BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

ORIGINAL APPLICATION NO. OF 54 OF 2016 (SZ)

IN THE MATTER OF:

Suo Motu based on the news item published in
The Hindu dated 08.03.2016 titled
"Lake in heart of Bengaluru City turns" Graveyard for fish". ... Applicant(s)

V/s

Government of Karnataka
and Ors. ...Respondent(s)

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S. Suresh
19/5/2022
DEPONENT

Place: Bengaluru

Date: 19/05/2022

S. SURESH
REGIONAL DIRECTOR
CENTRAL POLLUTION CONTROL BOARD
REGIONAL DIRECTORATE (SOUTH)
MIN. OF ENV, FORESTS & CC, GOVT. OF INDIA
BENGALURU - 560 079. MOB : 9480672128

BEFORE THE NATIONAL GREEN TRIBUNAL (SOUTHERN ZONE) CHENNAI

ORIGINAL APPLICATION NO. OF 54 OF 2016 (SZ)

IN THE MATTER OF:

Suo Motu based on the news item published in
The Hindu dated 08.03.2016 titled
"Lake in heart of Bengaluru City turns" Graveyard for fish". ... Applicant(s)

V/s

Government of Karnataka
and Ors. ...Respondent(s)

REPORT OF THE JOINT COMMITEE FILED BY CENTRAL POLLUTION CONTROL BOARD (CPCB) WITH REGARD TO HON'BLE TRIBUNAL ORDER DATED FEBRUARY 10th, 2022

I, S. Suresh, Son of Sh S.R. Sathyanarayana, Hindu, aged about 59 years, having office at the Regional Directorate, Central Pollution Control Board, 1st & 2nd Floors, Nisarga Bhavan, A-Block, Thimmaiah Main Road, 7th D Cross, Shivanagar, Bengaluru – 560 079 do hereby solemnly affirm and sincerely state as follows:

2. That I am presently working as Scientist 'E' & Regional Director, Regional Directorate (South), Central Pollution Control Board (hereafter called as CPCB), Bengaluru and have been authorized to file the present report. I am fully conversant with the facts of the case and hence, competent and authorized to depose and swear the present report as under:

3. That the Hon'ble National Green Tribunal (Southern Zone), Chennai in O A No. 54 of 2016 vide order dated February 10th, 2022 directed the Joint Committee to inspect the area in question again and report about the deficiency in the implementation of the directions issued earlier and further recommendations regarding the action to be taken, fixing the responsibility of the officials who are expected to carry out those recommendations with time line. Accordingly, the Joint Committee carried out inspections and monitoring on March 14th and 15th, 2022 and

conducted a review meeting with respective regulators on May 06th, 2022. The Joint Committee report is enclosed as **Appendix**.

Signed and verified on this on May 19th, 2022 at Bengaluru.

S. Suresh
19/5/2022

COUNSEL FOR CPCB

DEPONENT

S. SURESH
REGIONAL DIRECTOR
CENTRAL POLLUTION CONTROL BOARD
REGIONAL DIRECTORATE (SOUTH)
MIN. OF ENV, FORESTS & CC, GOVT. OF INDIA
BENGALURU - 560 079. MOB : 9480672128

REPORT OF THE JOINT COMMITTEE SUBMITTED BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, SOUTHERN ZONE, CHENNAI IN THE MATTER OF OA 54 OF 2016 (SZ) (SUO MOTU BY NGT V/s. GOVT. OF KARNATAKA AND OTHERS) REGARDING POLLUTION AND MASSIVE FISH DEATH CAUSED IN ULSOOR LAKE, BENGALURU DUE TO INDISCRIMINATE DISCHARGE OF SEWAGE

1.0 PREAMBLE

The Original Application (OA) 54 of 2016 (SZ) is a Suo Motu case taken by the Hon'ble National Green Tribunal (NGT), South Zone, Chennai based on the news item published in "The Hindu" dated 08/03/2016 titled "Lake in heart of Bengaluru city turns graveyard for fish". In continuation, Bruhat Bengaluru Mahanagara Palike (BBMP) filed Interlocutory Application (IA) 28 of 2019 (SZ) to implead them as additional respondent stating that they are the persons who are in charge of development and maintenance of Ulsoor Lake.

In view of above, the Hon'ble NGT, Southern Zone, Chennai vide Order dated 19/02/2020 directed the following

> *"(9) ..... it is appropriate to appoint a Joint Committee comprising of the Deputy Commissioner of Bengaluru (Urban), Senior scientist from Regional Office of Central Pollution Control Board (CPCB), Bengaluru, Karnataka State Pollution Control Board (KSPCB) and the Commissioner, Bruhat Bengaluru Mahanagara Palike (BBMP) to inspect the area in question and find out the source of pollution and persons who are responsible for causing pollution, whether the additional fourth respondent had taken any steps to implement the recommendations made by the KSPCB in their reply filed before this Tribunal on 26/09/2018, the present stage of the lake and also suggest the remedial measures to be taken to restore the lake to its original position, in respect to sewage treatment and dumping of garbage and illegal encroachments if any, in the lake.*
>
> *(13) Central State Pollution Control Board will be the nodal agency for co-ordination and for providing the necessary logistics for this purpose".*

In compliance to the order, the Joint Committee was constituted. Based on the field inspection, analysis results of wastewater, groundwater and surface water samples collected and verification of the official documents furnished by the concerned departments, the Joint Committee submitted a detailed report dated 10/08/2020 to the Hon'ble NGT.

The Hon'ble NGT considered the Joint Committee report, directed the following in the order dated 10/06/2021:

> *"(4) …The committee also wanted some more time for filing further progress report regarding the implementation of the recommendations and suggestions made by them by the respective regulators.*
>
> *(5) Considering the circumstances, we feel that some more time can be granted to the committee as well as to the official respondents to file their respective further progress report and action taken report."*

Consequent of transfer of three members of the committee, the Joint Committee was reconstituted with following members:

S. No.	Name of Member	Department
1.	Smt Sowmya D Scientist D	Regional Directorate Central Pollution Control Board Bengaluru
2.	Sh. B S Murulidhara Senior Environmental Officer (SEO) -Bengaluru City	Karnataka State Pollution Control Board Bengaluru
3.	Sh. K V Ravi Executive Engineer (Lakes)	Bruhat Bengaluru Mahanagara Palike Bengaluru
4.	Sh. Balakrishna, KAS Tahsildar - Bengaluru North	Deputy Commissioner Office DC Office Bengaluru Urban Bengaluru

The Joint Committee members conducted a meeting with the respective departments, inspected Sewage Treatment Plants (STP), Effluent Treatment Plant (ETP) and Storm Water Drains (SWD) in the catchment, monitored water quality of Ulsoor lake, verified the measures implemented by the concerned departments and submitted the report to the Hon'ble NGT on 16/09/2021.

The Hon'ble NGT directed the following in the order dated 10/02/2022 considering the Joint Committee report (**Annexure 1**):

"The Joint Committee is also directed to inspect the area in question again and report about the deficiency in the implementation of the directions issued earlier and further recommendations regarding the action to be taken, fixing the responsibility of the officials who are expected to carry out those recommendations with certain time line, so that this Tribunal can consider those aspects and pass appropriate directions/orders in this regard."

Consequent of transfer of Sh. B S Murulidhara, SEO, KSPCB, Smt. Vijayalakshmi, SEO took the charge. Accordingly, the joint committee is reconstituted with the following members vide office order dated 21/02/2022:

S. No.	Name of Member	Department
1.	Smt Sowmya D Scientist D	Regional Directorate Central Pollution Control Board Bengaluru
2.	Smt. Vijayalakshmi Senior Environmental Officer (SEO) -Bengaluru City	Karnataka State Pollution Control Board Bengaluru
3.	Sh. K V Ravi Executive Engineer (Lakes)	Bruhat Bengaluru Mahanagara Palike Bengaluru
4.	Sh. Balakrishna, KAS Tahsildar - Bengaluru North	Deputy Commissioner Office DC Office Bengaluru Urban Bengaluru

2. STATUS OF MEASURES IMPLEMENTED AS PER JOINT COMMITTEE RECCOMENDATIONS

In compliance to the order 10/02/2022, the Nodal Agency, CPCB addressed letters dated 21/02/2022 to the concerned officers of Madras Engineering Group & Centre (MEG), BBMP- Strom Water Drain (SWD), BBMP – Lakes, Bengaluru Water Supply and Sewerage Board (BWSSB) and KSPCB to furnish the information to verify the compliance.

On 14/03/2022 and 15/03/2022, the Joint Committee members along with officials of concerned departments inspected Ulsoor lake and STPs, ETP, storm water drains in the

catchment area of Ulsoor lake and verified the measures implemented by concerned departments as per the recommendations of the Joint Committee. During the inspection, wastewater samples from the outlet of 2 MLD STP operated by BWSSB at Ulsoor Lake and 100 KLD STP operated by Madras Engineering Group & Centre were collected. The water samples were collected from three locations at Ulsoor lake and combined storm water drain C-100 near Gurudhwar. The water and wastewater samples collected were analysed at Laboratory of Central Pollution Control Board, Regional Directorate, Bengaluru for the parameters such as pH, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Faecal Coliforms (FC). Subsequently, Joint Committee meeting was held at CPCB, Regional Directorate, Bengaluru on 06/05/2022 and reviewed the measures implemented by concerned departments.

The status of measures implemented by stakeholder departments as per the recommendations and suggestions in the Joint Committee report dated 10/08/2020 are as follow:

2.1 Status of measures implemented by Bengaluru Water Supply and Sewerage Board (BWSSB)

Sl	Suggestions of the Joint Committee in the report dated 10/08/2020	Status of implementation
1	To operate the existing STP of 2 MLD at its full capacity with a compliance to the discharge Standards, so that additional 0.5 MLD can be discharged to Ulsoor Lake, may adequate to maintain loss of water due to evaporation, infiltration etc.	1. During the inspection by the Joint Committee on 14/03/2022, the 2 MLD STP was operating with inflow of 1.85 MLD capacity. The daily flow meter readings recorded by BWSSB during 1/08/2021 to 28/02/2022 were verified and observed that the STP was operated at an average capacity of 1.95 MLD and in the range 1.85 MLD to 2.00 MLD. The photographs of the STP are enclosed as Photograph 1 & 2. The flow meter readings at the outlet of the STP from 01/08/2021 to 28/02/2022 is appended as **Annexure 2**. 2. The grab sample was collected at the outlet of

the STP on 14/03/2022 in presence of Joint Committee members. The samples were analysed at CPCB Laboratory and the analysis results are as follow (**Annexure 3**):

Parameter	Standard	Concentrations in sample collected at outlet of STP
pH@25˚C	5.5-9.0	7.9
BOD (3days @ 27˚C)(mg/L)	< 10	0.5
COD (mg/L)	< 50	38
TSS (mg/L)	< 20	BDL *1
Ammonical Nitrogen (mg/L)	< 5	BDL *2
Total Nitrogen (mg/L)	< 10	0.14
Fecal Coliform (MPN/100 ml)	Less than 100	10

Note:

*1: BDL - Range of testing of TSS - 5mg/L – 2000 mg/L

*2: BDL - Range of testing of Ammonical Nitrogen is 1 mg/L – 500 mg/L

The results show that the treated sewage is complying with the discharge standards.

3. BWSSB has installed the Real Time Continuous Treated Sewage Water Quality Monitoring Station at the outlet to the STP

		for the parameters pH, temperature, COD, BOD, color, total suspended solids, dissolved oxygen, ammonical nitrogen and total nitrogen (Photograph 3). The copy of work order dated 13/09/2021 issued by BWSSB to M/s Aaxis Nano Technology Pvt Ltd for supply, installation, testing and commissioning and five years comprehensive operation and maintenance of Real Time Continuous Treated Sewage Water Quality Monitoring Station is appended as **Annexure 4**. 4. The real time monitoring data is connected to BWSSB and KSPCB websites. The screenshot of online reading available in BWSSB website on 11/04/2022, 15.45 hr is as enclosed as Photograph - 4. 5. It was reported by BWSSB that 1.5 – 2.0 PPM of chlorine dosage is added to treated sewage at chlorine contact tank and maintained 15 minutes of retention time to nullify faecal and total coliform. During the inspection it was observed that the retention time provided was less. Retention time shall be increased to prevent residual chlorine entering into the lake. 6. BWSSB has awarded a study to Indian Institute of Science (IISc), Bengaluru on 11/11/2020 for suggesting measures to up-grade 20 STPs operating in Bengaluru to comply the effluent discharge standards as per

		KSPCB norms which includes 2.00 MLD STP at Ulsoor. The copy of work order dated 11/11/2020 issued to IISc by BWSSB is appended as **Annexure 5**. 7. The report submitted by IISc, Bengaluru to BWSSB on 21/03/2022 is appended at **Annexure 6** and recommended to maintain residual chlorine dose upto 2.5 – 3 ppm with a retention time of 30 - 40 minutes. Subsequently residual chlorine of treated sewage prior to discharge should be maintained at less than 0.7 ppm. If required de-chlorination may be adopted by providing aeration to maintain the residual chlorine.
2	To identify all the missing links and illegal discharge of wastewater into storm water drain and also to complete all the works taken up with respect to upgradation / rehabilitation of sub mains and lateral sewer lines by December 2020, as committed to stop 17 MLD flowing in the Storm Water Drains during dry weather.	1. BWSSB has identified 36 missing links and have taken up upgradation / rehabilitation of sub mains and lateral sewer lines (wastewater management zone – 20 works, maintenance zone - 16 works) to arrest the illegal discharge of sewage into storm water drain. The list of works undertaken by BWSSB is appended as **Annexure 7**. 2. During the inspection on 15/03/2022, BWSSB reported that out of 36 identified missing links 34 works (wastewater management zone – 20 works, maintenance zone – 14 works) were completed and other two works to be completed by the end of April 2022. BWSSB has submitted the report dated 23/04/2022 stating that remaining two works are also completed. The report is

appended as **Annexure 8**.

3. During the committee inspection lean flow was observed in the storm water drain (Photograph 5). The flow in the combined storm water drain (C- 100) at downstream of Ulsoor lake near Gurudhwar was monitored by the officials of BWSSB using float measuring technique during dry weather on 16/03/2022. The details of the flow are appended as **Annexure 9**. The average flow in the storm water drain during day time was 0.986 MLD and average flow of 24 hrs was 0.493 MLD. After completion of all 36 works, BWSSB has again measured the flow in the storm water drain on 16/04/2022 and report that the average flow in the storm water drain during day time was 0.386 MLD and average flow of 24 hrs was 0.193 MLD **(Annexure 10)**. On implementation of 36 works, discharge of 17 MLD of sewage to storm water drain is stopped.

4. The grab sample of water was collected from the storm water drain on 15/03/2022 and analysed at CPCB laboratory. The analysis report is appended as **Annexure 11**. The analysis results are as follow:

Parameter	Concentration
pH@25˚C	7.3
BOD (3 days, 27˚C) (mg/L)	11
COD (mg/L)	36
TDS (mg/L)	394

		<table><tr><td>TSS (mg/L)</td><td>BDL*</td></tr><tr><td>Ammonical Nitrogen (mg/L)</td><td>1.97</td></tr><tr><td>Total Kjeldahl Nitrogen (mg/L)</td><td>12.5</td></tr><tr><td>Total Coliform (MPN/100ml)</td><td>85 X10^3</td></tr><tr><td>Fecal Coliform (MPN/100ml)</td><td>24.5X X10^3</td></tr></table> Note: BDL*- Range of testing of TSS - 5mg/L – 2000 mg/L
3	To ensure the implementation of Notification No. FEE 316 EPC 2015, dated 19.01.2016 issued by Forest, Ecology & Environment Secretariat w.r.t. installation of STP and reuse of Treated Sewage.	1. BWSSB vide notification No. BWSSB/C/CAO-S/4138/2015-16, Bengaluru dt 25/02/2016 and amended vide notification No.BWSSB/CAO-S/ 5008 /2017-18 dt 21/2/2018, mandated installation of STP and Dual Piping System in following buildings as per Regulation 4A of Bengaluru Sewage Regulation: *"No water supply or sewerage connection shall be granted by the Board on the application of owner or builder or occupier of new Building Projects, unless sewage treatment plant is established and facilities for reuse of treated effluent by providing dual piping system one for toilet flushing purpose and the other for all purposes in respect of;* *i. Residential buildings consisting of 20 and above apartments or measuring 2,000 m^2 and above whichever is lower; or* *ii. Commercial building measuring 2,000 m^2 and above; or* *iii. Buildings of educational institutions measuring 5,000 m^2 and above."* The copy of the notification is appended as

		Annexure 12. 2. The BWSSB reported that 40 numbers of buildings in the catchment area of Ulsoor lake have installed individual STP and the list is appended as **Annexure 13**.
4	To ensure the implementation of BWSSB (Rain Water Harvesting) Regulations 2010 and subsequent amendments w.r.t providing rain harvesting structure by the owner or occupier of the residential building.	1. BWSSB has already made mandatory to adopt rain water harvesting system in the existing buildings constructed on a site dimension measuring 216 m^2 and above and also for new buildings constructed on a site measuring 108 m^2 and above vide Government Order No. UDD19MNI2009 dated 27/08/2009 by Amendment of Bengaluru Water Supply and Sewerage Act, 2010-72A. 2. BWSSB reported that around 1661 numbers of buildings in catchment area of Ulsoor lake have implemented the rain water harvesting system (**Annexure 13)**.
5	To avoid laying of Under Ground Drainage (UGD) lines & manholes within Storm Water Drains and also to execute work with an approval of BBMP – Storm Water Drain Division.	1. BWSSB reported that UGD line are laid in buffer zone, if buffer zones are available along the SWD. In case if there is no space, the UGD lines are laid inside SWD after obtaining approval by BBMP –SWD (**Annexure 13**). 2. During the inspection of the Joint Committee on 15/03/2022, it was observed that UGD lines were laid in the buffer zones and at a few places where there is no space available for buffer zones, UGD lines were laid inside the SWD.

2.2 Status of measures implemented by Bruhat Bengaluru Mahanagara Palike (BBMP)

Sl	Suggestions of the Joint Committee in the report dated 10/08/2020	Measures implemented
1	To remove accumulated floating debris / solid waste from wetland and main water body of Ulsoor Lake.	No floating debris/solid waste in wetland and in the lake were observed by the committee during the visit on 14/03/2022 and 15/03/2022 (Photographs 6 & 7).
2	To provide / install appropriate screen to arrest entry of floating matter at each stage i.e. Secondary drain to Primary drain, at regular interval may be of 1000 m in Primary drain. Also to develop system to remove accumulated debris from the screen on regular interval to protect and improve its functionality, also ensure disposal of debris removed to SWM processing facility. In addition, a section of 0.8 M widatedh and 0.6 M depth pilot drain shall be constructed at the middle in all primary and secondary drains to carry dry weather flow and will help in collecting / removing solid waste. BBMP may explore deputing scavengers for supervising and removing of solid wastes from the drains. To provide silt traps at appropriate locations in the primary and secondary drains to avoid carryover of silts to the Lakes and easy removal from the drains too.	1. During the joint committee visit on 14/03/2022, it was observed that two floating trash barrier are installed one at storm water drain upstream of Ulsoor Lake and another 24 m wide at the entrance of the wetland for trapping floating materials. The photographs are enclosed at photograph 8 & 9. 2. As per the records furnished by BBMP, under 15th finance Commission pertaining to solid waste management infrastructure development in BBMP jurisdiction, provision is made in the Action plan to provide trash barriers for selected lakes to avoid the solid waste entering into the lakes. The copy of 15th finance Commission Action plan is appended as **Annexure 14**. 3. As per the records of BBMP, annual maintenance contract for removal of debris and silt from SWD is given to a firm M/s Yoga & Co, Bengaluru for 3 years vide work order dated 09/04/2019. The copy of the work order is enclosed at **Annexure 15**. 4. Construction of a Silt Traps along C-200

		drain above the Komala Junction Bridge is at the completion stage BBMP has reported that construction of other two silt traps at appropriate locations along C-200 drain is in progress and also made financial provisions to construct a few more silt traps to arrest the silt. 5. BBMP reported that sewage pipelines are existing beneath the bed of storm water drains in C - 100 and C- 200 and its sub-streams due to which construction of pilot drain would be difficult. The construction of pilot drain at the middle of the SWDs are possible after the replacement of existing UGD/Sewage lines (**Annexure 14**).
3	The existing screen provided to arrest entry of floating debris into wetland found inadequate and BBMP has planned to install floating screen for the same. The committee of the opinion that the entry of water during wet weather is nothing but a diluted wastewater /sewage and carries lot of organic wastes along with it. The existing treated sewage from BWSSB STP (2 MLD) and MEG STP (100 KLD) may be adequate to maintain the water level of Ulsoor Lake. So, it is suggested to replace the existing weir with sluice gates to stop entry of diluted sewage into wetland / Ulsoor Lake.	A sluice gate is installed in storm water drain at upstream of the Ulsoor lake and dry weather flow is diverted to the diversion pipe which leads to Chalaghatta 248 MLD STP. During rainy season overflow of the storm water drain reaches the wetland of the Ulsoor lake. The photographs of sluice gate is enclosed as Photograph 9.
4	The treated water from STPs shall be	During the visit of the Joint Committee, it was

	discharged into wetland structure after complete cleaning to act as polishing process for removal of remaining suspended solids and biological oxygen demand making the water more hygienic and environmentally safe before release in to main course of Lake.	observed that the treated sewage from STP is discharged into a wetland prior to the main course of lake (Photograph 12).
5	To provide Cascade Aerators for discharging treated sewage into wetland helps in removing odour due to Hydrogen Sulfide, if any. Also micro bubblers and fountains may be planned by ensuing available D.O., if required.	1. During the visit of the Joint Committee on 14/03/2022, it was observed that cascade aerators for discharging treated sewage are not installed. 2. As per the records furnished by BBMP, under 15th finance Commission pertaining to solid waste management infrastructure development in BBMP jurisdiction, provision is made in the Action plan for installation of diffused aerator systems in Ulsoor (**Annexure 14 & 15**).
6	To install online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis at appropriate location. Until installation of online system, BWSSB may start monitoring pH, DO and Temperature on daily basis along with STP monitoring records.	1. The online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis is not installed. BBMP reported that financial provision is made in the 15th finance Commission Action plan for installing online water quality monitoring system. 2. BWSSB has installed Real Time Continuous Treated Sewage Water Quality Monitoring Station at the outlet to STP for the parameters pH, temperature, COD, BOB, color, total suspended solids, dissolved

		oxygen, ammonical nitrogen and total nitrogen and connected to BWSSB and KSPCB websites.
7	To renew the consent issued by KSPCB under the Water (Prevention & Control of Pollution) Act, 1974 for operating Slaughter House and 50 KLD ETP immediately. To upgrade and operate the ETP complying to the effluent discharge Standards and also to recycle the treated water for slaughter house washing/cleaning purpose. The effluent generated from mutton stalls located within slaughter house premises shall be treated in ETP and not to dispose directly into UGD. Also to implement the Notification No.PCB/WMC/SEO/2013-14/6271 dated 05.02.2014 issued by KSPCB as per the Guidelines for Slaughter House prepared by CPCB	1. CPCB issued directions to KSPCB on 09/12/2021 under Section 18(1)b of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 to close down all activities of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru with immediate effect. The copy of direction dated 09/12/2021 issued to KSPCB is appended as **Annexure 16**. 2. KSPCB issued Closure order under section 33(A) of Water (prevention & Control of Pollution) Act 1974 and Section 31 (A) of Air (Prevention and Control of Pollution Act 1981 on 28/1/2022. The copy of direction issued by KSPCB is appended as **Annexure 17**. 3. The Joint committee visited M/s BBMP Civil Slaughter House on 15/03/2022 and following were observed: i. The slaughter house was not in operation during the visit and it was reported that the slaughter house was close down since 13/03/2022. The photographs of process area of slaughter house and ETP are enclosed as Photographs 13 - 18. ii. The daily records of number of animals slaughters in slaughter house are

		maintained in the register. The copy of the register maintained by BBMP is appended as **Annexure 18**. 4. In response to the closure orders issued, BBMP vide letter dated 16/03/2022 to KSPCB proposed following short and long term measures for implementation (**Annexure 19**): *i.* *Short term measures:* As an immediate short term measures, arrangement are made to transport the effluent to CETP and treat the effluent. BBMP issued work order dated 17/03/2022 to M/s Sai Enviro Tech to collect, transport and dispose liquid waste generated in the slaughter house to Common effluent treatment plant (CETP) for treatment for the period 17/03/2022 to 16/06/2022. The copy of work order is appended as **Annexure 20**. The copy of agreement with CETP is not furnished by the BBMP. *ii.* *Long term measures:* a. Modernization of the abattoir by providing new infrastructure including building, slaughtering and meat processing as per modern Abattoir protocols. b. Setting up an effluent treatment plant with zero liquid discharge with latest available technology – vacuum

		evaporation system. c. Setting up a biogas plant where solid waste will be processed. Gas generated shall be used to produce power for use within modernized abettor. 5. Based on the short term measures implemented and long term measures proposed, BBMP through letter dated 16/03/2022 requested KSPCB to revoke the closure order issued as closure of slaughter house leads to: i. Illegal slaughtering of animals in shops and streets. ii. Massive discharge of blood and animal waste into drains. iii. Illegal selling of uncertified meat to customers. iv. Supply of unwholesome and unhygienic meat to customers. v. Contaminating the ground water leading to environmental pollution. 6. BBMP has applied to KSPCB for renewal of the consent to operation. The consent is to be renewed by KSPCB.

2.3 Status of measures implemented by Department of Fisheries

Sl	Suggestions of the Joint Committee in the report dated 10/08/2020	Measures implemented

1	To prescribe appropriate physio-chemical and biological parameters in the contract / agreement to carryout water quality monitoring while appointing contractor for fishing.	1. As per the records of Department of Fisheries, the contract for fishing is given to Bengaluru District, Fish production and marketing cooperative society Ltd on lease. 2. Fish production and marketing cooperative society Ltd is conducting water quality monitoring in the lake once in three months through Karnataka Veterinary, Animal and Fisheries Sciences University, Fisheries Research and Information Centre (Inland), Hebbal, Bengaluru. 3. The reports of the water quality analysis carried out in August and December 2021 and March 2022 is appended as **Annexure 21**.
2	To carryout study of bio accumulation of heavy metals in some tissues of fishes in Ulsoor Lake.	1. Department of Fisheries has conducted the study on bioaccumulation of heavy metals in fish through Karnataka Veterinary, Animal and Fisheries Sciences University, Fisheries Research and Information Centre (Inland), Hebbal, Bengaluru once in six months. The report states that the heavy metal in fish tissue in Ulsoor lake is below permissible limit. The reports of analysis carried out in August 2021 and March 2022 is appended as **Annexure 21**.
3	To maintain the cleanliness of the Ulsoor Lake and disposal of aquatic plants by pit composing method or any other means.	During the visit of the Joint Committee on 14/03/2022, it was observed that cleanliness of the lake was maintained and it was informed during the inspection that debris, solid waste and eutrophic plants are regularly removed.

2.4 Status of measures implemented by Madras Engineering Group and Centre

Sl	Suggestions of the Joint Committee in the report dated 10/08/2020	Measures implemented
1	To apply and obtain Consent (CFO) for discharge of effluents under the Water (Prevention & Control of Pollution) Act, 1974 and emissions under the Air (Prevention & Control of Pollution) Act, 1981 for operating & discharging of treated sewage from KSPCB immediately.	1. MEG&CC has not applied for Consent for Operation from KSPCB for operation of STP and discharge/utilization of treated sewage. 2. MEG&CC reported that KSPCB authorities have approached MEG&CC regarding obtaining consent to operation for 100 KLD STP. On enquiring about the procedure to apply for consent to operation, a consent fee structure applicable to State/Central Govt Undertaking/PSU's were furnished by KSPCB. However, no fee structure was conveyed for Defence/Non Industrial/Govt of India Agency. As the 100 KLD STP of MEG&CC is built on A1 Defence Land, none of the listed fee structure were applicable and infrastructure developed on A1 Defence land is not liable to pay any fee. In this connection, KSPCB was requested to waive off consent fee vide letter dated 01/02/2022 **(Annexure 22 & 23) .** **3.** In pursuing of above KSPCB invited MEG&CC authorities for personal hearing on date 04/04/2022. However, MEG&CC authorities did not attend the hearing. KSPCB reported that legal opinion regarding fee structure and consent for operation of STPs in A1 Defense land is sought. On receiving the legal opinion

<table>
<tr><td></td><td></td><td>action deemed fit shall be initiated (Annexure 24).</td></tr>
<tr><td>2</td><td>To operate the ETP complying to the effluent discharge Standards and not with discharge treated effluent directly into storm water drain. Shall lay a pipeline to discharge treated sewage with cascade aeration system in Wetland of Ulsoor Lake. Also to install flow meter and maintain proper records of the same.</td><td>1. The Joint Committee inspected 100 KLD STP installed by Madras Engineering Group and Centre on 14/03/2022. During the inspection STP was in operation (Photograph 19).

2. The treated sewage is being discharged to the storm water drain from the outlet of the STP (Photograph 20). The grab sample of treated sewage was collected at the outlet of the STP in presence of Joint Committee members and samples were analysed at CPCB Laboratory. The analysis results of the treated sewage collected from the STP are as follow (Annexure 25):
<table>
<tr><th>Parameter</th><th>Standard</th><th>Concentrations in treated wastewater at outlet of STP</th></tr>
<tr><td>pH@25˚C</td><td>5.5-9.0</td><td>7.4</td></tr>
<tr><td>BOD (3days @ 27˚C)(mg/L)</td><td>< 10</td><td>8.0</td></tr>
<tr><td>COD (mg/L)</td><td>< 50</td><td>53</td></tr>
<tr><td>TSS (mg/L)</td><td>< 20</td><td>BDL</td></tr>
<tr><td>Ammonical Nitrogen (mg/L)</td><td>< 5</td><td>BDL</td></tr>
<tr><td>Total Nitrogen (mg/L)</td><td>< 10</td><td>5.42</td></tr>
<tr><td>Fecal Coliform (MPN/100 ml)</td><td>Less than 100</td><td>400</td></tr>
</table>
</td></tr>
</table>

		3. The results show that the treated sewage is not complying with the discharge standards with reference to COD and Fecal coliform. 4. Pipeline and cascade aeration system to discharge treated wastewater to wetland of Ulsoor Lake are not installed. 5. Flow meter at the outlet of the STP is not installed and records are not maintained. 3. As per the records furnished to the Joint Committee by M/s Garrison Engineer (North), MEG&C, Bengaluru, a work for utilization of treated sewage from STP has been sanctioned for utilization of treated sewage for arboriculture and watering of Golf Area at MEG&C. The work is tendered and commenced on January 2, 2022 and expected to complete before April 30, 2022. The copy of sanction order and work order is appended as **Annexure 22.**
3	To propose and construct additional STP to treat additional 4200 KLD of domestic sewage generated from MEG and stop discharging untreated sewage into UGD in time bound manner.	1. M/s Garrison Engineer (North),MEG&C, Bengaluru has estimated the sewage load generated in MEG&C and revised estimate is furnished to the joint committee and KSPCB vide letter dated 22/11/2021**(Annexure 26)**. 2. As per the records, total quantity of sewage generated in MEG&C, Bengaluru is 1800

		KLD and out of this 100 KLD is treated in the STP. 640 KLD is discharged in the septic tank. Remaining 1050 KLD of sewage is discharged to the underground drainage system of BWSSB with prior permission of BWSSB. 3. As per the records, MEG&C is the process of installing 1200 KLD STP. The tender action is in process and probable date of installation of STP is March 2024 (**Annexure 27**).

2.5 Status of measures implemented by Karnataka State Pollution Control Board

Sl	Suggestion of the Joint Committee in the report dated 10.08.2020	Measures implemented
1	To ensure the implementation of Notification No. FEE 316 EPC 2015, dated 19/01/2016 issued by Forest, Ecology & Environment Secretariat w.r.t. installation of STP and reuse of Treated Sewage.	1. As per the records furnished by KSPCB, there are 62 units located in the catchment of Ulsoor Lake. Out of 62 units 37 units have installed STP/ETP to treat the wastewater generated, the treated effluent is reused for secondary purposes. 2. The remaining 25 units are discharging the untreated wastewater into UGD with a permission of BWSSB and same is being treated by the BWSSB STP. These 25 units are established prior to notification dated 19.01.2016 (**Annexure 27**).
2	Out of 62 units, only 37 units (59.67%) are provided with STP / ETP to treat the	It is reported by KSPCB that out of 62 units, 25 units are established prior to notification dated

	wastewater generated and the remaining units are permitted to discharge untreated wastewater in to UGD with a permission of BWSSB. KSPCB shall reinvestigate & take appropriate action to install STP/ ETP in remaining 25 units, if applicable.	19.01.2016, with prior permission from BWSSB and these units are discharging the untreated wastewater into BWSSB UGD, the same effluent is being treated in the terminal 2 MLD STP of BWSSB established at Ulsoor Lake premises. BWSSB authorities have verified the 25 units with RR numbers and confirmed these units have obtained permission for discharging sewage into UGD from BWSSB authority. The sewage is treated in Ulsoor 2 MLD STP and also at Chalaghatta 248 MLD STP (**Annexure 27**).

3.0 WATER QUALITY OF ULSOOR LAKE

The Joint Committee has carried out water quality monitoring of Ulsoor Lake at three locations on 14/03/2022. The samples are analysed at CPCB, Regional Directorate laboratory and analysis reports is appended as **Annexure 28**. The water quality analysis results are as follow:

Water Quality Analysis Results of Ulsoor Lake

Sl	Parameter	Concentrations		
		Location 1	Location 2	Location 3
1	pH at 25°C	**9.1**	**8.9**	**9.3**
2	EC µs/cm at 25° C	302	301	312
3	TSS mg/L at 103-105°C	72	60	65
4	TDS mg/L at 180°C	156	186	157
5	COD mg/L	98	105	109
6	BOD mg/L at 27°C, 3 days	16	15	13
7	Dissolved Oxygen, mg/L	**11.8**	**12.8**	**11.8**
8	Chloride, mg/L	21	22	25
9	Sulphates, mg/L	4	7	6
10	Phosphate as P, mg/L	0.67	1.18	0.21
11	Nitrate as N, mg/L	BDL	BDL	BDL

12	Ammonia as N, mg/L	**BDL**	**BDL**	**BDL**
13	Total Coliform (MPN/100 ml)	28 X 10^4	47 X 10^3	70 X 10^3
14	Fecal Coliform (MPN/100 ml)	34 X 10^3	175 X 10^2	6800

Where,

Location 1 – Ulsoor lake – Outlet near Guruduwara

Location 2 – Ulsoor lake – Near fishing centre

Location 3 – Ulsoor lake – Near Kalyani

The analysis results shows that the water quality of at the monitoring locations confirms to designated-best-use classification Class "D" – Prorogation of wildlife and fisheries except pH. The primary water quality criteria of designated-best-use classification Class "D" – Prorogation of wildlife and fisheries are as follow:

i. pH between 6.5 and 8.5
ii. Dissolved oxygen 4 mg/L or more
iii. Free ammonia (as N) 1.2 mg/L or less

The pH is higher in the water samples analysed may be due to presence of algae in the Ulsoor lake and the samples were collected 12.00 PM during that time rate of photosynthesis and respiration are higher.

KSPCB is regularly collecting and analyzing the samples of Ulsoor Lake under Boards Programme and NWMP Programme. As per the analysis report dated 05/04/2022, Ulsoor Lake water is conforming to Class 'D' Standards (Propagation of wild life, Fisheries). The copy of the analysis report is enclosed as **Annexure 29**.

4.0 RECOMMENDATIONS REGARDING ACTION TO BE TAKEN, OFFICIALS RESPONSIBLE AND TIME LINE FOR IMPLEMENTATION:

Sl No	**Department and officials responsible for implementation**	**Measures to be implemented**	**Time line for implementation as committed by the Departments**
1.	Engineering - Chief, Bengaluru Water	i. Retention tank for maintaining 30 minutes retention time for effective	December 31, 2022 (8 Months)

	Supply and Sewerage Board	chlorination shall be installed at 2 STP at Ulsoor lake.	
		ii. Ensure implementation of Notification No. FEE 316 EPC 2015, dated 19.01.2016 issued by Forest, Ecology & Environment Secretariat with respect to installation of STP and reuse of Treated Sewage.	Continuous
		iii. Ensure implementation of BWSSB (Rain Water Harvesting) Regulations 2010 and subsequent amendments with respect to providing rain harvesting structure by the owner or occupier of the residential building.	Continuous
2	Commissioner, Bruhat Bengaluru Mahanagara Palike	i. Complete the installation of silt traps and trash barriers in Storm water drains, cascading aerators for discharge of treated sewage, diffused aeration system at lake.	March 31, 2023 (11 Months)
		ii. Install online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis at appropriate location.	December 31, 2022 (8 months)
		iii. Ensure effluent generated in M/s BBMP Civil Slaughter House is transported and treated at CETP, install flow meter and camera at the outlet of the ETP, maintain manifestos and records for	Immediate

		effluent transported and treated at CETP.	
		iv. Ensure implementation of long term measures such as modernization of the abattoir installation of effluent treatment plant to achieve zero liquid discharge and biogas plant for solid waste at M/s BBMP Civil Slaughter House as proposed by BBMP.	March 31, 2024 (1 year 11 Months)
3	Director, Department of Fisheries	i. Periodically carryout study of bio accumulation of heavy metals in tissues of fishes and monitor water quality in Ulsoor Lake.	Continuous
4	Commandant, Madras Engineering Group and Centre	i. Apply and obtain Consent for Operation (CFO) under the Water (Prevention & Control of Pollution) Act, 1974 for operation of STP and utilization of treated sewage with in their premises.	June 30, 2022 (2 months)
		ii. Operate the STP complying to the effluent discharge Standards and utilize of treated water from STP for arboriculture and watering of golf area at MEG&C.	April 30, 2023 (11 Months)
		iii. Install a STP of 1200 KLD and treat additional sewage generated in MEG& C and stop discharging untreated sewage into UGD of	March 31, 2024 (1 year 11 Months)

		BWSSB.	
5	Member Secretary, Karnataka State Pollution Control Board	i. Ensure the implementation of Notification No. FEE 316 EPC 2015, dated 19/01/2016 issued by Forest, Ecology & Environment Secretariat with respect to installation of STP and reuse of Treated Sewage for secondary purpose.	Continuous

Sh. K V Ravi
Executive Engineer (Lakes)
BBMP

Sh. Balakrishna, KAS
Tahsildar - Bengaluru North
DC Office Bengaluru Urban

Smt. Vijayalakshmi
Senior Environmental Officer
KSPCB

Smt. Sowmya D
Scientist D
CPCB

PHOTOGRAPHS

Photograph 1: BWSSB STP

Photograph 2: Chlorination tank at BWSSB STP

Photograph 3: Real time continuous treated sewage water quality monitoring station installed at BWSSB STP

Bangalore Water Supply and Sewerage Board
ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಳಿ

aaxis nano TECHNOLOGIES Pvt. Ltd.

Real Time Continuous Treated Sewerage Water Quality Monitoring Stations.

	2MLD ULSOOR STP	CHIKKABANAVARA 5 MLD	KADUGODI 6 MLD STP	HORAMAVU 20 MLD	K AND C VALLEY 60 MLD	NAGASANDRA 20 MLD	RAJACANAL 40 MLD		
Parameters	2022-04-11 15:45:00	2022-04-11 15:15:00	2022-02-03 14:01:30	2022-04-11 15:00:00	2022-04-11 15:23:00	2022-04-11 15:15:00	2022-04-11 15:15:00	Limit	Unit
pH	6.96	7.61	7.57	7.21	7.41	7.09	7.04	6.5-9.0	pH
Temperature	30.70	30.90	24.70	30.50	30.20	30.40	29.70	24-27	°C
Ammonical Nitrogen	0.84	0.85	0.80	1.40	1.27	0.62	1.92	5	mg/l
Total Nitrogen	2.10	1.10	1.96	5.60	3.70	4.50	3.40	10	mg/l
COD	35.00	38.54	37.93	28.10	33.28	96.86	30.73	50	mg/l
BOD	2.60	8.11	2.25	7.57	6.46	8.21	8.18	10	mg/l
TSS	3.70	10.42	7.75	6.85	16.09	25.04	15.67	20	mg/l
Color	7.00	15.24	11.99	9.16	10.86	24.37	15.71		hu
Dissolved Oxygen	0.18	2.90	4.71	4.50	-0.71	4.06	4.70		mg/l

Powered By: ©Aaxis Nano Technologies Pvt. Ltd.
Designed By:
TELEMETRY

Photograph 4: Screen shot of connectivity provided to BWSSB portal

Photograph 5: Storm water drain near Gurudwar

Photograph 6: Floating debris removed and wetland is maintained

Photograph 7: Floating debris removed and wetland is maintained

Photograph 8: Trash barrier installed at entrance of wetland

Photograph 9: Trash barrier and sluice gate installed at Storm water drain

Photograph 10: Silt trap installation in SWD at Komala Junction by BBMP

Photograph 11: Silt trap installation in SWD at Komala Junction by BBMP

Photograph 12: Outlet of STP- treated sewage discharged to the wetland

Photograph 13: Process area at BBMP slaughter house

Photograph 14: Process area at BBMP slaughter house

Photograph 15: Process area

Photograph 16: ETP at BBMP Slaughter house

Photograph 17: Pipe disconnected from filtration system

Photograph 18: Rusted areator in areation tank

Photograph 19: STP at MEG& C

Photograph 20: Outlet of the STP to Storm water drain at MEG&C

Item No.15:

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No. 54 of 2016 (SZ)

(Through Video Conference)

IN THE MATTER OF:

Suo Motu based on the news item published in
The Hindu dated 08.03.2016 titled
"Lake in heart of Bengaluru City turns graveyard for fish".

With

Government of Karnataka,
Rep. by its Chief Secretary,
Bengaluru and Ors. ...Respondent(s)

Date of hearing: 10.02.2022.

CORAM:

HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER

HON'BLE Dr. SATYAGOPAL KORLAPATI, EXPERT MEMBER

For Applicant(s): Suo Motu by Court.

For Respondent(s): Mr. Rajat Jonathan Shaw represented
Mr. Darpan K.M. for R1, R2.
Mr. M.R. Gokul Krishnan for R3.
Mr. T.V. Sekar for R4.
Mr. R. Thirunavukarasu for CPCB.

ORDER

1. As per order dated 27.10.2021, this Tribunal had extracted the order passed on 23.09.2021 in Para (1) of the order and considered the inspection report submitted by the State Pollution Control Board dated Nil, e-filed on 26.10.2021 and extracted in Para (2) of the order and then, passed the following order:-

> *"3. Except the fact that certain directions have been issued, they have not filed any action report for the violations noted. Even as regards to certain violations noted in the earlier report by some other parties, there is no appropriate action taken report filed by the Pollution Control Board in this regard. When this was pointed out, the Learned Counsel appearing for the Pollution Control Board submitted if some time is granted, they will come with a proper action taken report considering all the aspects mentioned in the Joint Committee report and against the persons who are found to be violators.*
>
> *4. The Learned Counsel appearing for BBMP submitted that they want to file objection to the inspection report submitted by the Pollution Control Board and also file compliance report regarding the recommendations made by the Pollution Control Board. They are also directed to file their objections, if any, to the same along with compliance regarding recommendations made and both the Pollution Control Board and BBMP are directed to file the respective report and objections cum compliance report, if any, on or before 18.11.2021 and post the case for consideration on 24.11.2021.*
>
> *5. The Registry is directed to communicate this order to the official respondents including the Pollution Control Board and BBMP for their information and compliance of the direction."*

2. The case was originally posted on 24.11.2021 for filing objections (if any) to the report and consideration of report. Thereafter, the matter has

been adjourned from time to time by successive notifications and lastly, it was adjourned to today by notification dated 24.01.2022.

3. We have received the report submitted by the Executive Engineer (Lakes), BBMP dated 18.11.2021, e-filed on the same date stating the reason for not signing the report and expressing the apologies which reads as follows:-

"REPORT

Herein, I, K.V.Ravi, Executive Engineer(Lakes), Bruhat Bengaluru Mahanagara Palike, Bengaluru respectfully submits my report as under:

01.I submit that, I have been working as Executive Engineer (Lakes) from 2009 till now.

02.I submit that, I was one the three members of Joint Committee, appointed by the Hon'ble National Green Tribunal, Chennai, South Zone to inspect the area in question and find out the source of pollution and persons' who are responsible for causing pollution, etc.,

03. I submit that, after constitution of the Committee, a committee visited various spots and prepared a detailed report dated:10-08 2020, for being submitted to the Hon'ble National Green Tribunal.

04.I submit that, the consensus of the Joint Committee (except myself) was to recommend, imposition of a environment compensation on BBMP to an extent of Rs.17,83,60,000/-, for violation in the ETP of slaughter house.

05. I submit that, the figure arrived at was a whopping sum of Rs.17,83,60,000/-, which I sincerely and honestly felt that, I should bring this fact to the notice of the Hon'ble Chief Commissioner, who is the Head of the Bruhat Bengaluru Mahanagara Palike.

06.I submit that, therefore, I processed the file and sent to the Zonal Commissioner(East).

07.I deny that, the report had been sent to me several times for signature, but I did not sign. I respectfully submit that, only on 15-09-2021, an information was received from CPCB to come and to sign the report available in their office, as the case was coming up before the Hon'ble National Green Tribunal on 17-09-2021. I felt that, I should bring to the notice of my higher ups and then sign and therefore I processed the file on 16-09-2021 itself and simultaneously I made enquires in the office of CPCB and I was informed that the report in question has already been submitted to the Hon'ble NGT on 16-09-202 1 itself, without my signature.

08.I submit that, I have high respect and regards to the Hon'ble National Green Tribunal and I have been obeying all the directions and instructions issued by the NGT scrupulously. Absolutely there is no intention to show any disrespect either to the Joint Committee or the Hon'ble NGT.

09.I submit that, even now I am ready and willing to put my signature on the report.

10.I submit that, non signing is bona-fide mistake, particularly in saving the finanacial interest of Bruhat Bengaluru Mahanagara Palike and in any event not to be taken as disrespect to any institution. If the Hon'ble NGT were to form an opinion that, I was in error then, my apologies may kindly be accepted.

11.I submit that, I assure that, such error will not take place in future and I would be more careful.

12. Therefore, the proceedings if any against me, may please be dropped.

WHEREFORE, my report may please be accepted and proceedings may be dropped."

4. The reason stated in the affidavit for not signing the report and expressing the apology is recorded.

5. The BBMP has filed a report of measures undertaken/ implemented/objections dated 18.11.2021, e-filed on 19.11.2021 with certain annexure which reads as follows:-

Measures undertaken/implemented/objections of Bruhat Bengaluru Mahanagara Palike (BBMP)

I, Gaurav Gupta, I.A.S., Chief Commissioner, Bruhat Bengaluru Mahanagara Palike, N.R.Square, Bengaluru, do hereby state as follows:

01. I submit that, I have been working as Chief Commissioner, BBMP from 01-04-2021 and I know the facts of the case on the basis of the records available and on the basis of the discussions held with Chief Engineer(SWD), Chief Engineer(East), Joint Director(Animal Husbandary), Superintending Engineer(Lakes) and Assistant Executive Engineer(K.G.Halli). The information is given herein below in a tabular form submits measures undertaken/ implemented/ objections of Bruhat Bengaluru Mahanagara Palike (BBMP).

Sl	Suggestions of the Joint Committee in the report dt 10/08/2020	Reply/Compliance
01.	To remove accumulated floating debris / solid waste from wetland and main water body of Ulsoor Lake.	The recommendation of the Joint Committee is complied.
02.	To provide / install appropriate screen to arrest entry of floating matter at each stage i.e. Secondary drain to Primary drain, at regular interval may be of 1000 m in Primary drain. Also to develop system to remove accumulated debris	In order to: 01. Provide/install an appropriate screen to arrest entry of floating matter at each stage i.e., Secondary drain to Primary drain at regular interval at a distance of 1000 mtr each in Primary drain. 02. Develop system to remove

	from the screen on regular interval to protect and improve its functionality, also ensure disposal of debris removed to SWM processing facility. In addition, a section of 0.8 M width and 0.6 M depth pilot drain shall be constructed at the middle in all primary and secondary drains to carry dry weather flow and will help in collecting / removing solid waste. BBMP may explore deputing scavengers for supervising and removing of solid wastes from the drains. To provide silt traps at appropriate locations in the primary and secondary drains to avoid carryover of silts to the Lakes and easy removal from the drains too.	accumulated debris from the screen on regular interval to protect and improve its functionality. 03. A section of 0.8 m width and 0.6 m depth pilot drain would be constructed at the middle in all Primary and Secondary drain to carry dry whether flow and in collecting/removing solid waste 04. Providing silt traps at appropriate locations in the primary and secondary drains to avoid carry over of silts to the lakes and for easy removal from the drains. In so far as, Ulsoor Lake is concerned, BBMP wish to state that, there are two primary drains called C-100 commencing from Palace Grounds of a length of 4 kms., C-200 commencing from Jaymahal of a length 4.12 kms. C-200 has four Secondary drains, each having a length of about 2 kms., Thus, the total length is around 18 kms., All along these drains, there is BWSSB UGD lines passes beneath the drain. At places and at regular intervals, there are "man-holes". They are projecting, inside the drain, but above the bed of the drain of the height of 1.5 mtrs to 2 mtrs. They are the main obstacles for the easy flow of the drain water. At times, these man-holes would woose out and spil into the drain and leading to Ulsoor Lake, causing huge odour. The BWSSB needs to be involved in the matter in question, in speed up the work. A detailed project report(DPR) would be obtained from an expert with estimate and allocation would be sought from the government. For this, some time is required

		preferably could be included in the ensuing budget year 2022-23. The work would be under taken in phased manner, as per the budget allocation. In the meantime, in taking the issue forward, a line estimate would be prepared and would be submitted for further needful in the matter. In so far as, deputing scavengers not only for supervising but also for removing of solid wastes from the drains is concerned, BBMP has certain reservations to the issue in question. Such step would be taken only where drains are dry. In case of wet drains, (they are usually wet) it may not be possible in deputing scavengers for that work, in view of the provisions of the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 and the other concerned enactments. However, work of supervising and removing of solid waste from the drains, is not stopped. It is being carried by deploying machineries such as Proclaimers /excavators. In so far as, floating materials removed from the drain is concerned, it would be transported to processing unit. The silt removed from the drain to the designated landfill sites. The work of obtaining grant allocation from the Government, obtaining DPR, floating of tenders and their acceptance, and completion of the works, would taken considerable time. Till then, as a temporary measure, floating materials would be arrested by putting trash barriers, wherever necessary and all other steps including routine maintenance through annual maintenance would be under taken.
03.	The existing screen provided to arrest entry of	In so far as, providing screen to arrest entry of floating debris into

	floating debris into wetland found inadequate and BBMP has planned to install floating screen for the same. The committee of the opinion that the entry of water during wet weather is nothing but a diluted wastewater /sewage and carries lot of organic wastes along with it. The existing treated sewage from BWSSB STP (2 MLD) and MEG STP (100 KLD) may be adequate to maintain the water level of Ulsoor Lake. So, it is suggested to replace the existing weir with sluice gates to stop entry of diluted sewage into wetland / Ulsoor Lake.	wet land is concerned, the answer that, the Joint Committee on 28-07-2021, at the time its visit observed that the screen provided to arrest entry of floating debris into wet land is replaced with 24m wide floating barrier. And the said observation has been taken as complied. The office of the Chief Engineer (Lakes), BBMP has received the copy of the order No.UDD 307 CSS 2020, dated:27-07-2021, issued by the Government of Karnataka under which a provision for Trash Barriers for selected lakes in BBMP limits to avoid the Solid Waste entering into the lakes, has been made and in this respect an allocation of Rs.400.00 lakhs is sanctioned(allocation is under 15th Finance Commission) (copy enclosed as **Document No.1**). The BBMP has selected Ulsoor Lake, in the above said provision and has decided to replace the existing weir with sluice to stop entry of diluted sewage into wetland/Ulsoor Lake, by utilizing Rs.200.00 lakhs both in respect of replacing existing weir with sluice gates and in providing Cascade Aerators, with online monitoring system to monitor water quality. There is some delay in floating tenders. The file was under process in various departments of BBMP. That apart, in view of coming into force of "Election Code of Conduct", (elections to be held to the Legislative Council), which is going expire on 16-12-2021. Immediately thereafter, tenders would be floated and immediate steps would be taken in replacing the

		existing weir with sluice gates to stop entry of dilute sewage into wetland/Ulsoor Lake and in providing Cascade Aerators for discharging treated sewage into wetland.
04.	The treated water from STPs shall be discharged into wetland structure after complete cleaning to act as polishing process for removal of remaining suspended solids and biological oxygen demand making the water more hygienic and environmentally safe before release in to main courseof Lake.	The recommendation of the Joint Committee is complied.
05	To provide Cascade Aerators for discharging treated sewage into wetland helps in removing odour due to Hydrogen Sulfide, if any. Also micro bubblers and fountains may be planned by ensuing available D.O., if required.	Vide answer given to SI No.3
06.	To install online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis at appropriate location. Until installation of online system, BWSSB may start monitoring pH, DO and Temperature on daily basis along with STP monitoring records.	
07.	To renew the consent issued by KSPCB under the Water (Prevention & Control of Pollution) Act, 1974 for operating Slaughter House and 50 KLD ETP immediately. To upgrade and operate the	1. BBMP has applied for renewal of consent for operation of Slaughter House and 50 KLD ETP to KSPCB through online on 01-10-2021(copy enclosed as Document No.2). It is true that, the slaughter house is in

	ETP complying to the effluent discharge Standards and also to recycle the treated water for slaughter house washing/ cleaning purposed. The effluent generated from mutton stalls located within slaughter house premises shall be treated in ETP and not to dispose directly into UGD. Also to implement the Notification No.PCB/ WMC/SEO/2013-14/6271 dated 05.02.2014 issued by KSCB as per the Guidelines for Slaughter House prepared by CPCB	operation since 30/06/2009. The unit, being the only one unit, particularly for large animals(for slaughtering buffelows), in Bengaluru City, having a population more than 1,30,00,000 and as such has to run in view of absolute necessity and being essential. 2. In the event of, unit not being run, there could be several illegal slaughter houses, leading to animal waste being lead to storm water drains and lakes, eventually leading to ground water pollution. 3. In order to upgrade and operate the ETP after complying with the "effluent discharge standards and also in recycling the treated water of slaughter house and recycling of washed water". 4. Estimate was prepared for a period of one year in respect of upgradation and maintenance effluent treatment plant, which runs into Rs.87,03,000/-, for which job number certificate was obtained bearing No:060-21-000001 on 03-07-2020(copy enclosed as **Document No:3**). 5. Tender was floated on 02-09-2021. Only two bidders participated. Both were disqualified on technical grounds. 6. A decision was taken on 20-09-2021, to have a detailed project report in respect of upgradation and modernization of ETP with civil works. 7. Immediate steps are being taken in appointing an expert consultant in drafting a detailed project report, to

		whom instructions would be given to prepare DPR after observating specific observations appearing in the order dated:27-10-2021. 8. Immediately after obtaining a DPR, it would be submitted to the KSPCB for approval. After their approval, tenders would be floated. 9. In respect of civil works in the unit, an allocation of Rs.75.00 lakhs is made available under "budget Code 05-220410 Repairs and Maintenance – Building Slaughter Houses / Abattoir P2166", viz., Rs.25.00 lakhs each to the works of large animal section, small animal section and Bhotty Stalls in large and small animal sections (copy enclosed (vide Sl No.9) as Document No.4). 10. The effluent generated from Mutton Stalls located within the slaughter house premises coming from "large animal section", "small animal section" and from Bhotty Stalls joins ETP and they are not being disposed of directly into UGD. 11. The guidelines issued by the KSPCB dated:05-02-2014 would be followed and it would be incorporated in the DPR. 12. The inspection report of the KSPCB and sample analysis report, has shown the concentrations against the standards concerning various parameters. Once ETP is upgraded by utilizing the grants then, concentrations would comply with the discharge standards with reference to COD, TDS and

		Chloride. 13. After such upgradation of ETP, it would work scientifically. Rusted Aerators and Pumps would be removed in such upgradation. After upgradation, discharge from ETP would be regular and pipes to filtration unit would be proper. There would be no question of storage of effluents in the ETP. Some period is required for such upgradation and modernization including preparation of DPR viz., one year.

02. I submit that, the report, as directed in para No.5 of the order dated:23-09-2021, is obtained from the concerned officer, Shri.Ravi and the same is being submitted separately.

03. I submit that, it is true that, there some delay and some time is required in implementing the directions issued by the Hon'ble National Green Tribunal and an attempt has been made in explaining the reasons for the same. On behalf of BBMP, my apologies may please be accepted.

WHEREFORE, it is prayed that, environment compensation, recommended by the committee may not be imposed on BBMP in the public interest and every effort would be placed, in carrying out the directions issued by the Hon'ble National Green Tribunal. The concerned Chief Engineers have been instructed to follow the directions scrupulously.

6. The Central Pollution Control Board has filed an action taken report dated 15.12.2021, e-filed on the same date which reads as follows:-

"Report on action taken by CPCB in O. A No 54 of 2016 (SZ) in the matter of Suo Motu based on the news item published in The Hindu Dated 08.03.2016 titled "Lakes in heart of Bengaluru City turns graveyard of fish" vs Government of Karnataka and Ors

The Hon'ble NGT vide order dt 10/06/2021 in the matter of OA No. 54 of

2016(SZ) Suo Motu based on the news item published in The Hindu Dated 08/03/2016 titled "Lakes in heart of Bengaluru City turns graveyard of fish" vs Government of Karnataka and Ors, directed the Joint Committee to file further progress report regarding the implementation of the recommendations and suggestions made by the committee. Accordingly, the joint committee filed status report on 16/09/2021.

Subsequently, the Hon'ble NGT (SZ) vide order dt 23/09/2021 directed the following:

"The State Pollution Control Board as well as the Central Pollution Control Board are also directed to file their independent report regarding the further action taken by them as a regulator for the violations noted by them and non-compliance, in view of the directions issued by the Principal Bench of National Green Tribunal, New Delhi in O.A. No.606 of 2018 and the BBMP is also directed to file the report regarding steps taken by them in respect of the gap found by the majority members of the committee and also the steps taken by them for improving the water quality in the lake, which according to the committee has not improved than the condition which was found earlier."

The major observations of the joint committee in joint committee report dated 16/09/2021 are as follows:

1. *The validity of the consent issued by Karnataka State Pollution Control Board (KSPCB) under the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 to M/s Bruhat Bengaluru Mahanagara Palike (BBMP) Civil Slaughter House, Tannery Road, Bengaluru was expired on 30/06/2009 and the Effluent Treatment Plant (ETP) of the slaughter house is not operated scientifically.*
2. *Madras Engineering Group and Centre has not applied for Consent for Establishment and Consent for Operation from KSPCB for operation of Sewage Treatment Plant (STP) and the treated sewage is not complying with the discharge standards with reference to Chemical Oxygen Demand (COD) and fecal coliform.*
3. *The treated sewage discharged from 2 MLD STP operated by Bengaluru Water Supply and Sewerage Board (BWSSB) is not complying with the discharge standards with reference to COD and fecal coliform.*

The actions taken by Central Pollution Control Board (CPCB) in the matter of OA No. 54 of 2016(SZ) are as follow:

1. In the matter of mortality of fishes due to contamination in Ulsoor Lake, CPCB issued directions dated 04/04/2016 under 18(1) (b) of the Water (Prevention and control of Pollution) Act 1974 to KSPCB to ensure the following:

i. KSPCB shall issue directions under Section 33 (A) of the Water Act to BBMP and BWSSB to immediately stop discharge of untreated sewage in the surrounding areaof the lake.

ii. KSPCB shall direct BBMP and BWSSB to set up STPs of adequate capacity and provide underground sewerage system to cover the entire local/ urban areas and to bridge the treatment gap along with enforcement of consent management in line withstandards for sewage treatment.

iii. KSPCB shall direct concerned agency to ensure tertiary treatment of sewage beforedischarge into lakes.

iv. KSPCB shall direct concerned authorities to earmark boundary of the lake, and establish bunds along the periphery of the lake.

2. Based on the joint committee report dated 16/09/2021 submitted to the Hon'ble NGT (SZ), CPCB issued directions to KSPCB on 09/12/2021 under Section 18(1) b of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 in the matter of M/s Bruhat Bengaluru Mahanagara Palike (BBMP) Civil Slaughter House, Tannery Road, Bengaluru to ensure of the following:

i. To close down all activities of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru with immediate effect.

ii. To disconnect electricity supply of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru by Bengaluru Electricity Supply Company Limited.

iii. To disconnect water supply of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru by Bengaluru Water Supply and Sewerage Board.

iv. To carry out assessment of environmental damage and recovery of the cost from M/sBBMP Civil Slaughter House.

v. M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru shall not operate without Consent from KSPCB.

The copy of direction dated 09/12/2021 issued to KSPCB is appended as ***Annexure 1****.*

3. As the treated sewage at 100 KLD STP operated by Madras Engineering Group and Centre, Bengaluru in their campus and 2 MLD STP operated by BWSSB were not complying with the prescribed discharge standards for COD and Fecal Coliforms, CPCB issued directions to KSPCB on 18/11/2021 under Section 18(1) b of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 to ensure of the following:

i. KSPCB shall issue directions to concerned authorities (Madras Engineering Group and Centre, Bengaluru and BWSSB) to ensure that sewage treatment plants are optimally operated so as to comply with the prescribed norms.

ii. KSPCB shall direct the BWSSB to ensure that entire sewage generated in the catchment of lake Ulsoor is conveyed to STPs and these STPs are operated at the designed capacity and conform to the prescribed norms.

iii. KSPCB shall impose environmental compensation on Local Municipal bodies/State Level Authorities for discharge of untreated wastewater into Ulsoor Lake.

The copy of direction dated 18/11/2021 issued to KSPCB is appended as ***Annexure 2****.*

4. In pursuance to Hon'ble NGT order dated 10/5/2019 in O.A No. 325/2015 in the matter of Lt. Col. Sarvadaman Singh Oberoi Vs UoI, CPCB prepared Indicative Guidelines for Restoration of Stagnant Water Bodies and uploaded in CPCB website at https://cpcb.nic.in/NGTMC/Ind-Guidelines-RestWaterBodies-10062019.pdf on 10/06/2019. The indicative guidelines were also circulated to all States/ Union Territories (UTs) vide CPCB letters dated 18/6/2019 and 26/07/2019 and requested all the States and UTs to submit the action plans for restoration of water bodies prepared in line with the Indicative Guidelines for Restoration

of Stagnant Water Bodies.

Karnataka Tank Conservation and Development Authority vide email dated 4/02/2021 informed that Karnataka Tank Conservation and Development Authority has been designated as the Nodal Agency for restoration of stagnant water bodies in the State of Karnataka.

5. The information received from Karnataka State in compliance to the directions issued by the Principal Bench of Hon'ble NGT, New Delhi in O.A. No.606 of 2018 are as follow:

i. Total number of Urban Local Bodies (UPBs) in Karnataka are 316.

ii. As per the information provided by KSPCB, total solid waste generated in the State is approximately 11085 TPD. Out of this 6817 TPD is processed and it accounts for 61.5% of the total waste generated in the State. 1250 TPD (11.2%) of the waste is landfilled and the gap in solid waste management is 3018 TPD, which is 27.2% of the waste generated in the State.

iii. Door to door collection is initiated in 284 ULBs and in remaining ULBs door to door collection will be implemented by December 31, 2021.

iv. Partial source segregation of waste is implemented in 144 ULBs and the remaining ULBs are to be covered by March, 2022.

v. 217 Material Recovery Facilities (MRFs) are there in 204 ULBs in the State with a combined capacity of 514 TPD, covering 64.5% of the ULBs.

vi. 217 Plastic waste recycling units are there in the State with a combined capacity of 310TPD in 204 ULBs, covering 64.5% of ULBs.

vii. There are 216 composting units in the State with a combined capacity of 5834 TPD in198 ULBs, covering 62.65% of ULBs.

viii. There are 15 bio-methanation facilities in the State with a combined capacity of 68 TPDin 11 ULBs, covering 3.4% of ULBs.

ix. 217 RDF facilities are there in the State with a combined capacity of 215 TPD in 204 ULBs, covering 64.55% of ULBs.

x. Karnataka state doesn't have Waste to Energy facilities. 600 TPD (11.5 MW) Waste to Energy plant is being built by BBMP and Karnataka

Power Corporation Ltd (KPCL) at Bidadi and 200 TPD plant by NTPCL at Dharwad City Corporation.

xi. There are 52 landfill sites in the State in 52 ULBs with a capacity of 2680245 Tonnes. There are 191 dumpsites in the State with 1.5 Crore tons of waste dumped at these sites. Bio mining is commenced in 15 dumpsites. All the dumpsites are to be cleared by the year 2023.

xii. 8 Model Town/Cities and 90 Gram Panchayats have been identified in the State.

xiii. Environment cell has been created in the State.

xiv. The combined waste processing capacity in the State is approximately 6631 TPD whichis about 60% of the generated waste.

xv. City wise details have not been received from the State so far.

6. Under National Water Quality Monitoring Programme (NWMP), Ulsoor Lake is monitored at two locations with Station Code 3593 - Ulsoor lake Near temple and Station Code 1388 - Ulsoor lake near training centre of fish breeding. Based on the water quality monitored during 2020 and 2021 (up to August, 2021) both the locations are non- complying to the Primary Water Quality Criteria for Outdoor Bathing for all the 5 parameters viz, DO, pH, BOD, Fecal Coliform & Fecal Streptococci, notified under Environment (Protection) Rules, 1986. Water Quality data of Ulsoor Lake is appended as ***Annexure 3.****"*

7. The Central Pollution Control Board (CPCB) had issued certain directions to the State Pollution Control Board to implement the same which was produced along with the report.

8. We have received said to be an action taken report filed by the Environmental Officer, Bengaluru City East, Regional Office of KSPCB

by way of an internal communication to the Member Secretary, KSPCB vide letter dated Nil, e-filed on 09.02.2022.

9. The practice of producing the internal communication as action taken report by the regulators was deprecated by this Tribunal in several matters including in some matters where the Karnataka State Pollution Control Board themselves had done the same mischief. They are expected to file the report signed by the concerned officer along with the notice or other proceedings issued as document to the report, instead of simply producing certain internal communication between the District Environmental Officer and the Member Secretary.

10. When this was pointed out, the learned counsel appearing for the State Pollution Control Board submitted that he will take care of this aspect and this will not be repeated in future and he will file a proper report as directed by this Tribunal, for which, he want some more time.

11. We are not satisfied with the manner in which the BBMP is acting for the purpose of protecting the environment. The matter is pending from 2016 onwards. Several types of irregularities in implementation of the Solid Waste Management Rules, 2016 and treatment of sewage or sullage generated within their jurisdiction have been found by the CPCB and SPCB.

12. It is also mentioned in the report submitted by the CPCB that the Under Ground Sewerage System (UGSS) has not been completed as undertaken by them and the slaughter houses are not properly functioning and they are not providing any mechanism for treating the waste generated before it is being discharged into the public drains which ultimately reaches the lake causing pollution.

13. It is also seen from the report that in spite of several directions issued and steps taken, the water quality of the Ulsoor Lake has not improved as expected. That shows the regulators including the BBMP has to travel a lot for the purpose of improving the water quality which is a primary responsibility of the State instrumentalities to protect the environment as contemplated under Article 48 A of the Constitution of India. Non availability of fund or work burden is not an excuse for discharging their constitutional obligation of protecting the environment. It is for the State Government to look into the gap of financial crisis of the local bodies in implementing the project and they will have to find out the solution for the same by providing financial as well as technical support in a timely manner. Anything done out of time, after damage being caused to the environment, will not serve the purpose. Wherever timely action is required, it will have to be ensured by the higher level officials of the State.

14. In O.A. No.606 of 2018, several directions have been issued in respect of the responsibility of implementation of these statutory obligations including implementation of the Solid Waste Management Rules, 2016, establishment of STPs and treatment of sewage generated within the local bodies. But in spite of those aspects, the things are not happening to the expectation of the Tribunal and in the latest order passed by the Principal Bench in the above said case, after expressing its displeasure about the manner in which the review action is being undertaken by the Chief Secretaries, it was decided to call all the Chief Secretaries again and certain dates have been provided for that purpose. The Chief Secretaries of the States are also expected to review the action of implementation of the Solid Waste Management Rules, 2016 within their State and if there is any gap found, they are expected to intervene and coordinate with the respective officials and see that the gap is removed and implementation made smooth and effective. That only shows the expertise of governance by higher level officials.

15. However, considering the circumstances, we feel that some more time can be granted to the respective authorities to file their compliance report and also further action taken report in view of the directions issued by the CPCB by themselves as well as by the State Pollution Control Board and the remedial measures undertaken by the BBMP

(Lakes), BBMP and Executive Engineer, BBMP (Lakes) who is in charge of this lake to file their respective reports to this Tribunal and they are directed to file the same on or before 31.03.2022 by e-filing in the form of Searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hardcopies to be produced as per Rules.

16. The Joint Committee is also directed to inspect the area in question again and report about the deficiency in the implementation of the directions issued earlier and further recommendations regarding the action to be taken, fixing the responsibility of the officials who are expected to carry out those recommendations with certain time line, so that this Tribunal can consider those aspects and pass appropriate directions/orders in this regard.

17. The Registry is directed to communicate this order to the official respondents and members of the Joint Committee, apart communicating this order to the Chief Secretary - State of Karnataka, Special Chief Secretary for Environment, Secretary for Municipal Administration, Revenue, Public Works Department and Irrigation and Chairman – Karnataka State Pollution Control Board by e-mail for their information and compliance of direction of filing their reports about the review undertaken by them and the nature of directions given by them

to resolve the issue permanently from their side. They are also directed to file the respective reports at the higher level on or before 31.03.2022.

18. For consideration of further action taken report and progress report, post on 31.03.2022.

Sd/-
Justice K. Ramakrishnan, JM

Sd/-
Dr. Satyagopal Korlapati, EM

O.A. No.54/2016 (SZ),
10th February, 2022. Mn.

Annexure 2

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

AUGUST_2021

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.5-8.5	1000	350	600	----	7	70	(6.5 - 8.5)	≤ 50	≤ 10	≤ 10	≤ 5	≤ 10	≤ 1	≤ 10	≤ 100	≤ 1	3000 - 4500	
KSPCB limits									(6.5 - 9.0)	≤ 50	≤ 10	≤ 20	≤ 5	≤ 10	NA	≤ 10	<100	NA	NA	NA
01-08-2021	1.895	7.3	330.0	126.0	125.0	25	2.3	26.0	7.0	27.0	2.5	2.9	1.9	2.8	0.4	3.0	72	0.3	3576	3592
02-08-2021	1.902	7.5	326.0	129.0	132.0	27	2.4	25.0	7.3	30.0	2.7	2.5	1.7	2.6	0.7	2.8	78	0.6	3554	3580
03-08-2021	1.896	7.7	323.0	124.0	128.0	23	2.2	24.0	7.4	26.0	2.9	2.7	1.5	2.4	0.5	3.2	75	0.7	3568	3587
04-08-2021	1.940	7.6	329.0	126.0	130.0	25	2.0	27.0	7.3	24.0	2.6	2.3	1.9	2.2	0.3	3.0	80	0.5	3579	3608
05-08-2021	1.940	7.8	326.0	129.0	134.0	20	2.4	2.6	7.6	27.0	2.8	2.5	1.7	2.6	0.4	2.9	77	0.3	3554	3574
06-08-2021	1.936	7.5	334.0	124.0	132.0	23	2.6	30.0	7.3	25.0	2.4	2.7	1.5	2.9	0.6	3.2	74	0.4	3586	3590
07-08-2021	1.935	7.7	328.0	126.0	130.0	21	2.2	32.0	7.4	28.0	2.5	2.4	1.4	2.7	0.5	3.0	76	0.2	3567	3582
08-08-2021	1.952	7.9	337.0	130.0	135.0	24	2.5	29.0	7.6	26.0	2.7	2.3	1.7	2.8	0.7	2.9	72	0.5	3579	3594
09-08-2021	1.955	7.8	325.0	127.0	132.0	22	2.3	30.0	7.5	25.0	2.6	2.2	1.6	2.4	0.6	3.2	79	0.3	3556	3578
10-08-2021	1.962	7.4	330.0	132.0	129.0	26	2.5	27.0	7.6	23.0	2.1	2.4	1.8	2.7	0.3	3.0	70	0.6	3564	3570
11-08-2021	1.958	7.2	320.0	124.0	127.0	24	2.2	29.0	7.0	20.0	2.3	2.6	1.4	2.5	0.4	2.8	72	0.5	3580	3592
12-08-2021	1.969	7.0	325.0	127.0	132.0	23	2.3	26.0	7.3	25.0	2.4	2.7	2.0	2.9	0.5	3.2	80	0.3	3569	3575
13-08-2021	1.966	7.5	323.0	122.0	129.0	21	2.5	28.0	7.2	24.0	2.6	2.9	1.6	2.7	0.3	3.0	75	0.7	3594	3608
14-08-2021	1.955	7.4	329.0	120.0	130.0	24	2.2	27.0	7.0	27.0	2.5	2.8	1.9	2.4	0.6	2.9	78	0.4	3566	3579
15-08-2021	1.974	7.6	325.0	124.0	127.0	23	2.0	31.0	7.3	25.0	2.3	2.7	1.8	2.6	0.4	3.1	82	0.5	3574	3586
16-08-2021	1.967	7.4	320.0	122.0	129.0	26	2.4	29.0	7.0	22.0	2.1	2.4	1.5	2.3	0.3	2.8	80	0.6	3562	3580
17-08-2021	1.973	7.6	327.0	127.0	132.0	25	2.2	30.0	7.2	24.0	2.6	2.8	1.7	2.6	0.6	3.1	74	0.3	3570	3584
18-08-2021	1.963	7.5	325.0	124.0	136.0	24	2.5	32.0	7.3	25.0	2.3	2.7	1.8	2.6	0.4	2.9	82	0.5	3578	3592
19-08-2021	1.974	7.3	326.0	130.0	134.0	26	2.4	28.0	7.5	27.0	2.5	2.3	1.5	2.6	0.5	3.0	73	0.4	3604	3617
20-08-2021	1.966	7.6	332.0	125.0	132.0	25	2.6	30.0	7.2	23.0	2.7	2.6	1.7	2.0	0.7	2.8	76	0.6	3584	3609
21-08-2021	1.942	7.4	327.0	128.0	130.0	27	2.3	26.0	7.0	25.0	2.4	2.7	1.6	2.8	0.4	3.1	83	0.5	3594	3618
22-08-2021	1.981	7.6	325.0	124.0	127.0	23	2.0	31.0	7.3	28.0	2.6	2.4	1.5	2.7	0.6	2.9	78	0.3	3569	3576
23-08-2021	1.995	7.5	323.0	120.0	136.0	24	2.5	32.0	7.1	25.0	2.3	2.7	1.8	2.6	0.4	3.1	82	0.5	3570	3584
24-08-2021	1.990	7.4	320.0	122.0	129.0	26	2.6	29.0	7.0	22.0	2.1	2.4	1.5	2.3	0.3	2.8	80	0.7	3557	3672
25-08-2021	1.992	7.3	332.0	126.0	125.0	22	2.4	30.0	7.6	27.0	2.8	2.5	1.7	2.6	0.4	2.9	77	0.6	3615	3635
26-08-2021	1.995	7.6	326.0	124.0	127.0	26	2.7	28.0	7.4	25.0	2.4	2.8	1.4	2.5	0.6	2.6	72	0.3	3576	3582
27-08-2021	1.910	7.5	335.0	129.0	132.0	24	2.5	26.0	7.2	23.0	2.7	2.6	1.7	2.0	0.7	2.8	76	0.5	3565	3579
28-08-2021	1.934	7.3	328.0	126.0	129.0	23	2.6	29.0	7.0	22.0	2.1	2.4	1.5	2.3	0.3	2.7	80	0.3	3588	3607
29-08-2021	1.945	7.4	334.0	129.0	135.0	26	2.8	27.0	7.1	24.0	2.5	2.7	1.6	2.4	0.5	2.6	75	0.6	3560	3586
30-08-2021	1.980	7.7	325.0	124.0	126.0	24	2.7	32.0	7.6	27.0	2.8	2.5	1.7	2.6	0.4	2.9	77	0.4	3594	3608
31-08-2021	1.988	7.5	332.0	128.0	130.0	23	2.6	29.0	7.3	25.0	2.4	2.7	1.9	2.8	0.5	3.2	79	0.7	3572	3586
Tot.Avg	1.956	7.5	327.3	125.7	130.4	24.0	2.4	27.8	7.3	25.0	2.5	2.6	1.7	2.5	0.5	2.9	76.9	0.5	3575.0	3593.9

PLANT CHEMIST | PLANT MANAGER | AE (STP K-Valley - 1) | AEE (STP K - Valley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

SEPTEMBER_2021

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.5-8.5	1000	350	600	___	7	70	(6.5 - 8.5)	≤ 50	≤ 10	≤ 10	≤ 5	≤ 10	≤ 1	≤ 10	≤ 100	≤ 1	3000 - 4500	
KSPCB limits									(6.5 - 9.0)	≤ 50	≤ 10	≤ 20	≤ 5	≤ 10	NA	≤ 10	< 100	NA	NA	NA
01-09-2021	1.995	7.2	327.0	125.0	128.0	27	1.9	25.0	7.5	23.0	2.6	2.9	1.2	2.5	0.3	2.8	62	0.4	3587	3622
02-09-2021	1.970	7.5	337.0	120.0	122.0	24	2.3	27.0	7.1	26.0	2.2	2.5	1.5	2.1	0.3	3.1	66	0.7	3574	3598
03-09-2021	1.990	7.4	336.0	128.0	120.0	25	2.1	32.0	7.7	23.0	2.5	2.2	1.7	2.6	0.5	3.0	58	0.3	3581	3607
04-09-2021	1.958	7.3	340.0	125.0	118.0	23	2.0	28.0	7.6	25.0	2.7	2.3	1.4	2.2	0.4	3.2	65	0.2	3562	3584
05-09-2021	1.985	7.2	327.0	123.0	128.0	27	1.9	25.0	7.5	23.0	2.6	2.9	1.2	2.5	0.3	2.8	62	0.4	3567	3593
06-09-2021	1.996	7.4	332.0	122.0	117.0	25	2.2	26.0	7.7	28.0	2.9	2.6	1.8	2.4	0.5	3.0	69	0.7	3580	3608
07-09-2021	1.993	7.1	339.0	127.0	119.0	21	2.4	28.0	7.5	24.0	2.6	2.3	1.5	2.9	0.7	3.2	72	0.5	3564	3582
08-09-2021	1.987	7.3	330.0	125.0	115.0	23	2.1	27.0	7.2	25.0	2.7	2.2	1.9	2.3	0.3	3.4	70	0.4	3679	3610
09-09-2021	1.970	7.5	334.0	123.0	126.0	26	2.3	29.0	7.7	26.0	2.4	2.5	1.6	2.7	0.6	3.1	69	0.7	3576	3590
10-09-2021	1.989	7.2	327.0	125.0	128.0	27	1.9	25.0	7.5	23.0	2.6	2.9	1.2	2.5	0.3	2.8	62	0.4	3567	3587
11-09-2021	1.987	7.4	324.0	129.0	132.0	24	2.2	27.0	7.8	25.0	2.3	2.4	1.5	2.9	0.5	3.0	67	0.6	3582	3609
12-09-2021	1.989	7.2	328.0	122.0	130.0	26	2.4	25.0	7.6	28.0	2.6	2.3	1.9	2.7	0.7	2.8	73	0.3	3680	3695
13-09-2021	1.982	7.5	335.0	126.0	129.0	25	2.3	26.0	7.7	27.0	2.4	2.9	1.7	2.8	0.4	2.7	65	0.5	3558	3572
14-09-2021	1.980	7.3	332.0	124.0	127.0	22	2.5	24.0	7.5	25.0	2.2	2.7	2.0	2.9	0.4	3.1	75	0.4	3564	3578
15-09-2021	1.978	7.6	334.0	130.0	125.0	24	2.7	28.0	7.8	29.0	2.5	2.6	2.2	2.4	0.6	2.9	68	0.7	3569	3588
16-09-2021	1.986	7.4	338.0	135.0	129.0	26	2.3	25.0	7.6	27.0	2.3	2.8	2.1	2.7	0.3	3.0	73	0.5	3582	3596
17-09-2021	1.975	7.7	332.0	132.0	126.0	28	2.5	27.0	7.9	25.0	2.6	2.4	2.3	2.9	0.5	2.7	66	0.3	3590	3603
18-09-2021	1.984	7.8	335.0	126.0	122.0	25	2.6	29.0	7.6	23.0	2.4	2.3	1.9	2.5	0.7	3.2	63	0.6	3573	3585
19-09-2021	1.988	7.5	333.0	127.0	124.0	24	2.7	23.0	7.7	28.0	2.2	2.6	2.4	2.9	0.4	3.2	70	0.4	3562	3571
20-09-2021	1.980	7.3	324.0	123.0	120.0	23	2.4	26.0	7.5	25.0	2.8	2.5	2.0	2.7	0.5	2.9	73	0.3	3558	3567
21-09-2021	1.995	7.1	327.0	125.0	118.0	21	2.6	29.0	7.3	24.0	2.6	2.3	1.7	2.5	0.3	3.0	75	0.5	3564	3578
22-09-2021	1.984	7.3	320.0	127.0	124.0	22	2.3	28.0	7.6	27.0	2.5	2.9	2.0	2.6	0.7	3.3	65	0.7	3570	3585
23-09-2021	1.955	7.6	329.0	121.0	128.0	20	2.5	27.0	7.9	24.0	2.2	2.5	1.8	2.1	0.5	3.1	72	0.4	3558	3579
24-09-2021	1..938	7.4	323.0	125.0	122.0	24	2.1	29.0	7.7	23.0	2.6	2.7	2.0	2.4	0.7	2.8	76	0.7	3561	3574
25-09-2021	1.986	7.8	332.0	123.0	126.0	23	2.4	26.0	7.5	27.0	2.5	2.9	1.7	2.3	0.3	2.7	70	0.3	3569	3588
26-09-2021	1.980	7.5	328.0	126.0	124.0	26	2.3	28.0	7.8	25.0	2.7	2.6	1.9	2.5	0.5	2.9	73	0.7	3552	3564
27-09-2021	1.989	7.6	335.0	129.0	126.0	24	2.6	25.0	7.9	23.0	2.8	2.4	2.1	2.9	0.6	3.2	76	0.5	3578	3592
28-09-2021	1.982	7.4	328.0	127.0	130.0	27	2.5	28.0	7.6	22.0	2.6	2.1	1.9	2.7	0.4	3.0	68	0.6	3560	3582
29-09-2021	1.946	7.7	330.0	125.0	129.0	22	2.3	26.0	7.5	25.0	2.4	2.5	2.0	2.6	0.3	2.9	72	0.4	3594	3608
30-09-2021	1.985	7.5	335.0	128.0	134.0	24	2.7	27.0	7.7	24.0	2.2	2.4	2.2	2.9	0.5	3.2	76	0.3	3581	3598
Tot.Avg	**1.982**	**7.4**	**331.0**	**125.8**	**124.9**	**24.3**	**2.3**	**26.8**	**7.6**	**25.1**	**2.5**	**2.5**	**1.8**	**2.6**	**0.5**	**3.0**	**69.0**	**0.5**	**3578.1**	**3593.1**

PLANT CHEMIST | PLANT MANAGER | AE (STP K-Valley - 1) | AEE (STP K - Valley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

OCTOBER 2021

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.8-8.5	1000	350	600		7	70	(6.5 - 8.5)	≤ 50	≤ 10	≤ 10	≤ 5	≤ 10	≤ 1	≤ 10	≤ 100	≤ 1	3000 - 4500	
KSPCB limits									(6.5 - 9.0)	≤ 50	≤ 10	≤ 20	≤ 5	≤ 10	NA	≤ 10	< 100	NA	NA	NA
01-10-2021	1.983	7.3	328.0	118.0	122.0	21	2.5	24.0	7.1	28.0	2.6	2.7	2.0	2.4	0.5	2.8	80	0.6	3570	3586
02-10-2021	1.995	7.6	338.0	121.0	126.0	22	2.4	28.0	7.8	26.0	2.4	2.3	1.8	2.8	0.7	3.0	84	0.4	3582	3605
03-10-2021	1.990	7.3	329.0	127.0	119.0	23	2.1	26.0	7.5	25.0	2.8	2.5	2.1	2.7	0.5	3.3	81	0.6	3675	3592
04-10-2021	1.894	7.7	332.0	124.0	120.0	25	2.2	30.0	7.6	28.0	2.7	2.4	1.9	2.5	0.3	2.9	80	0.5	3558	3673
05-10-2021	1.940	7.4	322.0	119.0	115.0	22	2.4	25.0	7.2	27.0	2.6	2.3	2.0	2.2	0.7	2.7	76	0.3	3562	3582
06-10-2021	1.985	7.8	317.0	121.0	118.0	24	2.3	27.0	7.4	29.0	2.5	2.6	2.2	2.8	0.4	3.2	68	0.4	3504	3548
07-10-2021	1.953	7.5	327.0	126.0	116.0	27	2.6	24.0	7.3	26.0	2.4	2.8	1.7	2.4	0.6	3.0	62	0.5	3560	3534
08-10-2021	1.973	7.6	319.0	123.0	114.0	25	2.8	26.0	8.0	28.0	2.7	2.4	2.1	2.7	0.5	2.9	65	0.7	3565	3582
09-10-2021	1.947	7.4	325.0	128.0	122.0	23	2.5	28.0	7.6	27.0	2.3	2.7	1.9	2.9	0.3	3.1	60	0.4	3590	3613
10-10-2021	1.959	7.6	327.0	125.0	120.0	26	2.2	25.0	7.8	24.0	2.6	2.9	2.1	2.7	0.5	2.8	63	0.6	3573	3595
11-10-2021	1.977	7.5	342.0	130.0	124.0	25	2.4	38.0	7.3	32.0	2.9	2.6	1.8	2.8	0.7	3.2	58	0.3	3584	3607
12-10-2021	1.958	7.7	329.0	127.0	123.0	27	2.6	32.0	7.5	28.0	2.5	2.8	2.2	3.1	0.4	2.7	66	0.5	3045	3278
13-10-2021	2.020	7.9	334.0	134.0	126.0	24	2.8	35.0	7.6	30.0	2.7	2.5	2.0	2.9	0.6	3.3	64	0.4	3506	3534
14-10-2021	2.080	7.8	338.0	129.0	125.0	28	2.5	34.0	7.4	29.0	2.6	2.9	1.9	3.0	0.3	3.1	62	0.5	3552	3567
15-10-2021	2.020	7.9	343.0	135.0	128.0	26	2.8	32.0	7.7	31.0	2.4	2.7	2.3	3.3	0.6	3.2	58	0.7	3506	3538
16-10-2021	2.030	7.6	337.0	132.0	124.0	25	2.7	30.0	7.5	28.0	2.9	2.4	2.0	3.2	0.4	3.4	55	0.4	3558	3562
17-10-2021	1.984	8.0	346.0	138.0	129.0	27	2.6	33.0	7.8	30.0	2.7	2.8	2.2	3.4	0.7	3.0	59	0.7	3523	3568
18-10-2021	2.030	7.7	345.0	134.0	126.0	29	2.5	31.0	7.6	26.0	2.3	2.6	1.8	3.0	0.5	2.9	62	0.4	3092	3217
19-10-2021	2.020	7.5	342.0	135.0	128.0	24	2.9	28.0	7.2	29.0	2.5	2.3	2.1	3.5	0.6	2.7	57	0.6	3348	3562
20-10-2021	1.983	7.3	338.0	133.0	125.0	26	2.7	30.0	6.9	28.0	2.6	2.5	2.3	2.9	0.3	3.2	60	0.4	3015	2876
21-10-2021	2.010	7.6	348.0	129.0	124.0	23	2.8	29.0	7.4	30.0	2.4	2.7	2.0	3.2	0.7	2.9	58	0.6	3552	3572
22-10-2021	1.982	7.4	335.0	132.0	127.0	25	2.6	32.0	7.1	27.0	2.8	2.4	1.9	3.4	0.4	3.0	66	0.4	3513	3534
23-10-2021	2.010	7.9	350.0	136.0	130.0	30	2.5	34.0	7.6	32.0	2.7	2.9	2.1	3.0	0.6	2.8	52	0.7	3552	3567
24-10-2021	1.993	7.5	333.0	127.0	124.0	24	2.7	23.0	7.7	28.0	2.2	2.6	2.2	2.9	0.3	3.2	70	0.5	3547	3572
25-10-2021	1.974	7.3	339.0	130.0	128.0	27	2.9	26.0	6.9	30.0	2.5	2.8	1.8	3.3	0.5	2.7	63	0.3	3042	3358
26-10-2021	1.996	7.8	332.0	126.0	121.0	30	2.8	31.0	7.6	29.0	2.6	2.3	2.4	3.0	0.7	2.5	57	0.6	3508	3542
27-10-2021	2.010	7.2	337.0	128.0	132.0	28	2.4	29.0	7.0	26.0	2.9	2.7	2.3	3.4	0.4	3.1	53	0.4	3564	3570
28-10-2021	2.030	7.4	344.0	125.0	136.0	26	2.9	32.0	7.2	28.0	2.4	3.0	2.0	3.2	0.6	2.6	60	0.3	3518	3547
29-10-2021	1.978	7.6	346.0	129.0	130.0	31	2.5	28.0	7.1	27.0	2.8	3.2	1.9	2.7	0.5	3.2	56	0.6	3560	3577
30-10-2021	1.994	8.0	310.0	127.0	128.0	29	2.6	30.0	7.5	32.0	2.5	2.9	2.1	3.5	0.3	2.7	50	0.4	3580	3604
31-10-2021	1.980	7.6	335.0	129.0	126.0	24	2.3	25.0	7.9	23.0	2.8	2.4	2.2	2.9	0.6	3.2	76	0.5	3574	3588
Tot.Avg	1.990	7.6	334.4	128.3	124.4	25.7	2.6	29.2	7.4	28.1	2.6	2.6	2.0	3.0	0.5	3.0	63.9	0.5	3483.2	3524.2

R. Kumar
PLANT CHEMIST

PLANT MANAGER

M. C. Sharma JE.
AE (STP K-Valley - 1)

AEE (STP K-Valley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD. SAWLI-391775

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

NOVEMBER_2021

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.5-8.5	1000	350	600	—	7	70	(6.5 - 8.5)	≤ 50	≤ 10	≤ 10	≤ 5	≤ 10	≤ 1	≤ 10	≤ 100	≥ 1	3000 - 4500	
KSPCB limits									(6.5 - 9.0)	≤ 50	≤ 10	≤ 20	≤ 5	≤ 10	NA	≤ 10	< 100	NA	NA	NA
01-11-2021	2.010	7.8	339.0	132.0	123.0	26	2.8	27.0	7.5	30.0	2.5	2.6	2.3	3.2	0.4	3.5	68	0.3	3582	3598
02-11-2021	1.975	7.4	333.0	127.0	125.0	28	2.5	29.0	7.2	28.0	2.3	3.0	2.0	3.4	0.3	3.3	62	0.5	3564	3575
03-11-2021	1.989	7.6	342.0	130.0	122.0	25	2.7	34.0	7.9	32.0	2.8	2.5	1.7	2.9	0.6	3.0	57	0.7	3558	3579
04-11-2021	2.010	7.7	345.0	124.0	128.0	27	2.4	36.0	8.0	31.0	2.6	2.7	1.9	3.2	0.5	3.4	55	0.4	3564	3572
05-11-2021	1.995	7.5	348.0	126.0	132.0	22	3.5	35.0	7.6	29.0	3.0	2.8	2.1	3.4	0.7	3.2	60	0.3	3503	3537
06-11-2021	1.967	7.3	352.0	123.0	135.0	24	2.8	39.0	7.5	38.0	2.9	2.5	2.3	3.1	0.4	3.1	65	0.5	3540	3562
07-11-2021	1.983	7.4	335.0	132.0	127.0	25	2.6	32.0	7.1	27.0	2.8	2.4	1.9	3.4	0.6	3.0	66	0.5	3512	3538
08-11-2021	1.996	7.6	340.0	135.0	142.0	23	3.0	36.0	7.3	32.0	2.5	2.9	2.2	3.6	0.5	2.8	63.	0.3	3513	3529
09-11-2021	1.971	7.9	343.0	138.0	146.0	26	2.7	34.0	7.7	28.0	2.7	2.5	2.0	3.3	0.3	3.2	58	0.6	3548	3572
10-11-2021	1.961	7.5	346.0	141.0	150.0	25	2.9	37.0	7.4	30.0	2.8	2.7	2.4	3.5	0.7	2.7	75	0.4	3560	3578
11-11-2021	2.015	7.7	342.0	139.0	148.0	27	2.5	35.0	7.6	29.0	2.6	2.4	2.1	3.2	0.4	3.0	78	0.6	3215	3345
12-11-2021	1.992	7.3	350.0	143.0	139.0	24	2.8	32.0	6.9	27.0	2.4	2.6	2.3	3.0	0.6	2.9	81	0.5	3419	3605
13-11-2021	2.020	7.1	347.0	140.0	136.0	26	2.7	31.0	6.8	32.0	2.8	2.5	2.0	3.4	0.5	2.6	76	0.3	3162	3348
14-11-2021	1.967	7.3	341.0	137.0	134.0	24	2.5	33.0	7.5	30.0	2.7	2.3	1.8	3.2	0.7	2.9	79	0.6	3424	3615
15-11-2021	1.998	7.6	352.0	142.0	138.0	29	2.6	30.0	7.3	28.0	2.5	2.7	2.2	3.5	0.4	3.2	82	0.3	3572	3586
16-11-2021	1.995	7.8	355.0	145.0	141.0	32	2.8	28.0	7.6	32.0	2.8	2.4	2.1	3.3	0.6	2.7	80	0.5	3872	3913
17-11-2021	2.018	7.5	348.0	139.0	143.0	34	2.7	32.0	7.4	29.0	2.6	2.6	2.0	3.7	0.5	3.1	84	0.7	3582	3610
18-11-2021	2.025	7.2	354.0	141.0	146.0	30	3.0	29.0	6.9	34.0	2.4	2.5	1.8	3.1	0.3	2.8	78	0.5	3610	3634
19-11-2021	1.996	7.9	346.0	143.0	142.0	31	2.6	30.0	7.6	32.0	2.7	2.8	1.6	3.5	0.7	3.3	82	0.4	3592	3615
20-11-2021	1.987	7.6	353.0	146.0	139.0	28	2.4	34.0	7.4	30.0	2.5	2.6	1.9	3.2	0.5	3.5	77	0.3	3584	3598
21-11-2021	1.341	7.2	349.0	143.0	135.0	26	2.7	32.0	6.9	29.0	2.6	2.4	1.7	3.0	0.6	3.3	80	0.5	3574	3582
22-11-2021	1.947	7.4	355.0	142.0	137.0	29	2.5	31.0	7.2	33.0	2.4	2.7	1.5	2.8	0.4	3.0	83	0.3	3556	3568
23-11-2021	1.997	7.8	347.0	145.0	134.0	27	2.6	35.0	7.5	31.0	2.7	2.9	1.8	3.3	0.7	3.2	75	0.5	3562	3574
24-11-2021	2.014	7.6	352.0	140.0	136.0	25	2.8	33.0	7.3	34.0	2.9	2.6	1.6	3.1	0.5	3.5	79	0.4	3550	3567
25-11-2021	1.968	7.8	348.0	145.0	133.0	27	2.6	31.0	7.5	30.0	2.7	2.4	1.9	2.9	0.7	3.2	82	0.5	3564	3576
26-11-2021	1.958	8.0	353.0	147.0	135.0	28	2.7	29.0	7.8	32.0	2.6	2.8	2.1	3.4	0.4	3.4	80	0.3	3582	3602
27-11-2021	1.984	7.7	346.0	149.0	137.0	26	2.9	32.0	7.6	35.0	2.9	2.6	1.8	3.2	0.6	3.3	78	0.5	3558	3572
28-11-2021	1.972	7.4	350.0	146.0	139.0	29	2.5	30.0	7.2	33.0	2.8	2.5	2.0	3.1	0.5	3.5	83	0.4	3537	3568
29-11-2021	1.980	7.3	345.0	142.0	134.0	27	2.8	33.0	7.0	31.0	2.7	2.9	1.7	3.4	0.7	3.0	76	0.5	3578	3588
30-11-2021	1.971	7.6	356.0	144.0	137.0	26	2.4	31.0	7.4	32.0	2.5	2.5	1.9	3.2	0.5	3.5	78	0.3	3508	3562
Tot.Avg	1.967	7.6	347.1	138.9	136.4	27	2.7	32.3	7.4	30.9	2.7	2.6	2.0	3.3	0.5	3.1	74	0.5	3535	3576

PLANT CHEMIST	PLANT MANAGER	AE (STP K-Valley - 1)	AEE (STP K - Valley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD. SAKLESHPURA

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

DECEMBER 2021

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.5-8.5	1000	350	600	----	7	70	(6.5- 8.5)	≤ 50	≤ 10	≤ 10	≤ 5	≤ 10	≤ 1	≤ 10	≤ 100	≤	3000 - 4500	
KSPCB limits									(6.5- 9.0)	≤ 50	≤ 10	≤ 20	≤ 5	≤ 10	NA	≤ 10	< 100	NA	NA	NA
01-12-2021	1.987	7.9	352.0	145.0	139.0	24	2.6	34.0	7.7	30.0	2.8	2.5	1.6	3.1	0.4	3.3	82	0.5	3568	3576
02-12-2021	1.960	7.6	347.0	140.0	133.0	22	2.4	32.0	7.4	32.0	2.6	2.8	1.9	3.3	0.6	3.0	78	0.3	3506	3653
03-12-2021	1.953	7.8	342.0	138.0	135.0	26	2.8	30.0	7.5	29.0	2.7	2.6	1.7	3.2	0.5	3.5	80	0.5	3569	3574
04-12-2021	1.894	7.6	352.0	142.0	138.0	29	2.6	33.0	7.3	28.0	2.5	2.7	2.2	3.5	0.4	3.2	82	0.3	3564	3582
05-12-2021	1.937	7.3	350.0	143.0	139.0	24	2.8	32.0	6.9	27.0	2.4	2.6	2.3	3.0	0.6	2.9	81	0.5	3552	3567
06-12-2021	1.984	7.5	400.0	146.0	135.0	25	2.6	29.0	7.4	36.0	2.7	3.0	2.1	3.2	0.3	3.4	85	0.4	3580	3588
07-12-2021	1.997	7.7	388.0	149.0	140.0	27	3.0	35.0	7.4	38.0	2.9	2.8	2.3	3.4	0.6	3.2	88	0.3	3576	3594
08-12-2021	1.684	7.5	412.0	145.0	137.0	29	2.8	32.0	7.2	35.0	3.7	3.6	1.6	2.7	0.5	3.0	83	0.2	3605	3622
09-12-2021	1.980	7.4	424.0	152.0	136.0	28	2.5	30.0	7.3	40.0	3.5	3.4	1.8	2.9	0.4	3.3	86	0.5	3590	3615
10-12-2021	1.940	7.6	420.0	143.0	139.0	32	2.7	28.0	7.4	37.0	3.2	3.0	1.9	3.1	0.7	3.5	80	0.4	3558	3567
11-12-2021	1.953	7.4	434.0	147.0	135.0	25	3.0	36.0	7.2	35.0	3.4	3.2	1.5	2.6	0.5	3.2	72	0.3	3572	3586
12-12-2021	1.858	7.6	442.0	153.0	138.0	28	3.3	34.0	7.4	38.0	3.2	3.7	1.7	2.9	0.7	3.0	79	0.4	3580	3594
13-12-2021	1.986	7.3	450.0	149.0	142.0	30	2.9	32.0	7.0	36.0	3.0	3.3	1.8	2.5	0.4	3.4	83	0.5	3578	3588
14-12-2021	1.988	7.5	500.0	150.0	169.0	26	3.0	35.0	7.2	40.0	3.5	1.4	1.6	2.8	0.6	3.1	80	0.5	3590	3612
15-12-2021	1.970	7.7	523.0	142.0	210.0	28	2.7	30.0	7.4	43.0	2.9	1.9	1.7	2.6	0.7	3.2	84	0.3	3584	3598
16-12-2021	1.968	7.2	547.0	148.0	230.0	25	2.9	33.0	6.9	37.0	2.8	1.6	1.5	3.0	0.5	2.4	87	0.4	3607	3622
17-12-2021	1.978	7.4	515.0	156.0	250.0	23	2.5	35.0	7.1	40.0	3.6	1.4	1.3	2.8	0.6	2.7	82	0.2	3564	3640
18-12-2021	1.960	7.6	520.0	160.0	189.0	27	2.8	32.0	7.3	35.0	3.4	1.8	1.6	3.2	0.4	2.6	85	0.5	3592	3628
19-12-2021	1.981	7.3	510.0	153.0	203.0	24	2.5	30.0	7.0	38.0	3.7	1.4	1.8	3.5	0.7	2.9	80	0.3	3578	3582
20-12-2021	1.974	7.2	530.0	149.0	192.0	28	2.7	33.0	6.9	36.0	3.5	1.6	2.1	2.9	0.5	2.5	71	0.2	3564	3579
21-12-2021	2.050	7.5	510.0	156.0	210.0	25	2.9	36.0	7.1	32.0	3.9	1.5	1.9	3.2	0.6	2.3	75	0.4	3591	3012
22-12-2021	1.987	7.4	580.0	152.0	186.0	23	2.6	34.0	7.2	34.0	4.2	1.9	2.0	2.8	0.4	2.9	78	0.6	3580	3588
23-12-2021	1.971	7.3	540.0	154.0	200.0	26	2.8	32.0	7.0	30.0	3.8	2.3	1.8	2.5	0.8	2.7	73	0.3	3562	3574
24-12-2021	1.967	7.7	562.0	158.0	190.0	29	3.2	37.0	7.4	33.0	3.5	2.0	1.5	2.7	0.5	2.5	82	0.4	3556	3582
25-12-2021	1.930	7.5	575.0	165.0	213.0	27	3.0	35.0	7.3	31.0	3.7	2.4	1.7	2.9	0.7	2.8	85	0.5	3578	3591
26-12-2021	1.942	7.3	352.0	123.0	135.0	24	2.8	39.0	7.6	33.0	2.9	2.5	2.3	3.1	0.4	3.2	65	0.3	3564	3575
27-12-2021	1.951	7.6	395.0	147.0	152.0	26	3.2	36.0	7.2	35.0	3.4	2.7	1.9	2.8	0.6	3.0	73	0.2	3552	3567
28-12-2021	1.939	7.4	422.0	155.0	146.0	28	2.9	33.0	7.3	32.0	3.2	2.5	2.1	3.0	0.5	3.4	78	0.4	3564	3582
29-12-2021	1.953	7.8	470.0	148.0	160.0	25	3.0	35.0	7.5	34.0	3.6	2.8	1.8	3.2	0.7	3.1	84	0.3	3572	3584
30-12-2021	1.961	7.2	482.0	154.0	150.0	27	2.7	32.0	7.0	34.0	3.3	2.6	2.0	2.9	0.6	3.5	80	0.5	3550	3567
31-12-2021	1.954	7.6	476.0	159.0	143.0	29	3.1	30.0	7.4	32.0	3.7	2.9	1.7	3.4	0.4	3.3	82	0.7	3572	3588
Tot.Avg	1.95	7.5	455.5	149.1	165.0	26.4	2.8	33.0	7.3	34.5	3.3	2.5	1.8	3.0	0.5	3.0	80.1	0.4	3571.5	3573.5

PLANT CHEMIST | PLANT MANAGER | AE (STP K-Valley - 1) | AEE (STP K - Valley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD. BANGALORE

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

JANUARY 2022

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.5-8.5	1000	350	600	----	7	70	(6.5 - 8.5)	≤ 50	≤ 10	≤ 10	≤ 5	≤ 10	≤ 1	≤ 10	≤ 100	≤ 1	3000 - 4500	
KSPCB limits									(6.5 - 9.0)	≤ 50	≤ 10	≤ 20	≤ 5	≤ 10	NA	≤ 10	< 100	NA	NA	NA
01-01-2022	1.960	7.3	483.0	152.0	149.0	26	3.3	25.0	7.2	35.0	3.0	2.7	1.9	3.2	0.6	3.6	85	0.4	3562	3578
02-01-2022	1.985	7.2	496.0	157.0	160.0	28	3.0	24.0	7.0	37.0	3.3	2.9	1.6	3.5	0.4	3.4	82	0.3	3550	3569
03-01-2022	1.969	7.5	472.0	143.0	155.0	24	2.9	27.0	7.3	32.0	3.5	2.5	1.8	3.0	0.3	3.3	84	0.2	3567	3582
04-01-2022	1.994	7.7	486.0	154.0	168.0	27	3.4	25.0	7.5	34.0	3.2	2.8	1.5	2.6	0.5	3.6	86	0.6	3598	3614
05-01-2022	1.920	7.3	469.0	146.0	157.0	25	2.7	28.0	7.1	30.0	3.4	2.6	1.9	2.9	0.7	3.2	85	0.3	3565	3578
06-01-2022	1.941	7.6	475.0	150.0	162.0	28	3.2	26.0	7.4	33.0	3.0	2.9	1.7	3.2	0.6	3.5	80	0.4	3580	3592
07-01-2022	1.921	7.4	482.0	142.0	155.0	26	3.5	29.0	7.2	32.0	3.3	2.7	2.0	3.4	0.4	3.1	87	0.5	3573	3588
08-01-2022	1.909	7.2	488.0	147.0	163.0	28	3.3	32.0	7.0	30.0	3.1	2.5	1.8	3.2	0.7	3.5	82	0.3	3568	3582
09-01-2022	1.940	7.4	495.0	143.0	169.0	26	3.0	34.0	7.2	33.0	2.8	2.7	1.6	3.5	0.6	3.4	80	0.5	3558	3575
10-01-2022	1.912	7.3	513.0	152.0	156.0	24	3.2	31.0	7.1	35.0	3.3	2.8	1.5	3.3	0.5	3.0	78	0.2	3592	3608
11-01-2022	1.908	7.5	522.0	147.0	152.0	27	3.5	33.0	7.3	32.0	2.9	2.6	1.7	3.0	0.3	3.2	75	0.4	3578	3586
12-01-2022	1.965	7.2	530.0	155.0	150.0	22	3.0	32.0	6.9	34.0	3.5	2.7	1.8	3.2	0.6	2.9	73	0.3	3564	3572
13-01-2022	1.924	7.7	520.0	143.0	148.0	25	3.2	34.0	7.5	30.0	3.2	2.9	1.6	3.6	0.4	3.1	79	0.2	3598	3614
14-01-2022	1.857	7.4	535.0	148.0	153.0	23	3.4	33.0	7.2	32.0	3.6	2.5	1.9	3.3	0.3	2.7	76	0.5	3560	3578
15-01-2022	1.896	7.6	542.0	145.0	158.0	29	3.5	35.0	7.4	34.0	3.3	2.8	1.5	3.5	0.7	3.2	84	0.3	3582	3592
16-01-2022	1.859	7.4	556.0	158.0	143.0	26	3.2	31.0	7.2	30.0	2.9	2.7	1.9	3.3	0.4	3.6	86	0.5	3558	3567
17-01-2022	1.758	7.8	575.0	140.0	159.0	28	3.0	33.0	7.5	27.0	2.6	2.9	1.7	3.6	0.6	3.4	84	0.2	3564	3579
18-01-2022	1.772	7.3	563.0	137.0	165.0	26	3.3	36.0	7.0	32.0	2.8	3.1	1.9	3.4	0.7	3.0	80	0.4	3580	3588
19-01-2022	1.694	7.1	560.0	135.0	153.0	28	3.0	34.0	6.8	30.0	2.4	3.4	1.5	3.2	0.5	3.2	82	0.6	3554	3562
20-01-2022	1.748	7.5	486.0	155.0	162.0	27	3.4	25.0	7.2	31.0	3.2	2.8	1.7	2.9	0.4	3.6	86	0.3	3573	3584
21-01-2022	1.893	7.3	490.0	150.0	148.0	25	3.2	27.0	7.0	34.0	2.8	3.1	1.5	3.4	0.6	3.5	84	0.4	3565	3578
22-01-2022	1.731	7.6	347.0	140.0	133.0	22	2.4	32.0	7.3	35.0	2.9	2.7	1.9	3.0	0.5	3.1	75	0.3	3584	3596
23-01-2022	1.798	7.2	499.0	138.0	161.0	25	3.1	24.0	7.0	33.0	3.1	2.9	1.8	3.4	0.7	3.4	82	0.2	3573	3582
24-01-2022	1.714	7.4	525.0	145.0	139.0	23	2.8	30.0	7.2	36.0	3.3	2.6	2.1	3.2	0.4	2.9	77	0.5	3565	3575
25-01-2022	1.814	7.0	562.0	152.0	148.0	26	2.5	28.0	6.8	34.0	2.8	3.1	1.7	3.5	0.8	3.2	85	0.3	3584	3592
26-01-2022	1.809	7.5	578.0	135.0	159.0	30	2.7	32.0	7.2	32.0	2.6	3.4	2.0	3.6	0.6	3.1	87	0.6	3552	3570
27-01-2022	1.815	7.7	612.0	160.0	143.0	32	2.9	29.0	7.5	38.0	2.9	3.0	2.3	3.3	0.5	3.5	79	0.4	3570	3586
28-01-2022	1.836	7.3	584.0	149.0	163.0	29	2.6	30.0	7.0	35.0	3.2	3.5	2.5	3.8	0.7	3.3	88	0.2	3582	3595
29-01-2022	1.825	7.6	620.0	156.0	147.0	33	3.1	28.0	7.3	33.0	3.0	2.7	2.2	3.5	0.4	3.2	80	0.3	3527	3559
30-01-2022	1.795	7.4	592.0	154.0	160.0	30	2.8	32.0	7.2	31.0	3.3	3.2	2.0	3.7	0.6	3.6	85	0.5	3560	3572
31-01-2022	1.846	7.2	610.0	150.0	145.0	34	3.2	29.0	6.9	34.0	2.8	3.0	2.3	3.4	0.5	3.3	82	0.6	3550	3564
Tot.Avg	1.86	7.4	524.7	147.7	154.3	26.8	3.1	29.9	7.2	32.8	3.1	2.9	1.8	3.3	0.5	3.3	81.9	0.4	3568.9	3582.5

PLANT CHEMIST | PLANT MANAGER | AE (STP K-Valley - 1) | AEE (STP K - V alley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD.

ULSOOR 2-MLD STP-LAB ANALYSIS REPORT

February 2022

DATE		INLET - RAW SEWAGE							OUTLET - TREATED SEWAGE											
Parameters	Flow	PH	COD	BOD	TSS	Ammonical Nitrogen	Total Phosphate	TKN	PH	COD	BOD	TSS	Ammonical Nitrogen	Nitrate Nitrogen	Total Phosphate	TKN	Fecal Coliform	FRC in PPM	SBR TANK-1 MLSS	SBR TANK-2 MLSS
Unit	MLD	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	.....	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100	mg/l	mg/l	mg/l
Limits	2	6.5-8.5	1000	350	600	—	7	70	(6.5 - 8.5)	≤50	≤ 10	≤10	≤5	≤10	≤ 1	≤10	≤100	≤ 1	3000 - 4500	
KSPCB limits									(6.5 - 9.0)	≤50	≤ 10	≤20	≤5	≤10	NA	≤10	< 100	NA	NA	NA
01-02-2022	1.857	7.50	583.0	145.0	158.0	32	2.9	30.0	7.30	36.0	2.6	3.3	2.7	3.7	0.8	3.5	78	0.4	3562	3578
02-02-2022	1.838	7.00	550.0	138.0	164.0	29	3.0	27.0	6.80	32.0	2.4	2.8	2.0	3.3	0.6	3.7	75	0.2	3503	3566
03-02-2022	1.853	7.20	572.0	154.0	168.0	30	2.8	29.0	7.10	35.0	2.8	3.2	2.3	3.5	0.4	3.4	80	0.3	3575	3583
04-02-2022	1.834	7.40	608.0	148.0	157.0	34	2.6	32.0	7.20	33.0	2.5	2.9	2.5	3.8	0.5	3.6	73	0.6	3554	3568
05-02-2022	1.821	7.30	564.0	159.0	160.0	32	2.5	35.0	7.00	31.0	2.7	3.3	2.4	3.6	0.7	3.4	79	0.5	3570	3584
06-02-2022	1.848	7.70	588.0	143.0	157.0	30	2.8	37.0	7.50	34.0	2.5	3.0	2.1	3.8	0.4	3.6	82	0.3	3509	3592
07-02-2022	1.739	7.50	612.0	153.0	164.0	33	2.6	35.0	7.20	30.0	2.8	3.4	1.9	3.6	0.6	3.8	84	0.2	3558	3568
08-02-2022	1.817	7.20	640.0	160.0	159.0	29	3.0	33.0	7.00	36.0	3.2	3.1	2.3	4	0.5	3.7	75	0.4	3574	3582
09-02-2022	1.825	7.80	623.0	156.0	162.0	30	2.9	36.0	7.50	32.0	2.9	3.3	2.0	3.8	0.7	3.9	82	0.3	3563	3578
10-02-2022	1.857	7.60	634.0	164.0	168.0	26	2.7	35.0	7.30	37.0	3.3	3.0	2.2	4.2	0.3	3.6	78	0.5	3586	3592
11-02-2022	1.820	7.40	618.0	153.0	170.0	24	3.2	30.0	7.20	33.0	3.0	3.5	2.5	3.7	0.6	4.0	85	0.4	3559	3565
12-02-2022	1.849	7.30	595.0	160.0	163.0	27	2.8	33.0	7.00	35.0	3.2	3.1	2.3	3.9	0.5	4.2	88	0.6	3503	3537
13-02-2022	1.821	7.20	607.0	159.0	172.0	25	3.0	31.0	6.90	32.0	2.8	3.3	2.7	3.5	0.7	3.8	82	0.3	3518	3522
14-02-2022	1.839	7.51	583.0	165.0	168.0	29	3.3	34.0	7.34	34.0	3.1	2.8	1.9	4.0	0.4	3.6	89	0.5	3560	3572
15-02-2022	1.824	7.29	597.0	152.0	170.0	24	2.9	32.0	7.12	33.0	3.3	3.0	2.2	3.8	0.6	4.1	83	0.2	3509	3564
16-02-2022	1.825	7.56	613.0	168.0	155.0	26	3.4	30.0	7.40	30.0	2.9	2.7	1.7	4.2	0.3	3.8	76	0.4	3554	3570
17-02-2022	1.853	7.38	592.0	157.0	164.0	28	3.6	33.0	7.22	34.0	3.2	2.9	2.0	3.9	0.5	4.2	84	0.3	3576	3583
18-02-2022	1.839	7.52	624.0	142.0	170.0	25	3.2	31.0	7.36	29.0	3.4	3.3	2.3	4.3	0.7	4.0	80	0.6	3560	3575
19-02-2022	1.827	7.25	635.0	158.0	153.0	27	3.0	33.0	7.12	27.0	3.1	3.5	2.0	4.0	0.6	4.4	83	0.3	3558	3567
20-02-2022	1.840	7.43	625.0	150.0	142.0	29	3.3	30.0	7.30	30.0	3.3	3.1	2.2	3.8	0.7	4.2	80	0.6	3563	3570
21-02-2022	1.817	7.50	610.0	143.0	158.0	26	3.1	34.0	7.28	29.0	3.5	3.3	2.4	4.2	0.5	4.5	79	0.4	3510	3546
22-02-2022	1.839	7.48	623.0	158.0	135.0	32	3.5	36.0	7.34	33.0	3.2	3.7	2.0	3.9	0.8	4.1	84	0.5	3552	3567
23-02-2022	1.824	7.56	634.0	149.0	153.0	27	3.2	32.0	7.42	30.0	3.7	3.2	2.6	4.1	0.6	4.3	80	0.2	3560	3564
24-02-2022	1.825	7.43	620.0	145.0	149.0	30	3.4	35.0	7.25	34.0	3.2	3.6	2.2	4.3	0.7	3.9	82	0.3	3578	3585
25-02-2022	1.861	7.74	607.0	155.0	162.0	28	3.0	33.0	7.52	32.0	3.5	3.4	2.4	4.0	0.5	4.2	84	0.4	3564	3573
26-02-2022	1.840	7.58	618.0	140.0	154.0	26	3.2	31.0	7.26	35.0	3.4	3.3	2.3	4.2	0.6	4.0	80	0.7	3556	3569
27-02-2022	1.857	7.60	624.0	148.0	163.0	29	3.5	30.0	7.44	33.0	3.6	3.0	2.2	3.9	0.4	4.3	76	0.5	3572	3584
28-02-2022	1.850	7.45	615.0	159.0	167.0	27	3.3	34.0	7.22	37.0	3.2	3.6	2.0	4.5	0.7	4.1	83	0.3	3578	3580
Tot.Avg	**1.83**	**7.4**	**607.6**	**152.9**	**160.2**	**28.4**	**3.1**	**32.5**	**7.2**	**32.7**	**3.1**	**3.2**	**2.2**	**3.9**	**0.6**	**3.9**	**80.9**	**0.4**	**3553.0**	**3570.9**

PLANT CHEMIST | PLANT MANAGER | AE (STP K-Valley - 1) | AEE (STP K - V alley - 1)

EUROTEK ENVIRONMENTAL PVT. LTD. SAVLI-391775

Annexure 3

cpcb

Recognised under E(P) Act, 1986
(Legal 42(3)/87, dated 6th March, 2017)

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD,
(Ministry of Environment, Forest & Climate Change Govt. Of INDIA)
REGIONAL DIRECTORATE, BENGALURU

TC-7739

TEST REPORT

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: STPs near Ulsoor lake, Bengaluru.
Nature of sample: Waste water	Sampling plan& Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:14.03.2022	Date of receipt: 14.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -25.03.2022.	Date of report issue: 28.03.2022
Code no. of sample: WW/03/2022/58,60	Req. slip no. / Date: 21W/14.03.2022.
Page No: 01	Report issue no.: WW/03/2022/58-60

Sl. No	Name of the Parameter with unit	Range of testing / Limit of Detection	Sampling location		Test Method Specification
			Ulsoor lake STP-2 MLD O/L	Ulsoor lake – MEG STP O/L	
1.	pH at 25°C	1-14	7.9	7.4	APHA, 4500-H+B, , 23rd Ed., 2017
2.	EC at 25°C µs/cm	5 - 20000 µS/cm	779	1027	APHA (22nd Ed.,): 2017 2510-B
3.	COD, mg/L	4 - 150000 mg/L	38	53	IS 3025 (part 58): 2006
4.	$BOD_{3d,27°C}$, mg/L	2 - 75000 mg/L	05	08	IS: 3025, Part 44-1993, Reaffirmed 2009
5.	TDS at 180°C,mg/L	5 - 100000 mg/L	420	607	APHA (23rd Ed.,): 2017, 2540 C
6.	TSS at 105°C, mg/L	5 – 2000 mg/L	BDL	BDL	APHA (23rd Ed.,): 2017 2540-D,
7.	Ammonical Nitrogen as N, mg/L	1 - 500 mg/L	BDL	BDL	APHA, 4500-NH_3 B & C, 23rd Ed., 17
8.	Total Kjeldahl Nitrogen (TKN) as N, mg/L	2 – 1000 mg/L	BDL	3.8	APHA (23rd Ed.,): 2017 4500-Norg-B,
9.	Nitrate as N, mg/L	0.02 - 100 mg/L	0.02	BDL	APHA (23rd Ed.,): 2017 4500-NO_3-E,
10.	Nitrite as N, mg/L	0.02 - 10 mg/L	0.12	1.62	APHA (23rd Ed.,): 2017 4500-NO_2-B,

A. Gnanavelu

Authorized signatory
(A.Gnanavelu)
Scientist 'C'

The report shall not be reproduced, except in full, without the written approval of the laboratory.

- Compliance/non-compliance opinion not sought by customer.
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested
- Parameters marked * are not under NABL scope.

--- End of Report---

cpcb

IS/ISO: 45001:2018
Certified Laboratory
Recognised under E(P) Act, 1986

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment, Forest & Climate Change)
REGIONAL DIRECTORATE (SOUTH), BENGALURU

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: STPs -Near Ulsoor lake, Bengaluru.
Nature of sample: Waste water	Sampling plan & Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:14.03.2022	Date of receipt: 14.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -08.04.2022.	Date of report issue: 11.04.2022
Code no. of sample: BSW/03/2022/26-27	Req. slip no. / Date: 15 BSW/14.03.2022.
Page No: 01	Report issue no.: BSW/03/2022/26-27

Sl. No	Name of the Parameter with unit	Sampling location		Test Method Specification
		Ulsoor lake - 2 MLD STP O\L	Ulsoor lake – MEG STP - O/L	
1.	Total Coliform (MPN/100 ml)	490	31600	APHA, 9221 B, 23rd Ed., 2017
2.	Fecal Coliform (MPN/100 ml)	10	400	APHA, 9221 E, 23rd Ed., 2017

Authorised signatory

Deepesh V

- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- Compliance/non-compliance opinion not sought by customer
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested

--- End of Report---

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಲಿ

BANGALORE WATER SUPPLY AND SEWERAGE BOARD

Office of the Additional Chief Engineer (WWM)-3, Kadabesanahalli

Outer Ring Road, Near Marathahalli, Bangalore 560037.

No: BWSSB/ACE (WWM)-3/PB/232/2020-21 Dated:13/09/2021

LETTER OF ACCEPTANCE

To,
Mr.Sanjeev Gogia
Aaxis Nano Technologies Pvt Ltd
Plot No B-46, Sector-59
Industrial Area, Noida, U.P-201301

Sir,

Sub: Work of Supply, Installation, testing and commissiong and five years Comprehensive O&M of real time online Monitoring for 2 MLD STP at Ulsooru Coming under AEE STP KV-1.

Ref: 1) BWSSB/CE (WWM)/ACE (WWM)-1/DCE (WWM)/TA-1/891/2021-22 DT: 04/09/2021

This is to notify you that your tender for the Work of Supply, Installation, testing ar commissiong and five years comprehensive O&M of real time online Monitoring for 2 ML STP at Ulsooru for contract price of Rs. 19,25,000/- (Rupees Nineteen Lakhs Twenty Fiv Thousand only), Which is works out to 1.0763 % below the amount put to tender Rs19,45,944/- based on BWSSB SR 2017-18 as corrected and modified in accordance Wit the instruction to Tenderers is hereby accepted by the Board

You are here by requested to furnish 3% on contract price i.e 58000/- and unbalance amount of Rs. 10,500/- (58000+10500=68500/-) Total Rs 68500/-(Rupees Sixty eight Thousand five hundred only) as security deposit in the form detailed in clause 29.1 of IT within 20 days of the receipt of this letter of acceptance valid up to 30 days from the date expiry of Defects Liability period i.e. up to 6 months and sign the contract failing whic action as stated in para 29.4 of ITT will be taken.

Additional Chief Engineer (WWM)-3,
STP K-Valley Division,
Kadubeesanahalli Outer Ring Rd,
Near Marathahalli, Bangalore 560037.

1. Copy submitted to ACE (WWM)-1 for kind information

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಲಿ

BANGALORE WATER SUPPLY AND SEWERAGE BOARD

Office of the Additional Chief Engineer (WWM)-3, Kadabesanahalli

Outer Ring Road, Near Marathahalli, Bangalore 560037.

No: BWSSB/ACE (WWM)-3/PB/ 290/2020-21 Dated: 08/10/2021

WORK ORDER

To,
Mr.Sanjeev Gogia
Aaxis Nano Technologies Pvt Ltd
Plot No B-46, Sector-59
Industrial Area, Noida, U.P-201301

Sir,

SUBJECT: Work of Supply, Installation, testing, commissioning and five years Comprehensive O&M of real time online Monitoring for 2 MLD STP at Ulsooru Coming under AEE STP KV-1.

Ref: 1. Memorandum No. BWSSB/ CE (WWM)/ACE (WWM)-I/TA-I /987 / 2020-21 dt.13.08.2020

2. Sanctioned CER. No.96/ 2020-21 dt.11.08.2020

3. 2nd Call IFT No. BWSSB/EE (STP-K Valley)/PB/131/2020-21 Dt: 29.07.2021

4. Tender No. BWSSB/2020-21/OW/Work_Indent6627/Call-2

5. Tender Approval No. BWSSB/ CE (WWM)/ACE (WWM)-I/DCE(WWM)/ TA- I/891/2021-22 dt.04.09.2021

6. LOA No. BWSSB/EE (STP K-Valley)/PB/ 232 /2019-20 dt.13.09.2021.

7. Security deposit amount of 3% on contract price i.e 58000/- and Unbalanced item security deposit amount of Rs 10500/- (58000+10500=68,500/-) total Rs.68,500/- (Rupees sixty eight thousand five hundred only) vide BG 027GT02212700011 Dt:27.09.2021 and BG 027GT02212700002 Dt:27.09.2021 Of HDFC Bank,Plot No120,Patpar Ganj Industriel Area,New Delhi-110092 and the same has been acknowledge at this office.

8. Agreement No.01 / 2021-22 dt.08.10.2021

9. Action Plan ID No.505-20-4020501600-0006

Pursuant to your furnishing the requisite security deposit as stipulated ITT clause 24.1 & signing of the Contract agreement in respect of "Work of Supply, Installation, testing, commissioning and five years Comprehensive O&M of real time online Monitoring for 2 MLD STP at Ulsooru Coming under AEE STP KV-1", you are hereby instructed to proceed with the execution of the said work in accordance with the contract documents as per the directions of AEE (STP)-KV, BWSSB.

P.T.O

The details of work awarded are as follows

1	Estimate cost	**Rs 20,00,000/-**
2	Amount put to tender	**Rs 19,45,944/-**
3	Evaluated cost as per accepted / approved tender	**Rs 19,25,000/-**
4	Percentage at which work is to be executed	**At 1.0763% Below** compared to the amount put to tender based on BWSSB SR 2017-18
5	Date of commencement	**08/ 10 / 2021**
6	Date of completion	**07/ 12 / 2021**
7	Period of completion	**2 (Two) Months**
8	Head of account	**CE of STP for the year 2020-21 (2021-22)**

You are requested to start the work immediately & complete the same in all respects satisfactorily and hand over to the Board in complete manner within the stipulated period.

Further, you are requested to contact AEE (STP)-KV, BWSSB for further needful.

Thanking you

Yours faithfully

Additional Chief Engineer (WWM)-3,
STP K-Valley, Kadubeesanahalli
Outer Ring Road, Near Marathahalli,
Bangalore 560037.

Copy submitted to CE (WWM) / ACE (WWM)-I / ACE (QA) for kind information.

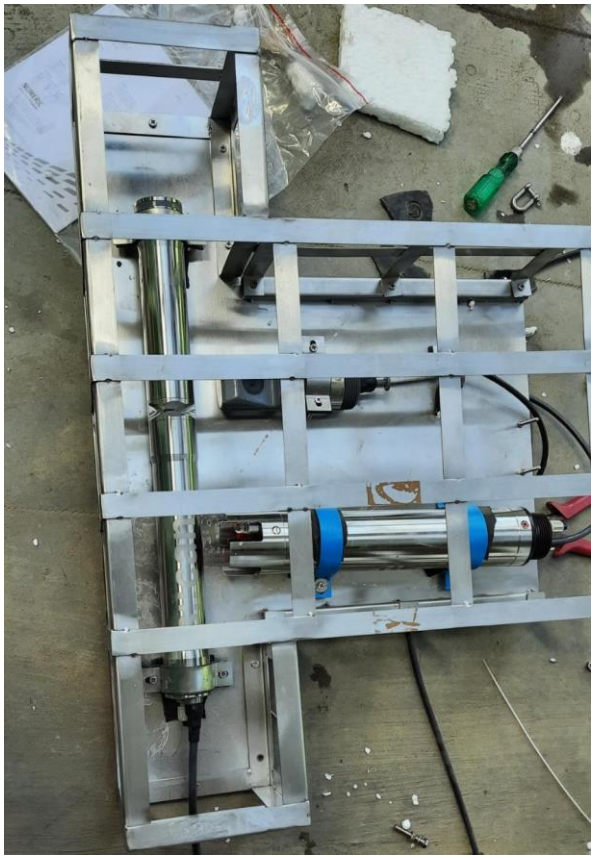
Copy submitted to EE (QA) for information and necessary action.

Copy to AO (IAW) along with agreement copy.

Copy to AEE (STP)-KV for information along with the copy of sanctioned estimate with Agreement copy.

Copy to AB for information along with the copy of sanctioned estimate with original Agreement.

THE REAL TIME ONLINE EFFLUENT MONITORING UNIT INSTALLED AT 02 MLD ULSOOR STP



Sensors to be immersed into treated effluent

Display box

Effluent Parameters display

2MLD Ulsoor STP - Live:January - 2022									
Timestamp	COD (mg/l)	BOD (mg/l)	COLOR (Hazen-eq.)	pH(pH)	TEMP. (C)	TSS (mg/l)	DO (mg/l)	AMMONICALNITROGEN (mg/l)	TN (mg/l)
27-12-2021 00:00	47.6	3.7	10.36	7.14	25.4	3.48	3.18	1.38	2.35
28-Dec-2021 00:15	45.3	5.5	9.06	7.15	24.9	2.35	2.39	2.01	2.27
29-Dec-2021 00:15	40.7	5	8.14	7.23	24.7	2.74	2.28	1.78	1.93
30-Dec-2021 00:15	30.4	3.3	6.08	7.2	24.7	3.67	2.38	4.04	8.85
31-Dec-2021 00:15	30.5	3.4	6.1	7.21	24.6	2.57	2.47	2.18	7.37
01-Jan-2022 00:15	31.4	3.5	6.28	7.16	24.5	2.44	2.53	1.2	2.11
02-Jan-2022 00:15	32.1	3.6	6.42	7.17	24.5	2.65	2.41	1.37	3.48
03-Jan-2022 00:15	32.5	4	6.5	7.13	24.5	3.49	2.16	3.38	1.96
04-Jan-2022 00:15	33.2	4.1	6.64	7.17	24.3	4.5	2.16	2.74	2.31
05-Jan-2022 00:15	34.3	4.4	6.86	7.15	24.6	5.1	2.49	1.72	3.61
06-Jan-2022 00:15	35.4	4.6	6.98	7.15	24.7	4.3	2.72	0.77	9.81
07-Jan-2022 00:15	35.4	4.7	7.08	7.24	24.4	5	2.83	0.75	2.43
08-Jan-2022 00:15	34.6	4.7	6.92	7.17	24.8	2.7	2.93	0.69	1.75
09-Jan-2022 00:15	36.9	4.8	7.38	7.15	24.5	3.23	2.45	1.48	3.1
10-Jan-2022 00:15	39	5.1	7.8	7.18	24.6	3.45	2.53	0.89	1.5
11-Jan-2022 00:15	35.6	4.7	7.12	7.16	24.7	2.51	2.25	2.68	2.29
12-Jan-2022 00:15	33.8	3.9	6.76	7.24	25.7	3.45	2.85	0.95	9.68
13-Jan-2022 00:15	34.3	4	6.86	7.14	25.9	2.5	2.81	1.84	3.72
14-Jan-2022 08:15	34.4	4	6.88	7.18	26.2	2.9	3.32	0.98	2.96
15-Jan-2022 08:15	35.6	4.3	8.96	7.2	25.4	2.44	2.38	0.89	2.31
16-Jan-2022 00:15	35.7	4.5	9.02	7.19	25.9	2.59	2.34	1.03	3.73
17-Jan-2022 00:15	34.1	4.5	8.82	7.17	25.9	3.67	2.61	2.16	2.18
18-Jan-2022 00:15	36.1	4.4	10.02	7.18	25.7	2.6	2.4	0.77	2.93
19-Jan-2022 00:15	35.7	4.6	8.76	7.17	25.6	3.57	2.26	1.29	3.22
20-Jan-2022 00:15	34.5	3.7	8.42	7.19	26.1	3.2	2.02	2.08	5.2
21-Jan-2022 00:15	35.4	3.6	7.76	7.2	26	3.12	3.07	0.92	3.3
22-Jan-2022 00:15	35.7	4	7.8	7.11	25.5	2.34	2.29	2.07	7.58
23-Jan-2022 00:15	34.9	4.3	12.84	7.13	25.6	2.41	2.38	0.89	2.86
24-Jan-2022 00:15	35.7	3.8	13.88	7.12	25.3	3.82	2.06	4.74	6.12
25-Jan-2022 00:30	35.4	5	14.08	7.14	25.1	3.2	1.82	1.87	2.07
26-Jan-2022 00:30	34.4	4.1	9.26	7.13	25.8	4.07	1.72	4.01	3.33
27-Jan-2022 00:30	35.6	4.1	10.66	7.13	25.7	2.33	1.68	1.56	2.58
28-Jan-2022 00:30	34.9	4.2	7.64	7.19	25.7	3.74	1.07	1.16	2.39
29-Jan-2022 00:30	35.1	4.9	10.22	7.11	26.1	2.68	-0.62	4.2	2.06
30-Jan-2022 00:30	35.4	4.2	11.54	7.05	26	3.91	-0.62	3.01	2.33
31-Jan-2022 00:30	35.5	4.1	8.6	7.06	25.6	2.13	-0.78	1.13	4.19

AXIS NANO TECHNOLOGIES PVT. LTD. NOIDA U.P.

Durgaprasad.G

2MLD Ulsoor STP - Live: February - 2022									
Time stamp	COD (mg/l)	BOD (mg/l)	COLOR (Hazen-eq.)	pH(pH)	TEMP. (C)	TSS (mg/l)	DO (mg/l)	AMMONICALNITROGEN (mg/l)	TN (mg/l)
01-Feb-2022 00:30	36.1	4.6	8.76	7.06	26.3	3.01	-0.75	2.42	5.48
02-Feb-2022 00:30	35.4	4.2	14.02	7.06	26.3	2.59	-0.82	3.28	5.02
03-Feb-2022 00:30	34.7	4	9.08	7.04	26.5	2.68	0.13	0.92	2.78
04-Feb-2022 00:30	35.6	4.3	10.14	7.05	26.3	4.11	-0.83	4.41	2.26
05-Feb-2022 00:30	34.8	4.2	9.1	7.07	26.2	2.61	-0.81	4.74	2.06
06-Feb-2022 00:30	35	4.4	11.14	7.05	26.6	3.45	-0.69	1.53	2.22
07-Feb-2022 00:30	35.4	5	10.4	7.02	26.4	3.25	-0.81	4.75	7.02
08-Feb-2022 00:30	34.1	4.6	8.76	7.01	26.1	3.77	-0.83	1.93	2.34
09-Feb-2022 00:15	35.7	4	10.12	6.97	26.4	2.34	-0.25	1.52	2.65
10-Feb-2022 00:30	35.4	4.2	8.74	7.44	24.7	3.33	5.36	0.38	2.55
11-Feb-2022 00:30	34.3	4.6	9.08	7.04	26	3.01	1.4	1.27	2.12
12-Feb-2022 00:30	35.6	4.4	8.26	7.17	25.9	3.01	2.16	1.03	1.93
13-Feb-2022 00:30	34.4	4.6	8.44	7.07	26	2.59	2	4.19	2.49
14-Feb-2022 00:30	35.6	4.7	8.6	7.16	26.4	2.68	2.37	3.76	6.57
15-Feb-2022 00:00	35.7	4.6	9.96	7.15	26.3	4.11	1.97	3.16	2.54
16-Feb-2022 00:30	34.5	5	11.46	7.07	26.1	2.6	1.9	1.39	3.33
17-Feb-2022 00:30	35.4	4.8	9.7	7.09	25.9	3.21	1.59	1.48	2.58
18-Feb-2022 00:30	34.9	4.6	9.3	7.21	26.4	3	2.39	0.78	1.83
19-Feb-2022 00:30	35.1	4.7	9.56	7.17	26.1	3.48	1.25	2.3	2.01
20-Feb-2022 00:30	35.4	4.7	8.92	7.15	25.8	3.17	1.45	2.02	2.24
21-Feb-2022 00:30	34.1	4.5	10.26	7.17	26.5	4.02	1.55	1.98	3.72
22-Feb-2022 00:30	35.7	5.5	14.24	7.05	26.6	2.62	1.66	0.97	2.31
23-Feb-2022 00:30	35.4	5.3	22.02	7.14	26.7	3.14	1.33	1.33	3.19
24-Feb-2022 00:30	34.4	5.3	16.26	7.14	26.7	2.95	0.99	1.99	2.63
25-Feb-2022 00:30	36	4.4	7.74	7.05	26.3	2.81	1.3	1.09	1.36
26-Feb-2022 00:00	30.8	3.1	6.16	7.13	26.8	2.5	2.71	1.22	2.24
27-Feb-2022 00:15	31.1	3.1	6.22	7.09	26.7	2.5	3.14	1.07	9.81
28-Feb-2022 00:15	31.4	3.1	6.28	7.16	26.8	2.6	3.1	3.51	2.81

AAXIS NANO TECHNOLOGIES PVT. LTD. NOIDA U.P.

Durgaprasad.G

2MLD Ulsoor STP - Live: March - 2022									
Time stamp	COD (mg/l)	BOD (mg/l)	COLOR (Hazen-eq.)	pH(pH)	TEMP. (C)	TSS (mg/l)	DO (mg/l)	AMMONICALNITROGEN (mg/l)	TN (mg/l)
01-Mar-2022 00:15	31.9	3.1	6.38	7.15	26.6	2.6	2.09	2.52	2.35
02-Mar-2022 00:15	32.5	3.2	6.5	7.16	26.7	2.7	2.22	1.7	6.61
03-Mar-2022 00:15	32.1	3.1	6.42	7.08	26.3	2.7	2.1	0.73	3.89
04-Mar-2022 00:15	32.2	3.2	6.44	7.19	26.3	2.7	1.58	2.58	2.43
05-Mar-2022 00:15	45.2	3.2	9.04	7.16	26.4	6.4	1.04	2.21	2.1
06-Mar-2022 00:15	38.2	3.4	7.64	7.11	26.8	4.2	0.47	2.45	2.86
07-Mar-2022 00:15	34.7	3.2	6.94	7.1	26.6	3.3	-0.87	1.67	1.74
08-Mar-2022 00:15	32.6	3.2	6.52	7.06	26.8	2.7	-0.23	0.66	1.69
09-Mar-2022 00:15	32.3	3.3	6.46	6.95	26.4	2.5	-0.78	2.62	
10-Mar-2022 00:15	33.8	3.3	6.76	7.06	27	3	-0.7	2.2	1.56
11-Mar-2022 00:15	49.7	3.4	9.94	7.05	26.9	7	-0.8	1.64	2.36
12-Mar-2022 00:15	31.9	3.2	6.38	7.04	26.6	2.5	-0.85	0.66	7.71
13-Mar-2022 00:15	32.4	3.2	6.48	7.15	26.6	2.7	3.08	2.65	2.38

AAXIS NANO TECHNOLOGIES PVT. LTD. NOIDA U.P.

Durgaprasad.G

Annexure 5

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಳಿ

BANGALORE WATER SUPPLY & SEWERAGE BOARD
Office of the Chief Engineer (WWM), 5th Floor
Cauvery Bhavan, K.G. Road, Bangalore-560009.

ಸಂ. ಬೆಂ.ಜ.ಮಂ

No.BWSSB / CE(WWM)/ ACE(WWM)-1&2/TA-1/ 1642 /2020-21 Date : 11/11/2020

To,
Chief Executive,
SOCIETY FOR INNOVATION AND DEVELOPMENT,
Indian Institute of Science,
Innovation Centre Building of the Indian Institute of Science Campus,
Bangalore – 560012

For Kind attention of

1. Dr. Lakshminarayana Rao, Assistant Professor, Department of Civil Engineering, The Indian Institute of Science, Bangalore-560012	2. Pro. H.N. Chanakya, Chief Research Scientist, Department of Civil Engineering, The Indian Institute of Science, Bangalore-560012
3 Dr. M.S. Mohan Kumar, Professor,(Retd.) Department of Civil Engineering, The Indian Institute of Science, Bangalore-560012	

Sir,

Sub:- Work of conducting studies towards the up gradation of the existing twenty (20) sewage treatment plants of BWSSB, to meet the effluent discharge standards as directed by the Honorable National Green Tribunal.

Ref: 1. Letter No. BWSSB/CE(WWM)/ACE(WWM) 1 & 3/TA-1/799/2020-21 dated 27/07/2020
2. Proposal dated 10th of August 2020, titledBiological Nutrient Removal (BNR) of the treated effluent from STPs of BWSSB.

*****

With reference to the above, it is to inform that, as per the guide lines of Hon'ble NGT OA No.1069/2018, it is required for BWSSB to treat effluent to the standards as enumerated in its orders.

In this regard, it is pleased to inform that your proposal for the above work at a cost of **Rs. 47,30,000.00 (Rupees Fourty Seven Lakhs Thirty Thousand only)** inclusive of all applicable taxes are acceptable to BWSSB which will be in the form of Grants for Studies.

The scope of the work with an objective of Study and modelling of the STP process under the current operation mode to determine the necessary upgradations and process modifications for

each of the 20 STPs, which are as follows,

- Technical visit to all the 20 STPs to understand the process and the gathering process data required for modelling of the STPs. (List enclosed)
- Detailed water quality analysis of various water samples at all intermediate stages, including inlet sewage and effluent for each of the STPs to assess the degree of functioning and potential for improvements.
- Process modelling of all the 20 STPs to determine the necessary upgradation protocols and process modifications details.
- Preparing a Technical feasibility report listing the necessary upgradations and process modifications to achieve the desired effluent quality covering all the 20 STPs as per Hon'ble NGT order OA No.1069/2018.
- To validate the proposals of DPR's and cost estimates prepared by the consultants during actual execution of work.

In this regard you are requested to enter in to an agreement for further forwarding of the proposal.

Thanking you,

Yours' faithfully,

Chief Engineer (WWM)
BWSSB

11/11/20

Copy submitted to Hon'ble Chairman, BWSSB for kind information.
Copy submitted to EIC, BWSSB for kind information.
Copy to ACE(WWM)-2 for information and necessary action.
Copy to ACE(WWM-3), STP - K.V division for information and necessary action.
Copy to EE(STP-V.V/A.V/C.V/H.V) for information and necessary action.

List of STPs in BWSSB						
Sl. No	**Name**	**Capacity in MLD**	**Location near to**	**Level of Treatment**	**Types of process for treating sewage**	**STP commissioned in year**
1	K&C valley	60	Belur Nagasandra (near Challaghatta)	Secondary	ASP with power generation	2005
2	Bellandur Amani kere	90	Vartur kere	Secondary	Activated Sludge Process (ASP)	2017
3	Kadabeesanahalli ph-I	50	Marathalli Outer Ring Road	Secondary	Sequential Batch Reactor	2005
4	Kadugodi	6	Kadugodi	Secondary	Sequential Batch Reactor	2005
5	Halasuru	2	Halasuru Lake	Secondary	Sequential Batch Reactor	2018
6	Rajacanal - Ph-1	40	Geddalahalli near Hebbal	Secondary	Upflow Aerobic Sludge Blanket (UASB) + Extended Aeration	2018
7	Rajacanal	40	Geddalahalli near Hebbal	Secondary	Sequential Batch Reactor	2004
8	Horamavu Agara	20	In between Kalkere and Horamavu Agara kere	Secondary	Sequential Batch Reactor	2018
9	K.R.Puram Ph-I	20	Tambuchetti playa Road	Secondary	UASB + Extended Aeration	2005
10	Yelemallappa Chetti kere	15	Yelemallappa Chetti kere	Secondary	Sequential Batch Reactor	2018
11	Nagasandra Ph-I	20	Yelemallappa Chetti kere	Secondary	Extended Aeration	2005
12	Mallathahalli	5	Near Madavara kere (near Tumkur Road)	Secondary	Sequential Batch Reactor	2011
13	Nagasandra	20	Near Madavara kere (near Tumkur Road)	Secondary	Sequential Batch Reactor	2018
14	Chikkabana	5	Mailasandra	Secondary	Sequential	2005

	vara				Batch Reactor	
15	Mailasandra Ph-I	75	Mailasandra	Secondary	Extended Aeration	2015
16	V.Valley	180	Mysore Road	Secondary	Two stage high rate trickling process	2004
17	Kempambudhi	1	N.R.Colony	Secondary	Extended Aeration	2002
18	Doddabele	20	Doddabele	Secondary	Sequential Batch Reactor	2018
19	Kengeri	60	Near Kengeri bus stand	Secondary	Secondary-Activated Sludge Process	2018
20	Madiwala	4	Near Madiwala Lake	Secondary	Sequential Batch Reactor	1999

cewwm@bwssb.gov.in

Office : (080) 22945106

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಳಿ

BANGALORE WATER SUPPLY & SEWERAGE BOARD
Office of the Chief Engineer (WWM), 5th Floor
Cauvery Bhavan, K.G. Road, Bangalore-560009.

No.BWSSB / CE(WWM)/ ACE(WWM) /TA/ 1831 /2020-21 Dated : 10/12/2020.

Work Order

To,
Chief Executive,
SOCIETY FOR INNOVATION AND DEVELOPMENT,
Indian Institute of Science,
Innovation Centre Building of the Indian Institute of Science Campus.
Bangalore – 560012

For Kind attention of

1. Dr. Lakshminarayana Rao, Assistant Professor, Department of Civil Engineering, The Indian Institute of Science, Bangalore-560012	2. Pro. H.N. Chanakya, Chief Research Scientist, Department of Civil Engineering, The Indian Institute of Science, Bangalore-560012
3. Dr. M.S. Mohan Kumar, Professor,(Retd.) Department of Civil Engineering, The Indian Institute of Science, Bangalore-560012	

Sir,

Sub:- Work of conducting studies towards the up gradation of the existing twenty (20) sewage treatment plants of BWSSB, to meet the effluent discharge standards as directed by the Honorable National Green Tribunal.

Ref: 1. Letter No. BWSSB/CE(WWM)/ACE(WWM) 1 & 3/TA-1/799/2020-21 dated 27/07/2020
1. Proposal dated 10th of August 2020, titled Biological Nutrient Removal (BNR) of the treated effluent from STPs of BWSSB.
2. Letter No. BWSSB/CE(WWM)/ACE(WWM)-1&2/TA-1/1642/2020-21 Dt:11-11-2020.
4. Your e-mail dated 17.11.2020
5. No.BWSSB / CE(WWM)/ ACE(WWM)-1&2 /TA-1/1787/2020-21 Dated:01-12-2020
6. Agreement No.25/2020-21 Dated: 07.12.2020

*****

Pursuant to the above and signing the contract agreement for the work of conducting studies towards the up gradation of the existing twenty (20) sewage treatment plants of BWSSB, to meet the effluent discharge standards as directed by the Honorable National Green Tribunal at a cost of Rs.47,30,000/- (Rupees Fourty Seven lakhs Thirty thousand only), you are hereby informed to proceed with the execution of the said work. Further you are hereby informed to carry out the work under the instructions of Additional Chief Engineer (WWM-3)-(STP-K Valley). Executive Engineer (STP-V.Valley). Executive Engineer (STP-H.Valley). Executive Engineer (STP-A.Valley) and Executive Engineer (STP-C.Valley). Further the scope of work also includes the validation of the DPR and cost estimates during actual execution of work in addition to the scope of work included in the agreement.

Please acknowledge the receipt of this work order.

Thanking you,

Yours faithfully.

Chief Engineer (WWM)
BWSSB

ANNEXURE -05

Annexure 6

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಲಿ

BANGALORE WATER SUPPLY AND SEWERAGE BOARD

Office of the Additional Chief Engineer (WWM)-3, Kadabesanahalli

Outer Ring Road, Near Marathahalli, Bangalore 560037.

No: BWSSB/ACE(WWM)-3/PB/445/2021-22 Dated: 17/12/2021

WORK ORDER

TO,
Dr. Lakshminarayana Rao
Assistant Professor
Centre for Sustainable Technologies
Indian Institute of science
C.V Raman Avenue
Bangalore-560012

Sir,

Sub: Recommendation / Suggestion for reducing the Fecal Coliform through any advanced technologies/De-Chlorination at 2 MLD STP Ulsooru.

Reg: 1) No. BWSSB/CE (WWM)/ACE (WWM)/DCE (WWM)/TA-1/1376/ 2021-22 Dt; 23.111.2021.
2) Agreement No.02/2021-22 Dt: 03-12-2021.

The above project titled Recommendation / Suggestion for reducing the Fecal Coliform through any advanced technologies/De-Chlorination at 2 MLD STP Ulsooru is entrusted to your esteemed institution by competent authority vide ref (1) approval for Rs 470820/- and the details of works & payments are as follows.

i) **Objectives:**

Conducting a pilot project at 2 MLD STP for assessing the parameters for influent and effluent sample tests and if required Recommendation / Suggestion of advanced technology for meeting all the effluent parameters to discharge standards as directed by the Honorable National Green Tribunal.

The effluent parameters in the test reports of In-house laboratory and NABL, MOEF & CC accredited laboratory are within the standards prescribed in KSPCB, norms. But some of the parameters in the KSPCB test reports are not meeting the standards. This is Contradictory and by Considering KSPCB reports Honorable National Green Tribunal in this order dated 23.03.2021 has raised an Environmental compensation of Rs. 2,94,60,000/- to BWSSB. Hence in order to resolve this contradiction between various laboratories this pilot project is proposed.

ii) Scope of Work: 84

The scope of work shall include the following activities:

- Site visit and sample collection at Ulsooru STP
- Time series data collection.
- Analysis of the treated effluent at Ulsooru STP specially for Fecal Coliform.
- Modelling of advanced Chlorination and De-Chlorination system to reduce the Fecal-Coliforms as the desirable limit of 100MPN/100 ml.
- Recommendations of a solution to reduce the Fecal Coliform.
- Water Quality Test Reports for pH, Phosphorus, BOD, COD, TSS, Ammonical Nitrogen, Total Nitrogen and Fecal Coliform.
- Comparative sample analysis with KSPCB representatives and MoEF& CC accredited Laboratory.
- Recommendation Report.

Details of work cost		Rs in lakhs
Total entrusted amount		4.7082
Break ups		
Project fees for the scope of the work mentioned		3.9900
Sub-Total		3.9900
GST	18%	0.7182
Grand Total		4.7082

Payment Schedule		Rs in lakhs
First Instalment 70%	At the beginning of the project	3.2957
Second Instalment 30%	Submission of Final Report	1.4125

Project schedule/Time frame:

Three (3) months from the date of start of the project.

You are hereby requested to proceed with the above said works in accordance with the contract document and as per the agreement vide above ref (2).

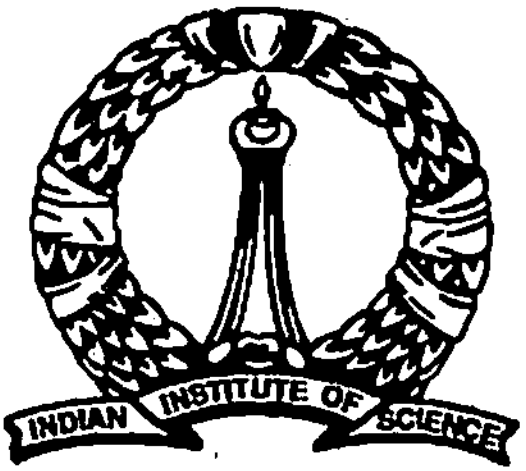
Your faithfully

Additional Chief Engineer (WWM)-3,
STP K-Valley, Kadubeesanahalli,
Near Marathahalli outer ring road,
Bangalore 560037.

Copy to: 1. CE (WWM)/ACE(WWM)-1 For kind information
2. AEE (STP)-KV for information and necessary action.
3. AB enclosed with Original Agreement & sanctioned estimate for information& N/A.

BWSSB, 2 MLD- Ulsoor STP Effluent Water Quality

Final Report



Submitted By:

Dr. L. N. Rao

CST, IISc Bengaluru

21st March 2022

1. Water quality Analysis

The objectives of the project were to study the date series water quality of the treated sewage effluent collected on different dates between November 2021 to February 2022 and also to recommend a chlorination-dichlorination protocol. The samples were collected from the 2 MLD STP Outlet through grab sampling and were analysed for physical, chemical and microbiological parameters following the Standard methods for examination of water. The findings are provided in the below Table 1.

Table1. Water Quality Analysis of STP treated Effluent*

Sl No	Sampling dates	Chemical Parameters & NGT Discharge Standard							
		pH	BOD for 5 days at 20°C (mg/L)	COD (mg/L)	Total Suspended Solids (mg/L)	Ammonia-N (mg/L)	Total Nitrogen as N (mg/L)	Residual Chlorine (mg/L)	Fecal Coliform CFU/100 mL
	NGT Std.	**6.5-9**	**10**	**50**	**20**	**5**	**10**	**-**	**<100 MPN/100 ml Desirable 230 MPN/100 ml Permissible**
1	30-Nov-2021	7.25	7.25	36	<10	**6.1**	**11.0**	0.21	130
2	03-Dec-2021	7.27	7.27	40	8	**7.5**	**10.2**	0.28	190
3	08-Dec-2021	7.25	7.25	32	14	**9.0**	8.4	0.96	95
4	10-Dec-2021	7.31	7.31	48	<10	2.7	6.8	0.41	218
6	15-Dec-2021	7.02	7.02	36	13	2.7	6.5	0.14	223
7	17-Dec-2021	7.07	7.07	32	9	0.31	6.2	0.31	164
8	20-Dec-2021	7.06	7.06	24	5	0.37	8.9	0.3	85
9	22-Dec-2021	7.09	7.09	24	<5	0.37	7.8	0.61	168
11	27-Dec-2021	7.14	7.14	16	7	0.31	6.1	0.2	76
12	29-Dec-2021	7.16	7.16	16	<5	1.5	6.3	0.31	79
13	12-Jan-2022	7.2	4.2	32	14	**8.9**	**13.4**	0.96	95
14	10-Feb-2022	6.4	4.6	42	21	1.7	9.5	0.4	200

- **Protocol used for this analysis is given as appendix-I**

40

Remarks:

The water quality analysis of the samples collected on 14 different days represents date series data which revel that

- The fecal coliform counts were less than the permissible limit of 230 MPN/100 ml.
- Except for ammonical nitrogen and total nitrogen on few occasions, all other parameters were within the standards.

Recommendations:

It is advised for disinfection to maintain the residual chlorine dose up to 2.5- 3 ppm for a retention time of 30-40 mints and subsequently the residual chlorine for discharge should be maintained at less than 0.7 ppm. If required dichlorination can be done by adopting aeration for 45 minutes at 9 LPM (0.54 m3/hr) flow rate to maintain this residual chlorine of < 0.7 ppm at the discharge point.

Appendix – I

Sl No.	Parameters	Method References
1.	pH	APHA 23rd Edition 4500-H^+, B
2.	BOD for 5 days at 20°C	APHA 23rd Edition 5210-B
3.	COD	APHA 23rd Edition 5220-C
4.	TSS	APHA 23rd Edition 2540-D
5.	Ammonia-N	APHA 23rd Edition 4500-NH_3
6.	Total Nitrogen	APHA 23rd Edition 4500-B
7.	Residual Chlorine	APHA 23rd Edition 4500- Cl^-A
8.	Fecal Coliform	APHA 23rd Edition 9221

L. N. Rao.

Dr. Lakshminarayana Rao

41

Annexure 7

Email: cewwm@bwssb.gov.in

Ph: 080-22945106

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BANGALORE WATER SUPPLY & SEWERAGE BOARD

O/o Chief Engineer(WWM), 5th Floor, Cauvery Bhavan, Bangalore-560009.

No. BWSSB/CE(WWM)/ACE(WWM)-1/DCE(WWM)/TA-1/ 108/2022-23 Date : 22/04/2022

To

The Senior Environmental Officer
Parisara Bhavana,
#49, Church Street,
Bengaluru -560001.

केन्द्रीय प्रदुषण नियंत्रण बोर्ड
25 APR 2022
बेंगलूर/पावती सं.....72.....

Sir,

Sub: Non Conformance to KSPCB Standards under the provision of Water (Prevention and Control of Pollution) Act, 1974 Reg:-Suo-Mutto case O.A.54/2016 at Hon'ble NGT.

Ref: No.BWSSB/ACE(WWM)-3/PB/28/2022-23 Dt:13-04-2022

~~*

With reference to the above as desired in the letter cited at reference the action taken reports and updated status of implementation of recommendations and suggestions of the Joint Committee report in the required formats are enclosed with this letter for your informations and further needful in the matter.

Yours faithfully

22/4/22

Chief Engineer(WWM)(I/C)
BWSSB

Encl: As above.

Copy to:

1. The Environmental Officer, Karnataka State Pollution Control Board, Bengaluru City East, Thimmaiah Road, 7th D – Main, Shivanagar, Bengaluru-560079.
2. The Regional Officer, Central Pollution Control Board, Thimmaiah Road, 7th D-main, Shivanagar, Bengaluru-560079.

25/3/2022

Received on 25/4/2022.

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI
ORIGINAL APPLICATION NO. 54 OF 2016 (SZ)
(Through video conference)

IN THE MATTER OF :-

Suo Motu based on the news item published in The Hindu dated 08.03.2016 titled "Lake in heart of Bengaluru City turns Graveyard for fish".

Court on its own Motion ... Applicant(s)

:: VERSUS ::

Government of Karnataka,
Rep. by its Chief Secretary,
Bengaluru and Others.

Date of hearing: 23.09.2021.
Date of hearing: 27.10.2021.
Date of hearing: 10.02.2022.

... Respondent(s)

Compliance report in respect of the directions issued by this Hon'ble National Green Tribunal in its order dated: 23-09-2021

Sl. No.	Suggestions of the Joint Committee in the report dated 10.08.2020	Measures implemented by Joint Committee	Compliance / Status of the works	Remarks
1	To operate the existing STP of 2 MLD at its full capacity with a compliance to the discharge Standards, so that additional 0.5 MLD can be discharged to Ulsoor Lake, may adequate to maintain loss of water due to evaporation, infiltration etc.,	1. During the inspection by the Joint Committee on 28.07.2021, the STP was operating at 1.8 MLD capacity. The daily flow meter readings recorded by BWSSB during June and July, 2021 were verified. It is observed that from 01.06.2021 to 08.07.2021, STP was operated at an average capacity of 0.9 MLD and in the range 0.94 MLD to 1.52 MLD. 2. During 09.07.2021 to 27.07.2021, the STP was operated in the range of 1.7 to 1.9 MLD capacity and average capacity of treatment was 1.84 MLD the records of flow meter readings at the outlet of the STP from 01.06.2021 to 27.07.2021 is enclosed at Annexure 2. 3. It is reported by the BWSSB that remaining 0.20 MLD of sewage will be treated in the STP by modifying the inlet arrangements within one-monthie, 31.08.2021 (Annexure 3) The recommendations of the Joint Committee are partially	After modification of the inlet arrangements, from August 2021 the inlet flow is increased to 1.95 MLD– 2.00 MLD (refer Annexure 1). The joint committee also visited site and inspected the 02 MLD Ulsoor STP.	

complied.

4. Every month, KSPCB is monitoring the quality of treated sewage discharged from the outlet of the STP. The grab sample was collected at the outlet of the STP on 28.07.2021 in presence of Joint Committee members and samples were analyzed at KSPCB Laboratory.

The analysis results of the treated sewage collected from STP on 31.03.2021, 01.04.2021, 03.05.2021 by KSPCB and during Joint Committee visit on 28.07.2021 are as follows (Annexure 4)

Parameter	Standards	Concentrations treated waste water at the out of the STP 01.03.2021
pH @ 25°C	5.5-9.0	7.0
BOD (3 days at27°C) (mg/L)	<10	5.0
COD (mg/L)	<50	55
TSS (mg/L)	<20	12
Ammoniacal Nitrogen (mg/L)	<50	27.1
Total Nitrogen (mg/L)	<10	37.0
Fecal Coliform (MPN/100 ml)	Less than 100	27*10□

The daily in-house lab reports shows that the treated effluent is maintained to the standards set by the KSPCB (refer Annexure 1). The Monthly reports of the samples collected by the external agency i.e., **"M/s General Analytical Laboratory"** also confirms that the treated effluent is maintained to the standards set by KSPCB (refer Annexure 2). In the month of September 2021 KSPCB has directed to test the effluent samples with MOEF and CC accredited laboratory. The instructions were followed and the sample got tested in **"M/s SLN Testing Laboratory".** The reports given by this laboratory also confirms to KSPCB standards (refer Annexure 3).

Further BWSSB requested to **M/s IISc** for treated effluent sample study and to suggest any advanced technologies for reducing COD and Fecal Coliform (refer Annexure 4). Hence **M/s IIScalong** with **CPCB** (Only on 10.02.2022), **KSPCB** and other two NABL & MoEF&CC accredited laboratories collected the samples on 08.12.2021 and 10.02.2022 and given the analysis reports in which all parameters are within the standards prescribed by KSPCB (refer Annexure 4).

Sl. No.	Name of the Laboratories	Date of Sample Collection	COD (Mg/L)	Fecal Coliform (MPN/100ml)
1	SLN Testing	08.12.2021	48	90

Parameter	Standards	Concentrations in treated waste water at the outlet of the STP 01.04.2021
pH @ 25°C	5.5-9.0	7.4
BOD (3 days at27°C) (mg/L)	<10	6.2
COD (mg/L)	<50	54.5
TSS (mg/L)	<20	2.0
Ammoniacal Nitrogen (mg/L)	<50	2.74
Total Nitrogen (mg/L)	<10	5.69
Fecal Coliform (MPN/100 ml)	Less than 100	$33*10^3$

Parameter	Standards	Concentrations in treated waste water at the outlet of the STP 03.05.2021
pH @ 25°C	5.5-9.0	7.8

	Laboratory	10.02.2022	32	80
2	General Analytical Laboratory	08.12.2021	16	24
		10.02.2022	24	30
3	KSPCB	08.12.2021	32	340
		10.02.2022	39	39
4	IISc	08.12.2021	32	95
		10.02.2022	42	200

As per the above test sample results all the parameters of treated effluent are well within the KSPCB standards.

Further BWSSB requested M/s IISc and issued work order on 17.12.2021 with a period of 03 months to conduct a date series study on treated effluent at 02 MLD Ulsoor STP and also to recommend Chlorination and de-chlorination protocol. M/s IISc submitted their date series analysis report on treated effluent (Annexure – 05). In M/s IISc date series analysis report also all the parameters are well within the standards prescribed from KSPCB.

BWSSB is also dosing the treated effluent with chlorination with 2ppm for nullifying the Fecal Coliform. The residual chlorine at the outlet is in the range of 0.4 to 0.7 (refer Annexure 1). If the chlorine dosage is further increased, as the treated effluent is directly entering into Ulsoor

BOD (3 days at27°C) (mg/L)	<10		5.0
COD (mg/L)	<50		67
TSS (mg/L)	<20		6.0
Ammoniacal Nitrogen (mg/L)	<50		3.0
Total Nitrogen (mg/L)	<10		7.0
Fecal Coliform (MPN/100 ml)	Less than 100		$23*10^3$

Parameter	Standards	Concentrations in treated waste water at the outlet of the STP 28.07.2021
pH @ 25°C	5.5-9.0	7.2
BOD (3 days at27°C) (mg/L)	<10	5.0
COD (mg/L)	<50	35
TSS (mg/L)	<20	8.0
Ammoniacal Nitrogen (mg/L)	<50	1.0
Total Nitrogen (mg/L)	<10	3.0
Fecal Coliform (MPN/100 ml)	Less than 100	$14*10^3$

The results show that the treated sewage is not complying with the discharge standards with reference to COD and Fecal Coliform.
The recommendations of the Joint Committee are not complied.

lake the aquatic Flora &Fauna will be affected.

Also the effluent samples collected from the STP should be analysed within 06 hours in the laboratory, else the results may vary abruptly due to biological reactions in the collected samples.

However, the BWSSB has taken up the work of up-gradation of 20 STPs including 2.00 MLD Ulsoor STP. BWSSB had entrusted the work to **M/s Indian Institute of Science** on 11.11.2020 for conducting studies towards the upgradation of existing 20 STPs of BWSSB to meet the effluent discharge standards as per KSPCB norms(refer Annexure 6). **M/s Indian Institute of Science**has submitted the study reports in the month of January 2022. Based on the report the BWSSB will take up DPR preparation is under process.

With reference to Online effluent monitoring system at outlet of the STP, the work has been completed through **"M/s Aaxis Nano technologies Pvt Ltd"**. The report of Online effluent monitoring system at outlet of the STPis attached (refer Annexure 7).

As it is evident from the reports of M/S IISc, KSPCB and NABL and MoEF&CC Certified external laboratory agencies, BWSSB has never failed in maintaining the quality of the treated effluent. Also BWSSB is taking up all steps to monitor and improve the quality of treated effluent.

2	To identify all the missing links and illegal discharge of waste water into storm water drain and also to complete all the works taken up with respect to up gradation / rehabilitation of sub mains and lateral sewer lines by December 2020, as committed to stop 17 MLD flowing in the storm water drains during dry weather.	1. In order to prevent sewage flow into storm water drain, BWSSB proposed to install 20 works under waste water management zone and 16 works under maintenance zone to upgradation/ rehabilitation of sub mains and lateral sewer lines. The list of works undertaken by BWSSB are enclosed at Annexure 5. 2. It was reported by BWSSB that as on 31.06.2021 out of 36 works, 34 works were completed and remaining 2 works are proposed to complete before December 31, 2021 by maintenance Zone. 3. On 30.08.2021, the Joint Committee members from CPCB and KSPCB visited the site and verified the status of compliance and observed that 34 works were completed. 4. The flow in the combined storm water drain (C- 100) at downstream of Ulsoor lake near Gurudhwar was monitored by the officials of BWSSB using float method in presence of committee members during dry weather on 03/08/2021. The details of the flow are enclosed at Annexure 6 and photographs at Figure 1 & 2. The average flow in the storm water drain during day time is 5.18 MLD. This shows that there is reduction of approximately 12 MLD of sewage discharged to the storm water drain. 5. The grab sample of water was collected from the storm water drain on 03/08/2021 and analyzed at CPCB laboratory (Annexure 7). The analysis results are as follow: Parameter | Concentration	BWSSB has proposed 20 works under waste water management zone and 16 works under maintenance zone to prevent the sewage flow in Storm Water Drain. All the 36 works have been completed.(refer Annexure-8) **By executing the all the above works the flow in SWD is reduced(SWD Photos enclosed).**

		pH @ 25°C: 7.6 BOD (3 days at27°C) (mg/L): 69 COD (mg/L): 114 TDS (mg/L): 368 TSS (mg/L): 26 The analysis result shows that partially treated/untreated sewage is mixed in the storm water drain. **The recommendations of the Joint Committee are partially complied.**	
3	To ensure the implementation of Notification No. FEE 316 EPC 2015, dated 19.01.2016 issued by Forest, Ecology & Environment Secretariatw.r.t. installation of STP and reuse of Treated Sewage.	1. BWSSB vide notification No. BWSSB/C/CAO-S/4138/2015-16, Bengaluru dt 25/02/2016 and amended vide notification No.BWSSB/CAO-S/ 5008 /2017-18 dt 21/2/2018, mandated installation of STP and Dual Piping System in following buildings as per Regulation 4A of Bengaluru Sewage Regulation (Annexure 8): "No water supply or sewerage connection shall be granted by the Board on the application of owner or builder or occupier of new Building Projects, unless sewage treatment plant is established and facilities for reuse of treated effluent by providing dual piping system one for toilet flushing purpose and the other for all purposes in respect of; i. Residential buildings consisting of 20 and above apartments or measuring 2,000 m2 and above whichever is lower; or ii. Commercial building measuring 2,000 m2 and above; or iii. Buildings of educational institutions measuring 5,000 m2 and above."	BWSSB has made mandatory for installation of STP and Dual Piping System by insertion of new regulation "4A" for Bangalore Sewage Regulation for the buildings vide notification No.BWSSB/C/CAO-S/4138/2015-16, Bengaluru Dated 25.02.2016 which is further amended vide notification No.BWSSB/CAO-S/ 5008 /2017-18 dt: 21.2.2018 for the following buildings. Sl. No. / Particulars "4A. Establishment of Sewage Treatment Plants and Dual Piping System:- (1) No water supply or sewerage connection shall be granted by the Board on the application of owner or builder or occupier of new Building Projects, unless sewage treatment plant is established and facilities for reuse of treated effluent by providing dual piping system one for toilet flushing purpose and the other for all purposes in respect of; (i) Residential buildings consisting of 20 and above apartments or measuring 2,000sqmtrs and above whichever is lower; or (ii)Commercial building measuring 2,000sqmtrs and above; or (iii) Buildings of educational institutions measuring 5,000sqmtrs and above. BWSSB has made mandatory to install STP's as per the regulation and around 40 buildings have installed individual STP's (refer Annexure-9).	

		2. The BWSSB reported that 34 numbers of buildings have installed individual STP as 31/06/2021 (Annexure 3). The details of numbers of building in the catchment of Ulsoor lakes mandated to install STPs are not furnished by BWSSB. **The recommendations of the Joint Committee are partially complied.**	BWSSB is insisting the eligible consumers and apartments for implementing the regulations.	
4	To ensure the implementation of BWSSB (Rain Water Harvesting) Regulations 2010 and subsequent amendments w.r.t providing rain harvesting structure by the owner or Occupier of the residential building.	1. As per the Bengaluru Water Supply and Sewerage Act, 2010-72A, every owner or occupier of a building having site area of not less than 216 m2 or every owner who propose to construct a building on a site area of not less than 108 m2 shall provide the rain water harvesting structure for use or ground water recharge (Annexure 3). 2. BWSSB reported that around 1661 numbers of buildings have implemented the rain water harvesting system as on 31/06/2021. Further the details of numbers of building in the catchment of Ulsoor lakes mandated to install rainwater harvesting system are not furnished by BWSSB. **The recommendations of the Joint Committee are partially complied.**	**THE BANGALORE WATER SUPPLY AND SEWERAGE ACT, 2010-72A:** Every owner or occupier of a building having sital area of not less than 216 square meters or every owner who propose to construct a building on a sital area of not less than 108 square meters shall provide the rain water harvesting structure for use or ground water recharge. Around 1661 no. of buildings have implemented the RWH as on date. As per the regulations 2010 and subsequent amendments the new water connections are sanctioning. BWSSB is insisting the eligible consumers and apartments for implementing the regulations.	
6	To install online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis at	3. Online effluent monitoring system at outlet of the STP is not installed. As per the records of BWSSB, tender is invited for installation of online monitoring system at the outlet of STP to monitor quality of treated sewage prior to discharge. The	With reference to Online effluent monitoring system at outlet of the STP, the work has been completed through **"M/s Aaxis Nano technologies Pvt Ltd"**. The report of Online effluent monitoring system at outlet of the STPis attached (refer Annexure 7).	

	appropriate ocation. Until installation of online system, BWSSB may start monitoring pH, DO and Temperature on daily basis along with STP monitoring records.	copy of tender document is enclosed at Annexure 13. **The recommendations of the joint committee are not Complied**		
1(2)	BWSSB: For non-compliance of the discharge standards in 2 MLD STP operated at Ulsoor Lake by BWSSB	**RECOMMENDATIONS** Rs. 2,94,60,000/- (Rupees Two Crore Ninety-Four Lakhs Sixty Thousand only)	BWSSB is also dosing the treated effluent with chlorination with 2ppm for nullifying the Fecal Coliform. The residual chlorine at the outlet is in the range of 0.4 to 0.7 (refer Annexure 1). If the chlorine dosage is further increased, as the treated effluent is directly entering into Ulsoor lake the aquatic Flora &Fauna will be affected. Also the effluent samples collected from the STP should be analysed within 06 hours in the laboratory, else the results may vary abruptly due to biological reactions in the collected samples. However, the BWSSB has taken up the work of up-gradation of 20 STPs including 2.00 MLD Ulsoor STP. BWSSB had entrusted the work to **M/s Indian Institute of Science** on 11.11.2020 for conducting studies towards the upgradation of existing 20 STPs of BWSSB to meet the effluent discharge standards as per KSPCB norms(refer Annexure 6). **M/s Indian Institute of Science**has submitted the study reports in the month of January 2022. Based on the report the BWSSB will take up DPR preparation is under process. As it is evident from the reports of M/S IISc, KSPCB and NABL and	

			MoEF&CC Certified external laboratory agencies, BWSSB has never failed in maintaining the quality of the treated effluent. Also BWSSB is taking up all steps to monitor and improve the quality of treated effluent. As BWSSB is taking up all steps to improve the quality of treated effluent. It is hereby **Praying forcancellation of the imposed Environmental Compansation.**	

Chief Engineer (WWM) (I/C)
BWSSB

Chief Engineer (O/M)-West
BWSSB

Engineering in Chief (I/C)
BWSSB

ANNEXURE-8

Action plan Works proposed to prevent the sewage entry to Storm Water Drains of Ulsoor lake catchment areas under the jurisdiction of Waste Water Management Zone				
Sl. No	**Executing division**	**Name of the Work**	**Estimated Completion date**	**Remarks**
1	WWM(C)Valley	Work of P/L 450mm dia RCC NP-3 line from TAJ Hotel to link at 1600mm dia opposite Gurudwara, Halasuru	Work Completed	
2	WWM(C)Valley	Work of P/L 450/600mm dia RCC NP-3 from Buddavihar road to Wheelers road, Cox Town	Work Completed	
3	WWM(C)Valley	Work of P/L 450mm dia sewer line from MG road towards Halasuru road junction Halasuru	Work Completed	
4	WWM(C)Valley	Work of P/L 600/900mm dia RCC NP-3 sewer line including trenchless technology from Bore Bank road to Robertson road, Frazer town.	Work Completed	
5	WWM(C)Valley	Work of P/L 900mm dia RCC sewer line from Stephens road to Asseya road	Work Completed	
6	WWM(C)Valley	Work of P/L 900mm dia RCC NP-3 class sewer line from SK Garden main road to ITI layout, SK Garden	Work Completed	
7	WWM(C)Valley	Work of P/L 900mm dia RCC NP-3 class sewer line from SK Garden main road to Bore Bank road , SK Garden	Work Completed	
9	WWM(C)Valley	Work of rehabilitation/replacement of 600mm dia sewer line by 900mm dia RCC sewer line from St.Jhones road towards Asseya road, Pulikeshinagar.	Work Completed	
10	WWM(C)Valley	Work of P/L 900mm dia sewer from Halasuru road junction to A.M Road	Work Completed	
11	WWM(C)Valley	Work of rehabilitation/replacement of 600mm dia sewer line by 900mm dia RCC sewer line from PSK Naidu road towards Wheelers road, Cox Town.	Work Completed	
12	WWM(C)Valley	Work of P/L 600/900mm dia RCC sewer line from inside MEG premises to halasuru STP, Halasuru.	Work Completed	
13	WWM(C)Valley	Work of P/L 450mm dia RCC NP-3 class sewer line in place of 230/300mm dia sewer from Narayanapillai	Work	

		street and Mackon road to ArunachalamMudalierBharathinagar, Shivajinagar.	Completed	
14	WWM(C)Valley	Work of rehabilitation 225/450mm dia RCC sewer line by 450/600mm dia sewer line along Wheelers road, Cox Town.	Work Completed	
15	WWM(C)Valley	Work of rehabilitation/replacement of 300/450mm dia RCC sewer line by 450/600mm dia sewer line from St.Alphons road to Pottery road, Sagayapuram.	Work Completed	
16	WWM(C)Valley	Work of P/L 450mm dia RCC Park road to Krishnappa lane, opposite to Football ground Jeevanahalli	Work Completed	
17	WWM(C)Valley	Work of P/L 600mm dia RCC NP-3 class sewer line from Miller tank bund road towards Jasmabhavan Road, Vasanthnagar.	Work Completed	
18	WWM(C)Valley	Work of P/L 900mm dia RCC sewer line inside SWD along Halasuru lake bund at Gangadharchetty road, Halasuru Ward.	Work Completed	
19	WWM(C)Valley	Work of Rehabilitaion/Replacement of 300/450mm dia RCC sewer line by 450/600mm dia sewer line from Gangadharchetty road towards Halasuru lake bund Shivanachetty Garden.	Work Completed	
20	WWM(C)Valley	Work of Rehabilitaion/Replacement of 300/450mm dia RCC sewer line by 450/600/800mm dia sewer line from Miller bund road towards Vasanthnagar.	Work Completed	
Action plan for the Works proposed to prevent the sewage entry to Storm Water Drains of Ulsoor lake catchment areas under the jurisdiction of Maintenance Zone				
1	Central Division	work of providing and laying near 300 mm dia S&S RCC NP3 Class UGD lines along Paranjyothi cross road & connecting to Submain on Paranjyothimain road Coming under Frazer town s/s of AEEC-3 subdvn.	Work Completed	
2	Central Division	Estimate for the work of providing and laying near 300 mm diaRCC NP-3 pipe in place of (0.60)mtr 225mm diaSWline damaged at Rose garden and Ganesha Garden coming under Machalibetta S/s under AEE C-3 Subdvn.	Work Completed	

3	Central Division	Estimate for the work of providing and laying 225 mm dia pipe in place of (0.6 mtr) 225 mm dia SW line damaged at Kateramma Slum Seth line Kateramma slum and Kateramma Slum 1st cross coming under Machalibetta S/s under AEEC-3 subdvn	Work Completed	
4	Central Division	Estimate for the work of providing and laying 225 mm dia pipe in place of (0.6 mtr) 225 mm dia SW line damaged at Yallamma Temple road and cross road in old Byappanahalli coming under Machalibetta S/s under AEEC-3 subdvn	Work Completed	
5	Central Division	Estimate for the work of providing and laying 300 mm dia RCC UGD pipe line of (0.6 mtr) 225 mm dia SW line damaged at KandaswamyMudiliyar road Coming undePillanna garden-2 S/s under AEEC-3 subdvn.	Work Completed	
6	Central Division	Estimate for the work of providing and laying 300 mm dia RCC UGD pipe line in in conservancy of devis road and Hall road from devis road to Vivani road coming under Pillanna garden -2 S/s under AEEC-3 subdvn	Work Completed	
7	Central Division	Estimate for the work of laying 300 mm RCC NP3 class lateral sewer line at NC Colony 3rd cross Annavailankannichapel road and linking to on-going work to WWM zone at Pottery road coming under Frazer town Service station of AEEC-3 Subdvn.	Work Completed	
8	Central Division	Estimate for the work of laying by reversal of 300 mm RCC NP3 (Existing 225 mm SW) class lateral Sewer line at NC colony 3rd cross Coming under Frazer town s/s of AEEC-3 subdvn.	Work Completed	
9	Central Division	Estimate for the work of laying by reversal of 300 mm RCC NP3 (Existing 225 mm SW) class lateral Sewer line at S.k Garden 7th & 8th cross in reverse gradient and linking to existing 300 mm RCC NP3 on main road Coming under frazer town s/s of AEEC-3 subdvn.	Work Completed	
10	Central Division	Estimate for the work of laying by reversal of 300 mm RCC NP3 (Existing 225 mm SW) class lateral Sewer line at S.k Garden 2nd cross near Muthuraman Temple and linking to 600 mm submain sewer on SK garden main road Coming under frazer town s/s of AEEC-3	Work Completed	

		subdvn.		
11	Central Division	Estimate for the work of laying new 300 mm RCC NP3 class lateral sewer line along Meanee Avenue road near ulsoor lake coming underfrazer town s/s of AEEC-3 subdvn.	Work Completed	
12	Central Division	Estimate for the work of linking of laterels to sub main by providing and laying of 230 mm diaGSWpipe and construction of 1.20 dia new manhole at Makkamajid road Nehrupuram to Arunachalammodilaar road Ward 92 shivajinagar coming under coles park s/s AEEC- 2 Sub div.	Work completed	
13	Central Division	Estimate for the work of linking of laterels to sub main by providing and laying of 230 mm diaGSWpipe and construction of 1.20 dia new manhole at Back side of Golden chiken old Korchipalyashivajinagar coming under HGRS/s AEEC-2sub div.	Work completed	
14	Central Division	Work of linking of laterals to sumain by providing and laying of 300mmdia RCC pipe and construction of 1.20mtr dia new manholes at Kamaraj road ,Shivanashetty Garden, Osdorn Road Near Ulsoor lake and near ShanthiSagar Hotel ward no 92 Shivajinagar Coming under CP S/stn of AEEC-2 Subdvn.	Work completed	
15	Central Division	Estimate for the work of linking of laterels to sub main by providing and laying of 230 mm diaGSWpipe and construction of 1.20 dia new manhole at Dikenson road cross to Ganga darchetty road Ward 110 shivajinagar coming under coles park s/s AEEC- 2 Sub div no.	Work completed	
16	Central Division	Estimate for the work of linking of laterels to sub main by providing and laying of 230 mm dia& 300mm dia GSW pipe and construction of new manhole from Tungabadra colony to sub maiat 3rdmainvasanhtnagar coming under Hgr s/s AEEC-2sub div.	Work completed	

Ulsoor Lake Nala Flow Measurment

16/03/2022

Annexure 9

Oppossite to Gurudwara Nala Flow measurment (Combined flow of all the nala/drain)

Sl no	Measurment taken time	Length in meter	Width (average) in meter)	Depth of Flow (average) in Meters	Total Time taken in Seconds	Velocity in meter per sec	Area in Sq meter	Total discharge in Cum per sec	Total discharge in MLD
	1	**2**	**3**	**4**	**5**	**6=2/5**	**7=3x4**	**8=6x7**	**9**
1	7.00AM	10.0	During this time the flow in nala is very less/Negligebale Quantity						0.00
2	10.00AM	10.0	1.05	0.06	169	0.059	0.063	0.0037	0.322
3	1.00PM	10.0	0.75	0.03	205	0.049	0.0225	0.0011	0.095
4	3.00PM	10.0	0.80	0.04	194	0.052	0.032	0.0016	0.143
5	5.00PM	10.0	1.10	0.07	156	0.064	0.077	0.0049	0.426
6	7.00PM	10.0	During this time the flow in nala is very less/Negligebale Quantity						0.00
Average Sewage Flow from 7.00am to 7.00Pm (for 12.00Hours)									**0.986**
Average Sewage Flow for one day (for 24.00Hours)									**0.493**

Note: During Night hours the flow in nala is very less/Negligebale Quantity.

Executive Engineer
(WWM) C... BWSSB,
OMSR ...
3rd Main Road, Laxmamma...
Banaswadi, Bengaluru - 560 043.

Exisitng Sewer network details inside Storm water drain in Ulsoor Lake Catchment

Total length of Existing sewer network inside Storm water drain in ulsoor lake catchment area is - **3.93KM**
Note : There is no space/land /buffer zone along the Storm water drain for above mentioned streaches hence the existing sewer line has laid inside SWD and If BBMP provides buffer zone/land along the storm water drain, the existing sewer network can be shifted out of the Storm water drain.

Executive Engineer
(WWM) O/o Executive Engineer BWSSB,
OMBR CLR, OMBR Layout,
3rd Main Road, Laxmamma Layout,
Banasawadi, Bengaluru - 560 043.

Ulsoor Lake Nala Flow Measurment – 16/4/2022.									
Oppossite to Gurudwara Nala Flow measurment (Combined flow of all the nala/drain)									
Sl no	Measurment taken time	Length in meter	Width (average) in meter)	Depth of Flow (average) in Meters	Total Time taken in Seconds	Velocity in meter per sec	Area in Sq meter	Total discharge in Cum per sec	Total discharge in MLD
	1	2	3	4	5	6=2/5	7=3x4	8=6x7	9
1	7.00AM	10.0	During this time the flow in nala is very less/Negligebale Quantity						0.00
2	10.00AM	10.0	0.85	0.05	187	0.053	0.0425	0.0023	0.196
3	1.00PM	10.0	0.60	0.02	242	0.041	0.012	0.0005	0.043
4	3.00PM	10.0	0.50	0.02	204	0.049	0.01	0.0005	0.042
5	5.00PM	10.0	0.80	0.03	198	0.051	0.024	0.0012	0.105
6	7.00PM	10.0	During this time the flow in nala is very less/Negligebale Quantity						0.00
Average Sewage Flow from 7.00am to 7.00Pm (for 12.00Hours)									0.386
Average Sewage Flow for one day (for 24.00Hours)									0.193

Note: During Night hours the flow in nala is very less/Negligebale Quantity.

EE(WWM-CV)

Annexure 11

cpcb

Recognised under E(P) Act, 1986
(Legal 42(3)/87, dated 6th March, 2017)

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD,
(Ministry of Environment, Forest & Climate Change Govt. Of INDIA)
REGIONAL DIRECTORATE, BENGALURU

TC-7739

TEST REPORT

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: Drain near Guruduwara Temple Ulsoor lake, Bengaluru.
Nature of sample: Waste water	Sampling plan& Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:15.03.2022	Date of receipt: 15.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -25.03.2022.	Date of report issue: 28.03.2022
Code no. of sample: WW/03/2022/64	Req. slip no. / Date: 23W/15.03.2022.
Page No: 01	Report issue no.: WW/03/2022/64

Sl. No	Name of the Parameter with unit	Range of testing / Limit of Detection	Sampling location	Test Method Specification
			Drain near Guruduwara temple	
1.	pH at 25°C	1-14	7.3	APHA, 4500-H'B, , 23rd Ed., 2017
2.	EC, mg/L	5 - 20000 µS/cm	697	APHA (22nd Ed.,): 2017 2510-B
3.	COD, mg/L	4 - 150000 mg/L	36	IS 3025 (part 58): 2006
4.	$BOD_{3d,27°C}$, mg/L	2 - 75000 mg/L	11	IS: 3025, Part 44-1993, Reaffirmed 2009
5.	TDS at 180°C,mg/L	5 - 100000 mg/L	394	APHA (23rd Ed.,): 2017, 2540- C
6.	TSS at 103°C - 105°C, mg/L	5 – 2000 mg/L	BDL	APHA (23rd Ed.,): 2017 2540-D,
7.	Ammonical Nitrogen as N, mg/L	1 - 500 mg/L	1.97	APHA, 4500-NH_3 B & C, 23rd Ed., 17
8.	Total Kjeldahl Nitrogen (TKN) as N, mg/L	2 – 1000 mg/L	12.5	APHA (23rd Ed.,): 2017 4500-Norg-B,

A. Gnanavelu

Authorized signatory
(A.Gnanavelu)
Scientist 'C'

The report shall not be reproduced, except in full, without the written approval of the laboratory.

- Compliance/non-compliance opinion not sought by customer.
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested
- Parameters marked * are not under NABL scope.

Regional Directorate, NisargaBhawan, A-Block, 1st& 2nd floors, Thimmaiah Road, 7th D main, Shivanagar, Bengaluru –79.
(Telephone: 080-23233739, 23222539, FAX: 080-23234059) (E-Mail: cpcbszo@yahoo.com, zobangalore.cpcb@nic.in)

--- End of Report---

cpcb

IS/ISO: 45001:2018
Certified Laboratory
Recognised under E(P) Act, 1986

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment, Forest & Climate Change)
REGIONAL DIRECTORATE (SOUTH), BENGALURU

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: Drain near Ulsoor lake, Bengaluru.
Nature of sample: Waste water	Sampling plan & Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:15.03.2022	Date of receipt: 15.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -08.04.2022.	Date of report issue: 11.04.2022
Code no. of sample: BSW/03/2022/31	Req. slip no. / Date: 17 BSW/15.03.2022.
Page No: 01	Report issue no.: BSW /03/2022/31

Sl. No	Name of the Parameter with unit	Sampling location	Test Method Specification
		Drain near Guruduwara	
5.	Total Coliform (MPN/100ml)	85000	APHA, 9221 B, 23rd Ed., 2017
6.	Fecal Coliform (MPN/100ml)	24500	APHA, 9221 E, 23rd Ed., 2017

Authorised signatory

Deepesh V

- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- Compliance/non-compliance opinion not sought by customer
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested

--- End of Report---

RNI No. KARBIL/2001/47147

ಕರ್ನಾಟಕ ರಾಜ್ಯಪತ್ರ

ಅಧಿಕೃತವಾಗಿ ಪ್ರಕಟಿಸಲಾದುದು

ವಿಶೇಷ ರಾಜ್ಯ ಪತ್ರಿಕೆ

ಭಾಗ- III	ಬೆಂಗಳೂರು, ಬುಧವಾರ, ಜನವರಿ ೨೦, ೨೦೧೬ (ಪುಷ್ಯ ೩೦, ಶಕ ವರ್ಷ ೧೯೩೭)	ಪಂ. ೧೧೩
Part- III	Bengaluru, Wednesday, January 20, 2016 (Pushya 30, Shaka Varsha 1937)	No. 113

FOREST, ECOLOGY & ENVIRONMENT SECRETARIAT

NOTIFICATION

No. FEE 316 EPC 2015, Bengaluru, dated:19.01.2016

Whereas, Tanks/Lakes both in Urban and rural areas were serving as source of drinking water to people, animals and birds and helped in increasing the fertility of the lands through controlling soil erosion which in turn enhanced the agricultural production. Tanks served as habitat for aquatic fauna boosting fish production and most importantly increasing the ground water table. Lakes are considered as lung spaces of cities and help moderate vagaries of climate and maintenance of ambient temperatures. Construction activities, destruction of tanks and wetland systems have added to the deterioration of urban environment.

Whereas, siltation, pollution, encroachment of Raja Kaluves, construction of apartments and entry of untreated sewage into the tanks, have resulted in deterioration to the level of hyper eutrophication state in many Tanks / Lakes in the urban areas. The services that the tanks were rendering earlier are vanished in Bengaluru and other urban areas. Such tanks lakes are contrarily posing threat in many ways and causing environment and health hazards.

Whereas, the foams and ignition phenomena observed in the Bellandur Amani Lake and Varthur Lake in Bengaluru in the recent past are the manifestations of severity of the problem.

Whereas, the inspection and monitoring by the Central Pollution Control Board and the Karnataka State Pollution Control Board reveals that the following are the chief causes for deterioration of water quality in the said lakes.

1. Increasing discharge of untreated wastewater containing abnormal quantity of organic matter, phosphorus, oil & grease, chemicals from detergents & cleaners etc. over a long period and its settlement as sediment.
2. Oil and grease from industrial activity, sewage and garbage have accumulated in sewer lines and in some parts of Lake. Due to heavy rains, the oil & grease accumulated in the sewer lines and storm water drains, etc. have been flushed to the surface of the lake.

Whereas, the State Government in exercise of powers conferred under 18 (1) (b) of the Water (Prevention and Control of Pollution) Act 1974 have issued direction to the Karnataka State Pollution Control Board vide the Notification No. FEE 22 EPC 2009 (P-1), dated: 04.08.2010 to exempt the residential and commercial construction of less than 20,000 Square meter built up area from the consent mechanism within the sewered areas wherein permission from Bangalore Water Supply and Sewerage Board (BWS&SB)/ BBMP/ Municipalities / Corporations is obtained to discharge sewage in sewer lines and charges paid to these authorities.

Whereas, the Central Pollution Control Board Vide No.A-19014/41/2006-MON/1242, dated:22.05.2015 have under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act 1974 directed the Karnataka State Pollution Control Board to ensure that all apartments with more than 50 units shall treat sewage in their own STPs and reuse the treated sewage within its premises.

Whereas, the Karnataka State Pollution Control Board has a mandate to comply with the directions issued by the Central Pollution Control Board under Section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974.

Whereas, the Karnataka State Pollution Control Board vide latter No.PCB/CNP/10/GEN/15/277, dated:13.10.2015 have submitted the proposal to the Government for issue of direction under Section 5 of the Environment (Protection) Act, 1986 to the concerned

Planning Authority i.e Bangalore Development Authority (BDA) and Bruhath Bengaluru Mahanagara Palike (BBMP) to insist for installation of STPs in Residential Apartments with 50 units and above irrespective of existence of sewer line and for treatment of sewage to urban reuse standards and to reuse the same within their premises.

Whereas, it is opined that establishment of sewage treatment plants in Group Housing Projects, Commercial Establishments and such other Institutions help in prevention of pollution of water bodies apart from reducing the fresh water demand in such establishments as Bangalore is facing shortage of fresh water supply by BWS&SB.

Wherefore, in order to ensure treatment of sewage generated in the Group Housing Projects, Commercial Establishments and such other Institutions and to ensure reuse of treated water for non-potable purposes apart from ensuring prevention of pollution of lakes and other water bodies, the State Government hereby issue direction under section 5 of the Environment (Protection) Act, 1986 in exercise of the powers delegated to the State Government vide Notification No.S.O.152 (E), dated: 10.02.1988 to the Authorities listed in the Table-1 below as mentioned against each of such authorities.

Table - 1

Sl. No.	Designation of the Authority issued with the direction under section 5 of Environment (Protection) Act, 1986	Direction under section 5 of Environment (Protection) Act, 1986
1	2	3
1.	The Commissioner, Bruhath Bengaluru Mahanagara Palike (BBMP), N.R.Square, Bengaluru-560002.	Shall approve plan for construction of buildings and development of layout in respect of activities listed in Table-2 of this notification only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity.
2.	The Commissioner, Bangalore Development Authority (BDA), T.Chowdaiah Road, Kumara Park West, Bengaluru - 560020.	
3.	The Commissioner, the Bangalore Metropolitan Region Development Authority (BMRDA), No.1, Ali Askar Road, Bengaluru- 560052.	
4.	The Commissioner of all the City Corporations in the State	
5.	The Chairman, Bangalore Water Supply and Sewerage Board (BWSSB), Cauvery Bhavan, Bengaluru – 560009	Shall provide water connection to the activities covered under this direction in Table-2 only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity.
6.	Director of Municipal Administration, V.V.Main Tower, Dr. B.R.Ambedkar Veedhi, Bengaluru-560001.	Shall ensure that the urban local bodies in the State coming under the jurisdiction of DMA approve plan for construction of buildings and development of layout in respect of activities listed in Table-2 of this notification only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity.
7.	The Managing Director, Karnataka Urban Water Supply and Sewerage Board, No.6, JalaBhavan 1st Stage, 1st Phase, BTM Layout, Bannerghatta Road, Bengaluru - 560029	Shall provide water connection to the activities covered under this direction in Table -2, only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity.

Sl. No.	Designation of the Authority issued with the direction under section 5 of Environment (Protection) Act, 1986	Direction under section 5 of Environment (Protection) Act, 1986
1	2	3
8.	The Director, Town Planning, M.S Building, Bengaluru.	Shall approve plan for construction of buildings and development of layout in respect of activities listed in Table -2 of this notification only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity.
9.	CEO & Executive Member, Karnataka Industrial Areas Development Board (KIADB), No. 49, East Wing, Khanija Bhavan, Race Course Road, Bangalore – 560001.	Shall approve plan for construction of buildings and development of layout in respect of activities listed in Table-2 of this notification either for their own use or for the occupiers only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity.
10.	The Managing Director, BESCOM, CESCOM, GESCOM, MESCOM and HESCOM.	Shall provide permanent power connection to the activities covered under this direction at Table-2, only after production of copy of Consent for Establishment (CFE) issued under the Water (Prevention and Control of Pollution) Act, 1974 by the Karnataka State Pollution Control Board for establishment of sewage treatment plant of appropriate capacity. However, this direction shall not be made applicable for temporary connection provided for construction phase.
11.	The Member Secretary, Karnataka State Pollution Control Board, No. 49, Parisasra Bhavana, Church Street, Bengaluru.	Shall include the activities covered under this direction under the consent mechanism in accordance with the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Rules made thereunder and shall ensure that such activities listed in Table-2 also are established along with sewage treatment plant of appropriate capacity and mechanism for reuse of treated water is put in place as directed by CPCB. Such activities shall be issued with CFE / CFO following the due procedure of law, after ensuring permissibility of such activity.

The direction issued under this Notification in column 3 of the above Table-1 shall be made applicable for the activities listed in the Table-2 below:

Table – 2

Sl. No.	Activities that need to install Sewerage Treatment Plants (STP) compulsorily and ensure reuse of treated water
i)	All the residential Group Housing Projects / Apartments with 20 Units and above or having a total built up area of 2,000 square meter including basement shall install STP.
ii)	Commercial constructions Projects (Commercials Complexes, office, IT related activities etc.,) with total built up area of 2,000 Squire meter and above shall install STP.
iii)	Educational Institutions with or without Hostel facility having total built up area of 5,000 Squire meter and above shall install STP.
iv)	Townships and Area Development Projects with an area of 10 acres and above shall install STP.

This direction will come to effect from the date of its publication in the Government Gazette.

The direction issued to the Karnataka State Pollution Control Board vide Government Notification No. FEE 22 EPC 2009 (P-1), dated: 04.08.2010 stands withdrawn.

By Order & in the Name of the Governor of Karnataka

ANDANAYYA MATHAD
Under Secretary to Government
(Ecology & Environment)
Forest, Ecology & Environment Dept.,

ಸರ್ಕಾರಿ ಮುದ್ರಣಾಲಯ, ವಿಕಾಸ ಸೌಧ ಪಡಸಾಲೆ, ಬೆಂಗಳೂರು. (ಪಿಡಿ) 100 ಪ್ರತಿಗಳು)

Annexure 7

Email: cewwm@bwssb.gov.in

Ph: 080-22945106

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಳಿ

BANGALORE WATER SUPPLY & SEWERAGE BOARD

O/o Chief Engineer(WWM), 5th Floor, Cauvery Bhavan, Bangalore-560009.

No. BWSSB/CE(WWM)/ACE(WWM)-1/DCE(WWM)/TA-1/ 108/2022-23 Date : 22/04/2022

To

केन्द्रीय प्रदुषण निर्यन्त्रण बोर्ड
25 APR 2022
बेंगलूर/पावती सं.....72.....

The Senior Environmental Officer
Parisara Bhavana,
#49, Church Street,
Bengaluru -560001.

Sir,

Sub: Non Conformance to KSPCB Standards under the provision of Water (Prevention and Control of Pollution) Act, 1974 Reg:-Suo-Mutto case O.A.54/2016 at Hon'ble NGT.

Ref: No.BWSSB/ACE(WWM)-3/PB/28/2022-23 Dt:13-04-2022

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With reference to the above as desired in the letter cited at reference the action taken reports and updated status of implementation of recommendations and suggestions of the Joint Committee report in the required formats are enclosed with this letter for your informations and further needful in the matter.

Yours faithfully

22/4/22

Chief Engineer(WWM)(I/C)
BWSSB

Encl: As above.

Copy to:

1. The Environmental Officer, Karnataka State Pollution Control Board, Bengaluru City East, Thimmaiah Road, 7th D – Main, Shivanagar, Bengaluru-560079.
2. The Regional Officer, Central Pollution Control Board, Thimmaiah Road, 7th D-main, Shivanagar, Bengaluru-560079.

25/3/2022

Received on 25/4/2022.

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI
ORIGINAL APPLICATION NO. 54 OF 2016 (SZ)
(Through video conference)

IN THE MATTER OF :-

Suo Motu based on the news item published in The Hindu dated 08.03.2016 titled "Lake in heart of Bengaluru City turns Graveyard for fish".

Court on its own Motion ... Applicant(s)

:: VERSUS ::

Government of Karnataka,
Rep. by its Chief Secretary,
Bengaluru and Others.

Date of hearing: 23.09.2021.
Date of hearing: 27.10.2021.
Date of hearing: 10.02.2022.

... Respondent(s)

Compliance report in respect of the directions issued by this Hon'ble National Green Tribunal in its order dated: 23-09-2021

Sl. No.	Suggestions of the Joint Committee in the report dated 10.08.2020	Measures implemented by Joint Committee	Compliance / Status of the works	Remarks
1	To operate the existing STP of 2 MLD at its full capacity with a compliance to the discharge Standards, so that additional 0.5 MLD can be discharged to Ulsoor Lake, may adequate to maintain loss of water due to evaporation, infiltration etc.,	1. During the inspection by the Joint Committee on 28.07.2021, the STP was operating at 1.8 MLD capacity. The daily flow meter readings recorded by BWSSB during June and July, 2021 were verified. It is observed that from 01.06.2021 to 08.07.2021, STP was operated at an average capacity of 0.9 MLD and in the range 0.94 MLD to 1.52 MLD. 2. During 09.07.2021 to 27.07.2021, the STP was operated in the range of 1.7 to 1.9 MLD capacity and average capacity of treatment was 1.84 MLD the records of flow meter readings at the outlet of the STP from 01.06.2021 to 27.07.2021 is enclosed at Annexure 2. 3. It is reported by the BWSSB that remaining 0.20 MLD of sewage will be treated in the STP by modifying the inlet arrangements within one-monthie, 31.08.2021 (Annexure 3) The recommendations of the Joint Committee are partially	After modification of the inlet arrangements, from August 2021 the inlet flow is increased to 1.95 MLD– 2.00 MLD (refer Annexure 1). The joint committee also visited site and inspected the 02 MLD Ulsoor STP.	

complied.

4. Every month, KSPCB is monitoring the quality of treated sewage discharged from the outlet of the STP. The grab sample was collected at the outlet of the STP on 28.07.2021 in presence of Joint Committee members and samples were analyzed at KSPCB Laboratory.

The analysis results of the treated sewage collected from STP on 31.03.2021, 01.04.2021, 03.05.2021 by KSPCB and during Joint Committee visit on 28.07.2021 are as follows (Annexure 4)

Parameter	Standards	Concentrations treated waste water at the out of the STP 01.03.2021
pH @ 25°C	5.5-9.0	7.0
BOD (3 days at27°C) (mg/L)	<10	5.0
COD (mg/L)	<50	55
TSS (mg/L)	<20	12
Ammoniacal Nitrogen (mg/L)	<50	27.1
Total Nitrogen (mg/L)	<10	37.0
Fecal Coliform (MPN/100 ml)	Less than 100	27*10□

The daily in-house lab reports shows that the treated effluent is maintained to the standards set by the KSPCB (refer Annexure 1). The Monthly reports of the samples collected by the external agency i.e., **"M/s General Analytical Laboratory"** also confirms that the treated effluent is maintained to the standards set by KSPCB (refer Annexure 2). In the month of September 2021 KSPCB has directed to test the effluent samples with MOEF and CC accredited laboratory. The instructions were followed and the sample got tested in **"M/s SLN Testing Laboratory".** The reports given by this laboratory also confirms to KSPCB standards (refer Annexure 3).

Further BWSSB requested to **M/s IISc** for treated effluent sample study and to suggest any advanced technologies for reducing COD and Fecal Coliform (refer Annexure 4). Hence **M/s IIScalong** with **CPCB** (Only on 10.02.2022), **KSPCB** and other two NABL & MoEF&CC accredited laboratories collected the samples on 08.12.2021 and 10.02.2022 and given the analysis reports in which all parameters are within the standards prescribed by KSPCB (refer Annexure 4).

Sl. No.	Name of the Laboratories	Date of Sample Collection	COD (Mg/L)	Fecal Coliform (MPN/100ml)
1	SLN Testing	08.12.2021	48	90

Parameter	Standards	Concentrations in treated waste water at the outlet of the STP 01.04.2021
pH @ 25°C	5.5-9.0	7.4
BOD (3 days at27°C) (mg/L)	<10	6.2
COD (mg/L)	<50	54.5
TSS (mg/L)	<20	2.0
Ammoniacal Nitrogen (mg/L)	<50	2.74
Total Nitrogen (mg/L)	<10	5.69
Fecal Coliform (MPN/100 ml)	Less than 100	$33*10^3$

Parameter	Standards	Concentrations in treated waste water at the outlet of the STP 03.05.2021
pH @ 25°C	5.5-9.0	7.8

	Laboratory	10.02.2022	32	80
2	General Analytical Laboratory	08.12.2021	16	24
		10.02.2022	24	30
3	KSPCB	08.12.2021	32	340
		10.02.2022	39	39
4	IISc	08.12.2021	32	95
		10.02.2022	42	200

As per the above test sample results all the parameters of treated effluent are well within the KSPCB standards.

Further BWSSB requested M/s IISc and issued work order on 17.12.2021 with a period of 03 months to conduct a date series study on treated effluent at 02 MLD Ulsoor STP and also to recommend Chlorination and de-chlorination protocol. M/s IISc submitted their date series analysis report on treated effluent (Annexure – 05). In M/s IISc date series analysis report also all the parameters are well within the standards prescribed from KSPCB.

BWSSB is also dosing the treated effluent with chlorination with 2ppm for nullifying the Fecal Coliform. The residual chlorine at the outlet is in the range of 0.4 to 0.7 (refer Annexure 1). If the chlorine dosage is further increased, as the treated effluent is directly entering into Ulsoor

BOD (3 days at27°C) (mg/L)	<10		5.0
COD (mg/L)	<50		67
TSS (mg/L)	<20		6.0
Ammoniacal Nitrogen (mg/L)	<50		3.0
Total Nitrogen (mg/L)	<10		7.0
Fecal Coliform (MPN/100 ml)	Less than 100		$23*10^3$

Parameter	Standards	Concentrations in treated waste water at the outlet of the STP 28.07.2021
pH @ 25°C	5.5-9.0	7.2
BOD (3 days at27°C) (mg/L)	<10	5.0
COD (mg/L)	<50	35
TSS (mg/L)	<20	8.0
Ammoniacal Nitrogen (mg/L)	<50	1.0
Total Nitrogen (mg/L)	<10	3.0
Fecal Coliform (MPN/100 ml)	Less than 100	$14*10^3$

The results show that the treated sewage is not complying with the discharge standards with reference to COD and Fecal Coliform.
The recommendations of the Joint Committee are not complied.

lake the aquatic Flora &Fauna will be affected.

Also the effluent samples collected from the STP should be analysed within 06 hours in the laboratory, else the results may vary abruptly due to biological reactions in the collected samples.

However, the BWSSB has taken up the work of up-gradation of 20 STPs including 2.00 MLD Ulsoor STP. BWSSB had entrusted the work to **M/s Indian Institute of Science** on 11.11.2020 for conducting studies towards the upgradation of existing 20 STPs of BWSSB to meet the effluent discharge standards as per KSPCB norms(refer Annexure 6). **M/s Indian Institute of Science**has submitted the study reports in the month of January 2022. Based on the report the BWSSB will take up DPR preparation is under process.

With reference to Online effluent monitoring system at outlet of the STP, the work has been completed through **"M/s Aaxis Nano technologies Pvt Ltd"**. The report of Online effluent monitoring system at outlet of the STPis attached (refer Annexure 7).

As it is evident from the reports of M/S IISc, KSPCB and NABL and MoEF&CC Certified external laboratory agencies, BWSSB has never failed in maintaining the quality of the treated effluent. Also BWSSB is taking up all steps to monitor and improve the quality of treated effluent.

2	To identify all the missing links and illegal discharge of waste water into storm water drain and also to complete all the works taken up with respect to up gradation / rehabilitation of sub mains and lateral sewer lines by December 2020, as committed to stop 17 MLD flowing in the storm water drains during dry weather.	1. In order to prevent sewage flow into storm water drain, BWSSB proposed to install 20 works under waste water management zone and 16 works under maintenance zone to upgradation/ rehabilitation of sub mains and lateral sewer lines. The list of works undertaken by BWSSB are enclosed at Annexure 5. 2. It was reported by BWSSB that as on 31.06.2021 out of 36 works, 34 works were completed and remaining 2 works are proposed to complete before December 31, 2021 by maintenance Zone. 3. On 30.08.2021, the Joint Committee members from CPCB and KSPCB visited the site and verified the status of compliance and observed that 34 works were completed. 4. The flow in the combined storm water drain (C- 100) at downstream of Ulsoor lake near Gurudhwar was monitored by the officials of BWSSB using float method in presence of committee members during dry weather on 03/08/2021. The details of the flow are enclosed at Annexure 6 and photographs at Figure 1 & 2. The average flow in the storm water drain during day time is 5.18 MLD. This shows that there is reduction of approximately 12 MLD of sewage discharged to the storm water drain. 5. The grab sample of water was collected from the storm water drain on 03/08/2021 and analyzed at CPCB laboratory (Annexure 7). The analysis results are as follow: Parameter | Concentration	BWSSB has proposed 20 works under waste water management zone and 16 works under maintenance zone to prevent the sewage flow in Storm Water Drain. All the 36 works have been completed.(refer Annexure-8) **By executing the all the above works the flow in SWD is reduced(SWD Photos enclosed).**

		pH @ 25°C: 7.6 BOD (3 days at27°C) (mg/L): 69 COD (mg/L): 114 TDS (mg/L): 368 TSS (mg/L): 26 The analysis result shows that partially treated/untreated sewage is mixed in the storm water drain. **The recommendations of the Joint Committee are partially complied.**	
3	To ensure the implementation of Notification No. FEE 316 EPC 2015, dated 19.01.2016 issued by Forest, Ecology & Environment Secretariatw.r.t. installation of STP and reuse of Treated Sewage.	1. BWSSB vide notification No. BWSSB/C/CAO-S/4138/2015-16, Bengaluru dt 25/02/2016 and amended vide notification No.BWSSB/CAO-S/ 5008 /2017-18 dt 21/2/2018, mandated installation of STP and Dual Piping System in following buildings as per Regulation 4A of Bengaluru Sewage Regulation (Annexure 8): "No water supply or sewerage connection shall be granted by the Board on the application of owner or builder or occupier of new Building Projects, unless sewage treatment plant is established and facilities for reuse of treated effluent by providing dual piping system one for toilet flushing purpose and the other for all purposes in respect of; i. Residential buildings consisting of 20 and above apartments or measuring 2,000 m2 and above whichever is lower; or ii. Commercial building measuring 2,000 m2 and above; or iii. Buildings of educational institutions measuring 5,000 m2 and above."	BWSSB has made mandatory for installation of STP and Dual Piping System by insertion of new regulation "4A" for Bangalore Sewage Regulation for the buildings vide notification No.BWSSB/C/CAO-S/4138/2015-16, Bengaluru Dated 25.02.2016 which is further amended vide notification No.BWSSB/CAO-S/ 5008 /2017-18 dt: 21.2.2018 for the following buildings. Sl. No. | Particulars "4A. Establishment of Sewage Treatment Plants and Dual Piping System:- (1) No water supply or sewerage connection shall be granted by the Board on the application of owner or builder or occupier of new Building Projects, unless sewage treatment plant is established and facilities for reuse of treated effluent by providing dual piping system one for toilet flushing purpose and the other for all purposes in respect of; (i) Residential buildings consisting of 20 and above apartments or measuring 2,000sqmtrs and above whichever is lower; or (ii)Commercial building measuring 2,000sqmtrs and above; or (iii) Buildings of educational institutions measuring 5,000sqmtrs and above. BWSSB has made mandatory to install STP's as per the regulation and around 40 buildings have installed individual STP's (refer Annexure-9).	

		2. The BWSSB reported that 34 numbers of buildings have installed individual STP as 31/06/2021 (Annexure 3). The details of numbers of building in the catchment of Ulsoor lakes mandated to install STPs are not furnished by BWSSB. **The recommendations of the Joint Committee are partially complied.**	BWSSB is insisting the eligible consumers and apartments for implementing the regulations.	
4	To ensure the implementation of BWSSB (Rain Water Harvesting) Regulations 2010 and subsequent amendments w.r.t providing rain harvesting structure by the owner or Occupier of the residential building.	1. As per the Bengaluru Water Supply and Sewerage Act, 2010-72A, every owner or occupier of a building having site area of not less than 216 m2 or every owner who propose to construct a building on a site area of not less than 108 m2 shall provide the rain water harvesting structure for use or ground water recharge (Annexure 3). 2. BWSSB reported that around 1661 numbers of buildings have implemented the rain water harvesting system as on 31/06/2021. Further the details of numbers of building in the catchment of Ulsoor lakes mandated to install rainwater harvesting system are not furnished by BWSSB. **The recommendations of the Joint Committee are partially complied.**	**THE BANGALORE WATER SUPPLY AND SEWERAGE ACT, 2010-72A:** Every owner or occupier of a building having sital area of not less than 216 square meters or every owner who propose to construct a building on a sital area of not less than 108 square meters shall provide the rain water harvesting structure for use or ground water recharge. Around 1661 no. of buildings have implemented the RWH as on date. As per the regulations 2010 and subsequent amendments the new water connections are sanctioning. BWSSB is insisting the eligible consumers and apartments for implementing the regulations.	
6	To install online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis at	3. Online effluent monitoring system at outlet of the STP is not installed. As per the records of BWSSB, tender is invited for installation of online monitoring system at the outlet of STP to monitor quality of treated sewage prior to discharge. The	With reference to Online effluent monitoring system at outlet of the STP, the work has been completed through **"M/s Aaxis Nano technologies Pvt Ltd"**. The report of Online effluent monitoring system at outlet of the STPis attached (refer Annexure 7).	

	appropriate ocation. Until installation of online system, BWSSB may start monitoring pH, DO and Temperature on daily basis along with STP monitoring records.	copy of tender document is enclosed at Annexure 13. **The recommendations of the joint committee are not Complied**		
1(2)	BWSSB: For non-compliance of the discharge standards in 2 MLD STP operated at Ulsoor Lake by BWSSB	**RECOMMENDATIONS** Rs. 2,94,60,000/- (Rupees Two Crore Ninety-Four Lakhs Sixty Thousand only)	BWSSB is also dosing the treated effluent with chlorination with 2ppm for nullifying the Fecal Coliform. The residual chlorine at the outlet is in the range of 0.4 to 0.7 (refer Annexure 1). If the chlorine dosage is further increased, as the treated effluent is directly entering into Ulsoor lake the aquatic Flora &Fauna will be affected. Also the effluent samples collected from the STP should be analysed within 06 hours in the laboratory, else the results may vary abruptly due to biological reactions in the collected samples. However, the BWSSB has taken up the work of up-gradation of 20 STPs including 2.00 MLD Ulsoor STP. BWSSB had entrusted the work to **M/s Indian Institute of Science** on 11.11.2020 for conducting studies towards the upgradation of existing 20 STPs of BWSSB to meet the effluent discharge standards as per KSPCB norms(refer Annexure 6). **M/s Indian Institute of Science**has submitted the study reports in the month of January 2022. Based on the report the BWSSB will take up DPR preparation is under process. As it is evident from the reports of M/S IISc, KSPCB and NABL and	

			MoEF&CC Certified external laboratory agencies, BWSSB has never failed in maintaining the quality of the treated effluent. Also BWSSB is taking up all steps to monitor and improve the quality of treated effluent. As BWSSB is taking up all steps to improve the quality of treated effluent. It is hereby **Praying forcancellation of the imposed Environmental Compansation.**	

Chief Engineer (WWM) (I/C)
BWSSB

Chief Engineer (O/M)-West
BWSSB

Engineering in Chief (I/C)
BWSSB

ANNEXURE - 09.

Details of STP Constructed after 19.01.2016 (Annexure A)

Sl No	Name	RR No	STP Sanct Date	Number of Floors	Capacity of STP	Treatment plant		Treatment plant			Treated Sewerage water		Excess Treatead sewerage water Disposal type	Remarks
				Multistore House	Day/KL	Working	Not working	Electrical connec details	Register maintnied by S/stn	Dual piping system	Used	Not used		
1	2		3	4	5	7	8	9	10	11	12	13	14	15
1/1/1900	ITC Gardenia, #1, Sy no.334, Residency road.	C-239433	2/16/2016	√ (3BF+GF+GMZF+ 11F)	170	√		E3HT302	√	√	√		Cooling tower,Flusing, Garden	
=	Prestige Koday tower, #3, Rajbhavan road.	C-202928	2/16/2016	√ (2BF+GF+ 14F)	55			2EHT193	—	√	—	—	—	Building is vacant Not yet commissioned.
3	J.W.Marriot, no.24/1, Vittal malya road,bangalore	C-242106	2/19/2016	3BF+GF+18F	250 to 300	√	—	3EHT335	√	√	√	—	Flusing,Cloud ng, washing, cooling tower, Garden	
4	Mallya Hospital, Vittal Mall road, Bangalore	C-229972	1/19/2016	√	120KL	√	—	3EHT045	√	—	—	√	---	Oldng building
5	Bowring Hospital, Hospital road.	C-225360 C-227201 C-209887	1/20/2016	√	300KL	√	—	E2HT043	√	√	√	—	Flusing,Cleaning, Park, Garden	
6	CSI Hospital, No.150, HKP Road, Browway road,Shivajinagar	C-223391 C-208125	1/20/2016	√	200KL	√	—	2EHT011	√	√	√	—	Flusing, Gardenin Floor wash	
7	UB City, Kasuthraba Road, vittal mall road, Bangalore	C-228085	1/20/2016	√	250 KL	√	—	3EHT241	√	√	√	---	Flusing, Garden	
8	Forties Hospita,No.14, cunningham rd, Bangalore	c-200538	1/21/2016	√	50KL	√	---	2EP2584	√	√	√	—	Washing, Garden	
9	Jain Hospital, Millers Rd, Bangalore	C-202693 C-223803	1/21/2016	√	400 KL	√	---	2EHT39	√	√	√	—	Washing, Flusing, Garden	

10	Vikaram Hospital,No.71/1, Millers rd, Bangalore	C-227700	1/21/2016	√	70KL	√	—	2EHT18	√	√	√	—	Flusing,Garden,Washing	
11	KSCA	C-229001	1/22/2016	√	250KL	√	—		√	—	√	—	Garden,Washing	
12	ST.MARKS HOTEL PVT.LTD	C-230286	12/22/2016	√	30 KL	√	—	3EHT55	√	—	√	—	Building washing.	
13	SMITHALINE BECHAM PHARMATICA	C-241694	12/6/2016	√	16 KL	√	—	W4HT59	√	—	√	—	Ground washing. flower washing	
14	YESHAVANTHA RAO CHOGALE EMBAS	C-231063		√	50 KL	√	—		√	—	√	—		
15	HOTEL RAMA LTD	C-221477	1/1/2017	√	20KL	√	—	3EHT39	√	—	√	—	Garden, flower washin. Bath romm clean	
16	KRIZM HOTELS PVT LTD	C-223616	11/4/2010	√	90KL	√	—	2EHT158	√	—	√	—	Cars crop clean, car washing. Flushing. garden cleaning	
17	S.K. PARTHA SARATHEY	C-214240	10/10/2019	GF+1+2+3+ 4TH FLOOR	25 KL	√	—		√	—	√	—	Cars crop clean, car washing. Flushing. garden cleaning	

18	M.S.UNITED BEWERAYES	C-210459		20/10-2018	BF+GF+1ST TO4TH FLOOR	110 KL	√	---		√	---	√	—	Land crop clean, car washing. Flushing, garden cleaning	
19	ROCK LINES HOUSING DEVELOPENT P LTD	C-210391		20-03-2019	B+G+M+17 FLOORS	30 KL	√	---		√	---	√	—	Land crop clean, car washing. Flushing, garden cleaning	
20	V.R. SUNDRA MURTHY	C-207689		5/7/2019	B1+B2+G+5 TH FLOOR	16 KL	√	---		√	---	√	—	Land crop clean, car washing. Flushing, garden cleaning	
21	M/S TOTAL ENVIRONOMEN T PROJECTES (INDIS P LTD)	C-210368		20-05-2019	B+G+4TH FLOOR	11KL	√	---		√	---	√	—	Land crop clean, car washing. Flushing, garden cleaning	
22	NADDEM AHMED	C-207768		20-08-2018	B1+B2+G+9 TH FLOOR	30KL	√	---		√	---	√	—	Land crop clean, car washing. Flushing, garden cleaning	
23	GOUSIE Hospital	c-208016, C-208017			B+G+2	15 KLD	√	---	2EHT73	√	---	√	—	Flushing gowdan	
24	Partha Sarathi Raju	c-254031	29/11/2019		B+G+5	15 KLD	√			√	√	√		Flushing	Building not occupied
25	Sushant Gupta	C-210445	22/07/2020		B+G+3rd F+TeF	9KLD	√			√	√	√		Flushing car washing	
26	RBI Staff Qutras	C-29335		2019	G+5F									Flushing cleaning	Old building
27	Director cum dean collage block Bowring hospital	C-203965	16/10/2020		14Floor	32KLD								Flushing cleaning	
28	Directorcum dean	C-223221	26/06/2020		13 Floor	50KLD								Flushing cleaning	
29	MS prestige estates projects limited	C-228842	6/8/2020		41Flats	40KLD								Flushing cleaning	

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Annexure-2
Instsllation of Sewage treatment plant – Due

Sl No	Address	RR NO	Remarks
1	The society of sisters of jeshph #16, devis road, cook town, Ward-59 maruthisevanagar, Banglore	E-301392	
2	L parwy #3-6 cline road, cooktown, Ward-59, maruthisevanagar Banaglore	E-301465	
3	G. Ramananda, Indiar Ramananda #7, high street, cook town, Ward-59, Maruthisevanagar,	E-301598	
	Bangalore		
4	Thamasappa #8, Kandaswamy mudaliyar road, Ward-60 sagayapuarm, Bangalore	E-303442	
5	Dsouza E #3/1, Kandaswamy mudaliyar road, Ward-60 sagayapuarm, Bangalore	E-313207	
6	Lakshman R #65/3, Doddagunta Ward-79, doddagunta Bangalore	E-331004	
7	Sarswathi yammal, 71/2, Jaibharath nagar Ward-59, maruthisevanagar	E-316719	

	Bangalore		
8	Filoman karolin, 13, Venkataram layout, post office road Ward-59, maruthisevanagar Bangalore	E-321326	
9	Nazeer Ahamhed, 2/14, Promnade road, Ward no-78, Pulakeshinagar Bangalore	E-302771	
10	Abdul Rhohan #59, MM road, Ward no-78, Pulakeshinagar Bangalore	E-309352 E-300932	
11	Kanjan Wilson,karkada 1, 1 st cross nagayainapalya Ward-59, maruthisevanagar Bangalore	E-323950	

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Annexure 14

Format-2

Action taken report of Bruhat Bengaluru MahanagaraPalike (BBMP)

Sl	Suggestion of the Joint Committee in the report dt10.08.2020	Measures implemented	Measures yet to be implemented	Time required for implementing the measures
1	To remove accumulated floating debris / solid waste from wet land and main water body of Ulsoor Lake.	On daily basis floating debris / solid waste removed by maintenance people. The recommendation of the Joint committee complied.		
2	To provide / install appropriate screen to arrest entry of floating matter at each stage i.e. Secondary drain to Primary drain, at regular interval may be of 1000 m in Primary drain. Also to develop system to remove accumulated debris from the screen on regular interval to protect and improve its functionality, also ensure disposal of debris removed to SWM processing facility. In addition, a section of 0.8 M width and 0.6 M depth pilot drain shall be constructed at the middle in all primary and secondary drains to carry dry weather flow and will help in collecting / removing solid waste. BBMP may explore deputing scavengers for supervising and removing of solid wastes from the drains. To provide silt traps at appropriate locations in the primary and secondary drains to avoid carryover of silts to the Lakes and easy removal from the drains too.	➢ A Trash barrier has been installed at the upstream of said water body (Ulsoor Lake) which is in function resulting in catching/ arresting floating materials earlier entering into lake directly and it is being continuously monitored and maintained by BBMP(SWD) through AMC(Annexure B and Annexure C). BBMP further planning to install few more Trash barriers across the drain along it's length as per the recommendations of the committee and the financial provisions made in this regard. ➢ An attempt has been made by BBMP(SWD) to implement Silt Traps along C-200 drain entering Ulsoor Lake. The construction of Silt Traps at three appropriate locations in progress out of which one just above the Komala Junction Bridge is at the completion stage and the remaining two are under progress as per the recommendations of the committee and the financial provisions made in this regard to construct few more such Silt Traps to arrest Silt.	Pilot Drain needs to be made along C-100 and C-200 and it's sub streams. Further it is noticed/observed that there are existing sewage pipelines beneath the bed of SWDs due to which construction of Pilot Drain would be difficult. The construction of Pilot Drain at the middle of the SWDs could be possible only after the replacement of existing UGD/Sewage lines all along the SWDs	Financial provisions have been made in the present Budget and some more Financial Grants will be sought further to implement all the essential and recommended measures to avoid pollution in the lake.

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3	The existing screen provided to arrest entry of floating debris into wetland found inadequate and BBMP has planned to install floating screen for the same. The committee of the opinion that the entry of water during wet weather is nothing but a diluted wastewater /sewage and carries lot of organic wastes along with it. The existing treated sewage from BWSSB STP (2 MLD) and MEG STP (100 KLD) may be adequate to maintain the water level of Ulsoor Lake. So, it is suggested to replace the existing weir with sluice gates to stop entry of diluted sewage into wetland / Ulsoor Lake.	The screen provided to arrest entry of floating debris into wetland is replaced with 24 Meter wide floating barrier. And the said observation has been taken as complied. The office of the chief engineer (lakes) BBMP under 15th finance action plan (Annexure-A) provision for trash barriers for selected lakes in BBMP limits to avoid the solid water entering into lakes. The BBMP has selected ulsoor lake in the above said provision and has decided to replace existing weir with sluice to stop entry of diluted sewage into wetland lake by utilizing Rs. 200 lakhs both in replacing existing weir with sluice gates and cascade aerators with online monitoring system to monitor water quality. Rate approval for said trash barriers is in process and immediate steps will be taken to call tender.	Tender to be called	December-2022.
4	The treated water from STPs shall be discharged into wet land structure after complete cleaning to act as polishing process for removal of remaining suspended solids and biological oxygen demand making the water more hygienic and environmentally safe before release in to main course of Lake.	The recommendation of the joint committee is complied		
5	To provide Cascade Aerators for discharging treated sewage in to wetland helps in removing odour due to Hydrogen Sulfide, if any. Also micro bubblers and fountains may be planned by ensuing available D.O., if required.	Vide Answer given to Sl No. 3	Tender to be called	December-2022.

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6	To install online monitoring system to assess the water quality of Ulsoor Lake on real time monitoring basis at appropriate location. Until installation of online system, BWSSB may start monitoring pH, DO and Temperature on daily basis along with STP monitoring records.	Vide Answer given to Sl No. 3	Tender to be called	December-2022.
7	To renew the consent issued by KSPCB under the Water (Prevention & Control of Pollution) Act, 1974 for operating Slaughter House and 50 KLD ETP immediately. To upgrade and operate the ETP complying to the effluent discharge Standards and also to recycle the treated water for slaughter house washing/cleaning purposed. The effluent generated from mutton stalls located within slaughter house premises shall be treated in ETP and not to dispose directly into UGD. Also to implement the Notification No.PCB/WMC/SEO/2013-14/6271 dated 05.02.2014 issued by KSCB as per the Guidelines for Slaughter House prepared by CPCB	Subsequent to the filing of action taken report, the 3rd Respondent viz., the Karnataka State Pollution Control Board issued closure orders of the slaughter house situated at the Tannery Road. In pursuance of that order the submission of this Respondent is as follows. Meeting was held with senior environmental officer of Karnataka State Pollution Control Board on 12-01-2022 regarding the environmental compliances and also National Green Tribunal directions and also consequences on the health of the citizens due to the closure of the slaughter house. The senior environmental officer suggested a "permanent solution" and also "short term measures" in view of a Hon'ble National Green Tribunal directions, in the case of OA No.125/2017 dated: 18-12-2019, wherein, no discharge to be allowed, into drains in the catchment area of Bellandur lake and to adopt the "zero liquid discharge policy". It was discussed relating to the closure orders of the slaughter house, would cause greater	Once Bruhat Bengaluru Mahanagara Palike gets approval from Karnataka State Pollution Control Board regarding modernization of slaughter house based on the technical proposal a detailed project report would be obtained from the reputed consultant and suitable proposal would be submitted to Government of Karnataka for seeking financial assistance and project will be implemented on priority and fast track basis, but till such a time, the short term measures may be	

		inconvenience and hence it was informed that emergency action should be taken up by this Respondent to check the menace. The Proceedings of the discussion held with respect to the both slaughter house dated:17-01-2022 is enclosed as Annexure-1. the Karnataka State Pollution Control Board passed closure order vide No:PCB/WMC/1040/ 2016/120, dated:28-01-2022 issued to the Bruhat Bengaluru Mahanagara Palike civil Slaughter House Tannery Road, enclosed as Annexure-2. Based on the suggestion of Karnataka State Pollution Control Board (KSPCB) dated:17-01-2021 the Hon'ble Chief Commissioner held a meeting with Special Commissioner (Project), Special Commissioner (Health and Animal Husbandry), Joint Commissioner (SWD), Chief Engineer (East), Joint Director (Animal Husbandry) and other senior officers wherein, it was decided to request Karnataka State Pollution Control Board to revoke the closure order issued in respect of slaughter house at Tannery Road in view of the following reason. (The proceedings of meeting dated:02-02-2022 enclosed at Annexure-3). (a) Illegal slaughtering of animals in shops and streets. (b) Massive discharge of blood and animal waste into drains.	permitted to be continued.	

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		(c) Illegal selling of uncertified meat to customers. (d) Supply of unwholesome and unhygienic meat to customers. (e) Contaminating the ground water leading to environmental pollution. I submit that It was also decided to propose "long term measures" like modernization of abettors by providing new infrastructure which includes building, slaughtering and meat processing as per modern abettors protocol, Setting up of effluent treatment plant with zero liquid discharge with latest vacuum evaporation system or adopting equalling technology available, Setting up of bio-gas plant to process the solid waste as per the CPCB norms. As immediate response, arrangements have been made to completely to stop the discharge from the slaughter house by authorizing M/s Sai Enviro Tech to collect and transport the liquid animal waste (effluent) collected in a tank in slaughter houses to a common effluent treatment plant certified by Karnataka State Pollution Control Board and also drainage outlets of the slaughter house at Tannery Road has been plugged from outside to ensure no seepage of discharge from slaughter house to storm water drain (SWD). Based on the decision taken in a meeting		

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		chaired by Hon'ble Chief Commissioner-BBMP, dated:02-02-2022, a letter has been addressed to the Member Secretary, Karnataka Pollution Control Board by the Chief Commissioner dated:18-03-2022 along with the detailed technical proposal to modernize the slaughter house as per the Central Pollution Control Board norms and also requested to revoke the closure order issued in respect of slaughter house at tannery road. The copy of the letter is enclosed as Annexure-4. Quotations were called for collection, transportation and disposal of liquid waste (generated at slaughter houses) through suction machine from city slaughter house and civil slaughter house, Tannery Road to common effluent treatment plant. In response to the same, the lowest quotation of M/s Sai Enviro Tech, No.9, Sri Lakshmi VenkateshwaraNilaya, near Bandeshwara Swamy Temple, BandemathaK.S.Town, Bengaluru-560 060, was accepted on 17-03-2022, and service work order dated: 17-03-2022 has been issued and the copy of which is at Annexure-5.		

Executive Engineer
Lakes, BBMP

Annexure 14 b

ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ನಡವಳಿಗಳು

ವಿಷಯ: ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆಗೆ (ಬಿಬಿಎಂಪಿ) 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ ಅನುದಾನದಡಿಯಲ್ಲಿ 2020-21ನೇ ಸಾಲಿಗೆ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಹಾಗೂ ನೀರು ಸರಬರಾಜು ಸುಧಾರಣೆಗಾಗಿ ಬಿಡುಗಡೆಯಾಗಿರುವ ರೂ. 279 ಕೋಟಿಗಳ ಮೊತ್ತದ ಸೂಕ್ಷ್ಮ ಮಟ್ಟದ ಕ್ರಿಯಾಯೋಜನೆಗೆ (Micro Plan) ಅನುಮೋದನೆ ನೀಡುವ ಬಗ್ಗೆ.

ಓದಲಾಗಿದೆ:
1) ಕೇಂದ್ರ ಹಣಕಾಸು ಸಚಿವಾಲಯ, ನವದೆಹಲಿ ರವರ ಪತ್ರ ಸಂಖ್ಯೆ: 15(2)FC-XV/FCD/2020-25, ದಿನಾಂಕ: 01-06-2020.
2) ಸರ್ಕಾರದ ಆದೇಶಗಳ ಸಂಖ್ಯೆ: ನಅಇ 307 ಸಿಎಸ್ಎಸ್ 2020, ದಿ: 07-11-2020 ಮತ್ತು ದಿ: 30-03-2021.
3) ಆಯುಕ್ತರು, ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆ ರವರ ಪತ್ರ ಸಂಖ್ಯೆ: ಮು.ಆ./ಪಿಆರ್-46/21-22, ದಿ: 05-05-2021.
4) ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆಯ ಅಪರ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿಯವರ ಅಧ್ಯಕ್ಷತೆಯಲ್ಲಿ ದಿನಾಂಕ: 05-07-2021ರಂದು ಜರುಗಿದ ಸಭೆಯ ನಡವಳಿಗಳು.

ಪ್ರಸ್ತಾವನೆ:

ಮೇಲೆ ಓದಲಾದ ಕ್ರ.ಸಂ. (1)ರಲ್ಲಿ, ಕೇಂದ್ರ ಹಣಕಾಸು ಸಚಿವಾಲಯವು 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ ಅನುದಾನದ ಹಣವನ್ನು ನಗರ ಸ್ಥಳೀಯ ಸಂಸ್ಥೆಗಳಿಗೆ ಬಿಡುಗಡೆ ಮಾಡುವ ಬಗ್ಗೆ ಕಾರ್ಯಕಾರಿ ಮಾರ್ಗಸೂಚಿಗಳನ್ನು ಹೊರತಂದಿರುತ್ತದೆ. ಅದರಂತೆ, ಒಂದು ದಶಲಕ್ಷಕ್ಕಿಂತ ಮೇಲ್ಪಟ್ಟು ಜನಸಂಖ್ಯೆಯಿರುವ ನಗರ ಸ್ಥಳೀಯ ಸಂಸ್ಥೆಗಳಿಗೆ ನೀರು ಸರಬರಾಜು (ಮಳೆ ನೀರು ಕೊಯ್ಲು ಹಾಗೂ ಮರುಬಳಕೆ ಸೇರಿದಂತೆ) ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಗಾಗಿ 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ ಅನುದಾನವನ್ನು ಬಿಡುಗಡೆ ಮಾಡಲು ಕೇಂದ್ರ ವಸತಿ ಮತ್ತು ನಗರ ವ್ಯವಹಾರಗಳ ಮಂತ್ರಾಲಯವನ್ನು ನೋಡಲ್ ಮಂತ್ರಾಲಯವನ್ನಾಗಿ ಮಾಡಿದ್ದು, ರಾಜ್ಯ ಸರ್ಕಾರಗಳೊಂದಿಗೆ ಸಮಾಲೋಚಿಸಿ, 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ 2020-21ನೇ ಸಾಲಿನ ವರದಿಯ ಅನುಬಂಧ-5.6 ರಲ್ಲಿನ ನಿಯತಾಂಕಗಳ ರೀತ್ಯಾ 2020-25ನೇ ಅವಧಿಗೆ ನಗರವಾರು ಹಾಗು ವಾರ್ಷಿಕವಾರು ಗುರಿಗಳನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸಿ, ಎರಡು ಸಮಾನ ಕಂತುಗಳಲ್ಲಿ ಹಣವನ್ನು ಅಂತಹ ನಗರಗಳಿಗೆ ಬಿಡುಗಡೆ ಮಾಡಲು ಶಿಫಾರಸ್ಸು ಮಾಡುವಂತೆ ತಿಳಿಸಲಾಗಿರುತ್ತದೆ. 2020-21ನೇ ಸಾಲಿಗೆ ಬೆಂಗಳೂರು ಮಹಾನಗರಕ್ಕೆ ನೀರು ಸರಬರಾಜು ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಗಾಗಿ ರೂ. 279 ಕೋಟಿಗಳನ್ನು ನಿಗದಿಪಡಿಸಲಾಗಿರುತ್ತದೆ.

ಮೇಲೆ ಓದಲಾದ ಕ್ರ.ಸಂ. (2)ರ ಆದೇಶಗಳನ್ವಯ, ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆಗೆ ನೀರು ಸರಬರಾಜು ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಗಾಗಿ 2020-21ನೇ ಸಾಲಿಗೆ ಹಂಚಿಕೆ ಮಾಡಲಾಗಿರುವ 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ ಒಟ್ಟು ಅನುದಾನ ರೂ. 279 ಕೋಟಿಗಳನ್ನು ಎರಡು ಸಮಾನ ಕಂತುಗಳಲ್ಲಿ ಈಗಾಗಲೇ ಬಿಬಿಎಂಪಿಗೆ ಬಿಡುಗಡೆ ಮಾಡಲಾಗಿರುತ್ತದೆ. 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ ಮಾರ್ಗಸೂಚಿಗಳಂತೆ, ನಗರಗಳು 2020-21ನೇ ಸಾಲಿನಲ್ಲಿ ಸೇವಾ ಮಟ್ಟದ ಮಾನದಂಡಗಳನ್ನು ಪೂರೈಸಲು ಸಾಮರ್ಥ್ಯ ಅಭಿವೃದ್ಧಿ ಮತ್ತು ಮೂಲಸೌಕರ್ಯ ಸಮಸ್ಯೆಗಳ ಪರಿಹಾರಕ್ಕಾಗಿ ವಿಸ್ತೃತ ಯೋಜನಾ ವರದಿಯನ್ನು ಸಿದ್ಧಪಡಿಸಬೇಕಿರುತ್ತದೆ. ಅದರಂತೆ, 2020-21ನೇ ಸಾಲಿನ 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ ಅನುದಾನದಲ್ಲಿ ನೀರು ಸರಬರಾಜು ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಗಾಗಿ ಬಿಡುಗಡೆಯಾಗಿರುವ ಅನುದಾನಕ್ಕೆ ಆದ್ಯತೆಯನ್ನು ನೀಡಿ ಪರಿಗಣಿಸಬಹುದಾದ ಕೆಲಸಗಳು /ಚಟುವಟಿಕೆಗಳನ್ನು ಒಳಗೊಂಡ ಸೂಕ್ಷ್ಮ ಮಟ್ಟದ ಕ್ರಿಯಾಯೋಜನೆ (ಮೈಕ್ರೋ ಪ್ಲಾನ್) ಯನ್ನು ಸಿದ್ಧಪಡಿಸಿ ಸರ್ಕಾರದ ಅನುಮೋದನೆಗಾಗಿ ಸಲ್ಲಿಸುವಂತೆ ಸದರಿ ಆದೇಶಗಳಲ್ಲಿ ಬಿ.ಬಿ.ಎಂ.ಪಿ.ಗೆ ಸೂಚಿಸಲಾಗಿರುತ್ತದೆ.

ಮುಂದುವರೆದು, ಮೇಲೆ ಓದಲಾದ ಕ್ರ.ಸಂ. (3)ರ ಪ್ರಸ್ತಾವನೆಯಲ್ಲಿ, ಬಿಬಿಎಂಪಿ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ 15ನೇ ಹಣಕಾಸು ಆಯೋಗದಡಿಯಲ್ಲಿ 2020-21ನೇ ಸಾಲಿಗೆ, ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ, ನೀರು ಸರಬರಾಜು ಹಾಗೂ

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ಕ್ರ. ಸಂ.

ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆ ಕೆಲಸಗಳಿಗಾಗಿ ಬಿಡುಗಡೆಯಾಗಿರುವ ಒಟ್ಟು ರೂ. 279 ಕೋಟಿಗಳ ಮೊತ್ತಕ್ಕೆ ಒಟ್ಟು 160 ಸಂಖ್ಯೆಯ ಕಾಮಗಾರಿಗಳನ್ನೊಳಗೊಂಡ ಸೂಕ್ಷ್ಮ ಮಟ್ಟದ ಕ್ರಿಯಾಯೋಜನೆಯನ್ನು ಸಿದ್ಧಪಡಿಸಿ ಸರ್ಕಾರದ ಅನುಮೋದನೆಗಾಗಿ ಸಲ್ಲಿಸಿರುತ್ತಾರೆ. ಸದರಿ ಕ್ರಿಯಾಯೋಜನೆಗೆ ದಿ: 15-04-2021ರಂದು ವಿಷಯ ಸಂಖ್ಯೆ: 958/2020-21ರನ್ವಯ ತೆರಿಗೆ ಮತ್ತು ಆರ್ಥಿಕ ಸ್ಥಾಯಿ ಸಮಿತಿ ಹಾಗೂ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಸಭೆಯ ಅಧಿಕಾರಗಳನ್ನು ಚಲಾಯಿಸಿ ಆಡಳಿತಾಧಿಕಾರಿಗಳು ಅನುಮೋದನ ನೀಡಿರುತ್ತಾರೆ. ಕ್ರಿಯಾಯೋಜನೆಯ ವಿವರಗಳು ಕೆಳಗಿನಂತಿವೆ;

ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ, ನೀರು ಸರಬರಾಜು ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಯ ಕಾರ್ಯಯೋಜನೆ

ಕ್ರ. ಸಂ.	ಕಾಮಗಾರಿ / ಚಟುವಟಿಕೆಗಳು	ಸಂಖ್ಯೆ	ಅಂದಾಜು ಮೊತ್ತ (ರೂ. ಲಕ್ಷಗಳು)
1	ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ ಮತ್ತು ಅಭಿವೃದ್ಧಿ ಕೆಲಸಗಳು	7	4185
2	ನೀರು ಸರಬರಾಜು ಸುಧಾರಣೆ ಕೆಲಸಗಳು	136	9765
3	ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆ ಕೆಲಸಗಳು	17	13950
	TOTAL	**160**	**27900**

ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಯು ಮೇಲಿನಂತೆ ಅನುಮೋದನೆಗಾಗಿ ಸಲ್ಲಿಸಿರುವ ಕ್ರಿಯಾಯೋಜನೆಯಲ್ಲಿರುವ ಕಾಮಗಾರಿಗಳನ್ನು ಅಂತಿಮಗೊಳಿಸುವ ಸಲುವಾಗಿ ಮೇಲೆ ಓದಲಾದ ಕ್ರ.ಸಂ. (4)ರನ್ವಯ ದಿ: 07-07-2021 ರಂದು ಅಪರ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿ, ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆರವರ ಅಧ್ಯಕ್ಷತೆಯಲ್ಲಿ ಜರುಗಿದ ಸಭೆಯಲ್ಲಿ, ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಯು ಸಲ್ಲಿಸಿರುವ ಕ್ರಿಯಾಯೋಜನೆಯಲ್ಲಿ ಬೆಂಗಳೂರು ನಗರದ ಸಮಗ್ರ ಅಭಿವೃದ್ಧಿಯನ್ನು ದೃಷ್ಟಿಯಲ್ಲಿಟ್ಟುಕೊಂಡು ಕೆಲವೊಂದು ಬದಲಾವಣೆಗಳನ್ನು ಮಾಡಲಾಗಿರುತ್ತದೆ.

ಅಂತಿಮಗೊಳಿಸಲಾದ ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ, ನೀರು ಸರಬರಾಜು ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಯ ಕಾರ್ಯಯೋಜನೆ

ಕ್ರ. ಸಂ.	ಕಾಮಗಾರಿ / ಚಟುವಟಿಕೆಗಳು	ಸಂಖ್ಯೆ	ಅಂದಾಜು ಮೊತ್ತ (ರೂ. ಲಕ್ಷಗಳು)
1	ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ ಮತ್ತು ಅಭಿವೃದ್ಧಿ ಕೆಲಸಗಳು	8	4185
2	ನೀರು ಸರಬರಾಜು ಸುಧಾರಣೆ ಕೆಲಸಗಳು	132	9765
3	ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆ ಕೆಲಸಗಳು	7	4080
	TOTAL	**147**	**18030**

ಆದ್ದರಿಂದ ಆಯುಕ್ತರು, ಬಿಬಿಎಂಪಿ ರವರು ಮೇಲಿನಂತೆ ಸಲ್ಲಿಸಿರುವ ಪ್ರಸ್ತಾವನೆಯನ್ನು ಕೂಲಂಕಶವಾಗಿ ಪರಿಶೀಲಿಸಿದ ಸರ್ಕಾರವು ಸದರಿ ಪ್ರಸ್ತಾವನೆಗೆ ಕೆಲವೊಂದು ಬದಲಾವಣೆಗೊಳಪಡಿಸಿ ಅನುಮೋದನೆಯನ್ನು ನೀಡಲು ಪರಿಗಣಿಸಿ ಈ ಕೆಳಕಂಡಂತೆ ಆದೇಶಿಸಿದೆ.

ಸರ್ಕಾರದ ಆದೇಶ ಸಂಖ್ಯೆ: ನಅಇ 307 ಸಿಎಸ್‌ಎಸ್ 2020,
ಬೆಂಗಳೂರು, ದಿನಾಂಕ: 27-07-2021

ಪ್ರಸ್ತಾವನೆಯಲ್ಲಿ ವಿವರಿಸಿರುವ ಅಂಶಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ 15ನೇ ಹಣಕಾಸು ಆಯೋಗದಡಿಯಲ್ಲಿ 2020-21ನೇ ಸಾಲಿಗೆ ನೀರು ಸರಬರಾಜು ಹಾಗೂ ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆಗಾಗಿ ನಿಗದಿಯಾಗಿರುವ ಒಟ್ಟು ರೂ. 27900 ಲಕ್ಷಗಳ ಪೈಕಿ, ರೂ. 18030 ಲಕ್ಷಗಳ (ರೂಪಾಯಿ ಹದಿನೆಂಟು ಸಾವಿರದ ಮೂವತ್ತು ಲಕ್ಷಗಳು ಮಾತ್ರ) ಅನುದಾನದ ಮೊತ್ತಕ್ಕೆ ಅನುಬಂಧ - 1, 2 ಮತ್ತು 3 ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿರುವ ಒಟ್ಟು 147 ಸಂಖ್ಯೆಯ ಕಾಮಗಾರಿಗಳನ್ನೊಳಗೊಂಡ ಸೂಕ್ಷ್ಮ ಮಟ್ಟದ ಕ್ರಿಯಾಯೋಜನೆಗೆ (Micro-Plan) ಸರ್ಕಾರ ಅನುಮೋದನೆಯನ್ನು ನೀಡಿ ಆದೇಶಿಸಿದೆ.

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(ರೂ. ಲಕ್ಷಗಳು)

ಕ್ರ. ಸಂ.	ಕಾಮಗಾರಿ / ಚಟುವಟಿಕೆಗಳು	ಸಂಖ್ಯೆ	ಅಂದಾಜು ಮೊತ್ತ	ಷರಾ
1	ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ ಮತ್ತು ಅಭಿವೃದ್ಧಿ ಕೆಲಸಗಳು	8	4185	ಅನುಬಂಧ-1
2	ನೀರು ಸರಬರಾಜು ಸುಧಾರಣೆ ಕೆಲಸಗಳು	132	9765	ಅನುಬಂಧ-2
3	ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆ ಕೆಲಸಗಳು	7	4080	ಅನುಬಂಧ-3
	TOTAL	**147**	**18030**	

ಷರತ್ತುಗಳು

1) ಅನುಬಂಧಗಳಲ್ಲಿ ಉಲ್ಲೇಖಿಸಿರುವ ಕಾಮಗಾರಿಗಳನ್ನು ಆಯುಕ್ತರು ಪುನಃ ಧೃಡೀಕರಿಸಿಕೊಳ್ಳುವುದು.

2) ಬಿ.ಬಿ.ಎಂ.ಪಿ.ಯು, ಘನತ್ಯಾಜ್ಯ ನಿರ್ವಹಣೆ ಸುಧಾರಣೆ ಕೆಲಸಗಳಿಗಾಗಿ ಇನ್ನುಳಿದ ರೂ. 9870.00 ಲಕ್ಷಗಳ ಮೊತ್ತಕ್ಕೆ ಕಾಮಗಾರಿಗಳ ವಿವರಗಳನ್ನು 7 ದಿನದೊಳಗಾಗಿ ಅನುಮೋದನೆಗೆ ಸರ್ಕಾರಕ್ಕೆ ಸಲ್ಲಿಸತಕ್ಕದ್ದು. ಕಾಮಗಾರಿಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡಿಕೊಳ್ಳಬೇಕಾದ ಸಂದರ್ಭಗಳಲ್ಲಿ, ಕಾಮಗಾರಿಗಳು ಯಾವುದೇ ಒಂದು ಪ್ರದೇಶಕ್ಕೆ ಸೀಮಿತವಾಗಿರದಂತೆ ಹಾಗೂ ಬೆಂಗಳೂರು ನಗರದ ಸಮಗ್ರ ಅಭಿವೃದ್ಧಿಯನ್ನು ದೃಷ್ಟಿಯಲ್ಲಿಟ್ಟುಕೊಂಡು ಕಾಮಗಾರಿಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡತಕ್ಕದ್ದು.

3) ಮಹಾನಗರಪಾಲಿಕೆಯು ಅನುಮೋದಿತ ಕಾಮಗಾರಿಗಳಿಗೆ ನಿಯಮಾನುಸಾರ ಅಂದಾಜುಪಟ್ಟಿಗಳನ್ನು ಸಿದ್ಧಪಡಿಸಿ ಸಕ್ಷಮ ಪ್ರಾಧಿಕಾರಿಯಿಂದ ತಾಂತ್ರಿಕ ಮಂಜೂರಾತಿ ಪಡೆದುಕೊಂಡು ಕೆ.ಟಿ.ಪಿ.ಪಿ. ನಿಯಮಾವಳಿಗಳನ್ವಯ ಇ-ಪ್ರೊಕ್ಯೂರ್‌ಮೆಂಟ್ ಪೋರ್ಟಲ್ ಮೂಲಕವೇ ಅನುಷ್ಠಾನಗೊಳಿಸಲು ಕ್ರಮ ಕೈಗೊಳ್ಳುವುದು.

4) ಅನುಮೋದಿತ ಮೈಕ್ರೋ-ಪ್ಲಾನ್ ನಲ್ಲಿ ಪರಿಗಣಿಸಿರುವ ಕಾಮಗಾರಿಗಳನ್ನು ಮಹಾನಗರ ಪಾಲಿಕೆಯು ಅನುಷ್ಠಾನಗೊಳಿಸುತ್ತಿರುವ ಇತರೆ ಯೋಜನೆಗಳಡಿಯಲ್ಲಿ ಪರಿಗಣಿಸಿರಬಾರದು ಹಾಗೂ ಯಾವುದೇ ಕಾರಣಕ್ಕೂ ಅವುಗಳು ನಕಲು ಕಾಮಗಾರಿಯಾಗಿರಕೂಡದು.

5) ಮಹಾನಗರಪಾಲಿಕೆಯು ಸಂಬಂಧಪಟ್ಟ ಕಾಮಗಾರಿ ವಿಭಾಗದ ಕಾರ್ಯಪಾಲಕ ಇಂಜಿನಿಯರ್ ಕಾರ್ಯವ್ಯಾಪ್ತಿಯ ಎಲ್ಲ ಸದೃಶ ಕಾಮಗಾರಿಗಳನ್ನು ಒಟ್ಟುಗೂಡಿಸಿ ಪ್ಯಾಕೇಜ್ ಮಾಡಿ ಟೆಂಡರ್ ಆಹ್ವಾನಿಸಲು ಕ್ರಮ ಕೈಗೊಳ್ಳತಕ್ಕದ್ದು.

6) ಕೆರೆಗಳ ಪುನರುಜ್ಜೀವನ ಹಾಗೂ ಅಭಿವೃದ್ಧಿ ಕಾಮಗಾರಿಗಳನ್ನು ಕೈಗೆತ್ತಿಕೊಳ್ಳುವ ಮೊದಲು ಅವುಗಳ ಗ್ರಾಮ ನಕ್ಷೆ / ಸರ್ವೆ ನಕ್ಷೆಯಲ್ಲಿರುವಂತೆ ಗಡಿರೇಖೆಗಳನ್ನು ಸರಿಯಾಗಿ ಗುರುತಿಸಿರಬೇಕು ಹಾಗೂ ಯಾವುದೇ ಒತ್ತುವರಿಗಳಿದ್ದಲ್ಲಿ ಅವುಗಳನ್ನು ತೆರವುಗೊಳಿಸಿರಬೇಕು.

7) ಬಿಬಿಎಂಪಿಯು, 15ನೇ ಹಣಕಾಸು ಆಯೋಗದ 2020-21ನೇ ಸಾಲಿನ ವರದಿಯ ಅನುಬಂಧ-5.6 ರಲ್ಲಿನ ನಿಯತಾಂಕಗಳಿಗಾಗಿ 2020-25ರ ಅವಧಿಗೆ ನಿಗದಿಪಡಿಸಲಾದ ಸೇವಾ ಮಟ್ಟದ ಮಾನದಂಡಗಳ (Service Level Benchmarks) ಗುರಿಗಳನ್ನು ಸಾಧಿಸಲು ಕ್ರಮ ವಹಿಸತಕ್ಕದ್ದು ಹಾಗೂ ಬಾಕಿ ವಾರ್ಷಿಕ ಕಂತುಗಳನ್ನು ಪೂರ್ಣ ಪ್ರಮಾಣದಲ್ಲಿ ಕೇಂದ್ರ ಸರ್ಕಾರದಿಂದ ಪಡೆಯಲು ಎಲ್ಲಾ ಕ್ರಮ ವಹಿಸುವುದು.

8) ಬಿಬಿಎಂಪಿಯು ಕೈಗೊಳ್ಳುವ ಎಲ್ಲಾ ಕಾಮಗಾರಿಗಳು ಉತ್ತಮ ಗುಣಮಟ್ಟದ್ದಾಗಿರುವಂತೆ ಖಾತರಿಪಡಿಸಿಕೊಳ್ಳತಕ್ಕದ್ದು.

9) ಕಾಮಗಾರಿಗಳ ಗುಣಮಟ್ಟವನ್ನು 3ನೇ ವ್ಯಕ್ತಿಯ ತಪಾಸಣೆಗೆ (Third Party Inspection) ಒಳಪಡಿಸತಕ್ಕದ್ದು.

10) ಒಂದು ವೇಳೆ, ಅನುಷ್ಠಾನದ ಸಂದರ್ಭದಲ್ಲಿ ಸದರಿ ಕಾಮಗಾರಿಗಳಲ್ಲಿ ಅನಿವಾರ್ಯವಾಗಿ ಯಾವುದೇ ಬದಲಾವಣೆಗಳಾದಲ್ಲಿ, ಶೇ. 10 ರವರೆಗೂ ಮೀರದಂತೆ (ಆರ್ಥಿಕ - ರೂ. 17.70 ಕೋಟಿಗಳು ಮತ್ತು ಭೌತಿಕ - ಒಟ್ಟು 14 ಕಾಮಗಾರಿಗಳಿಗೆ ಮೀರದಂತೆ) ಕಾಮಗಾರಿಗಳಲ್ಲಿ ಅಗತ್ಯ ಬದಲಾವಣೆಗಳನ್ನು ಮಾಡಿ ಸರ್ಕಾರದ ಅನುಮೋದನೆ ಪಡೆದುಕೊಳ್ಳತಕ್ಕದ್ದು.

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11) ಅನುಮೋದಿತ ಮೈಕ್ರೋ-ಪ್ಲಾನ್ ಅನ್ವಯ ಇತರೆ ಇಲಾಖೆಗಳ ನಡುವಿನಿಂದ ಅನುಷ್ಠಾನಗೊಳಿಸಬೇಕಿರುವ ಕಾಮಗಾರಿಗಳಿಗೆ ಮಂಜೂರಾಗಿರುವ ಮೊತ್ತವನ್ನು ಸಂಬಂಧಪಟ್ಟ ಸಂಸ್ಥೆಗಳಿಗೆ / ಇಲಾಖೆಗಳಿಗೆ ನಿಯಮಾನುಸಾರ ವರ್ಗಾಯಿಸುವುದು.

12) ಸದರಿ ಮೈಕ್ರೋ-ಪ್ಲಾನ್ ಅನುಷ್ಠಾನದ ಪ್ರಗತಿ ಕುರಿತಂತೆ ಪರಿಶೀಲನೆ ಹಾಗೂ ಮೇಲ್ವಿಚಾರಣೆ ನಡೆಸುವ ಸಲುವಾಗಿ ಅಗತ್ಯ ಆನ್-ಲೈನ್ ತಂತ್ರಾಂಶವನ್ನು ಸಿದ್ಧಪಡಿಸಿ ಮಾಹಿತಿಯನ್ನು ಸಾಧಿಸಲಾದ ಪ್ರಗತಿಯನ್ನು ಅದರಲ್ಲಿ ಅಪ್-ಲೋಡ್ ಮಾಡತಕ್ಕದ್ದು.

13) 15ನೇ ಹಣಕಾಸು ಆಯೋಗದಡಿ ಸರ್ಕಾರವು ಈಗಾಗಲೇ ಬಿಬಿಎಂಪಿಗೆ ಬಿಡುಗಡೆಗೊಳಿಸಿರುವ ಅನುದಾನದ ಪ್ರತಿ ತ್ರೈಮಾಸಿಕದ ಅವಧಿಯ ಅಂತ್ಯದ ಲೆಕ್ಕಪತ್ರಗಳನ್ನು ಆಧರಿಸಿ ತ್ರೈಮಾಸಿಕ ಉಪಯುಕ್ತತಾ ಪ್ರಮಾಣ ಪತ್ರಗಳನ್ನು ನಿಗಧಿತ ನಮೂನೆಯಲ್ಲಿ ತ್ರೈಮಾಸಿಕದ ಅಂತ್ಯದ ಮುಂದಿನ ತಿಂಗಳ 10ನೇ ತಾರೀಖಿನೊಳಗೆ ಸರ್ಕಾರಕ್ಕೆ ಸಲ್ಲಿಸತಕ್ಕದ್ದು.

ಕರ್ನಾಟಕ ರಾಜ್ಯಪಾಲರ ಆಜ್ಞಾನುಸಾರ ಮತ್ತು
ಅವರ ಹೆಸರಿನಲ್ಲಿ,

(ಕೆ.ಎಸ್. ಶಂಕರ್)
ಜಂಟಿ ನಿರ್ದೇಶಕರು (ಯೋಜನೆ) ಹಾಗೂ
ಪದನಿಮಿತ್ತ ಉಪಕಾರ್ಯದರ್ಶಿ
ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆ.

ಗೆ;

1) ಮುಖ್ಯ ಆಯುಕ್ತರು, ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆ, ಬೆಂಗಳೂರು.
2) ಅಧ್ಯಕ್ಷರು, ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಳಿ, ಬೆಂಗಳೂರು.
3) ನಿರ್ದೇಶಕರು, ಪೌರಾಡಳಿತ ನಿರ್ದೇಶನಾಲಯ, ಬೆಂಗಳೂರು.
4) ಸದಸ್ಯ ಕಾರ್ಯದರ್ಶಿ, ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ, ಬೆಂಗಳೂರು.
5) ವಿಶೇಷ ಆಯುಕ್ತರು (ಘತ್ಯಾನಿ), ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆ, ಬೆಂಗಳೂರು.

ಪ್ರತಿ;

1) ಸರ್ಕಾರದ ಅಪರ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿ, ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆರವರ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿ ರವರು.
2) ಸರ್ಕಾರದ ಜಂಟಿ ಕಾರ್ಯದರ್ಶಿ-1, ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆ(ಬಿಬಿಎಂಪಿ)ರವರ ಆಪ್ತ ಸಹಾಯಕರು.
3) ಜಂಟಿ ನಿರ್ದೇಶಕರು (ಯೋ), ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆ ರವರ ಆಪ್ತ ಸಹಾಯಕರು.
4) ಸರ್ಕಾರದ ಅಧೀನ ಕಾರ್ಯದರ್ಶಿ, ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆ (ಬಿ.ಬಿ.ಎಂ.ಪಿ) ರವರ ಆಪ್ತ ಸಹಾಯಕರು.
5) ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು, ತಾಂತ್ರಿಕ ಕೋಶ, ನಗರಾಭಿವೃದ್ಧಿ ಇಲಾಖೆ ರವರ ಆಪ್ತ ಸಹಾಯಕರು.

Annexure – 3

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Annexure – 3 to Government Order No. UDD 307 CSS 2020, Dated: 27-07-2021

(Rs. in Lakhs)

ANNEXURE-3

List of Works under the 15th Finance Commission Tied Grants pertaining to Solid Waste Management Infrastructure Development in BBMP Jurisdiction

Sl. No.	Name of Works	Total Estimated Amount
1	Establishment of 200 TPD Coconut Processing unit which comprises of shredding, squeezing, screening, pulverizing and pelleting to produce 3 products – organic liquid, cocopeat and pellets in 1 acre of land at the Waste Tech Park Proposed in Lakkasandra. (On PPP Model)	200.00
2	Up gradation of RDF shed to 50 ton Semi Automated Material Recovery Facility in 3 existing processing plants in BBMP (unit cost for each plant Rs. 300 Lakhs)	900.00
3	a) Up-gradation and Establishment of new Decentralised Dry waste collection centers (DWCC) for storage, sorting and to recovery the valuable dry waste - 28 Nos.	1000.00
	b) Improvements to DWCC centre and Segregation Centre in ward no. 167 - Yediyur	35.00
	c) Upgradation of Dry Waste Centre and Improvements to surroundings of garbage centre in Govindarajnagar sub division and Chandra Layout sub division in Govindarajnagara Constituency	200.00
4	Laying of pipeline from BWSSB Sewage Treatment Plant to the point of Nayandahalli lake and Kengeri Lake for Lake rejuvenation	250.00
5	Provision for Trash Barriers for selected lakes in BBMP limits to avoid the Soild Waste entering into the lakes.	400.00
6	Solid Waste Management Infrastructure Development works in Raja Rajeshwari Nagara Constituency	340.00
7	Procurement and Installation of Automatic waste segregation machine (Including Dry waste / Wet waste / Sanitary Waste etc)	755.00
	Total Rs. in Lakhs	**4080.00**

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Annexure 15 a

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Bruhat Bangalore Mahanagara Palike

No: BBMP/EE/SWD South/WO/01/2019-20

Office of the Executive Engineer
SWD, South zone, Jayanagara 4th Block,
Shopping Complex, 9th Floor,
Bangalore-560 011,
DATED: 09/04/2019

WORK ORDER

To,

M/s Yogaa and Co,
#34, Ground Floor, 1st Cross,
20th Main, G Block, Sahakar Nagar,
Bangalore-560092

Sub:- Annual Maintenance of Storm Water Drain including Desilting, Removal of Floating Solid waste/Jungle clearance in drains/walls, Construction and Strengthening of Size Stone Masonry/Joints, Prevention of dumping of Debris/Solid Waste and Conveying the Silt/Debris/Solid Waste to approved locations.

Ref: 1) Approval from GoK: UDD 26 MNY 2019, Bengaluru dated: 28/03/2019
2) Approval from Secretariat of Election Commission of India, Letter No: 437/KT-HP/2019, Dated:27.03.2019.
3) Approval from GoK: UDD 26 MNY 2019, Bengaluru dated: 08/03/2019
4) Administrative sanction No: CE/SW/ADMN/20/2018-19 dt: 27/10/2018
5) Technical sanction No: CE/SWD/TECH-SANTION/21/2018-19 dt 27/10/2018
6) Agreement No: EE/SWD/SOUTH/AGMT/01/2019-20 dt 09/04/2019

****

By virtue of having executed the agreement by you and the same has been accepted by the competent authority of BBMP, You are hereby directed to go ahead with the work by contacting the Concerned Executive Engineers of SWD wing (Zone wise) and complete as per the contract agreement for a period of 3 years (including monsoon period). The date of start of contract will commence from You submitting the implementation plan including the deployment of Men and Machineries.

The contract value of the work is Rs. 36,63,82,966.00 (Rupees Thirty Six crores Sixty Three lakhs Eighty Two thousand Nine Hundred and Sixty Six only) per Annum (excluding GST) which is 17.50% above the PWD SR of 2018-19 has been approved by the competent authority vide reference (3). Further, the scope of work is maintenance in nature, the approval is accorded from the Election Commission of India and UDD, Government of Karnataka vide reference (1) and (2). The contract period of this agreement is 3 years (Three Years) from the date of actual start of work on site by organizing full fledged Men, Machineries and Materials.

The primary objectives to be achieved and expected is as under:

- Annual Maintenance for SWD at various selected locations including desilting of collected silt, lifting of silt from SWD and conveying to approved locations (Within a maximum distance of 25 kms from Core

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Zones and 15 Kms from Outer Zones) by Mechanical/Manual means in open SWDs and [illegible] SWDs by Removing/Re-fixing of chainlink fencing, RCC chamber/slab covers, dismantling of RCC/SSM wall by engaging suitable number of Mechanical Excavators/allied Machineries along with appropriate Man power as follows:

Sl No	Name of Zone	Length in kms	Attachment
1	East	73.07	Key Map with index
2	West	42.17	Key Map with index
3	South	35.38	Key Map with index
4	Kormanagala Valley	49.82	Key Map with index
5	Yelahanka	42.63	Key Map with index
6	Mahadevapura	32.95	Key Map with index
7	Bommanahalli	53.55	Key Map with index
8a	RRNagara	48.62	Key Map with index
8b	Yeshwanthapura	36.17	Key Map with index
9	Dasarahalli	25.64	Key Map with index
	Total	**440.00**	

- Cleaning of SWDs from vegetations (Trees/Plants/Grass etc.) including cutting, removing, lifting and conveying it to approved locations.
- Clearing of SWDs from solid waste materials (Plastic bottles/Thermocol/Animal Waste/Dead Animals/Human Excreta/ Medical/Cloths/Beds/ Mattresses etc.,) of all nature in foul condition (as is where is condition at the time of quoting tender) including removing, lifting and conveying it to approved locations/dry waste collection centers/designated BBMP quarries, Solid waste Processing units of BBMP.
- Clearing of SWDs from silt/vegetation under bridges, clearing of blockages in pipe culverts, removal of vegetation, solid waste and lifting of solid waste material from SWDs and conveying it to approved locations.
- Prevention of dumping of Construction and Demolition waste throwing of solid waste/garbage by Public and identification of Persons throwing waste into SWDs and Lodging complaints with local police under "The Prevention of Damage to Public Property Act, 1984" under section 425.
- Identification of Blockages of road side drains connecting to SWDs including BWSSB pipelines, BESCOM cables etc., complete.
- Conveying of Silt, Solid Waste, Debris, Construction and Demolition etc., complete to the approved locations. The contractor should identify suitable dumping locations on his own and at his own risk including all Lead and Lifts, Incidental Charges, Present and Future Taxes as applicable, including all Men and Machineries as per the directions of the Engineer-In-Charge of the work.

The Excavated silt/any solid waste lifted from the SWD shall be removed from the site within 3 days from the day of excavation and stacking.

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- **Minimum Man Power required to maintain SWD of Bengaluru city are as follows**

Sl. No.	Name	No of persons
1.	Project Manager	1 No
2.	Senior Engineers	3 Nos
3.	Supervisors	1 person per 20 km
4.	Unskilled labourers	2 persons per km

- The contractor shall have in possession atleast 8 nos of Earth work excavators with track/chain depending upon the size/width of the SWD (Minimum of 4 Nos Own and 4 Nos on Hire/Lease). The contractor shall submit the invoices of minimum of 4 machineries purchased from the manufacturers and produce lease/hire deeds of atleast 4 nos of machineries. **The contractor has to procure 8 nos of ROBOTIC EXCAVATORS for desilting the drain within 04 months of Notice to proceed with the work (Date of Agreement of the work).**

- The contractor shall have in possession atleast **15 nos of Tippers and depending upon the size/width of the SWD (Minimum of 10 Nos Own and 5 Nos on Hire/Lease). The contractor shall submit the invoices of minimum of 10 machineries purchased from the manufacturers and produce lease/hire deeds of atleast 5 nos of machineries.** The contractor has to purchase the remaining 05 nos of Tippers and replace the machineries taken on Hire/Lease basis within 05 months of Notice to proceed with the work (Date of Agreement of the work). Further the Tippers shall be Modified to have Hydralic Door opening and Water Tight Gasket arrangements for carrying the wet/ slussy/ watery silt without pouring Leachate on road.

- The contractor shall paint the whole machineries with **"SKY BLUE PAINT"** marked as **"BBMP CONTRACT VEHICLE FOR SWD ANNUAL MAINTENANCE PROJECT"**.

- The contractor shall be billed according to the **"Service level Bench-mark"** and the photographs, videos using drone to be submitted every quarterly which shall be certified by concerned SWD engineers.

You are directed to submit the work program schedule, methodology statement within 7 days from the date of receipt of this work order.

Thanking you,

Sd/-
Executive Engineer
SWD, South zone
Bruhat Bangalore Mahanagara Palike

1. Copy submitted to Worshipful Mayor for kind information and a copy is submitted to PS of Worshipful Mayor.
2. Copy submitted to Deputy Mayor for kind information.
3. Copy submitted to The Hon'ble Commissioner B.B.M.P Bangalore for kind information.
4. Copy submitted to The Special Commissioner (Projects) B.B.M.P for kind information
5. Copy submitted to Taxation and Finance committee for kind information.
6. Copy submitted to Major works committee for kind information.

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7. Copy submitted to Accounts committee for kind information.
8. Copy submitted to The Additional Commissioner (Finance) B.B.M.P for kind information.
9. Copy submitted to The Chief Engineer, (SWD) B.B.M.P for kind information.
10. Copy submitted to Chief Accounts/Finance/ Audit officer for kind information.
11. Copy to concerned Executive Engineer, (SWD), East, West, South, Koramangala, Yelahanka, Mahadevapura, Bommanahalli, RR Nagara, Dasarahalli zone for information and requested to provide the work fronts as per the tender documents. Copy of the same may be furnished to the office of the under signed.
12. Copy to Account Superintendent, SWD for necessary action.
13. Office Copy.

9/9/19

Executive Engineer
SWD, South zone
Bruhat Bangalore Mahanagara Palike

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सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No.	:	IN-KA68799382027509R
Certificate Issued Date	:	08-Mar-2019 10:39 AM
Account Reference	:	NONACC (FI)/ kaksfcl08/ KODIGEHALLI/ KA-BA
Unique Doc. Reference	:	SUBIN-KAKAKSFCL0869409429018778R
Purchased by	:	YOGAA AND COMPANY
Description of Document	:	Article 12 Bond
Description	:	AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	YOGAA AND COMPANY
Second Party	:	EE W SWD BBMP
Stamp Duty Paid By	:	YOGAA AND COMPANY
Stamp Duty Amount(Rs.)	:	37,000 (Thirty Seven Thousand only)

The Pavagada Souharda Multipurpose Co-operative Ltd. (R)

Authorised Signatories

RS. 37,000 08-MAR-2019 10:39 AM

Please write or type below this line

AGREEMENT

Agreement No: EE/SWD/SOUTH/AGMT/ 01 /2019-20 dated: 09/04/2019

Name of the work: **"Annual Maintenance of Storm Water Drain including Desilting, Removal of Floating Solid waste/Jungle clearance in drains/walls, Construction and Strengthening of Size Stone Masonry/Joints, Prevention of dumping of Debris/Solid Waste and Conveying the Silt/Debris/Solid Waste to approved locations. Indent No: 32039"**

This agreement entered into this day the 09th of April of the year 2019 between Bruhat Bangalore Mahanagara Palike, represented by the **Executive Engineer (Storm Water Drain-South)**, Bruhat Bangalore Mahanagara Palike, 9th floor, Jayanagara shopping

Contractor

Executive Engineer, SWD-South

Statutory Alert:

1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as

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complex, 4th block, Jayanagara, Bangalore-560 011 which term shall mean and include successors in the office and assigns here in after called as "**BBMP**" on ONE PART and **Yogaa and Co, #34, Ground Floor, 1st Cross, 20th Main, G Block, Sahakar Nagar, Bangalore-560092** hereinafter called as "**Contractor**" on the OTHER PART, which shall mean and include their heirs, successors and legal representatives as the case may be.

Whereas BBMP is desirous to take up the work of "**Annual Maintenance of Storm Water Drain including Desilting, Removal of Floating Solid waste/Jungle clearance in drains/walls, Construction and Strengthening of Size Stone Masonry/Joints, Prevention of dumping of Debris/Solid Waste and Conveying the Silt/Debris/Solid Waste to approved locations, Indent No: 32039**" at an estimated cost of Rs. 1067.00 Lakhs based on KPWD SR 2018-19 as per the Tender Notification No: EE/SWD-SOUTH/TEND/03/18-19 dated: 27/10/2018. Indent No: BBMP/2018-19/FP/WORK_INDENT32039

Whereas the Government of Karnataka has accorded Administrative Approval vide No: UDD 26 MNY 2019, Bengaluru dated: 08/03/2019 for the above work, Chief Engineer (Storm Water Drain) has accorded Administrative Sanction vide No. CE/SW/ADMN/20/2018-19 dt: 27/10/2018 and Chief Engineer (Storm Water Drain) has accorded Technical Sanction vide No. CE/SWD/TECH-SANTION/21/2018-19 dt 27/10/2018 for the above work.

Whereas the Contractor has quoted total amount of **Rs. 36,63,82,966.00 (Rupees Thirty Six crores Sixty Three lakhs Eighty Two thousand Nine Hundred and Sixty Six only)** per Annum (excluding GST) which is 17.50% above the PWD SR of 2018-19 for executing the above work.

NOW THIS AGREEMENT WITNESSTH AS FOLLOWS

1. In consideration of the payments to be made by the BBMP to the Contractor as herein after mentioned, the Contractor here by covenants with the BBMP, to execute and complete the works as per the tender conditions in all respects.
2. The BBMP hereby agrees to pay the Contractor in consideration of the execution and completion of the works and remedying the defects found therein the contract amount become payable under the provisions of the contract at the times and in the manner prescribed by the contract and appended to this Agreement subject to statutory recoveries of taxes and levies such as income tax, sales tax, VAT, royalty, etc., at the rates prescribed by Government from time to time. The BBMP also agrees to pay such further amount on the work executed that may be out of the Tender Scope but are directly connected with the execution of the work tendered mutually agreed upon for execution and the same will be paid on production of Bills to that effect, in the manner prescribed under the Clauses of General conditions of Contract laid down in Standard bid documents.
3. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.,
   a) Invitation for Tender,
   b) The Contract Agreement
   b) Letter of Acceptance
   c) The Contractor's bid,
   d) Bid Documents,
   e) Contract Data;
   f) Conditions of Contract including Special Conditions of Contract:

Contractor

Executive Engi...

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g) Specifications
h) Drawings
i) Any other document listed in the Contract Data as forming part of the Contract

4. The aforesaid documents shall be taken as complementary and mutually explanatory to one another, but in case of ambiguities or discrepancies, the document first shall take precedence in the order set out above and the above said documents from 3(a) to 3(i) shall be part and parcel of Agreement.
5. The date of commencement of the work starts from the date of actual start of work on site by organizing full fledged Men, Machineries and Materials and the Employer shall take over the Site and the Works within seven days of the Engineer issuing a Certificate of Completion.
6. Construction Programme: Time is the essence of the contract & it shall be clearly understood that the Contractor is bound to maintain the storm water drain as per the tender conditions on day-to-day basis from the date of organizing full fledged Men, Machineries and Materials.
7. The contractor shall not store any materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.
8. No Mobilization Advance will be paid to the Contractor.
9. The Contractor will not have any claims in case of any delay by the BBMP for removal of trees, shifting, raising, removing of telegraph, telephone or electric line (overhead or underground) and sewer lines and other structures etc, if any, which may come in the way of the work. However, suitable extension of time can be granted to cover such delays.
10. Contractor has to furnish drawings, photos and videos to the BBMP after completion of the project before final bill submission.
11. Penalty for delay — In respect of shortfall in progress assessed as due to the delay on the part of the contractor, he shall be liable to pay penalty as per conditions of contract.
12. All risks of loss of or damage to physical property and of personal injuries and death which arise during and in consequence of the performance of the Contract other than the excepted Risks are the responsibility of the Contractor.
13. The Contractor shall complete the work to the satisfaction of the BBMP and shall rectify the defects if any, during the defects liability period of one year from the date of Issue of completion certificate.
14. Bank guarantees (2 Nos.) drawn on Andhra Bank, Bannerghatta Branch, Bangalore have been submitted and the same will be released after the Completion of defect liability period.

Sl No:	No:	Amount (Rs)	Date of deposit	Date of expiry	Remarks
1	119619IGPER0008	91,75,000/-	30.03.2019	29.03.2021	Performance Security to be renewed every year before one month to the expiry of the validity.
2	119619IGPER0009	2,75,25,000/-	09.04.2019	08.04.2020	

15. The contract period of this agreement is 3 years (Three Years) from the date of actual start of work on site by organizing full fledged Men, Machineries and Materials.

The primary objectives to be achieved and expected is as under:

- Annual Maintenance for SWD at various selected locations including desilting of collected silt, lifting of silt from SWD and conveying to approved locations (Within a maximum distance of 25 kms from Core Zones and 15 Kms from Outer Zones) by Mechanical/Manual means in open SWDs and Covered SWDs by Removing/Re-fixing of chainlink fencing, RCC chamber/slab covers, dismantling of RCC/SSM walls by

Contractor

Executive Engineer, SWD-South 09/4

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appropriate Man power as follows.

Sl No	Name of Zone	Length in kms	Attachment
1	East	73.07	Key Map with index
2	West	42.17	Key Map with index
3	South	35.38	Key Map with index
4	Kormanagala Valley	49.82	Key Map with index
5	Yelahanka	42.63	Key Map with index
6	Mahadevapura	32.95	Key Map with index
7	Bommanahalli	53.55	Key Map with index
8a	RRNagara	48.62	Key Map with index
8b	Yeshwanthapura	36.17	Key Map with index
9	Dasarahalli	25.64	Key Map with index
	Total	**440.00**	

- Cleaning of SWDs from vegetations (Trees/Plants/Grass etc.) including cutting, removing, lifting and conveying it to approved locations.
- Clearing of SWDs from solid waste materials (Plastic bottles/Thermocol/Animal Waste/Dead Animals/Human Excreta/ Medical/Cloths/Beds/ Mattresses etc.,) of all nature in foul condition (as is where is condition at the time of quoting tender) including removing, lifting and conveying it to approved locations/dry waste collection centers/designated BBMP quarries, Solid waste Processing units of BBMP.
- Clearing of SWDs from silt/vegetation under bridges, clearing of blockages in pipe culverts, removal of vegetation, solid waste and lifting of solid waste material from SWDs and conveying it to approved locations.
- Prevention of dumping of Construction and Demolition waste throwing of solid waste/garbage by Public and identification of Persons throwing waste into SWDs and Lodging complaints with local police under "The Prevention of Damage to Public Property Act, 1984" under section 425.
- Identification of Blockages of road side drains connecting to SWDs including BWSSB pipelines, BESCOM cables etc., complete.
- Conveying of Silt, Solid Waste, Debris, Construction and Demolition etc., complete to the approved locations. The contractor should identify suitable dumping locations on his own and at his own risk including all Lead and Lifts, Incidental Charges, Present and Future Taxes as applicable, including all Men and Machineries as per the directions of the Engineer-In-Charge of the work.
- The Excavated silt/any solid waste lifted from the SWD shall be removed from the site within 3 days from the day of excavation and stacking.
- **Minimum Man Power required to maintain SWD of Bengaluru city are as follows**

Sl. No.	Name	No of persons
1.	Project Manager	1 No
2.	Senior Engineers	3 Nos
3.	Supervisors	1 person per 20 km
4.	Unskilled labourers	2 persons per km

- The contractor shall have in possession atleast 8 nos of Earth work excavators with track/chain depending upon the size/width of the SWD (Minimum of 4 Nos Own and 4 Nos on Hire/Lease). The contractor shall submit the invoices of minimum of 4 machineries purchased from the manufacturers and produce lease/hire deeds of atleast 4

ontractor

Executive Engineer, SWD-South

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nos of machineries. The contractor has to procure 8 nos of ROBOTIC **EXCAVATORS for desilting the drain within 04 months of Notice to proceed with the work (Date of Agreement of the work).**

- The contractor shall have in possession atleast **15 nos of Tippers and depending upon the size/width of the SWD (Minimum of 10 Nos Own and 5 Nos on Hire/Lease). The contractor shall submit the invoices of minimum of 10 machineries purchased from the manufacturers and produce lease/hire deeds of atleast 5 nos of machineries.** The contractor has to purchase the remaining 05 nos of Tippers and replace the machineries taken on Hire/Lease basis within 05 months of Notice to proceed with the work (Date of Agreement of the work). Further the Tippers shall be Modified to have Hydralic Door opening and Water Tight Gasket arrangements for carrying the wet/ slussy/ watery silt without pouring Leachate on road.
- The contractor shall paint the whole machineries with **"SKY BLUE PAINT"** marked as **"BBMP CONTRACT VEHICLE FOR SWD ANNUAL MAINTENANCE PROJECT".**
- The contractor shall be billed according to the **"Service level Bench-mark"** and the photographs, videos using drone to be submitted every quarterly which shall be certified by concerned SWD engineers.

In witness whereof the parties there to have cause this Agreement executed on the 09th April of the year 2019. Signed, sealed and delivered by the presence of

09/4/19

Contractor

Executive Engineer
Storm Water Drain – South

Witnesses:

1 Anand Pramodh
NO E3, Vinayaka Residency Block
5th cross Ganga
R.T. Nagar B-32

2

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Annexure 16

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE GOVT. OF INDIA

E-mail/ SPEED POST

B-Tannery/IPC-IV/2021-22/ 09.12.2021

To

The Chairman
Karnataka State Pollution Control Board
"Parisara" Bhavan",
No #49, Church Street,
Bengaluru - 560001

Sub: Directions under section 18(1)(b) of the Water (prevention & control of pollution) Act, 1974 and the Air (prevention & control of pollution) Act, 1981 regarding non-compliance status of M/s Bruhat Bengaluru Mahanagara Palike (BBMP) Civil Slaughter House, Bengaluru.

WHEREAS, under Section 17 of the Water (Prevention & Control of Pollution) Act, 1974, and under Section 17 of the Air (Prevention & Control of Pollution) Act, 1981, one of the function of the State Pollution Control Boards(SPCBs)/Pollution Control Committees(PCCs) is to plan a comprehensive programme for the prevention, control or abatement of pollution of streams, wells and air pollution in the State/Union territory and to secure the execution thereof; and

WHEREAS, under section 16 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 16 of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of the Central Pollution Control Board (CPCB), constituted under Water (Prevention and Control of Pollution) Act, 1974 is to coordinate activities of the State Pollution Control Boards and Pollution Control Committees and to provide technical assistance and guidance to SPCBs / PCCs; and

WHEREAS, the SPCBs and PCCs are empowered to stipulate standards for discharge of environmental pollutants for various categories of industries and common effluent treatment plants (CETPs), Common Hazardous waste and Biomedical waste incinerators even more stringent than those notified by the Central Government, under the Environmental (Protection) Act, 1986 and rules framed there under; and

WHEREAS, the SPCBs and PCCs to ensure installation and regular operation of the requisite pollution control facilities in the polluting industries so as to meet prescribed Environmental norms; and

WHEREAS, the matter of Original Application (O.A.) 54 of 2016 (SZ) is the Suo Motu case taken by the Hon'ble National Green Tribunal (NGT), South Zone, Chennai based on the news item published in "The Hindu" dated 08/03/2016 titled "Lake in heart of Bengaluru city turns graveyard for fish". Bruhat Bengaluru Mahanagara Palike (BBMP) filed Interlocutory Application (I.A.) 28 of 2019 (SZ) to implead them as additional respondent stating that they are the persons who are in charge of development and maintenance of Ulsoor Lake. The Hon'ble NGT, Southern

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032
दूरभाष/Tel : 43102030, 22305792, वेबसाईट/Website : www.cpcb.nic.in

Zone, Chennai while considering the matter passed order dated 19/02/2020 and directed as under:

"(9) it is appropriate to appoint a Joint Committee comprising of the Deputy Commissioner of Bengaluru (Urban), Senior scientist from Regional Office of Central Pollution Control Board (CPCB), Bengaluru, Karnataka State Pollution Control Board (KSPCB) and the Commissioner, Bruhat Bengaluru Mahanagara Palike (BBMP) to inspect the area in question and find out the source of pollution and persons who are responsible for causing pollution, whether the additional fourth respondent had taken any steps to implement the recommendations made by the KSPCB in their reply filed before this Tribunal on 26/09/2018, the present stage of the lake and also suggest the remedial measures to be taken to restore the lake to its original position, in respect to sewage treatment and dumping of garbage and illegal encroachments if any, in the lake. Central State Pollution Control Board will be the nodal agency for co-ordination and for providing the necessary logistics for this purpose".

WHEREAS, in compliance to Hon'ble NGT's aforementioned order, Joint Committee was constituted which carried out inspection of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru on 14.05.2020 and collected the samples of waste water from ETP and Ground water. The analysis report shows that the quality of treated effluent has pH (7.6), EC (1797 µs/cm), TSS (131 mg/l), TDS (1014 mg/l), COD (307 mg/l), BOD (53 mg/l), Chloride (261 mg/l), Sulphates (12.2 mg/l), Phosphate (1.44 mg/l), Ammonia as N (30.3 mg/l) and Oil & Grease (2.3 mg/l). The report of Joint Committee was submitted to the Hon'ble NGT on 10.08.2020. The Committee in its report suggested following action points to be implemented by the BBMP Slaughter House:

- To renew the consent issued by KSPCB under the Water (Prevention & Control of Pollution) Act, 1974 for operating Slaughter House and 50 KLD ETP immediately.
- To upgrade and operate the ETP complying to the effluent discharge Standards and also to recycle the treated water for slaughter house washing/cleaning purposed.
- To ensure that the effluent generated from mutton stalls located within slaughter house premises is mandatorily treated in ETP and is not disposed directly into UGD.
- To implement the Notification No.PCB / W}I4C / SEO / 2013-14 / 6271 dated 05.02.2074 issued by KSCB as per the Guidelines for Slaughter House prepared by CPCB; and

WHEREAS while considering the report of Joint Committee, Hon'ble NGT (SZ) pronounced order on 10.06.2021 and directed as under:

> *"(4) Both the counsel appearing for the State respondents and Pollution Control Board wanted some more time to file further action taken report as directed by this Tribunal. The committee also wanted some more time for filing further progress report regarding the implementation of the recommendations and suggestions made by them by the respective regulators.*

(5) Considering the circumstances, we feel that some more time can be granted to the committee as well as to the official respondents to file their respective further progress report and action taken report."; and

WHEREAS the Joint committee inspected the Slaughter House on 28.07.2021 and observed the following status of implementation:

i. BBMP has not applied for renewal of consent for operation of Slaughter House and 50 KLD ETP and it is in operation since 30.06.2009 without valid consent for operation from KSPCB.
ii. The slaughter house was in operation on the day of inspection and the ETP was not operated scientifically.
iii. Aerators and pumps were rusted indicating that the ETP is not operated regularly.
iv. There was no discharge from the ETP during the inspection and the effluent was stored in the ETP. The ETP operator informed that effluent will be treated in filtration unit and discharged. It was observed that the connecting pipes to filtration unit were dismantled.
v. There were no any improvements in the status of operation of the ETP compared to the observations made during earlier inspections by the Joint Committee and KSPCB and measures were not implemented to improve the condition of the ETP; and

WHEREAS, while considering the report of Joint Committee submitted on 16.09.2021, the Hon'ble NGT (SZ) passed following order on 23.09.2021:

"*The State Pollution Control Board as well as the Central Pollution Control Board are also directed to file their independent report regarding the further action taken by them as a regulator for the violations noted by them and non-compliance, in view of the directions issued by the Principal Bench of National Green Tribunal, New Delhi in O.A. No.606 of 2018 and the BBMP is also directed to file the report regarding steps taken by them in respect of the gap found by the majority members of the committee and also the steps taken by them for improving the water quality in the lake, which according to the committee has not improved than the condition which was found earlier.*"; *and*

WHEREAS, the Ministry of Environment & Forests, Government of India, vide Notifications No. S. O. 157 (E) of 27.02.1996, has delegated the powers vested under Section 5 of the Environment (Protection) Act, 1986 (29 of 1986) to the Chairman, Central Pollution Control Board, to issue directions to any industry or any local body or any other authority for violations of the standards and rules notified under the Environment (Protection) Rules, 1986 and amendment thereof.

Now, therefore, in exercise of the powers conferred under Section 18 (1) (b) of the Water (Prevention & Control of Pollution) Act, 1974, and Air (Prevention & Control of Pollution) Act, 1981, following Directions are issued to Karnataka State Pollution Control Board:

1. To close down all activities of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru with immediate effect.
2. To disconnect electricity supply of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru by Bangalore Electricity Supply Company Limited.
3. To disconnect water supply of M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru by Bangalore Water Supply and Sewerage Board.
4. To carry out assessment of environmental damage and recovery of the cost from M/s BBMP Civil Slaughter House.
5. M/s BBMP Civil Slaughter House, Tannery Road, Bengaluru shall not operate without Consent from KSPCB.

The Karnataka State Pollution Control Boards shall acknowledge the receipt of these directions within a week and submit detailed Action Taken Reports within two weeks thereafter.

10/12/21
(Tanmay Kumar)
Chairman

ANNEXURE - 2

Fax : 080-25586321
ಇ-ಅಂಚೆ/E-mail : ho@kspcb.gov.in
ವೆಬ್‌ಸೈಟ್/Website : http://kspcb.gov.in

☎ 25581383, 25589112
25588151, 25588270
25586142, 25586520

Dt 25/01/2022

ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ

Karnataka State Pollution Control Board

"ಪರಿಸರ ಭವನ", 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ. 49, ಚರ್ಚ್ ಸ್ಟ್ರೀಟ್, ಬೆಂಗಳೂರು - 560 001, ಕರ್ನಾಟಕ, ಭಾರತ
"Parisara Bhavana", 1st to 5th Floor, # 49, Church Street, Bengaluru - 560 001, Karnataka, INDIA

Date: 28 JAN 2022

No. PCB/WMC/1040/2016/ 120

CLOSURE DIRECTION UNDER SECTION 33 (A) OF WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974, AND SECTION 31(A) OF AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981

Ref.: (1) Direction issued by CPCB No. B -Tannery (IPC-IV/2021-22, Dt:09.12.2021 under section 18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974 and the Air(Prevention and Control of Pollution) Act, 1981

(2) This office D.O. Letter No. PCB/HWM/2021-22/226 Date: 27.10.2021

(3) This office D.O. letter D.O. No. PCB/WMC/2020-21/5289 Dated: 20.02.2021

(4) Proceedings of personal hearing held on 01.12.2020

(5) Inspection of slaughterhouse by Regional Officer Bangalore City west on 14.09.2020

•••

WHEREAS, under Section 17 of the Water (Prevention & Control of Pollution) Act, 1974, and under Section 17 of the Air (Prevention & Control of Pollution) Act, 1981, one of the function of the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) is to plan a comprehensive programme for the prevention, control or abatement of pollution of streams, wells and air pollution in the State/Union territory and to secure the execution thereof; and

WHEREAS, under section 16 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 16 of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of the Central Pollution Control Board (CPCB), constituted under Water (Prevention and Control of Pollution) Act, 1974 is to coordinate activities of the State Pollution Control Boards and Pollution Control Committees and to provide technical assistance and guidance to SPCBs/PCCs; and

WHEREAS, the SPCBs and PCCs are empowered to stipulate standards for discharge of environmental pollutants for various categories of industries and common effluent treatment plants (CETPs), Common Hazardous waste and Biomedical waste incinerators even more

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stringent than those notified by the Central Government, under the Environmental (Protection) Act, 1986 and rules framed there under; and

WHEREAS, the SPCBs and PCCs to ensure installation and regular operation of the requisite pollution control facilities in the polluting industries so as to meet prescribed Environmental norms; and

WHEREAS, the matter of Original Application (O.A.) 54 of 2016 (SZ) is the Suo Motu case taken by the Hon'ble National Green Tribunal (NGT), South Zone, Chennai based on the news item published in "The Hindu" dated 08/03/2016 titled " Lake in heart of Bengaluru city turns graveyard for fish". Bruhat Bengaluru Mahanagara Palike (BBMP) filed Interlocutory Application (I.A.) 28 of 2019 (SZ) to implead them as additional respondent stating that they are the persons who are in charge of development and maintenance of Ulsoor Lake. The Hon'ble NGT, Southern Zone, Chennai while considering the matter passed order dated 19/02/2020 and directed as under:

> *" (9) it is appropriate to appoint a Joint Committee comprising of the Deputy Commissioner of Bengaluru (Urban), Senior scientist from Regional Office of Central Pollution Control Board (CPCB), Bengaluru, Karnataka State Pollution Control Board (KSPCB) and the Commissioner, Bruhat Bengaluru Mahanagara Palike (BBMP) to inspect the area in question and find out the source of pollution and persons who are responsible for causing pollution, whether the additional fourth respondent had taken any steps to implement the recommendations made by the KSPCB in their reply filed before this Tribunal on 26/09/2018, the present stage of the lake and also suggest the remedial measures to be taken to restore the lake to its original position, in respect to sewage treatment and dumping of garbage and illegal encroachments if any, in the lake. Central State Pollution Control Board will be the nodal agency for co-ordination and for providing the necessary logistics for this purpose ".*

WHEREAS, in compliance to Hon'ble NGTs aforementioned order, Joint Committee was constituted which carried out inspection of M/s. BBMP Civil Slaughter House, Tannery Road, Bengaluru on 14/05/2020 and collected the samples of waste water from ETP and Ground water. The analysis report shows that the quality of treated effluent has pH (7.6), EC (1797 us/cm), TSS (131 mg/l), TDS (1014 mg/l), COD (307 mg/l), BOD (53 mg/l) Chloride (261 mg/l), Sulphates (12.2 mg/l) Phosphate (1.44 mg/l), Ammonia as N (30.3 mg/l) and Oil & Grease (2.3 mg/l). The report of Joint Committee was submitted to the Hon'ble NGT on 10.08.2020. The Committee in its report suggested following action points to be implemented by the BBMP Slaughter House:

- To renew the consent issued by KSPCB under the Water (Prevention & Control of Pollution) Act, 1974 for operating Slaughter House and 50 KLD ETP immediately.

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- To upgrade and operate the ETP complying to the effluent discharge Standards and also to recycle the treated water for slaughter house washing/cleaning purpose.
- To ensure that the effluent generated from mutton stalls located within slaughter house premises is mandatorily treated in ETP and is not disposed directly into UGD.
- To implement the Notification No. PCB/W14C/SEO/2013-14/6271 dated 05.02.2014 issued by KSPCB as per the Guidelines for Slaughter House prepared by CPCB; and

WHEREAS, while considering the report of Joint Committee, Hon'ble NGT (SZ) pronounced order on 10.06.2021 and directed as under:

> *"(4) Both the counsel appearing for the State respondents and Pollution Control Board wanted some more time to file further action taken report as directed by this Tribunal. The committee also wanted some more time for filing further progress report regarding the implementation of the recommendations and suggestions made by them by the respective regulators.*
>
> *(5) Considering the circumstances, we feel that some more time can be granted to the committee as well as to the official respondents to file their respective further progress report and action taken report"; and*

WHEREAS, the Joint committee inspected the Slaughter House on 28.07.2021 and observed the following status of implementation:

i. *BBMP has not applied for renewal of consent for operation of Slaughter House and 50 KLD ETP and it is in operation since 30.06.2009 without valid consent for operation from KSPCB.*
ii. *The slaughter house was in operation on the day of inspection and the ETP was not operated scientifically.*
iii. *Aerators and pumps were rusted indicating that the ETP is not operated regularly.*
iv. *There was no discharge from the ETP during the inspection and the effluent was stored in the ETP. The ETP operator informed that effluent will be treated in filtration unit and discharged. It was observed that the connecting pipes to filtration unit were dismantled.*
v. *There were no improvements in the status of operation of the ETP compared to the observations made during earlier inspections by the Joint Committee and KSPCB and measures were not implemented to improve the condition of the ETP; and*

WHEREAS, while considering the report of Joint Committee submitted on 16.09.2021, the Hon'ble NGT (SZ) passed following order on 23.09.2021:

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" The State Pollution Control Board as well as the Central Pollution Control Board are also directed to file their independent report regarding the further action taken by them as a regulator for the violations noted by them and non-compliance, in view of the directions issued by the Principal Bench of National Green Tribunal, New Delhi in OA No. 606 of 2015and the BBMP is also directed to file the report regarding steps taken by them in respect of the gap found by the majority members of the committee and also the steps taken by them for improving the water quality in the lake, which according to the committee has not improved than the condition which was found earlier"; and

WHEREAS, the facility was inspected by Regional Officer Bangalore City west on 14.09.2020 and observed several noncompliance and observed slaughter house was operating without valid consent.

WHEREAS, the facility authority were called for personal hearing on 01.12.2020 and following directions were issued

1. BBMP authorities has to submit project report inclusive of tender notification, short term plan and long term plan to modernize the slaughter house.
2. If BBMP is not serious in complying with Board directions and directions issued in the watch dog committee, and implement the same within one month, Board will issue closure directions to BBMP slaughter house.
3. Address a D.O. letter to BBMP administrator/commissioner and inform to take appropriate action to modernize the slaughter house and comply the Board direction.

WHEREAS, this office also brought to notice of Administrator of BBMP about serous noncompliance and requested for personal interest in attending the same at the earliest vide ref.(2) and (3) , further no response received from the BBMP in this regard.

WHEREAS, in exercise of the powers conferred under Section 18 (1) (b) of the Water (Prevention & Control of Pollution) Act, 1974, and Air (Prevention & Control of Pollution) Act, 1981, following Directions are issued by CPCB to Karnataka State Pollution Control Board vide ref.(1):

1. To close down all activities of M/s. BBMP Civil Slaughter House, Tannery Road, Bengaluru with immediate effect.
2. To disconnect electricity supply of M/s. BBMP Civil Slaughter House, Tannery Road, Bengaluru by Bangalore Electricity Supply Company Limited
3. To disconnect water supply of M/s. BBMP Civil Slaughter House, Tannery Road, Bengaluru by Bangalore Water Supply and Sewerage Board.
4. To carry out assessment of environmental damage and recovery of the cost from M/s. BBMP Civil Slaughter House.
5. M/s. BBMP Civil Slaughter House, Tannery Road, Bengaluru shall not operate without Consent from KSPCB.

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WHEREFORE, In the circumstances explained above and in exercise of the powers conferred under section 33 (A) of Water (Prevention & Control of Pollution) Act, 1974, read with Rule 34 (4) of Water (Prevention & Control of Pollution) Rules & Section 31(A) of Air (Prevention & Control of Pollution) Act, 1981 & read with rule 20(A) of Karnataka Air (Prevention & Control of Pollution) Rules, 1983 and the Board hereby issues the following directions to;

1. M/s. BBMP Civil Slaughter House, Tannery Road, Frazer Town, Bengaluru-60017 shall close down all activities henceforth.

2. The Managing Director, 'BESCOM', Near K.R. Circle, Nrupathunga Road, Bangalore, to issue necessary directions to the concerned Executive Engineer and Assistant Executive Engineer to stop/cut off power supply to the above said industry forthwith & until further order.

3. The Chairman, BWSSB, Cauvery Bhavan, KG Road, Bangalore, to cut off water supply to the above said industry forthwith and until further orders.

4. The Deputy Commissioner, Bangalore Urban, Bangalore to seize the above industry forthwith and until further orders.

Sd/-
CHAIRMAN
KARNATAKA STATE POLLUTION CONTORL BOARD

To,

1. The Occupier,
   M/s. BBMP Civil Slaughter House,
   Tannery Road, Frazer Town, Bengaluru-60017

2. The Managing Director,
   Bangalore Electricity Supply Company Limited(BESCOM)
   Near K.R. Circle, Nrupathunga Road,
   Bangalore.

3. The Chairman,
   Bangalore Water Supply and Sewerage Board (BWSSB),
   Kaveri Bhavan, K. G. Road,
   Bangalore-560009.

4. The Deputy Commissioner,
   Bangalore Urban,
   KG Road, Near District Registrar Office
   Ambedkar Veedhi, Sampangi Rama Nagara,
   Bengaluru, 560009

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Copy Submitted to: The [illegible] Central Pollution Control Board, Parivesh [illegible] 110032

Copy to: [illegible] Hospital City [illegible] to carry [illegible] of environmental damage [illegible] from M/s [illegible] Treatment [illegible] Road [illegible] three days.

SENIOR ENVIRONMENTAL OFFICER
WASTE MANAGEMENT CELL

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Annexure 18

BRUHATH BENGALURU MAHANAGARA PALIKE, BANGALORE

CIVIL SLAUGHRT HOUSE BBMP, TANNERY ROAD, FRAZER TOWN BANGALORE

AD (AH) CS.H/PR/13/2022-23

OFFICE OF THE ASSISTANT DIRECTOR
CIVIL SLAUGHRT HOUSE BBMP
BANGALORE

PROGRESS REPORT OF FEBRUARY 2022 DATED: 4/03/2022

DETAILES	BUFFALOW	SHEEP	GOAT	PIG	OTHERS
ANIMALS FOR SLAUGHTERING	244	12229	1296	478	
ANIMALS REJECTED BEFORE SLAUGHTER	00	348	81	00	
ACTUAL NUMBER OF ANIMALS SLAUGHTERED	244	11881	1215	478	
REJECTED AFER POST MORTEM EXAMINATION	00	00	00	00	
TOTAL NUMBER OF CARCASSES AFTER PM EXAMINATION	244	11881	1215	478	

COPY TO: JOINT DIRECTOR (AH) BBMP FOR INFORMATION

DEPUTY DIRECTOR (AH) BBMP FOR INFORMATION

ಸಹಾಯಕ ನಿರ್ದೇಶಕ
ನಾಗರೀಕ ಮಾಂಸ ಉತ್ಪಾದನಾ ಮತ್ತು ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರ
ಬೃಹತ್ ಬೆಂಗಳೂರು ನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು-560 005

ನಮೂನೆ-ಕ

ನಾಗರೀಕ ಮಾಂಸ ಉತ್ಪಾದನಾ ಮತ್ತು ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರ, ಫ್ರೇಜರ್‌ಟೌನ್, ಬೆಂಗಳೂರು
೨೦೨೦-೨೨ ನೇ ಸಾಲಿನ ದಿಸೆಂಬರ್-೨೦೨೦ -೨೦೨೦ ಮಾಹೆಯ ಪ್ರಗತಿ ವರದಿ

ಕ್ರ ಸಂ	ತಿಂಗಳು	ವಧೆಗೆ ಬಂದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ					ವಧಾಪೂರ್ವ ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವು					ವಧೆಯಾದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ					ವಧಾ ನಂತರ ಪಿ.ಎಂ. ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವು					ವಧೆಯ ನಂತರ ಒಟ್ಟು ಸ್ವೀಕೃತವಾದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ				
		ಎಮ್ಮೆಗಳು	ಕುರಿ	ಮೇಕೆ	ಹಂದಿ	ಇತರೆ	ಎಮ್ಮೆಗಳು	ಕುರಿ	ಮೇಕೆ	ಹಂದಿ	ಇತರೆ	ಎಮ್ಮೆಗಳು	ಕುರಿ	ಮೇಕೆ	ಹಂದಿ	ಇತರೆ	ಎಮ್ಮೆಗಳು	ಕುರಿ	ಮೇಕೆ	ಹಂದಿ	ಇತರೆ	ಎಮ್ಮೆಗಳು	ಕುರಿ	ಮೇಕೆ	ಹಂದಿ	ಇತರೆ
೧	ಏಪ್ರಿಲ್-೨೦೨೦	36	34940	2788	342	0	0	206	144	0	0	36	34734	2644	342	0	0	0	0	0	0	36	34734	2644	342	0
	ಮೇ-೨೦೨೦	34	21276	1349	283	0	0	123	110	0	0	34	21153	1239	283	0	0	0	0	0	0	34	21153	1239	283	0
೩	ಜೂನ್-೨೦೨೦	40	19012	1876	185	0	0	152	145	0	0	40	18860	1731	185	0	0	0	0	0	0	40	18860	1731	185	0
೪	ಜುಲೈ-೨೦೨೦	308	24003	1432	313	0	0	211	157	0	0	308	23792	1275	313	0	0	0	0	0	0	308	23792	1275	313	0
೫	ಆಗಸ್ಟ್-೨೦೨೦	546	22239	1433	338	0	0	237	114	0	0	546	22002	1319	338	0	0	0	0	0	0	546	22002	1319	338	0
೬	ಸೆಪ್ಟಂಬರ್-೨೦೨೦	312	24056	1761	239	0	0	424	180	0	0	312	23632	1581	239	0	0	0	0	0	0	312	23632	1581	239	0
೭	ಅಕ್ಟೋಬರ್-೨೦೨೦	415	22845	2910	238	0	0	454	152	0	0	415	22391	2758	238	0	0	0	0	0	0	415	22391	2756	238	0
೮	ನವೆಂಬರ್-೨೦೨೦	496	22095	2910	260	0	0	341	152	0	0	496	21754	2817	260	0	0	0	0	0	0	496	21754	2817	260	0
೯	ದಿಸೆಂಬರ್-೨೦೨೦	736	21547	3629	301	0	0	369	235	0	0	736	21178	3394	301	0	0	0	0	0	0	736	21178	3394	301	0
೧೦	ಜನವರಿ-೨೦೨೧	320	18272	3715	298	0	0	352	241	0	0	320	17920	3474	298	0	0	0	0	0	0	320	17920	3474	298	0
೧೧	ಫೆಬ್ರವರಿ-೨೦೨೧	244	12229	1296	478	0	0	348	81	0	0	244	11881	1215	478	0	0	0	0	0	0	244	12229	1296	478	0
೧೨	ಮಾರ್ಚ್-೨೦೨೧																									
	ಒಟ್ಟು	3487	242514	25099	3275	0	0	3217	1711	0	0	3487	239297	23447	3275	0	0	0	0	0	0	3487	239645	23528	3275	0

ಸಹಾಯಕ ನಿರ್ದೇಶಕ (ಪಶುಪಾಲನೆ)
ನಾಗರೀಕ ಮಾಂಸ ಉತ್ಪಾದನಾ ಮತ್ತು ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು-560 005

ಸಹಾ... (...ಪಾಲನೆ)
ನಾಗರೀಕ ಮಾಂ... ಸಂಸ್ಕರಣಾ ಕೇಂ...
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು-560 005

ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ, ಬೆಂಗಳೂರು

ನಾಗರೀಕ ಮಾಂಸ ಉತ್ಪಾದನಾ ಮತ್ತು ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರದಲ್ಲಿ ವಧೆಯಾಗಿರುವ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯಾ ಕ್ರಮ ಪಟ್ಟಿಯ ದೈನಂದಿನ ವರದಿ

ದಿನಾಂಕ	ವಾರ	ವಧೆಗೆ ಬಂದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ			ಪೂರ್ವ ಮರಣ ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವುಗಳು								ಒಟ್ಟು ವಧಾ ಪೂರ್ವ ತಿರಸ್ಕೃತ		ವಧೆ ಮಾಡಲ್ಪಟ್ಟ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ			ವಧೆಯ ನಂತರ PM ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವುಗಳು			ವಧೆಯ ನಂತರ ಒಟ್ಟು ಸ್ಥಿರವಾದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ
					ಚಿಕ್ಕ ವಯಸ್ಸಿನವು		ಹೀಲ [illegible]ಗಳು		ಚರ್ಮರೋಗದವು		ಇತರ										
		ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಒಟ್ಟು	ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಎತ್ತು, ಹೋರಿ	ಎಮ್ಮೆ ಕೋಣ	ಒಟ್ಟು	ಸಿಸ್ಟಿಸಿರ್ ಕೋಸಿಸ್	ಇತರ ಕಾರಣಗಳು	ಒಟ್ಟು	
1 1/3/22	Meat less day																				
2 2/3/22			5	5									0	0		5	5			0	5
3 3/2/22			5	5									0	0		5	5			0	5
4 4/2/2			6	6										0		6	6			0	6
5 5/3/2			4	4										0		4	4			0	4
6 6/2/22			14	14										0		14	14			0	14
7 7/3/2			1	1										0		1	1			0	1
8 8/2/2			5	5										0		5	5			0	5
9 9/3/22			2	2										0		2	2			0	2
10 10/3/2			4	4										0		4	4			0	4
11 11/2/22			7	7										0		7	7			0	7
12 12/3/22			8	8										0		8	8				8
13/3/22	No Slaughter																				
14/2/22	No Sl...																				
15/3/22	No ...																				

ಸಹಾಯಕ ನಿರ್ದೇ...
ನಾಗರೀಕ ಮಾಂಸ ...
ಬೃಹತ್ ಬೆಂ...
15/3/22

ಸಹಾಯಕ ... (ಪಶುಪಾಲನೆ)
ನಾಗರೀಕ ಮಾಂಸ ... ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬೆಂಗಳೂರು-560 005

ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ, ಬೆಂಗಳೂರು

ನಾಗರೀಕ ಮಾಂಸ ಉತ್ಪಾದನಾ ಮತ್ತು ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರದಲ್ಲಿ ವಧೆಯಾಗಿರುವ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯಾ ಕ್ರಮ ಪಟ್ಟಿಯ ದೈನಂದಿನ ವರದಿ

ವಾರ	ವಧೆಗೆ ಬಂದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ			ವಧಾ ಪೂರ್ವ ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವುಗಳು										ಒಟ್ಟು ವಧಾ ಪೂರ್ವ ತಿರಸ್ಕೃತ	ವಧೆ ಮಾಡಲ್ಪಟ್ಟ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ	ಒಟ್ಟು	ವಧೆಯ ನಂತರ PM ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವುಗಳು				ವಧೆಯ ನಂತರ ಒಟ್ಟು ಸ್ಥಿರವಾದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ
				ಚರ್ಮರೋಗ		ದಾಸ್ಸಿ		ಜ್ವರ		ಚಿಕ್ಕವಯಸ್ಸಿನವು		ಇತರೆ					ಲಿವರ್ ಫ್ಲೂಕ್	ಲಿವರ್ ಸಿರೋಸಿಸ್ ಸಿಸ್ಟ್	ಶ್ವಾಸಕೋಶ ಬಾಯಿಲ್	ಒಟ್ಟು	
	ಕುರಿ	ಮೇಕೆ	ಒಟ್ಟು	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ + ಮೇಕೆ	ಕುರಿ + ಮೇಕೆ						
1/3/22	650		MEAT LESS DAY																		
2/3/22	650	110	760							15	10			15+10	635+100	735	—	—	—		735
3/3/22	552	55	607							20	10			20+10	532+55	587					587
4/3/22	850	120	970							15	10			15+10	835+110	945					945
5/3/22	820	110	930							20	5			20+5	800+105	905					905
6/3/22	1050	150	1200							30	10			30+10	1020+140	1160					1160
7/3/22	70	15	85							3	0			3+0	67+15	82					82
8/3/22	610	140	750							15	10			15+10	595+130	725					725
9/3/22	452	75	527							10	4			10+4	442+71	513					513
10/3/22	250	35	285							10	0			10+0	240+35	275					275
11/3/22	1250	170	1420							15	5			15+5	235+165	1400					1400
12/3/22	1200	155	1355							25	10			25+10	1175+145	1310					1310
13/3/22	No Slaughter																				
14/3/22	No Slaughter																				
15/3/22	No Slaughter																				

For
ಸಹಾಯಕ ನಿರ್ದೇಶಕರು ...
ನಾಗರೀಕ ಮಾಂಸ ...
ಬೃಹತ್ ಬೆಂಗಳೂರು ...
ಬೆಂಗಳೂರು-... 005

15/3/22

ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ, ಬೆಂಗಳೂರು

ನಾಗರೀಕ ಮಾಂಸ ಉತ್ಪಾದನಾ ಮತ್ತು ಸಂಸ್ಕರಣಾ ಕೇಂದ್ರದಲ್ಲಿ ವಧೆಯಾಗಿರುವ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯಾ ಕ್ರಮ ಪಟ್ಟಿಯ ದೈನಂದಿನ ವರದಿ

ಸಾಲು	ವಧೆಗೆ ಬಂದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ			ವಧಾ ಪೂರ್ವ ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವುಗಳು										ಒಟ್ಟು ವಧಾ ಪೂರ್ವ ತಿರಸ್ಕೃತ	ವಧೆ ಮಾಡಲ್ಪಟ್ಟ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ	ಒಟ್ಟು	ವಧೆಯ ನಂತರ PM ಪರೀಕ್ಷೆಯಲ್ಲಿ ತಿರಸ್ಕೃತವಾದವುಗಳು				ವಧೆಯ ನಂತರ ಒಟ್ಟು ಸ್ವೀಕಾರವಾದ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ
				ಚರ್ಮರೋಗ		ಡ್ರಾಪ್ಸಿ		ಜ್ವರ		ಚಿಕ್ಕವಯಸ್ಸಿನವು		ಇತರ					ಲಿವರ್ ಫ್ಲೂಕ್	ಲಿವರ್ ಸಿರೋಸಿಸ್/ಪೈಸ್	ಶ್ವಾಸಕೋಶ ಹಾಯಿದ		
	ಕುರಿ	ಮೇಕೆ	ಒಟ್ಟು	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ	ಮೇಕೆ	ಕುರಿ + ಮೇಕೆ	ಕುರಿ + ಮೇಕೆ					

Annexure 19

BRUHATH BENGALURU MAHANAGARA PALIKE

OFFICE THE CHIEF COMMISSIONER, N.R. SQUARE, BENGALURU-560002.

NO:CC(PR)/ /2021-22 **Date: 16-03-2022**

18/3/2022

To, (G) 4970

The Member Secretary,
Karnataka State Pollution Control Board,
Parisara Bhavan, #49, 4th & 5th Floor,
Church Street,
Bangalore-560001

Sir,

Sub: Request to revoke the closure order issued to both the Slaughter Houses at Tannery Road and Usman Khan Road.

Ref: 1. Closure order No. KSPCB/NGT/SEO-INFRA/CLO-Order/2022/118 Dated: 21-01-2022 issued to the Usman Khan Road Slaughterhouse
2. Closure order No. PCB/YMC/1040/2016/120 Dated: 28-01-2022 issued to the BBMP Civil Slaughter House Tannery Road

****

Bengaluru, being one of the most important city in India with an area of 825 Sq kms and a cosmopolitan population, has a huge demand for hygienic, clean meat and meat products especially among the urban youths who are aware about the nutritional benefits of meat. The city consumes 33,312 tonnes of red meat and about 5,825 tonnes of poultry meat in a year. The average daily red meat consumption in Bengaluru is about 91 tonnes. Hence, there is dire necessity of authorized Slaughter Houses within the corporation limits.

BBMP was operating three slaughter houses at Tannery Road, Usman Khan Road and Pottery Road and approximately 1500 sheep/goats, 150 Buffaloes and 20 pigs are slaughtered every day in these slaughter houses. The meat sold in the slaughter houses is verified and certified by team of Veterinary Doctors to ensure that only healthy animals are slaughtered for human consumption and that meat from animals is free from disease, wholesome and no risk to human health.

As per orders cited under reference (1) and (2) it has been directed to close the slaughter houses at Tannery Road and Usman Khan Road under section 33(A) of water (Prevention and Control of Pollution) Act, 1974. Closure of the slaughter houses will lead to

(a) illegal slaughtering of animals in shops and streets
(b) Massive discharge of blood and Animal waste into drains
(c) Illegal selling of uncertified meat to customers.
(d) Supply of unwholesome and unhygienic meat to consumers
(e) Contaminating the ground water leading to environmental pollution.

In response to the closure orders as an immediate short term measure, arrangements have been made to completely stop the discharge from both the slaughter houses. BBMP has authorized M/s **Sai Enviro Tech** to collect and transport the liquid animal waste collected in the tanks in slaughter houses to a **Common effluent treatment plant certified by KSPCB.** The Drainage outlets of the Slaughter House at Usman Khan road has been plugged from outside to ensure there is no seepage of discharge from the Slaughter House.

Waste from Usmankhan Road Slaughter house - The waste from the Usman Khan Road slaughterhouse will also be transported through tankers to the Tannery Road facility for treatment.

The following Permanent long term measures have been proposed to modernize the Slaughter House at Tannery Road:

a. **Modernization** of the Abattoir by providing new infrastructure including building, slaughtering and meat processing as per the modern Abattoir protocols.
b. Setting up an Effluent Treatment Plant with Zero **Liquid Discharge** with latest available technology– Vacuum Evaporation System with which 95% of the treated water can be recovered and can be used for washing which will result in zero discharge of either treated or untreated effluents into the storm water drain.
c. Setting up a **Biogas plant** where the solid waste will be processed as per the CPCB norms. The gas generated shall be used to produce power for usage within the modernized abettors.

A brief proposal for modernization of Slaughter House is herewith attached for your kind consideration. A Detailed Project Report (DPR) will be submitted for approval and further necessary deliberations.

In the interest of meat Consumers and public at large, we request to revoke the closure order forthwith and also consider our technical proposal to modernize the slaughter house as per the CPCB norms.

Chief Commissioner
Bruhat Bangalore Mahanagara Palike

Annexure 20

BRUHATH BENGALURU MAHANAGARA PALIKE
Office of Joint Director (Animal Husbandry), Ground Floor, Room No 7,
Annex 3, N R square, Bengaluru, Karnataka 560002.

JDAH/PR/Animal waste/PR- 194 **/2021-22** **Date:17-03-2022.**

Services Work Order

To.
Sai Enviro Tech
#9, Sri lakshmi Venkateshwara Nilaya,
Near Bandeshwaraswamy Temple,
Bandemata K.S. Town, Bengaluru-560060.

Sub:- Collection, Transportation and Disposal of Liquid Waste (generated at Slaughter houses) through suction machine from City slaughter house usmankhan road and Civil slaughter house tannery road, BBMP.

Ref:- Honorable Chief Commissioner, BBMP Note Approval No.:(G) 4947/22, Dated:17-03-2022.

******

With reference to the above subject, as per the Honorable Chief Commissioner, BBMP Note approval No.:(G) 4947/22, Dated:17-03-2022. The Collection, Transportation and Disposal of Liquid Waste (generated at Slaughter houses) through suction machine from City slaughter house usmankhan road and Civil slaughter house tannery road. From **17/03/2022 to 16/06/2022,** for a period of 03 months. The details are as follows.

Sl. No.	Brief description of service	Rate per trip for 4000 liters capacity vehicle with suction facility(inclusive of all taxes and GST)
1	Collection, Transportation and Disposal of Liquid Waste (generated at Slaughter houses) through suction machine from City slaughter house usmankhan road and Civil slaughter house tannery road, BBMP.	Rs.5,000/-

Terms and Conditions:-

(a) The Service provider has to collect, transport and dispose the Animal waste on daily basis.
(b) The Service provider should get the trip sheet of every trip verified and counter signed by the Assistant Director, City/Civil Slaughter House.
(c) All the trip sheets and GPS photos have to mandatorily produced at the time of submission of Bill.
(d) Bill should be submitted to Deputy Director (AH), BBMP and the same may be claimed under maintenance of abattoir P Code-2166.
(e) All duties, taxes and other levies payable, by service provider (including GST) is included in the item rate.
(f) The rates quoted for each trip should include all the costs, such as labour charges, vehicle charges, suction charges, and other incidental charges.
(g) All disputes will be referred to Honourable chief Commissioner, BBMP, whose decision shall be final and binding on both Sides.

17/03/22

Joint Director (Animal Husbandry)
BBMP, Bengaluru

Copy submitted to:

1. The Chief Commissioner, BBMP for kind information.
2. The Special Commissioner (Health, IT & AH), BBMP for kind information.
3. The Special Commissioner (SWM), BBMP for kind information.
4. The Joint Commissioner (SWM), BBMP for kind information.
5. Deputy Director (AH), BBMP For information and necessary action.
6. Assistant Director (AH), City / Civil Meat Production and Processing Centre, BBMP For information.
7. DCF, BBMP For information and necessary action.
8. Office Copy.

Annexure 21

Format-3

Action taken report of Department of Fisheries

Sl	Suggestion of the Joint Committee in the report dt 10.08.2020	Measures implemented	Measures yet to be implemented	Time required for implementing the measures
1	To prescribe appropriate physio-chemical and biological parameters in the contract / agreement to carryout water quality monitoring while appointing contractor for fishing.	The Prescribed appropriate physio-chemical and biological parameters of water of Ulsoor lake is carried out periodically by lessee i.e Fisheries-co-operative society. Reports are enclosed for your reference. It is submitted that the all values are in the permissible range.	-	-
2	To carryout study of bio accumulation of heavy metals in some tissues of fishes in Ulsoor Lake.	The analysis of heavy metals accumulation in tissues of fishes in Ulsoor Lake has been carried out by recognized govt lab. The report is enclosed for your reference. It is submitted that the heavy metals range in the tissues of Fishes of Ulsoor lake are in permissible range and fishes are safe for human consumption.	-	-
3	To maintain the cleanliness of the Ulsoor Lake and disposal of aquatic plants by pit composing method or any other means.	Fishermen co-operative society is maintaining the cleanliness of the lake as per procedure laid down by the Fisheries department.	-	-

Date: 11/03/2022

Place: Bangalore

11/3/2022

Deputy Director of Fisheries

Bangalore urban District.

Annexure 21

Karnataka Veterinary, Animal And Fisheries Sciences University
Soil, Water and Fish Health Investigation Laboratory
Fisheries Research and Information Center (Inland)
10th cross, Mayura Street, Hebbal Outer Ring Road, Papanna layout, Bengaluru – 560 094
Tel & fax: 080-2351645 Email: fricbangalore@gmail.com

No: FRIC (I) Hebbal/DOF/ 34a /2021-22 Date: 24.08.2021

To,
Bangalore District, Fish Production & marketing
Co- Operative Society Ltd
Bengaluru-75

Sir,

Sub: Submission of report on water quality monitoring of Ulsoor lake- reg.

This is to inform you that, we have undertaken the water and fish quality analysis of ulsoor lake during August, 2020. Accordingly, I herewith submit the report for your kind information and further needful.

I sincerely hope you will find the contents of the report on the guidelines and take appropriate initiation to maintain good water quality in the lake.

Yours faithfully,
Professor & Head
Fisheries Research and Information Centre
KVAFSU,10th Cross, Mayura Street
Papanna Layout, Hebbal Outer Ring Road
Bengaluru - 560 094

Copy to:

1. Sr. Assistant Director Fisheries, Department of Fisheries, Bengaluru Urban.
2. Assistant Director Fisheries, Department of Fisheries, Bengaluru South.

16/3/22
Deputy Director of Fisheries
Bangaluru Urban Dist.

Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar

WATER AND FISH QUALITY LAKE OF ULSOOR LAKE

August, 2021

Submitted to

Bengaluru District, Fish Production & Marketing

Co Operative Society Ltd, Bengaluru-75

Fisheries Research and Information Centre (Inland)
[illegible] Nayura Street, Hebbal Outer Ring Road, Papanna layout,
Bengaluru – 560 094

CONTENT

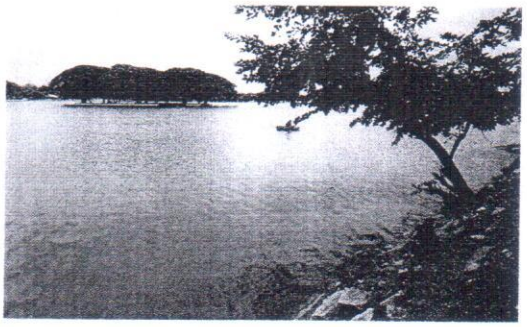
Introduction

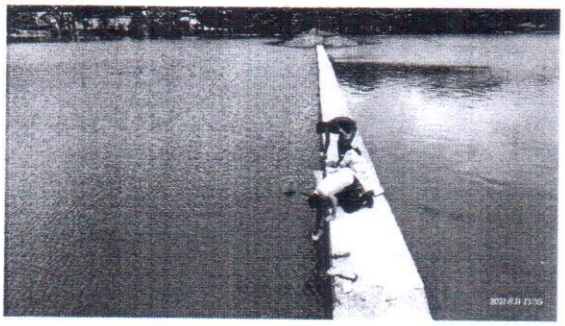
Freshwater is the fastest depleting natural resources in the world. The surface waterbodies like lakes, ponds and tanks are the sources of fresh water for majority, at least, in rural areas or in cities where dense population occurs. Unfortunately, due to irresponsible and careless management these waterbodies have been abused to such an extent that not only their ecology is under threat but their very existence is at stake in many cases. Of late, realizing the importance of lakes and ponds, many governments have initiated action to protect and restore them for the benefit of society. People consume harvested fish from these eutrophic lakes without knowing the quality and consequences. It is in this context that the Department of Fisheries, Bengaluru is committed to empower the people in Bengaluru city regarding the efficient utilization of lake water and also quality fish production from those waters.

Ulsoor Lake situated in the eastern part of the city and spread over an area of about 50 ha. It has three islands and receives direct industrial and domestic wastewaters from the surrounding area. The wastewater is aerated and then let into the lake. There is a park in its vicinity, a corporation swimming pool adjacent to the lake. Madras Engineering Group (MEG) uses this lake for training Purpose.

Further, to know the water quality from Ulsoor lake, the authority has assigned the task of investigating one lake to FRIC, Hebbal, Bengaluru. The assignment was to analyze the water qualities of these lakes with perspective to produce quality fish and to maintain the ecological and aesthetic environment. in this context, water from the ulsoor lake was analyzed and following are the observations.

ULSOOR LAKE





OBSERVATIONS OF WATER QUALITY OF ULSOOR LAKE

Parameters	Methodology	Samples			Standards for aquaculture
		Inlet	Middle	Outlet	
pH	pH meter	7.76	7.53	8.47	**6.5-8.5**
Alkalinity (mg/l as $CaCO_3$)	Titration method	96	72	76	**300**
Hardness (mg/l)	Titration method	144	108	94	**<500**
Conductivity (mS/cm)	Electrometric method	0.40	0.36	0.38	**<1.0**
Dissolved Oxygen (mg/l)	Winkler's method	8.43	7.73	8.61	**4-10**
BOD (mg/l)	Winkler's method after 3 days incubation @ 27 ^{0}C	1.24	2.21	2.28	**< 5**
COD (mg/l)	Chemical oxidizing method	470	380	260	**<500**
Turbidity (NTU)	Turbidometer	0.09	0.01	0.02	**< 5**
Carbon di oxide (mg/l)	Titration method	16.1	28.72	27.44	**<30**
Ammonia (PPM)	Phenol hypochlorite method	0.619	0.052	0.625	**<2**
Nitrate (PPM)	Strictlan and parsons	0.008	0.008	0.004	**<1**
Phosphorous (mg/l)	Strictland and parsons	0.882	0.267	0.405	**<1**
Heavy Metals		**Rohu Fish**	**Tilapia Fish**		
Lead mg/kg	AAS	BDL	**0.005**		**0.3**
Mercury (mg/kg)	AAS	BDL	0.010		**0.5**
Cadmium (mg/kg)	AAS	0.03	0.01		**0.3**
Nickel (mg/kg)	AAS	BDL	BDL		**0.5**
Zinc (mg/kg)	AAS	BDL	BDL		**40**

- **BDL- Below Detectable Level**

Group	Inlet (Nos/ml)	Middle (Nos/ml)	Outlet (Nos/ml)
Chlorophyceae			
Volvox	18	20	19
Gonium	15	18	14
Sphaerdystis	02	36	16
Pediastrum	03	14	17
Chlorella	08	19	16
Spirogyra	20	20	19
Clostrium	13	14	20
Bacillarophyceae			
Diatom	52	08	26
Asterionella	14	09	18
Charophyceae			
Nitella sp.	23	18	15
Total	**168**	**158**	**180**

Inference:

- The water quality parameters analyzed are within permissible limits.
- The heavy metal in fish tissue is below permissible limit.
- Fish from Ulsoor lake can be safe for human consumption only after removal of gill, intestine and proper cooking.
- The lake with proper management the water body can be efficiently used for fish culture.
- However, all the water entry points must have silt trap be provided with and lake has to be oxygenated using a greater number of jet aerators.
- Water quality analysis must be carried out every month and Heavy Metal in fish, water and sediment has to be measured for every six months.

16/7/2022

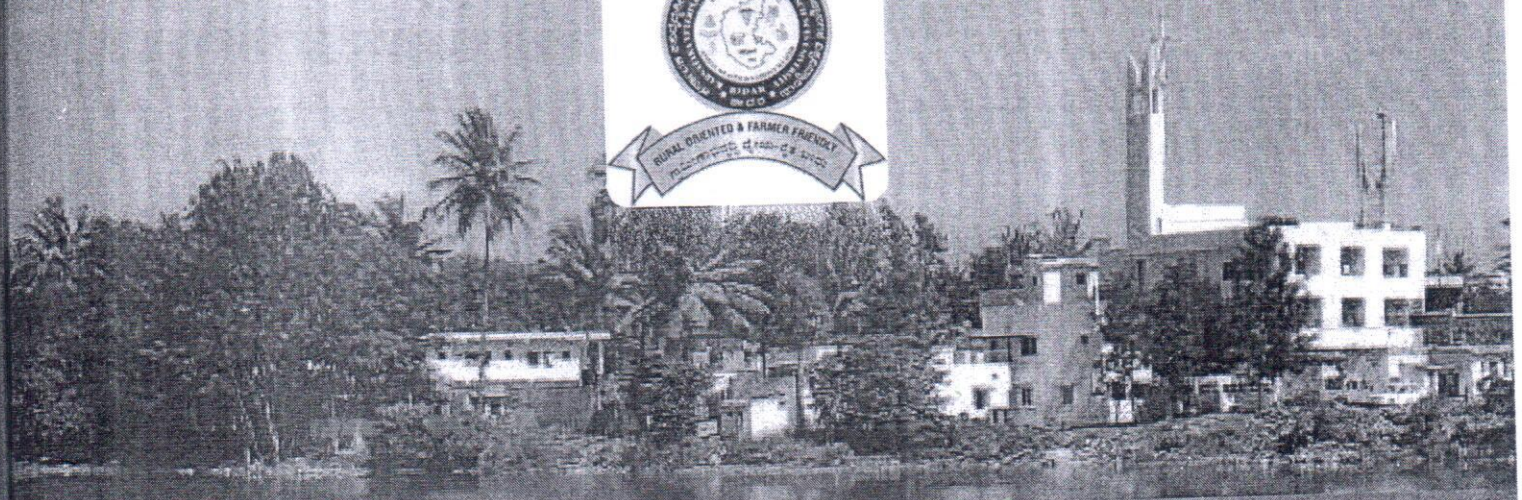
4

Deputy Director of Fisheries
Bangaluru Urban Dist.

Professor and Head
FRIC, Hebbal

Professor & Head
isheries Research and Information Centre
KVAFSU, 10th Cross, Mayura Street
Papanna Layout, Hebbal Outer Ring Road
Bengaluru - 560 094

Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar



REPORT OF WATER QUALITY OF ULSOOR LAKE

December, 2021

Fisheries Research and Information Centre (Inland)
10th cross, Mayura Street, Hebbal Outer Ring Road, Papanna layout,
Bengaluru – 560 094

CONTENT

Introduction

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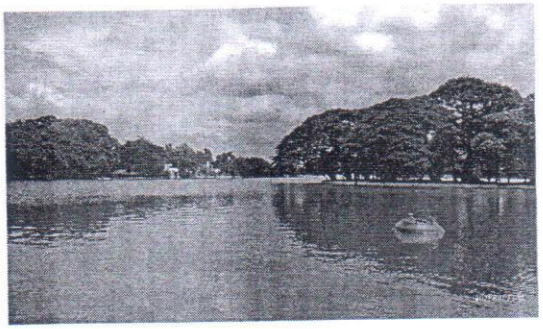

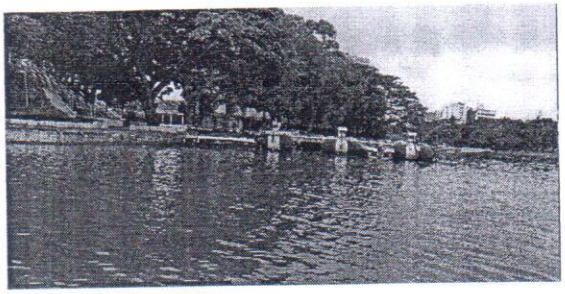

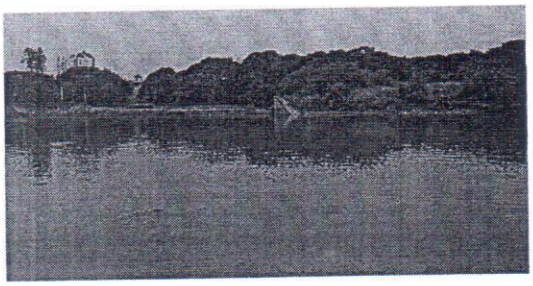

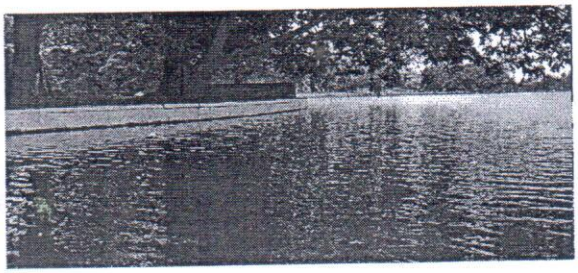

OBSERVATIONS OF WATER QUALITY OF ULSOOR LAKE

Parameters	Methodology	Samples			Standards for aquaculture
		Inlet	Middle	Outlet	
pH	pH meter	8.50	8.17	8.11	6.5-8.5
Alkalinity (mg/l as $CaCO_3$)	Titration method	84	76	72	300
Hardness (mg/l)	Titration method	104	92	88	<500
Conductivity (mS/cm)	Electrometric method	0.24	0.25	0.24	<1.0
Dissolved Oxygen (mg/l)	Winkler's method	8.87	9.07	9.19	4-10
BOD (mg/l)	Winkler's method after 3 days incubation @ 27 ^{0}C	3.4	3.8	3.4	< 5
COD (mg/l)	Chemical oxidizing method	423	380	290	<500
Carbon di oxide (mg/l)	Titration method	19.36	15.84	14.80	<30
Ammonia (PPM)	Phenol hypochlorite method	0.1	0.25	0.32	<2
Nitrate (PPM)	Strictlan and parsons	0.014	0.013	0.014	<1
Nitrite (ppm)	Strictland and parsons	0.013	0.012	0.013	<1

- **BDL- Below Detectable Level**

Inference:

- The water quality parameters analyzed are within permissible limits.
- Fish from Ulsoor lake can be safe for human consumption only after removal of gill, intestine and proper cooking.
- The lake with proper management the water body can be efficiently used for fish culture and increase the production.
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Professor and Head
FRIC, Hebbal

Professor & Head
Fisheries Research and Information Centre
KVAFSU,10th Cross, Mayura Street
Papanna Layout, Hebbal Outer Ring Road
Bengaluru - 560 094

16/3/2022

Deputy Director of Fisheries
Bangaluru Urban Dist.

Annexure 21

Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar

REPORT OF WATER QUALITY OF ULSOOR LAKE

March, 2022

Fisheries Research and Information Centre (Inland)
10th cross, Mayura Street, Hebbal Outer Ring Road, Papanna layout,
Bengaluru – 560 094

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CONTENT

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Introduction

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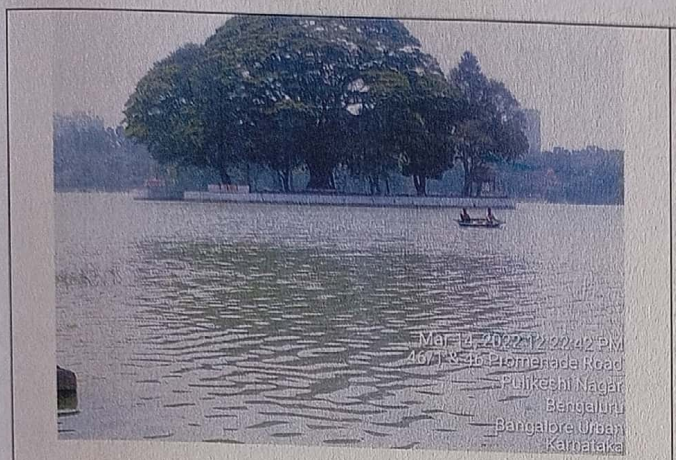

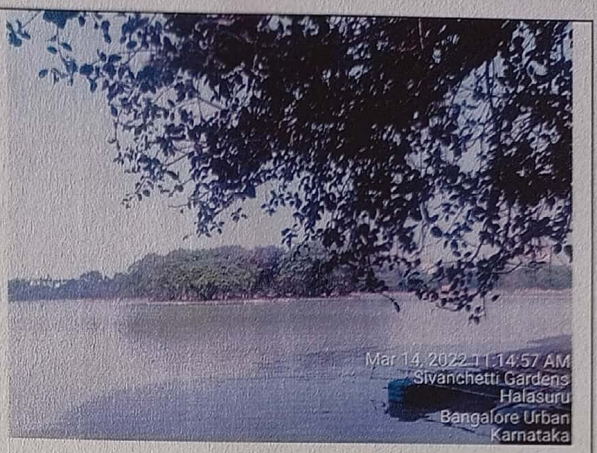

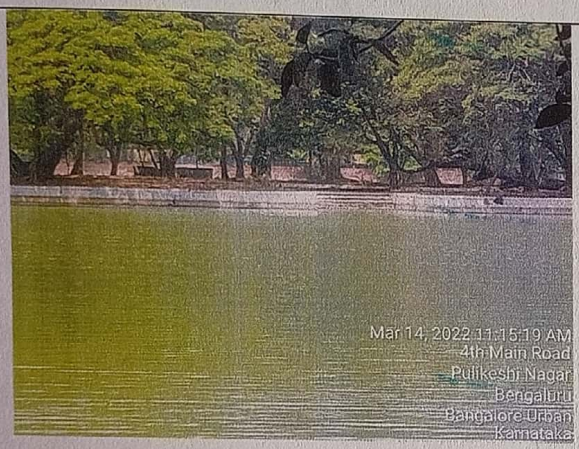

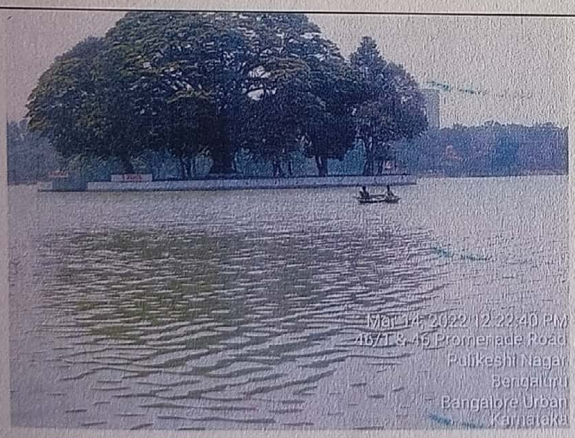

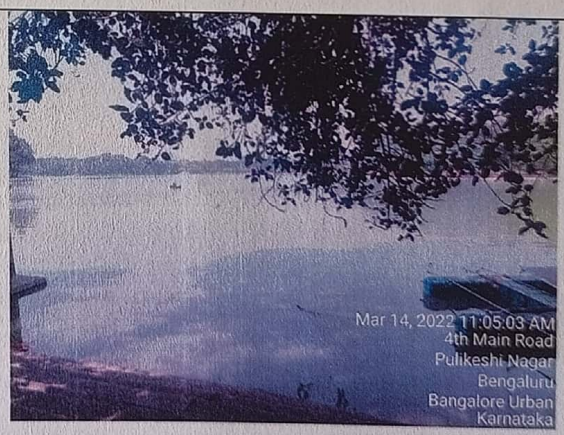

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OBSERVATIONS OF WATER QUALITY OF ULSOOR LAKE

Parameters	Methodology	Samples			Standards for aquaculture
		Inlet	Middle	Outlet	
pH	pH meter	8.19	8.92	8.70	6.5-8.5
Alkalinity (mg/l as $CaCO_3$)	Titration method	96	84	92	300
Hardness (mg/l)	Titration method	102	84	98	<500
Conductivity (mS/cm)	Electrometric method	0.32	0.33	0.33	<1.0
Dissolved Oxygen (mg/l)	Winkler's method	8.42	8.32	8.43	4-10
BOD (mg/l)	Winkler's method after 3 days incubation @ 27 ^{0}C	NIL	NIL	NIL	< 5
COD (mg/l)	Chemical oxidizing method	360	280	250	<500
Carbon di oxide (mg/l)	Titration method	10.23	12.90	16.80	<30
Ammonia (PPM)	Phenol hypochlorite method	0.046	0.048	0.045	<2
Nitrate (PPM)	Strictlan and parsons	0.0146	0.0137	0.0142	<1
Nitrite (PPM)	Strictland and parsons	0.0183	0.0165	0.0181	<1
Lead (Fish) Tilapia	AAS	BDL			0.3
Mercury (Fish)	AAS	0.025			0.5
Cadmium(Fish)	AAS	0.055			0.3
Lead (Water)	AAS	BDL	BDL	BDL	0.3
Mercury (Water)	AAS	0.01	0.015	0.02	0.5
Cadmium(Water)	AAS	0.065	0.035	0.04	0.3

- **BDL- Below Detectable Level**

Scanned by CamScanner

Inference:

- The water quality parameters analyzed are within permissible limits.
- Fish from Ulsoor lake can be safe for human consumption only after removal of gill, intestine and proper cooking.
- The lake with proper management the water body can be efficiently used for fish culture.
- However, all the water entry points must have silt trap provided with and lake has to be oxygenated using more number of get aerators.
- Water quality parameters must be carried out every month and Heavy metal in fish, water and sediment has to be measured for every six months.

Professor and Head

Professor & Head
Fisheries Research and Information Centre
KVAFSU, 10th Cross, Mayura Street
Papanna Layout, Hebbal Outer Ring Road
Bengaluru - 560 094.

Scanned by CamScanner

Annexure 22

Format

Action taken report of Madras Engineering Group

Sl	Suggestion of the Joint Committee in the report dt 10.08.2020	Measures implemented	Measures yet to be implemented	Time required for implementing the measures
1	To apply and obtain Consent (CFO) for discharge of effluents under the Water (Prevention & Control of Pollution) Act, 1974 and emissions under the Air (Prevention & Control of Pollution) Act, 1981 for operating & discharging of treated sewage from KSPCB immediately.	KSPCB authorities have approached this office regarding obtaining NOC for 'Consent to Operate' 100 KLD STP at MEG & Centre. On enquiring about the procedure to apply for NOC, a consent fee structure applicable to State/Central Govt Undertaking/PSU's were handed over by KSPCB authorities. However, no fee structure was conveyed for Defence /Non-Industrial/Govt of India Agency. The said STP being built on A1 Defence Land, none of the listed fee structure is applicable to this STP. Moreover, infrastructure being constructed on A1 Defence Land is not liable to pay any fee on this account. In this connection, HQ Karnataka & Kerala Sub Area letter No. 19000/29/AMWP/STP/21-22/Q3W dated 4 Jan 2022 and KSPCB letter No. PCB/BCE/678/2021-22/1126 dated 01 Feb 2022 stating that case for waiver off consent fee for this org has been initiated by KSPCB is enclosed herewith for your info pl.	Not applicable for this Organization being built on A1 Defence Land. If any consent fee is applicable for Defence Org, auth/policy letter on same may please be provided	NA

2	To operate the ETP complying to the effluent discharge Standards and not with discharge treated effluent directly into storm water drain. Shall lay a pipeline to discharge treated sewage with cascade aeration system in Wetland of Ulsoor Lake. Also to install flow meter and maintain proper records of the same.	STP 100 KLD installed at MEG & Centre has been complying to the effluent discharge standards. A work for utilization of treated water from STP has been sanctioned for Rs. 4.98 Lakhs by HQ K&K Sub Area, Bangalore (copy enclosed). This will cater for utilizing the treated water of STP for Arboriculture and watering of MEGEPTA Golf Arena at MEG & Centre. The work has already been tendered and commenced on 2008/114/E2 dated 2 Jan 2022. The expected date of completion is 28 Aug 2022. However, work is expected to complete by 30 Apr 2022. (Copy of Work Order enclosed). Copy of Work Order enclosed). It is also confirmed that flow meter and records of STP are properly maintained at MEG and Centre. Log books/documents have been produced during the inspection by CPCB and KSPCB officials from time to time.	Work for utilization of treated water from STP MEG & Centre is under progress.	30 Apr 2022
3	To propose and construct additional STP to treat additional 4200 KLD of domestic sewage generated from MEG and stop discharging untreated sewage into UGD in time bound manner.	Pl refer this office letter No. 4001/18/E4 dated 22 Nov 2021 addressed to KSPCB (copy enclosed), where it has been clearly mentioned that the info of 4.2 MLD sewage generated and discharged into drains is farfetched. Sewage load of MEG & Centre is 1800 KLD out of which 100 KLD is under operation and 1200 KLD has been planned and under tender action. Details of same is enclosed vide above referred letter	STP work has been concurred and under tender action.	104 Weeks from the date of Acceptance (Probable PDC: Mar 2024)

(Soumen Sinha)
AE (E/M)
ACE E/M (North)

Annexure 23

Headquarters
Karnataka & Kerala Sub Area
PIN – 900493
C/O 56 APO

19000/29/AMWP/STP/21-22/Q3W

04 January 2022

Karnataka State Pollution Control Board
Regional Office, Bengaluru City East
Nisarga Bhawan, 3rd Floor
Thimmaiah Road, 7th 'D' Main
Shivanagar, Bengaluru - 560010

NO OBJECTION CERTIFICATE FOR 'CONSENT TO OPERATE' SEWAGE TREATMENT PLANT AT BANGALORE MILITARY STATION

Sir,

1. Please refer :-

   (a) This Headquarter letter No 19000/29/AMWP/STP/21-22/Q3W dt 11 August 2021 (copy attached).
   (b) This Headquarter letter No 19000/29/AMWP/STP/21-22/Q3W dt 16 October 2021 (copy attached).
   (c) This Headquarter letter No 19000/29/AMWP/STP/21-22/Q3W dt 20 December 2021 (copy attached).

2. STPs are planned for Bengaluru Military Station in two phases (i.e. Phase-I & Phase-II) and Phase-I is approved by Integrated Headquarters of Ministry of Defence (Army) on 31 March 2020, after which planning for execution commenced immediately. The locations selected are as under -

Ser No	STP Locations	Capacity KLD
(a)	Feild Marshal Cariappa Colony (Cubbon Road)	400
(b)	Marshall Barrack (Dickenson Road)	200
(c)	56 Coy ASC (Supply) (Cubbon Road)	100
(d)	515 Tech Area (515 Military Canteen)	100
(e)	515 Military Wing (515 Military Canteen)	200
(f)	Harish Barrack & Separated Family Accommodation (515 Military canteen)	100
(g)	CMP Centre & School (Neelasandara)	400
(h)	Vannarpet Non Commissioned Officers (NCO) Colony	300
(j)	Training Battalion III Madras Engineer Group & Centre (Banaswadi)	400
(k)	Chaudhary Line & Army Digital Mapping Centre (Chikka Banaswadi)	200
(l)	Tarapore Officers Colony/Promenade Officers Colony/MEG Officers Mess (Promenade Road)	100
(m)	Baird Barracks (Dickenson Road)	350
(n)	Sandip Unnikrishnan Officer Enclave (Dickenson Road)	15
(o)	Senior Officer Colony (Dickenson Road)	50
(p)	Gun Troops Officer Colony (Old Airport Road)	130
(q)	Rashtriya Military School (Neelasandra)	150
(r)	Controller Defence Account (Victoria Road)	520
(s)	Vanarpet Office Colony (Victoria Road)	100
(t)	Domlur (Domlur Village)	200
(u)	Meanee Line (Near Maya Bazar)	670
(v)	Assaye Line and Field Marshal Manekshaw Enclave (John's Road)	700
(w)	EC Line (Jeevanhalli)	300

3 A fee structure has been fixed to accord No Objection Certificate for 'Consent to Establish' STPs. It is once again reiterated that with regard to the proposal for taking consent for establishment & operation of STPs and subsequent fee structure, there is no provision for Army Establishments/Stations in Karnataka taking prior consent & depositing fees before operationalising STPs. It is once again intimated that Military Engineer Services is a not-for-profit Central Govt Deptt under Ministry of Defence which provides essential services to the Armed Forces & Defence Establishments.

4 In view of the non-applicability of the fee structure being a non-industrial organization, the requirement of payment of fees for establishment and running of STPs is not justified and may be urgently reviewed at your end.

5 Hence, you are requested to issue No Objection Certificate for above mentioned STPs without any fee as this is a transaction between two Govt Agencies (Central & State Govt) at the earliest.

6 A favourable action is requested please.

Yours faithfully,

(Shouvik Sen)
Colonel
Colonel Quartermaster
for General Officer Commanding

Copy to

Additional Chief Secretary (UDD)
Govt of Karnataka,
Vikasa Soudha
Bengaluru -560001

Bengaluru Water Supply & Sewage Board
Cauvery Bhavan, 2nd Floor, K G Road,
Bengaluru Karnataka-560009

HQ DB Area (Q Wks)

MEG & Centre

CWE (Army) Bengaluru

CE North Bengaluru

S

Annexure 24

ಫ್ಯಾಕ್ಸ್ / Fax : 080-25586321
ಈಮೇಲ್ / E-mail : ho@kspcb.gov.in
ವೆಬ್‌ಸೈಟ್ / Website : http://kspcb.gov.in

☎ 25581383, 25589112
25588151, 25588270
25588142, 25586520

ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ
Karnataka State Pollution Control Board

"ಪರಿಸರಭವನ", 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ.49, ಚರ್ಚ್‌ಸ್ಟ್ರೀಟ್, ಬೆಂಗಳೂರು - 560 001, ಕರ್ನಾಟಕ, ಭಾರತ
"Parisara Bhavana", 1st to 5th Floor, # 49, Church Street, Bengaluru - 560 001, Karnataka, INDIA

No. PCB/83/LKS/2010/ 7167

Dated: 29 MAR 2022

To

1. The Director,
M/s MEG & Center
Shivanachetty Gardens,
Bengaluru-560042.

Sub: Non-compliance under the provisions of the Water (Prevention & Control of Pollution) Act, 1974-Reg.

Ref:

1. Hon'ble NGT Order dated: 10.06.2020 in the matter of OA 54 of 2016 (SUO Moto by NGT V/s Govt. Of Karnataka and Others).
2. Inspection of MEG training institute by the Joint Committee on 14.05.2020.
3. Joint Committee report dated: 10.08.2020 filed before Hon'ble NGT.
4. Hon'ble NGT Order dated 14.08.2020 in the matter of OA 54 of 2016 (SUO Moto by NGT V/s Govt. Of Karnataka and Others).
5. Joint Inspection of MEG training institute by the officers of this Office on 28.01.2021.
6. Reply submitted by MEG vide their letters dated 11.08.2021, 16.10.2021.
7. Notice of Proposed direction issued by the RSEO, Bengaluru City dated: 25.10.2021.
8. Reply submitted by MEG Headquarters vide their letters dated 22.11.2021.
9. Board Office memo dated: 14.12.2021.
10. Inspection of MEG training institute by the Officers of this office on 20.12.2021.
11. Letter submitted by MEG Headquarters dated 04.01.2022(received on 25.01.2022).
12. CPCB new Delhi directions Under Section 18(1)b letter No.CM-13013/6/2021-TECH-RD-BENGALURU-RD(Bengaluru) datd:18.11.2021.

ಪರಿಸರ ಅಧಿಕಾರಿಗಳ ಕಚೇರಿ ಬೆಂಗಳೂರು ನಗರ ಪೂರ್ವ ನಂ..2632.. ತಾ:31.3.22 ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ

Pl. forward to RO-Bangalore City East for n/a
30/3/2022

*****

With reference to above, as per Hon'ble NGT Order dated: 10.06.2021 in the matter of OA 54 of 2016 (SUO Moto by NGT V/s Govt. Of Karnataka and Others), the MEG 'Training Institute' was inspected by the Joint Committee on 14.05.2020. As per the observations made by the committee during the inspection, the report dated: 10.08.2020 was filed before Hon'ble NGT. As per the records of Regional Office Bengaluru City East, M/s. MEG & Centre authorities have established and operating 100 KLD STP to treat the sewage generated

31/3/2022

from various building located within the institute without obtaining permission from the Board.

Further, the total water consumption by MEG is about 5400 KLD and sewage generation is about 4300 KLD. Whereas the existing capacity of the STP is only 100 KLD. The balance untreated sewage is disposed into BWSSB UGD/gardens etc. As per the directions of Hon'ble NGT order cited under ref(4) and recommendations of Joint Committee, Regional office Bengaluru City East has addressed a letter to MEG Centre for making application for obtaining permission for operation of existing 100KLD STP. M/s. Garisson Engineers (North) has submitted a reply to this office notice and stated that, they are in the process of making application for obtaining permission from KSPCB.

Also, as per recommendations of Hon'ble NGT dated 23.09.2021 in the matter of OA-54 of 2016 (Suo Moto by NGT V/s Govt. Of Karnataka and others), environmental compensation of Rs. 2, 94, 60,000/- was imposed for non-compliance of the discharge standards in 100KLD STP operated by MEG and it is also directed that M/s. Madras Engineering Group and Centre shall apply for consent for operation of existing STP and to construct an additional STP to treat 4200 KLD of sewage generated from MEG Centre in a time bound manner. As MEG authorities have not taken steps for making application for obtaining CFE/CFO from Board, RSEO, Bengaluru City has issued NPD cited under ref(7).

In the mean time, M/s. MEG & Centre authorities have submitted reply on 11.08.2021, 16.10.2021, 22.11.2021, 20.12.2021 which is not acceptable and as per the reply letter stated that, the sewage generated from MEG and centre is only 1800 KLD, out of which STP 100 KLD is operating and rest of 1200KLD STP are under planning and will be established soon. Further stated that, to obtain CFE and CFO for STP, in the consent fee structure nowhere mentioned that, Army establishments needs to take prior consent and deposit fees also informed that Military Engineer services is not a profit organisation and it is coming under central Govt Department under Ministry of Defence which provide essential services to the Armed forces and defence establishments. Also stated that, as the non-applicability of the fee structure being a non- industrial organization, the requirement of payment of fee for establishment and running of STPs is not justified and requested to review the decision on applicability of fee payments.

Now, the authorities of M/s. MEG & Centre in the letter dated 04.01.2022 informed that, they have planned STP's for Bengaluru Military Station in two phases (i.e, Phase-I, Phase-II) and Phase-I is approved by Integrated Headquarters of Ministry of Defense (Army) on 31.03.2020, after which planning for execution commenced immediately. You have selected about 22 locations and total capacity to treat sewage 5285 KLD with STP's of various capacities for which prior CFE and CFO is necessary.

You have requested to provide a exemption provision for Army establishments/Stations in Karnataka. Also you are requesting for issue of NOC without any Consent fees, since Military Engineer Services non profit organisation of Central Govt. Department under Ministry of Defence which provides essential services to the Armed Forces & Defence Establishments which is not acceptable under prevailing rules.

In view of the protection of Ulsoor lake, the Chairman of CPCB has issued directions under section 18(1) (b) to KSPCB. As per the same you are required to treat all the domestic sewage generated from the campus and utilize the same inside premises without discharging outside.

In view of the above, non-compliance, you are hereby informed to appear for Personal hearing before the Chairman, KSPCB scheduled to be held on **04.04.2022** at **11.00 AM** Karnataka State Pollution Control Board, 3rd Floor, No.49, "Parisara Bhavan", Church Street, Bangalore -560 001.

Please note that only the authorized person who can take decision at the meeting should attend with complete details, otherwise the Board will take exparte decision on the matter.

The receipt of this letter may please be acknowledged.

Draft Approved by Chairman

Yours faithfully,
Sd/-
Chairman

Copy to: 1.Regional officer, **(Sarjapura)** for information and to attend the meeting with complete details.

2. Case file.

SENIOR ENVIRONMENTAL OFFICER

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD,
(Ministry of Environment, Forest & Climate Change Govt. Of INDIA)
REGIONAL DIRECTORATE, BENGALURU

Annexure 25

TC-7739

Recognised under E(P) Act, 1986
(Legal 42(3)/87, dated 6th March, 2017)

TEST REPORT

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: STPs near Ulsoor lake, Bengaluru.
Nature of sample: Waste water	Sampling plan& Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:14.03.2022	Date of receipt: 14.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -25.03.2022.	Date of report issue: 28.03.2022
Code no. of sample: WW/03/2022/58,60	Req. slip no. / Date: 21W/14.03.2022.
Page No: 01	Report issue no.: WW/03/2022/58-60

Sl. No	Name of the Parameter with unit	Range of testing / Limit of Detection	Sampling location		Test Method Specification
			Ulsoor lake STP-2 MLD O/L	Ulsoor lake – MEG STP O/L	
1.	pH at 25°C	1-14	7.9	7.4	APHA, 4500-H+B, , 23rd Ed., 2017
2.	EC at 25°C µs/cm	5 - 20000 µS/cm	779	1027	APHA (22nd Ed.,): 2017 2510-B
3.	COD, mg/L	4 - 150000 mg/L	38	53	IS 3025 (part 58): 2006
4.	$BOD_{3d,27°C}$, mg/L	2 - 75000 mg/L	05	08	IS: 3025, Part 44-1993, Reaffirmed 2009
5.	TDS at 180°C,mg/L	5 - 100000 mg/L	420	607	APHA (23rd Ed.,): 2017, 2540 C
6.	TSS at 105°C, mg/L	5 – 2000 mg/L	BDL	BDL	APHA (23rd Ed.,): 2017 2540-D,
7.	Ammonical Nitrogen as N, mg/L	1 - 500 mg/L	BDL	BDL	APHA, 4500-NH_3 B & C, 23rd Ed., 17
8.	Total Kjeldahl Nitrogen (TKN) as N, mg/L	2 – 1000 mg/L	BDL	3.8	APHA (23rd Ed.,): 2017 4500-Norg-B,
9.	Nitrate as N, mg/L	0.02 - 100 mg/L	0.02	BDL	APHA (23rd Ed.,): 2017 4500-NO_3-E,
10.	Nitrite as N, mg/L	0.02 - 10 mg/L	0.12	1.62	APHA (23rd Ed.,): 2017 4500-NO_2-B,

A. Gnanavelu

Authorized signatory
(A.Gnanavelu)
Scientist 'C'

The report shall not be reproduced, except in full, without the written approval of the laboratory.

- Compliance/non-compliance opinion not sought by customer.
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested
- Parameters marked * are not under NABL scope.

--- End of Report---

IS/ISO: 45001:2018
Certified Laboratory
Recognised under E(P) Act, 1986

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment, Forest & Climate Change)
REGIONAL DIRECTORATE (SOUTH), BENGALURU

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: STPs -Near Ulsoor lake, Bengaluru.
Nature of sample: Waste water	Sampling plan & Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:14.03.2022	Date of receipt: 14.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -08.04.2022.	Date of report issue: 11.04.2022
Code no. of sample: BSW/03/2022/26-27	Req. slip no. / Date: 15 BSW/14.03.2022.
Page No: 01	Report issue no.: BSW/03/2022/26-27

Sl. No	Name of the Parameter with unit	Sampling location		Test Method Specification
		Ulsoor lake - 2 MLD STP O\L	Ulsoor lake – MEG STP - O/L	
1.	Total Coliform (MPN/100 ml)	490	31600	APHA, 9221 B, 23rd Ed., 2017
2.	Fecal Coliform (MPN/100 ml)	10	400	APHA, 9221 E, 23rd Ed., 2017

Authorised signatory

Deepesh V

- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- Compliance/non-compliance opinion not sought by customer
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested

--- End of Report---

08029512669
08029512669
nbng4-mes@nic.in

Garrison Engineer (North)
T/64 Meanee Lines
MEG & Centre
Bangalore - 560 042

4001/ 18 /E4

22 Nov 2021

The Environmental Officer
Regional Office Bengaluru City East
KSPCB "Nisarga Bhavana"
3rd Floor, 7th 'D' Main Thimmaiah Road
Shivanagar, Bengaluru-560 010

NON COMPLIANCE UNDER THE PROVISION OF WATER (PREVENTION AND CONTROL OF POLLUTION) ACT 1974 AND AIR (PREVENTION AND CONTROL OF POLLUTION) 1981-REG

1. Please refer the following:-

(a) This office letter No 4001/11/E4 dated 12 Aug 21.
(b) This office letter No 4001/14/E4 dated 30 Sep 21.
(c) Karnataka State Pollution Control Board letter No KSPCB/RSEO/BNG-CITY/NPD/ 2021-22/167 dated 26 Oct 21.

2. With refer to above letters, Sewage load calculation at MEG & Centre under GE (North) Bangalore is as under:-

Sl No	Area	Total Sewage Load in KLD	STP running KLD	Off load to BWSSB Sewage line	Septic Tank in KLD	STP Planned in KLD	Remarks
1.	TB-I	290	100	50	140	-	
2.	Depot Bn, Records, CIW and CICE	900	Nil	500	400	670	
3.	RC Line	300	NIL	250	50	300	
4.	New TB-III	300	NIL	250	50	250	
	TOTAL	**1790**	**100**	**1050**	**640**	**1220**	

SUMMARY

1.	Total Sewage load for MEG & Centre	1.8 MLD
2.	Offload to BWSSB Line	1.0 MLD
3.	Septic tank / Imhoff tanks	0.64 MLD
4.	STP under progress	1.22 MLD

3. It is clear from above that Sewage Load of MEG & Centre is only 1800 KLD out of which 100 KLD STP is running at TB-I location & 1200 KLD, is under planning and soon to be established. So the info of 4.3 MLD sewage generation & disposed into drains is farfetched. Furthermore, for the sewage we are disposing in BWSSB Sewage lines we are paying sanitary charges to the tune of 13 Lakhs every month.

4. Further, where as the case for consent for establishment & operation fee structure, nowhere it is mentioned that Army Establishments/Stns in Karnataka has to take prior consent & deposit fees. It is intimated Military Engineer Services is a not-for-profit Central Govt. Deptt under MoD who provides services to Armed Forces & Defence Establishments. Hence levying of fees in this case is not justified & the same should be reviewed.

(Gulam Abbas, IDSE)
EE
Garrison Engineer

Copy to:-

Karnataka State Pollution Control Board - For information please.
Zonal office Bangalore city
Nisarga Bhavana, 3rd Floor
7th 'D' Main Thimmaiah Road
Shivanagar, Bangalore - 560 010

HQ K & K Sub Area - For information please.
PIN-900493
C/O 56 APO

HQ, Commander Works Engineer (Army) - For information please.
101, Dickenson Engineer
Bangalore – 560042

Tele : 25572669

Garrison Engineer
T/64 Meanee Lines
MEG & Centre
Bangalore – 560042

3 Jan 2022

2008/114/E2

AGE B/R (MEG)
AGE E/M (North)

ADM APPROVAL : MINOR WORKS 2021-22

1. The fwg Adm Approval for minor works 2021-22 issued by HQ K & K Sub Area vide their letter No 19000/26/Q3W dt 28 Dec 2021 are fwd herewith for submission of DCS at the earliest please.

(a) **KSA/BAN/25/2021-22:** Provn of pipelines and connected fittings for reuse of treated STP water at TB-I at MEG & Centre.

(b) **KSA/BAN/26/2021-22:** Provn of water storage and dranage facility for vehs washing pts at 22 RAJRIF MT Park at Banaswadi Mil Grn.

(Sheela Devi G)
AE (E/M)
AGE Tech
for Garrison Engineer

Encls : (As above)

Internal:-

E5 Sec
E8 Sec

} For info and necessary action with a copy of above Adm Approval.

MES CONTRACTOR ORDER SHEET
WORK ORDER NO 01 (MEASURABLE) 200 Appx B2

M/s **Prachaniva Constructions**, No 9A, Vinayaka Nilaya, Om Shakti Layout, Kanakagiri Post, Horamavu, Bangalore-560 043, will carry out the under mentioned work at Bangalore as per terms and conditions under **"CA NO GE(N)/B/72 OF 2021-2022 : PROVISION OF MARRIED ACCOMMODATION FOR 02 x SAILORS AT TRIVENI COMPLEX AT NAVAL LIAISON CELL (HAL) AND CERTAIN E/M WORKS FOR TREATED STP WATER AT TB-I, MEG AND CENTRE BANGALORE UNDER GE (NORTH) BANGALORE" for Rs 48,27,658.54** (Rupees Forty Eight Lakhs Twenty Seven Thousand Six hundred fifty eight and Paise Fifty Four only).

PARTICULARS

1. Auth: Garrison Engineer (North) Bangalore letter No 8276/32/E8 dated 28 Feb 2022.

2. Provide all labour and materials required for the full and entire completion of the work **"PROVISION OF MARRIED ACCOMMODATION FOR 02 x SAILORS AT TRIVENI COMPLEX AT NAVAL LIAISON CELL (HAL) AND CERTAIN E/M WORKS FOR TREATED STP WATER AT TB-I, MEG AND CENTRE BANGALORE UNDER GE (NORTH) BANGALORE"** all in accordance with **CA NO GE(N)/B/72 OF 2021-2022**.

3. Time effect
   (a) Date of handing over of site : 180 Days
   (b) Date of commencement of work : 02 Mar 2022
   (c) Date of completion : 02 Mar 2022 / 28 Aug 2022

4. Financial effect :-
   (a) Present order : Rs **48,27,658.54**

	Billed direct	Measurable	Total
(b) Contract amount as adjusted by previous order :	-	-	-
(c) Contract amount as adjusted upto including this order. :	-	**Rs 48,27,658.54**	**Rs 48,27,658.54**

5. Technically checked
(Sig _____)
Offg AGE (Contract) of GE (N) Bangalore

6. Approved
(Sig _____)
Garrison Engineer (North)

7. Accepted
(Sig _____)
Contractor or his agent holding power of attorney)

Case No: 8276/32/E8
Garrison Engineer (North)
T/64, Meanee Lines
MEG & Centre, Bangalore – 560 042

02 Mar 2022

Distribution:-
1. PCDA Bangalore (Through AO, GE (North) Bangalore),
2. AGE B/R (MEG) Bangalore-42
3. AGE E/M (North) Bangalore-42,
4. Contractor
5. The Regional Labour Officer, "Shram Sadan", 3rd Main, II Phase, Yeshwantpura, Bangalore-

Internal
6. E2 Section/E5 Section

Karnataka State Pollution Control Board
Regional Office : Bangalore City East
"Nisarga Bhavan", 3rd Floor, 7th 'D' Main,
Thimmaiah Road, Shivanagar, Bangalore-560 010.
Tel.: 080-23224830
E-mail : bngcityeast@kspcb.gov.in

ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ
ಪ್ರಾದೇಶಿಕ ಕಛೇರಿ : ಬೆಂಗಳೂರು ನಗರ ಪೂರ್ವ
"ನಿಸರ್ಗ ಭವನ", 3ನೇ ಮಹಡಿ, 7ನೇ 'ಡಿ' ಮುಖ್ಯರಸ್ತೆ,
ತಿಮ್ಮಯ್ಯ ರಸ್ತೆ, ಶಿವನಗರ, ಬೆಂಗಳೂರು-560 010.
ದೂ.: 080-23224830
E-mail : bngcityeast@kspcb.gov.in

ಕರ್ನಾಟಕ ರಾಜ್ಯ
ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ

towards a cleaner Karnataka

No: PCB/BCE/Gen-77/2022-23/69

Date: 28 APR 2022

Annexure 28

To,
The Senior Environmental Officer
Bengaluru City Zone
Karnataka State Pollution Control Board
Nisarga Bhavan, Bengaluru-560010

Sir,

Sub : Submission of action taken report of Ulsoor Lake in the matter of Hon'ble NGT OA 54 of 2016-reg

Ref : 1. SEO, Bengaluru City Zone email dt.23.2.2022.
2. T.O action taken replay submitted on 24.2.2022.

****

With reference to the above subject and in continuation of this office action taken replay submitted on 24.2.2022 w.r.to Ulsoor Lake in the matter of Hon'ble NGT OA 54 of 2016, please find here with enclosed updated status of implementation of recommendations and suggestions of the joint committee report in the format enclosed

This is for your kind information.

Yours faithfully

Sd/-
Environmental officer
Bengaluru City East

Copy submitted to:

1. Regional Directorate, Central Pollution Control Board, 1st Floor, "Nisarga Bhavan, 7th 'C" Main, Thimmaiah Road, Shivanagar, Bengaluru for kind information.
2. Case file

Environmental officer
Bengaluru City East

Format-5

Action taken report of Karnataka State Pollution Control Board

Sl	Suggestion of the Joint Committee in the report dt 10.08.2020	Measures implemented	Measures yet to be implemented	Time required for implementing the measures
1	To ensure the implementation of Notification No. FEE 316 EPC 2015, dated 19.01.2016 issued by Forest, Ecology & Environment Secretariat w.r.t. installation of STP and reuse of Treated Sewage.	As per the records of this office, there are 62 units located in the catchment of Ulsoor Lake. Out of 62 units 37 units have installed STP/ETP to treat the wastewater generated, the treated effluent is reused for secondary purposes. The remaining 25 units are discharging the untreated wastewater into UGD with a permission of BWSSB and same is being treated by the BWSSB STP. These 25 units are established prior to notification dt.19.01.2016.		
2	Out of 62 units, only 37 units (59.67%) are provided with STP / ETP to treat the wastewater generated and the remaining units are permitted to discharge untreated wastewater in to UGD with a permission of BWSSB. KSPCB shall reinvestigate & take appropriate action to install STP/ ETP in remaining 25 units, if applicable.	Out of 62 units, 25 units are established prior to notification dated 19.01.2016, with prior permission from BWSSB and these units are discharging the untreated wastewater into BWSSB UGD, the same effluent is being treated in the terminal 2 MLD STP of BWSSB established at Ulsoor Lake premises. Further, the list of above said 25 units have been verified from BWSSB authorities, they have verified the RR numbers and observed that, all these units have obtained permission for discharging sewage into BWSSB UGD from BWSSB authority and these sewage is being treated in Ulsoor 2 MLD STP and		

		also at Chalaghatta 248 MLD STP and there is no missing links of sewage which is joining to Ulsoor Lake. This Office is regularly collecting and analyzing the samples of Ulsoor Lake under Boards Programme and NWMP Program. As per the recent analysis report dt.05.04.2022, Ulsoor Lake water is conforming to Class 'D' Standards (Propagation of wild life, Fisheries) (Copy of the analysis report is enclosed).		

Environmental officer
Bengaluru City East

Annexure 29

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD,
(Ministry of Environment, Forest & Climate Change Govt. Of INDIA)
REGIONAL DIRECTORATE, BENGALURU

TC-7739

Recognised under E(P) Act, 1986
(Legal 42(3)/87, dated 6th March, 2017)

TEST REPORT

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: Ulsoor lake, Bengaluru.
Nature of sample: Lake water	Sampling plan& Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:14.03.2022	Date of receipt: 14.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -25.03.2022.	Date of report issue: 28.03.2022
Code no. of sample: FW/03/2022/61-63	Req. slip no. / Date: 22F/14.03.2022.
Page No: 01	Report issue no.: FW/03/2022/61-63

Sl. No	Name of the Parameter with unit	Range of testing / Limit of Detection	Sampling location			Test Method Specification
			Ulsoor lake (Kalyani)	Ulsoor lake outlet near Guruduwara Temple	Ulsoor lake fishing centre	
1.	pH at 25°C	1-14	9.3	9.1	8.9	APHA, 4500-H+B, , 23rd Ed., 2017
2.	EC at 25°C µs/cm	5 - 20000 µS/cm	312	302	301	APHA (22nd Ed.,): 2017 2510-B
3.	COD, mg/L	4 - 150000 mg/L	109	98	105	IS 3025 (part 58): 2006
4.	$BOD_{3d,27°C}$, mg/L	2 - 75000 mg/L	13	16	15	IS: 3025, Part 44-1993, Reaffirmed 2009
5.	Oxygen dissolved, mg/L	0.1-10.0 mg/L	11.8	11.8	12.8	APHA, 4500-O, 23rd Ed., 2017
6.	TDS at 180°C,mg/L	2 – 5000 mg/L	157	156	186	APHA (23rd Ed.,): 2017 2540 C,
7.	TSS at 105°C, mg/L	5 – 2000 mg/L	65	72	60	APHA (23rd Ed.,): 2017 2540-D,
8.	Ammonical Nitrogen as N, mg/L	1 - 500 mg/L	BDL	BDL	BDL	APHA, 4500-NH_3 B & C, 23rd Ed., 17
9.	Nitrate as N, mg/L	0.02 - 100 mg/L	BDL	BDL	BDL	APHA (23rd Ed.,): 2017 4500-NO_3-E,
10.	Nitrite as N, mg/L	0.02 - 10 mg/L	BDL	BDL	BDL	APHA (23rd Ed.,): 2017 4500-NO_2-B,
11.	Phosphate as P, mg/L	0.01 - 200 mg/L	0.21	0.67	1.18	APHA (23rd Ed.,): 2017 4500-P -D
12.	Chloride, mg/L	2 -4000 mg/L	25	21	22	APHA (23rd Ed.,): 2017 4500-Cl-B
13.	Sulphate, mg/L	4 - 500 mg/L	06	04	07	APHA (23rd Ed.,): 2017 4500-SO_4 - E

Authorized signatory
(A.Gnanavelu)
Scientist 'C'

The report shall not be reproduced, except in full, without the written approval of the laboratory.

- Compliance/non-compliance opinion not sought by customer.
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested
- Parameters marked * are not under NABL scope.

Regional Directorate, NisargaBhawan, A-Block, 1st& 2nd floors, Thimmaiah Road, 7th D main, Shivanagar, Bengaluru –79.
(Telephone: 080-23233739, 23222539, FAX: 080-23234059) (E-Mail: cpcbszo@yahoo.com, zobangalore.cpcb@nic.in)

--- End of Report---

cpcb

IS/ISO: 45001:2018
Certified Laboratory
Recognised under E(P) Act, 1986

REGIONAL LABORATORY
CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment, Forest & Climate Change)
REGIONAL DIRECTORATE (SOUTH), BENGALURU

Name & Contact details of the customer: Smt Sowmya. D, Scientist "D" CPCB RD, Bengaluru.	Sampling locations: Ulsoor lake, Bengaluru.
Nature of sample: Lake water	Sampling plan & Type: As Per CPCB/RLB/QSP/7.3/1 & Grab
Date of sampling:14.03.2022	Date of receipt: 14.03.2022
Place, Date of commencement and completion of analysis: Bengaluru, 15.03.2022 -08.04.2022.	Date of report issue: 11.04.2022
Code no. of sample: BSF/03/2022/28-30	Req. slip no. / Date: 16 BSF/14.03.2022.
Page No: 01	Report issue no.: BSF/03/2022/28-30

Sl. No	Name of the Parameter with unit	Sampling location			Test Method Specification
		Ulsoor lake - Kalyani	Ulsoor lake - Outlet near Guruduwara	Ulsoor lake - fishing centre	
3.	Total Coliform (MPN/100 ml)	70000	280000	47000	APHA, 9221 B, 23rd Ed., 2017
4.	Fecal Coliform (MPN/100 ml)	6800	34000	17500	APHA, 9221 E, 23rd Ed., 2017

Authorised signatory

Deepesh V

- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- Compliance/non-compliance opinion not sought by customer
- Samples will be stored for a period of 15 days from the date of issue of test report.
- The above results pertain only to sample tested

--- End of Report---

Fax : 080-23238300

(28) Annexure 30

Email:centrallab@kspcb.gov.in
Website : http://kspcb. gov.in

TC-5487

KARNATAKA STATE POLLUTION CONTROL BOARD
CENTRAL ENVIRONMENTAL LABORATORY

Legal 42(3)/87,E(P)ACT, 1986 RECOGNISED ENVIRONMENTAL LABORATORY
ISO/IEC 17025 Accredited Testing Laboratory by NABL Vide Certificate Number TC-5487
ISO 9001:2015 and ISO 45001:2018 CERTIFIED LABORATORY

K.S.P.C.B., "Nisarga Bhavan"
7th D Cross, Thimmaiah Road,
Shivanagar, Bangalore – 560079

ANALYSIS REPORT

Date: 21-04-2022

NAME OF THE LAKE:	Ulsoor Lake	Page 1 of 1
		DATE OF COMMENCEMENT OF TEST:05-04-2022
SAMPLE COLLECTED BY :	Sri. M.M.Ameenulla Baig, DEO RO: Bng City East	DATE OF COMPLETION OF TEST:12-04-2022
DATE OF COLLECTION :	05-04-2022	
DATE OF RECEIPT :	05-04-2022	SAMPLE REPORT NO:W-46
PARTICULARS :	Lake Water Sample	SAMPLE NO : W-46

Sl No	Parameters	Unit	Water Quality Criteria					Result	Test Method
			A	B	C	D	E		
1.	pH@25° C	-	6.5-8.5	6.5-8.5	6.0-9.0	6.5-8.5	6.0-8.5	7.7	IS 3025 (Part 11)
2.	Conductivity@25° C	µs/cm	-	-	-	-	2250	344	IS 3025 (Part 14)
3.	Dissolved Oxygen	mg/L	6	5	4	4		5.8	IS 3025 (Part 38)
4.	Biochemical Oxygen Demand (3 days @ 27 °C)	mg/L	2	3	3	-	-	4.0	IS 3025 (Part 44)
5.	Free Ammonia	mg/L	-	-	-	1.2	-	BDL	APHA 23rd edition (4500 NH3-D)
6.	Sodium Absorption Ratio	-	-	-	-	-	26	BDL	IS;11624
7.	Boron as B	mg/L	-	-	-	-	2.0	BDL	APHA 23rd edition (4500-B B)
8.	Total Coliform	MPN /100ml	50	500	5000	-	-	$540x10^2$	APHA 23rd edition (9221 A, B,C). 9-68 to 9-75

INFERENCE	**Class -"D"— As Per Primary water quality criteria-CPCB.**
	Designated best use- Propagation of Wild Life, Fisheries

Note: 1. The above results pertain only to the sample tested.
2. The report shall not be reproduced without the written approval of the laboratory.
3. Samples will be stored for a period of 10 days from the date of issue of report.
4. Decision Rule: "Statement of conformity / non conformity applies only to test results as per standard stipulated by regulatory authority".
5. BDL: Below Detection Level in mg/L.
Boron as B:0.1; Free Ammonia:1.0; Sodium Absorption Ratio:2.0.

Radha. M. N

Authorized Signatory (Biological)
(Radha M.N)
Assistant Scientific Officer

Authorized Signatory (Chemical)
(Farhath Jabeen)
Deputy Scientific Officer

---End of Report---