भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
क्षेत्रीय कार्यालय, लखनऊ
Regional Office, Lucknow
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File No. XXI/ENV/NGT/CC/213/2026/434 Dated: 25.03.2026

BY-EMAIL

To,

The Registrar General,
Principal Bench,
Hon'ble National Green Tribunal,
Copernicus Marg,
New Delhi-110001
Email: judicial-ngt@gov.in

Subject: Submission of Joint Committee Report in in E.A. No. 38 of 2022 in O.A. 165 of 2021, Girija Shankar Rai vs State of U.P & Ors before the Hon'ble National Green Tribunal.

Sir,

In compliance of the direction passed by this Hon'ble National Green Tribunal, vide its order dated 08.01.2026 in in E.A. No. 38 of 2022 in O.A. 165 of 2021, Girija Shankar Rai vs State of U.P & Ors.

2. The Joint Committee Report is enclosed herewith, with a request to put up before the Hon'ble Tribunal for kind perusal and consideration please.

Encl: As above

Yours Sincerely,

(Dr. R. B. Lal)
Scientist 'F'/ Head of Office

Copy to:

1. Shri Nitin Joshi, Additional Surveyor General, Survey of India, New Delhi. Email: zone.north.soi@gov.in
2. Shri Arvind Kumar, Scientist 'C', RD CPCB, Lucknow. Email: arvind.cpcb@gov.in

JOINT COMMITTEE REPORT BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, NEW DELHI

IN THE MATTER OF

Execution Application No. 38 of 2022
IN
Original Application No. 165 of 2021
Titled as
Girija Shankar Rai Vs State of U.P. & Ors.

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Dated: 25.03.2026

Filed by:
(MoEF&CC, Regional Office, Lucknow)

JOINT COMMITTEE REPORT BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, NEW DELHI

IN THE MATTER OF

Execution Application No. 38 of 2022
IN
Original Application No. 165 of 2021
Titled as
Girija Shankar Rai Vs State of U.P. & Ors.

1. Background:

The Hon'ble NGT, Principal Bench, New Delhi, vide its order dated 08.01.2026, in the matter of Execution Application No. 38 of 2022 in Original Application No. 165 of 2021 titled as Girija Shankar Rai Vs State of U.P. & Ors., constituted a Joint Committee comprising of the representative of the CPCB, the representative of Survey of India and the representative of Regional Officer, MoEF&CC, Lucknow not below the rank of the Joint Secretary. Further, the Hon'ble NGT directed that the Regional office of the MoEF&CC, Lucknow will act as a Nodal Agency on the matter. The Hon'ble NGT also directed the Joint Committee to visit the site, verify from the old revenue record the original area and boundaries of the Laxmi Tal and ascertain the area of the Laxmi Tal which has been encroached upon and the catchment/buffer area of the Laxmi Tal on which the constructions have been raised and also find out the status of on-going constructions and the persons/authorities responsible for raising such constructions and encroaching upon the Laxmi Tal or its catchment/buffer area.

Relevant para of the Hon'ble NGT's order is reproduced, as below: -

"…..6. Hence, in order to ascertain correct position, we appoint a Joint Committee comprising of the representative of the CPCB, the representative of Survey of India and the representative of Regional Officer, MoEF&CC, Lucknow not below the rank of the Joint Secretary. The representative of RO, MoEF&CC, Lucknow will act as a nodal agency in this Joint Committee. The Joint Committee will visit the site, verify from the old revenue record the original area and boundaries of the Laxmi Tal and ascertain the area of the Laxmi Tal which has been encroached upon and the catchment/buffer area of the Laxmi Tal on which the constructions have been raised and also find out the status of on-going constructions and the persons/authorities responsible for raising such constructions and encroaching upon the Laxmi Tal or its catchment/buffer area. The Collector and Superintendent of Police, Jhansi will extend full cooperation to the Joint Committee for carrying out the aforesaid exercise. This exercise will be completed by the Joint Committee within a period of two months and the status report will be submitted immediately thereafter to the Tribunal.

7. List on 13.04.2026….."

(A copy of the order of Hon'ble NGT dated 08.01.2026 is annexed as Annexure No.1)

In compliance with said order, the following Officers were nominated from the concerned Department:

(i) Shri Satya Prakash Negi, IFS, Deputy Director General of Forests, Ministry of Environment, Forest and Climate Change (MoEF&CC), Regional Office, Lucknow.

(ii) Shri Nitin Joshi, Additional Surveyor General, Survey of India, New Delhi

(iii) Shri Arvind Kumar, Scientist 'C', Central Pollution Control Board (CPCB), Regional Directorate, Lucknow

2. Preliminary Meeting to comply the Hon'ble Tribunal's Order dated 08.01.2026

A preliminary meeting was convened on 23.02.2026 through hybrid mode with the concerned Departments/Organizations under the chairmanship of Deputy Director General of Forests, MoEF&CC, RO, Lucknow (i.e. Nodal Agency) to discuss procedures, schedule a site visit, requirement of revenue records/ documents from State Government Authorities and finally to narrow down the key issues to be discussed, information to be collected later during the site visit.

(Copy of the Minutes of Meeting held on 23.02.2026 is annexed as **Annexure No. 2)**

3. Site Visit of Joint Committee conducted on 09.03.2026:

The site visit of the Laxmi Tal by the Joint Committee was carried out on 09.03.2026. Before the site-visit, the Joint Committee convened a meeting at the Office of the Municipal Corporation Jhansi with the officials of the concerned Departments of the District of Jhansi. The List of Participants is annexed as **Annexure No. 3.**

During the meeting, a detailed discussion was held on the issues related to Laxmi Tal and the Joint Committee also collected various information/records from the concerned Departments. Soon after this meeting with District Authorities, the Joint Committee along with the representatives of the various Departments visited the site i.e. Laxmi Tal on the same day.

4. Observation by the Joint Committee during site visit:

The Municipal Corporation, Jhansi informed that Jhansi Smart City Limited (JSCL), vide its agreement dated 12th July 2021, has executed the Work for the Development of Laxmi Tal in Jhansi City (such as Bund wall & walkway, Entrance Plaza, Parking & Roads, boating deck and boats, Viewing Decks, Parks and Landscape work, Drain & culvert work, Water ATMs etc.).

(Copy of Agreement is annexed as **Annexure No. 4)**

The Point-wise observation of the Joint Committee on the directions given by the Hon'ble NGT at Para- 6 of the Order dated 08.01.2026, inter-alia, are stated below:

A. Verification of the original area and boundaries of the Laxmi Tal from old revenue record -

(i) The Revenue Department, Jhansi provided the old revenue records of the Laxmi Tal. This old data is related to Fasli Year 1421-1426 (01 July 2019 to 30 June 2025). As per the old Revenue Records, the **total area of the Laxmi Tal (including Water Body and its surroundings) is 33.0680 ha** which include total 60 Khasra Numbers. (Copy of Revenue Data is annexed as **Annexure No. 5**). The detail **break-up of area** is depicted below:

Owner name / Category: 6-1/ Non-Agricultural Land /Waterlogged Land	Khasra No.	Area (Hectare)
Laxmi Tal	1630	0.0400
	1631	0.3760
	1369	0.0770
	1666	0.3320
	1647	0.1620
	1629	0.0610
	1668	0.0160
	1669	0.1380
	1628	0.6840

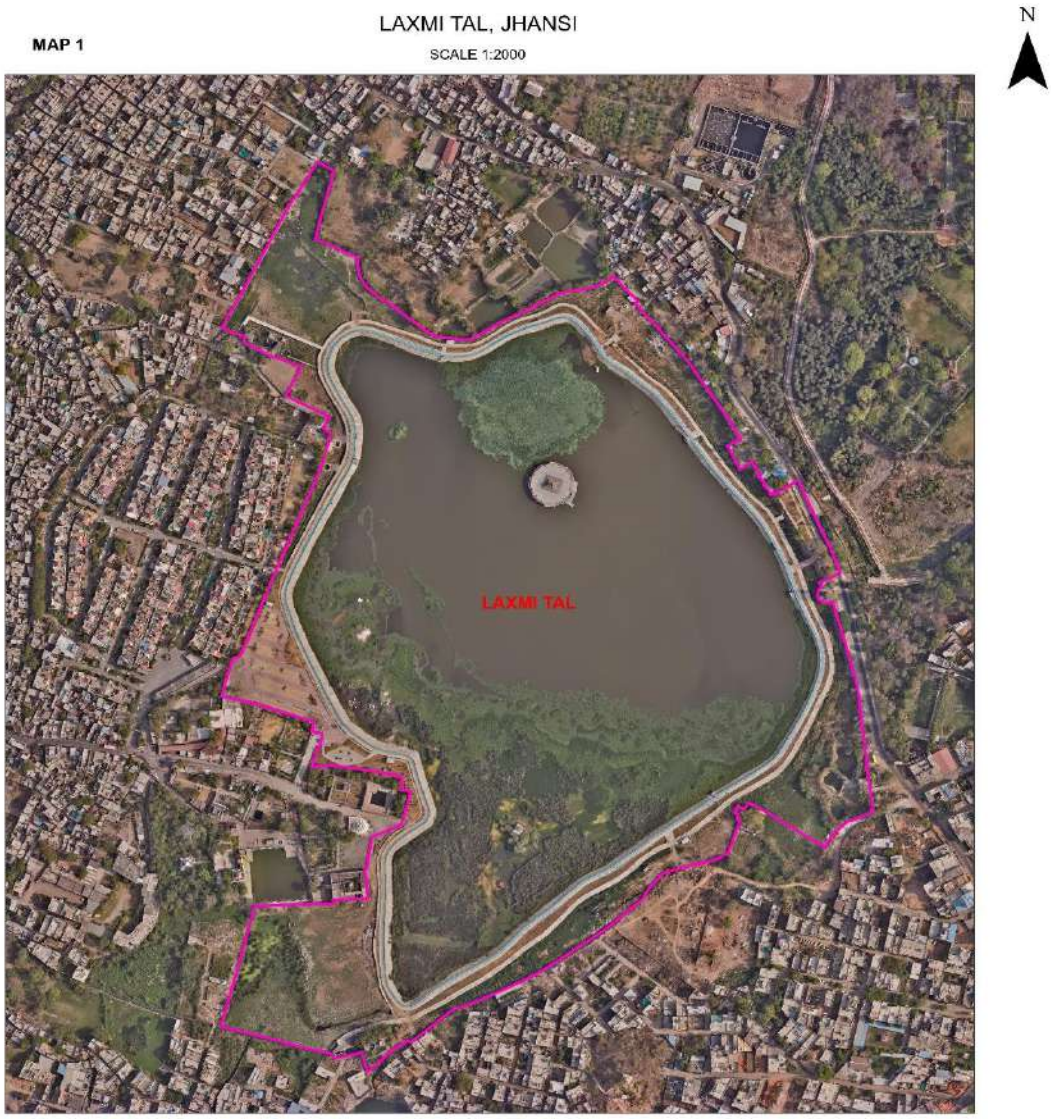
	1651	0.5430
	1650	0.2910
	1312	0.2790
	1649	0.1860
	1662	0.0160
	1667	0.5020
	1645	0.6810
	1289 mi (Minjumla/Minja)	0.1050
	1247	0.3240
	1646	0.5090
	1289	0.2190
	1316	0.6060
	1291	0.2950
	1307	0.4620
	1670	0.6600
	1246	0.2430
	1248	0.4130
	1288	0.0410
	1292/2	0.1700
	1293	0.4130
	1294	0.1010
	1295	0.3280
	1296	0.5100
	1297	0.2750
	1298	0.3040
	1299	0.2230
	1300	0.2310
	1303	0.1620
	1305	0.4130
	1306	0.4620
	1308	0.0120
	1317	0.2800
	1318	0.2950
	1319	0.5510
	1321	0.1130

	1575	1.3330
	1648	0.0770
	1652	0.0320
	1653	0.2710
	1654	0.7000
	1655	0.4130
	1656	0.0690
	1657	15.9450
	1658	0.4170
	1659	0.1210
	1660	0.1210
	1664	0.1700
	1665	0.0890
	1671	0.0810
	1675	0.1090
	1686	0.0160
		Total Area =33.0680 Ha.

(ii) To assess the present status/ actual area of Laxmi Tal as on date, it was decided to use the available aerial imagery. The Survey of India had captured the aerial imagery using Helicopter during April 2025 for a project named NAKSHA. This imagery has the spatial resolution of 05 cm and positional accuracy of about 5 cm. During field visit by the Joint Committee on 09.03.2026, a printout of the said imagery was taken to the site and correlated to the objects / structures at the Laxmi Tal and its surroundings. The details verified on ground were also marked on the imagery. The details were

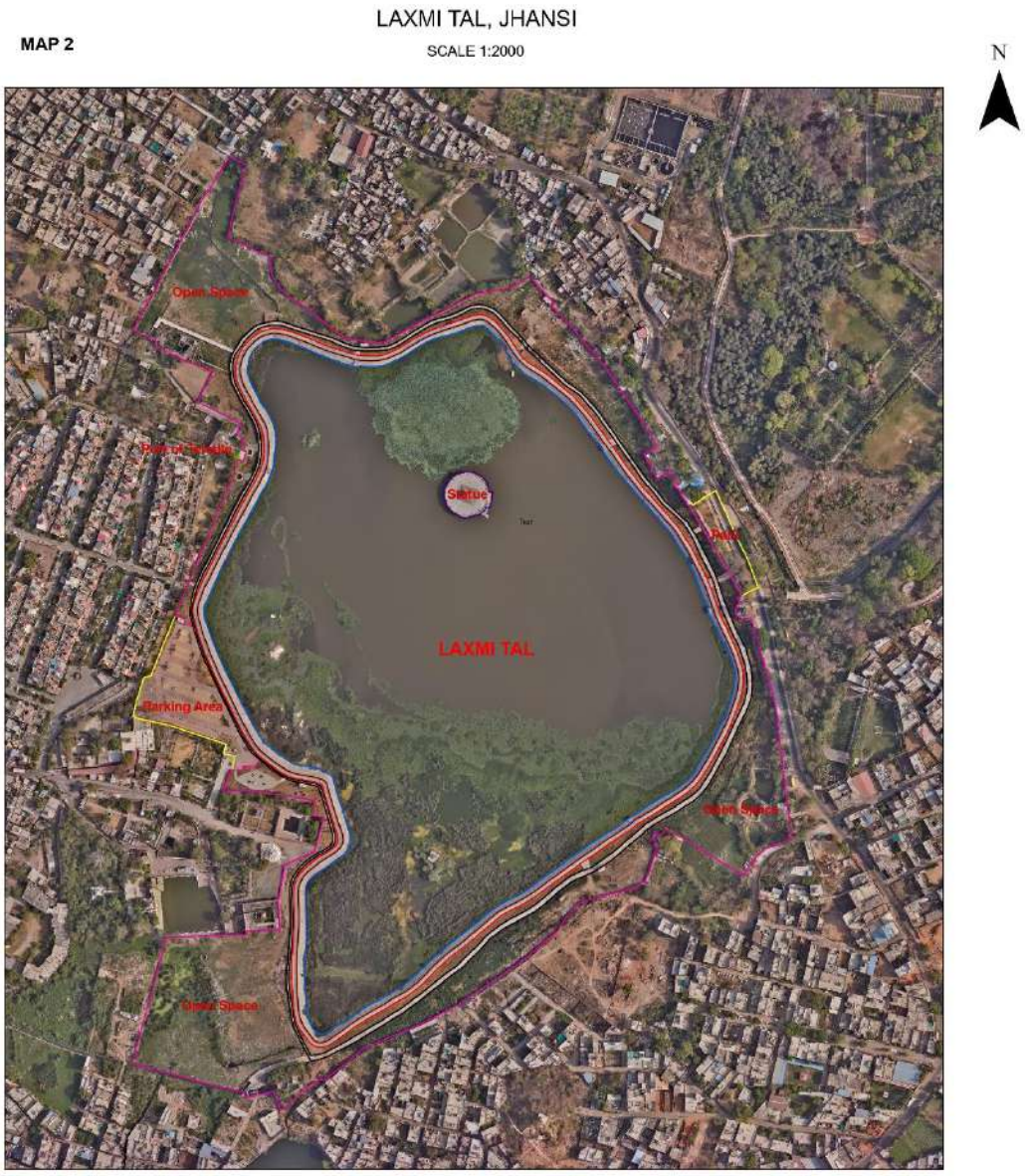
digitized taking the imagery as base data and the area of various parts have been calculated using the ArcGIS software.

(iii) The imagery showing the area of Laxmi Tal and its surroundings is annexed as Map-1. **(Annexure No.6)**



MAP-1-Imagery showing the area of Laxmi Tal (Water Body) and its surroundings

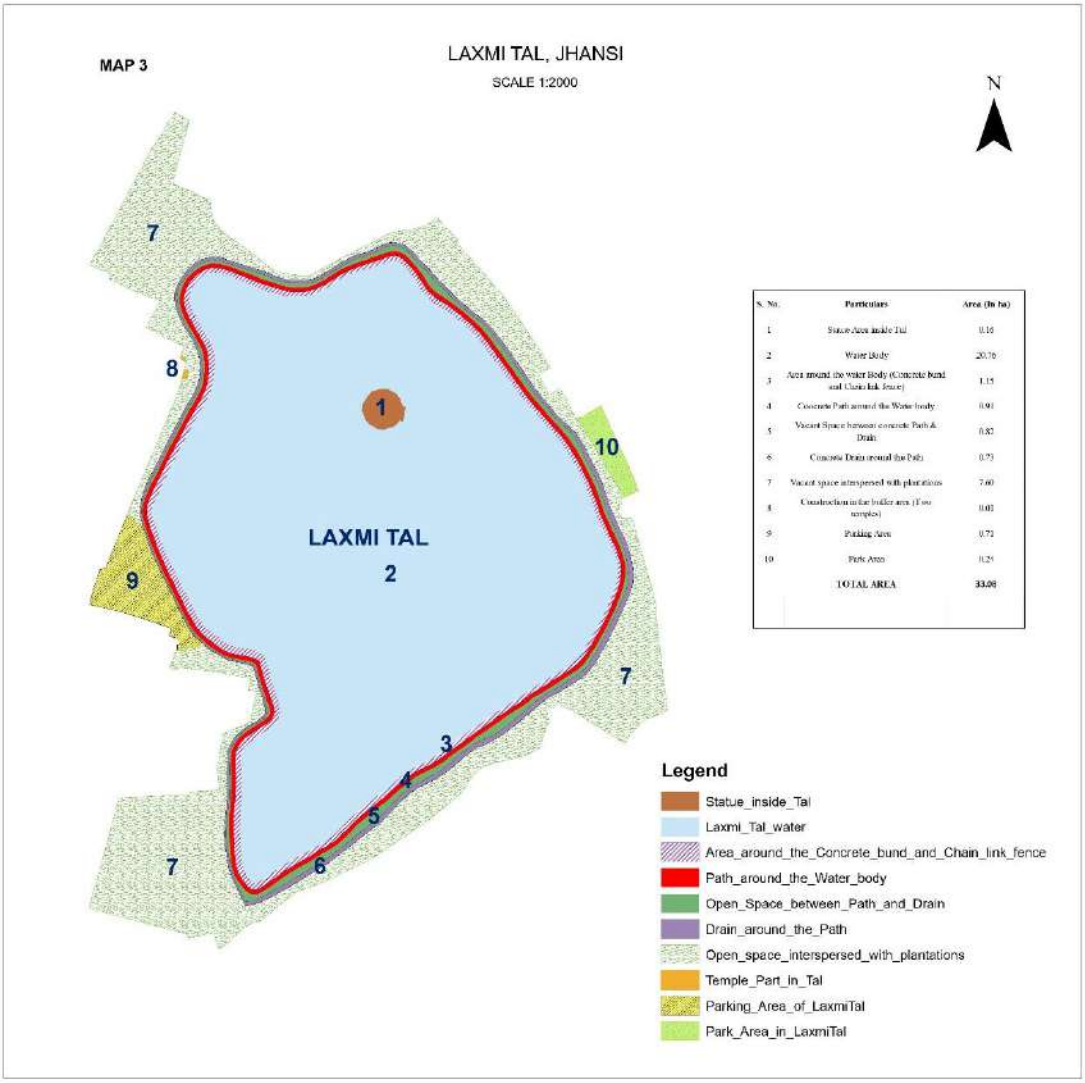
(iv) The imagery showing the area of Laxmi Tal (Water Body) and its surroundings with the features marked on it is annexed as **Map-2**. **(Annexure No.7)**



MAP-2 showing the area of Laxmi Tal (Water Body) and its surroundings with the features

(v) The Joint Committee also measured the data with respect to various structures such as Statue inside the Laxmi Tal (Water Body), Water Body, Concrete Bund & Chain-link Fence around the Water Body,

Concrete Path, Open Space between Concrete Path and Concrete Drain, Concrete Drain around the Concrete Path, Open Spaces interspersed with Plantations, Temple Part, Parking Area and Park. Details are shown at **Map-3. (Annexure No. 8)**



MAP-3: Showing areas of various portions/ components of Laxmi Tal (Water Body & its Surroundings) in hectares.

The detail area break-up pf area under various components as shown in the Map – 3 above is summarised as below: -

S No.	Details of Features	Area (in hectare)
1	Statue Area inside Laxmi Tal (Water Body)	0.16
2	Water Body (excluding the Island and Statue)	20.76
3	Concrete Bund and Chain Link Fence (around the Water Body)	1.15
4	Concrete Path (around the Water Body)	0.91
5	Vacant Spaces between Concrete Path & Concrete Drain	0.82
6	Concrete Drain (around the Path)	0.73
7	Vacant spaces interspersed with Plantations	7.60
8	Constructions in the Outer Part (Buffer area) (Two Temples)	0.01
9	Parking Area	0.71
10	Park	0.24
	TOTAL AREA	**33.080**

(vi) The area of the Laxmi Tal as per old revenue record was **33.068 ha.** However, present measurement as per the Survey of India aerial imagery using Helicopter during April 2025 for a project named NAKSHA with positional accuracy of about 5 cm gives total area of Laxmi Tal (Water Body and other various components as given in the table above) come out to be **33.080 ha.** Thus, there is a minor difference of 0.012 ha area. This difference is not very significant, and may be due to use of different technology for the measurement of the site in question.

B. Ascertain/Verification the area of the Laxmi Tal which has been encroached upon: -

(i) The Jhansi Smart City Limited (JSCL), vide its agreement dated 12th July 2021, has executed the Work for the Development of Laxmi Tal in Jhansi City.

(ii) The Joint Committee observed that the area consisting of Water Body of the Laxmi Tal is enclosed in a Concrete Bund, and Chain Link Fence is erected over this Concrete Bund. There is a Concrete Path developed around/encircling the Concrete Bund and Chain Link Fence. The area of this Water Body part has been calculated using Aerial Imagery of April 2025 and found 20.76 ha. There is no new/ongoing construction of any kind by any individual or private party was observed by the Joint Committee during the Site Visit of the Joint Committee. However, the statue of Rani Lakshmi Bai is situated in the Water Body of the Laxmi Tal. This Statue area is calculated to be about 0.16 ha.

(iii) A Concrete Path surrounding the Water Body of the Laxmi Tal with a width of about 3.5 m, has been developed for public usage/ visitors to the park. This area is calculated to be about 0.91 ha. There is no private construction/structure observed in this path.

(iv) In the outer circle surrounding this Concrete Path, a covered Concrete Drain with a width of about 3 m covering length, has also been developed. There is no private construction/structure observed in this covered drain.

(v) There is a Vacant Space in between Concrete Path and Concrete Drain with varying width all around having grasses. There is no private construction/structure observed in this Vacant Spaces.

(vi) In the outer circle surrounding this Concrete Drain, there are Vacant Space interspersed with Plantations; afterwards the entire area of the Laxmi Tal is fenced with brick wall fencing. Major portion of this brick wall consist of old / ancient time concrete fencing. Along this concrete fencing area, there are 07 temples and 01 mazar in few places. These temples and mazar are also from the ancient times, and some falls in the Outer Part (Buffer area) of Laxmi Tal area. However, at two (02) places, the pillars of part of the temples lies along the boundary of Vacant Spaces area of the Laxmi Tal **[Photo 1& 2 attached below].** These pillars are not of ancient times. The Municipal Corporation, Jhansi, vide letter dated 07.03.2026, inter-alia, has also mentioned about that existence of these 07 temples and 01 mazar in few places.

Photo 1: Temple Pillars constructed in the Buffer area of Laxmi Tal

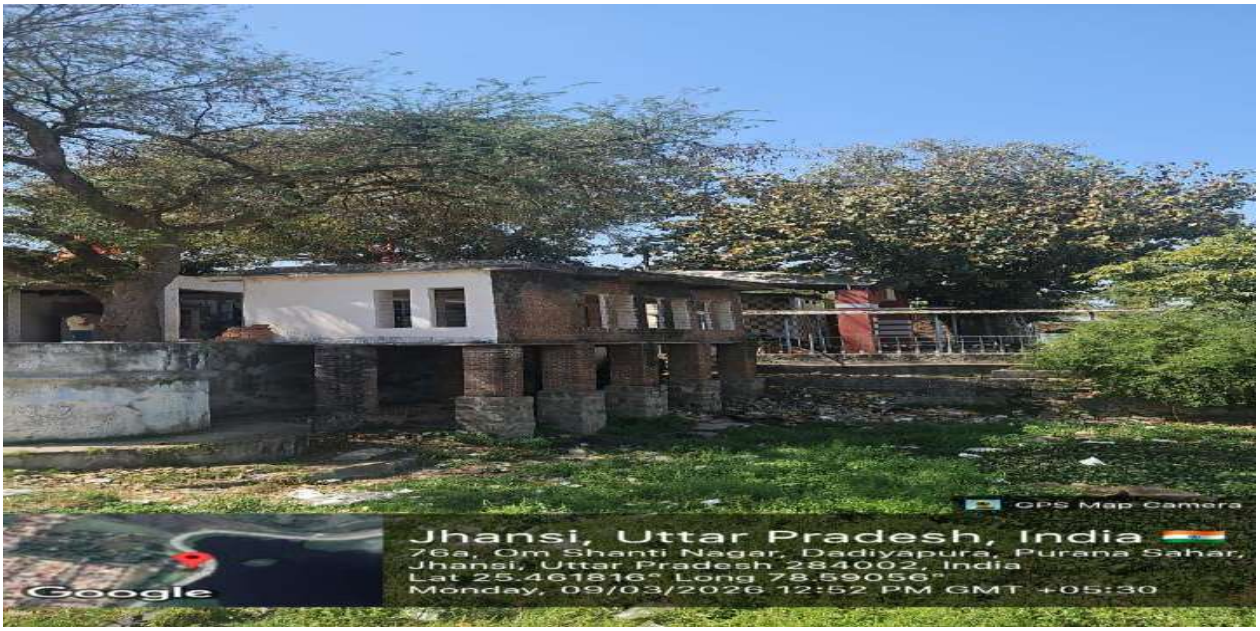


Photo 2: Temple Pillars constructed in the Buffer area of Laxmi Tal

C. Catchment/buffer area of the Laxmi Tal on which the constructions raised:

For the sake of better clarity and understanding, the whole Laxmi Tal area can be divided in to Two Parts. The **Inner Part** fenced with Chain Link consist of the Water Body. The remaining **Outer Part** of this Water Body, which consist of Concrete Path, Covered Concrete Drain, and Vacant Spaces can be considered as Buffer Area of the main water body of the Laxmi Tal. As explained in Paragraph (B) above, only at Two places, the pillars of part of the temples located in this Outer Part (buffer area) of the Laxmi Tal. This area is calculated to be 0.01 ha. Except these Two small structures there is no new construction/structure of any kind by private individual/s in the Outer Part (Buffer area). The Concrete Path and the Concrete Drain have been constructed by the Municipal Corporation for the beautification and conservation of the Laxmi Tal.

D. Status of on-going construction in Laxmi Tal and its buffer area:

During the day of Site Visit, no new/ongoing construction of any kind by any individual or private party was observed by the Joint Committee.

E. Persons/authorities responsible for raising such constructions and encroaching upon the Laxmi Tal or its catchment/buffer area.

The Municipal Corporation, Jhansi has reported that Jhansi Smart City Limited (JSCL), vide its agreement dated 12th July 2021, has executed the Work for the Development of Laxmi Tal in Jhansi City (such as Bund wall & walkway, Entrance Plaza, Parking & Roads, boating deck and boats, Viewing Decks, Parks and Landscape work, Drain & culvert work, Water ATMs etc.). The Committee noted that temple pillars have been constructed at two locations in the Outer Area (Buffer Area) of Laxmi Tal. This area is calculated to be 0.01 ha. Except these Two small structures there is no new construction/structure of any kind by private individuals in the buffer zone.

F. Status regarding management of generated domestic effluent/sewage near Laxmi Tal and Adjoining area:

(i) During Site Visit, it was observed that a Concrete Drain around the Laxmi Tal is constructed by Municipal Corporation, Jhansi. It is informed by Municipal Corporation that this Concrete Drain around the Laxmi Tal is made to prevent domestic effluent/sewage from entering Laxmi Tal.

(ii) A STP of 26 MLD capacity has been constructed near Laxmi Tal for treatment of generated domestic effluent/sewage near Laxmi Tal and Adjoining area.

(iii) Three Sewage Pumping Stations (SPS) are made to divert the domestic effluent/sewage of seven drains to STP of 26 MLD capacity near Laxmi Tal. The representative of Jal Nigam Jhansi (Urban) has informed that four drains namely Kashai Mandi Nala, Kuberu Nala, Laxmi Gate Nala and Joshiaana Nala with flow of approx. 18-20 MLD are tapped at SPM-1 and three drains namely Bangla Ghat Nala, Bada Gano Nala and Om Shanti Nagar Nala with flow of 4-5 MLD are tapped at SPM-2 and SPM-3.

(iv) During visit, it was observed that Drains at SPM-1, SPM-2 & SPM-3 are not completely tapped and approx. 14 MLD (as per STP logbook) domestic effluent/sewage reaches to STP. Remaining domestic effluent/sewage was observed flowing into the peripheral drain/guard drain around Laxmi Tal, which discharges into Narayan Bag. This effluent further reaches near the Garhmau Jheel via Drain.

	
Photo 3: Leakage of Domestic effluent/sewage in peripheral/ guard of Laxmi Tal drain at SPM-2 & 3	**Photo 4: Leakage of Domestic effluent/sewage in peripheral/ guard of Laxmi Tal drain at SPM-1**
	
Photo 5: Bypass arrangement at SPS-1 meeting at Peripheral drain/guard drain	**Photo 6: Discharge of peripheral drain/ guard of Laxmi Tal at Narayan Bag**

(v) During the Site Visit, one drain carrying domestic effluent/ sewage of Om Shanti Nagar and one drain near SPS-1 was found directly entering in peripheral drain/guard drain around Laxmi Tal, which discharges into Narayan Bag which further reaches the near Garhmau Jheel via drain.

	
Photo 7: Drain carrying domestic effluent/ sewage of Om Shanti Nagar directly entering in peripheral drain/guard drain around Laxmi Tal	**Photo 8: Drain carrying domestic effluent/ sewage near SPS-1 directly entering in peripheral drain/guard drain around Laxmi Tal**

(vi) It was observed that no flow meters are installed at SPM-1, SPM-2 & SPM-3 and no logbook for pumping of domestic effluent/sewage is made.

(vii) During visit, inspection and monitoring of 26 MLD STP near Laxmi Tal, Jhansi was also carried out. Details of same are as below:

(a) STP is based upon SBR (Sequential Batch Reactor) Technology of capacity 26 MLD.

(b) STP is being operated by M/s Jeo Miller and Company Private Limited, G. M. House, F-3/2 Okhla Industrial Area Phase-1, New Delhi.

(c) STP has not obtained Consent to Operate under the provision of the Water Act and Air Act from Uttar Pradesh Pollution Control Board (UP PCB) for operation of STP. The Regional Office, UP PCB, Jhansi informed that a show cause notice was issued to M/s Jeo Miller and Company Private Limited for operation of STP without Consent to Operate under the provision of the Water Act and Air Act (**Annexure No. 9**).

(d) The logbook for operation of STP is maintained (**Annexure No. 10**). As per logbook, STP was found operational on approx. 14 MLD capacity against 26 MLD installed capacity.

(e) The STP has provision of two outlets for treated waste water, one of 4 MLD and another of 22 MLD. The 4 MLD outlet is discharged in to Laxmi Tal through underground pipeline and 22 MLD outlet is discharged in Narayan Bag through lined drain where it mixed with untreated domestic effluent/sewage coming from peripheral drain of Laxmi Tal which further reaches to near Gadmau Jheel.

	
Photo 9: Mixing of treated domestic effluent/ sewage from STP and untreated effluent/ sewage from peripheral/guard drain at Narayan Bag	**Photo 10: Drain carrying mixture of treated domestic effluent/ sewage from STP and untreated effluent/ sewage from peripheral/guard drain at Narayan Bag**

(f) It is observed that the Online Continuous Effluent/Emission Monitoring System (OCEMS) has been installed at only 22 MLD outlet but it was not connected to CPCB/SPCB server. No OCEMS was installed at 4 MLD outlet.

(**viii**) **Monitoring of Water Quality parameters of STP:** During visit, samples were also collected from STP inlet, 4 MLD outlet & 22 MLD outlet Aeration Tank and analyzed in CPCB laboratory. Analysis result is tabulated as below:

S. No.	Parameters	Unit	Inlet of STP	Aeration Tank	22 MLD outlet	4 MLD outlet	Standards as per NGT Order dated 30.04.2019 In OA 1069 of 2018	Standards as per MoEF&CC Notification dated 13.10.2017
1	pH	-	7.26	-	7.61	7.47	5.5 to 9.0	6.5 to 9.00
2	TSS	mg/l	181	-	8.08	5	20	< 100
3	Total Nitrogen		38.5	-	**25.8**	**24.7**	10	-
4	Total Phosphorus		2.32	-	1.08	**1.64**	1.0#	-
5	BOD		61	-	**17.1**	3.11	10	30
6	COD		305	-	**63.1**	32.5	50	-
7	Faecal Coliform	MPN/100ml	3.3×10^7	-	4.5	7.8	230	<1000
8	MLSS	mg/l	-	1088	-	-	-	-
9	MLVSS		-	1006	-	-	-	-
#Standard for Total Phosphorus is for Discharge into Ponds, Lakes								

- The above analysis results indicate that STP is non-complying w.r.t. Total Nitrogen, Total Phosphorus, BOD & COD at 22 MLD outlet of STP as per prescribed standards of Hon'ble NGT order dated 30.04.2019 in OA No. 1069/2018.
- The above analysis results indicate that STP is non-complying w.r.t. Total Nitrogen & Total Phosphorus at 04 MLD outlet of STP as per prescribed standards of Hon'ble NGT order dated 30.04.2019 in OA No. 1069/2018.
- However, as per above analysis report it is observed that STP is complying at both the outlets w.r.t. discharge standards as notified through Notification G.S.R. 1265(E) dated 13.10.2017 issued by MOEF&CC, New Delhi. Copy of Notification dated 13.10.2017 is annexed as **Annexure No. 11**.

(ix) Monitoring of Water Quality parameters of Laxmi Tal: During visit, Samples has also been collected from 2 locations at Laxmi Tal to assess water quality as per Designated Best Used (DBU) Water Quality Criteria. (Copy of Designated Best Used (DBU) Water Quality Criteria is annexed as **Annexure No. 12**.

(x) Analysis report is as below:

S. No.	**Parameters**	**Unit**	**Sampling Locations**	
			West side of Tal	**East side of Tal**

1.	pH	-	7.32	7.37
2.	Free Ammonia	mg/l	<0.1	<0.1
3.	Boron		<0.5	<0.5
4.	COD		23.5	33.8
5.	BOD		4.04	4.70
6.	DO		2.0	1.6
7.	Conductivity	Micro-Siemens/cm	982	976
8.	SAR	--	2.86	2.83
9.	Total Coliform	MPN/ 100ml	1.3×10^4	1.4×10^4
10.	Faecal Coliform		1.3×10^3	2.8×10^3

- It is evident from above analysis result that **water quality of Laxmi Tal is meeting with Class E of water quality** i.e. suitable for Irrigation, Industrial Cooling, Controlled Waste disposal as per (DBU) Designated Best Used Water Quality Criteria.

- It is also evident from above analysis result that water quality of Laxmi Tal is not suitable for Drinking/Bathing/ propagation of Wild life and Fisheries as per Designated Best Used (DBU) Water Quality Criteria.

5. Conclusion:

As desired by the Hon'ble NGT, the findings of the Joint Committee are concluded as below:

(i) The area of the Laxmi Tal, as per old revenue record, was **33.068 ha.** However, as per measurement done by the Survey of India (with positional accuracy of about 05 cm), the total area of Laxmi Tal come out to be **33.080 ha.** Thus, there is a minor difference of 0.012 ha area. This difference is not very significant, and may be due to the use of different technology adopted for the measurement of the site in question.

(ii) The area consisting of Water Body of the Laxmi Tal is enclosed in a Concrete Bund, and Chain Link Fence which is erected over this Concrete Bund. There is a Concrete Path developed around/encircling the Concrete Bund and Chain Link Fence. The area of this Water Body part has been calculated using Aerial Imagery of April 2025 and found to be 20.76 ha.

(iii) During the day of Site Visit, no new/ongoing construction of any kind by any individual or private party was observed by the Joint Committee.

(iv) That for the sake of better clarity and understanding, the whole Laxmi Tal area can be divided in to Two Parts. The Inner Part fenced with Chain Link consist of the Water Body. The remaining Outer Part of this Water Body, which consist of Concrete Path, Covered Concrete Drain, and Vacant Spaces can be considered as Buffer Area of the main water body of the Laxmi Tal. Only at Two places, the pillars of part of the temples located in this Outer Part (buffer area) of the Laxmi Tal. This area is calculated to be 0.01ha. Except these Two small structures there is no new construction/structure of any kind by private individual/s in the Outer Part (Buffer area).

(v) The Municipal Corporation, Jhansi has stated that Jhansi Smart City Limited (JSCL), vide its agreement dated 12th July 2021, has executed the Work for the Development of Laxmi Tal in Jhansi City (such as Bund wall & walkway, Entrance Plaza, Parking &

Roads, boating deck and boats, Viewing Decks, Parks and Landscape work, Drain & culvert work, Water ATMs etc.).

(vi) The STP of capacity 26 MLD has been installed based upon SBR (Sequential Batch Reactor) Technology near the Laxmi Tal. The STP has provision of two outlets for treated waste water, one of 4 MLD and another of 22 MLD. The 4 MLD outlet is discharged in to Laxmi Tal through underground pipeline and 22 MLD outlet is discharged in Narayan Bag through lined drain where it mixed with untreated domestic effluent/sewage coming from peripheral drain of Laxmi Tal which further reaches to near Gadmau Jheel.

(vii) The Laxmi Tal infested with Water hyacinth which also trigger the process of Eutrophication of the Laxmi Tal. As a result, the overall water quality of Laxmi Tal becomes poor and the Water ecosystem is damaged.

(viii) The STP has not obtained Consent to Operate under the provision of the Water Act and Air Act from Uttar Pradesh Pollution Control Board (UPPCB). The STP was operating without CTO from UP Pollution Control Board.

6. Recommendations: -

(i) The Laxmi Tal infested with Water hyacinth, an invasive aquatic plant which is due to excessive N,P,K concentration in the Water Body of Laxmi Tal and also trigger the process of Eutrophication of the Laxmi Tal. As a result, the overall water quality of Laxmi Tal becomes poor and the Water ecosystem is damaged. In this regard, the District Authority should prepare the Action Plan for its mitigation and restore its natural integrity with the help of UP PCB and Environment Department of the Bundelkhand University or any other reputed University/ Institute/ Organization,

(ii) All the drains at SPM-1, SPM-2 & SPM-3 should be completely tapped and tapped domestic effluent/sewage should be sent to 26 MLD STP. No untreated domestic effluent/sewage should enter in peripheral drain around Laxmi Tal or any water body.

(iii) Flow meters / V notch should be installed at pumping stations and logbook for the same should be maintained for its proper monitoring purpose.

(iv) STP should obtain Consent to Operate under the provisions of the Water Act and Air Act from Uttar Pradesh Pollution Control Board.

(v) STP should operate at full capacity in order to treat all the waste water originated from the seven major drains around the Laxmi Tal. The operator of the STP should optimize its operation to meet effluent discharge standards at STP outlets as per the Hon'ble NGT order dated 03.04.2019 in OA 1068 of 2018.

(vi) The UP Jal Nigam (Urban) should explore the possibility for 100% reuse of the treated domestic effluent/ sewage water.

(vii) The operator of the STP should also install OCEMS (Online Continuous Effluent/Emission Monitoring System) at 4MLD outlet of STP and both the Outlets should be connected to CPCB & UPPCB server.

(viii) The Municipal Corporation, Jhansi should rejuvenate the aquatic eco-system of ponds and maintain the aquatic floral and faunal diversity and serenity of the water body. Municipal Corporation, Jhansi may refer CPCB guideline namely "Indicative Guidelines for Restoration of Water Bodies" June, 2019 for the protection and rejuvenation of Water Body. **(Annexure No. 13)**.

(ix) It is recommended that the Municipal Corporation, Jhansi should consider and initiate the process to include this 33.0680 ha. Wetland/Tal (namely: Laxmi Tal) for enlisting/including in the category of important Wetlands of Uttar Pradesh.

(x) It is also recommended that Aquatic Plant, including free floating and fixed floating bio-diversity may also be maintained inside the Tal for Natural purification of Laxmi Tal water. The expert guidance in this regard may be obtained from Environmental Science Department, Budhelkhand University, Jhansi or any other reputed University/ Institute/ Organization,

(Arvind Kumar)	**(Nitin Joshi)**	**(Satya Prakash Negi)**
Scientist 'C', CPCB, RD, Lucknow	**Additional Surveyor General, Survey of India**	**Deputy Director General of Forests, MoEF&CC, RO, Lucknow**

PHOTOS TAKEN DURING THE SITE VISIT AT JHANSI

Photo 11: Joint Committee along with District Authority Officials

Photo 12: Joint Committee Team

Photo 13: Joint Committee Team at Entry of Laxmi Tal

Photo 14: Laxmi Temple

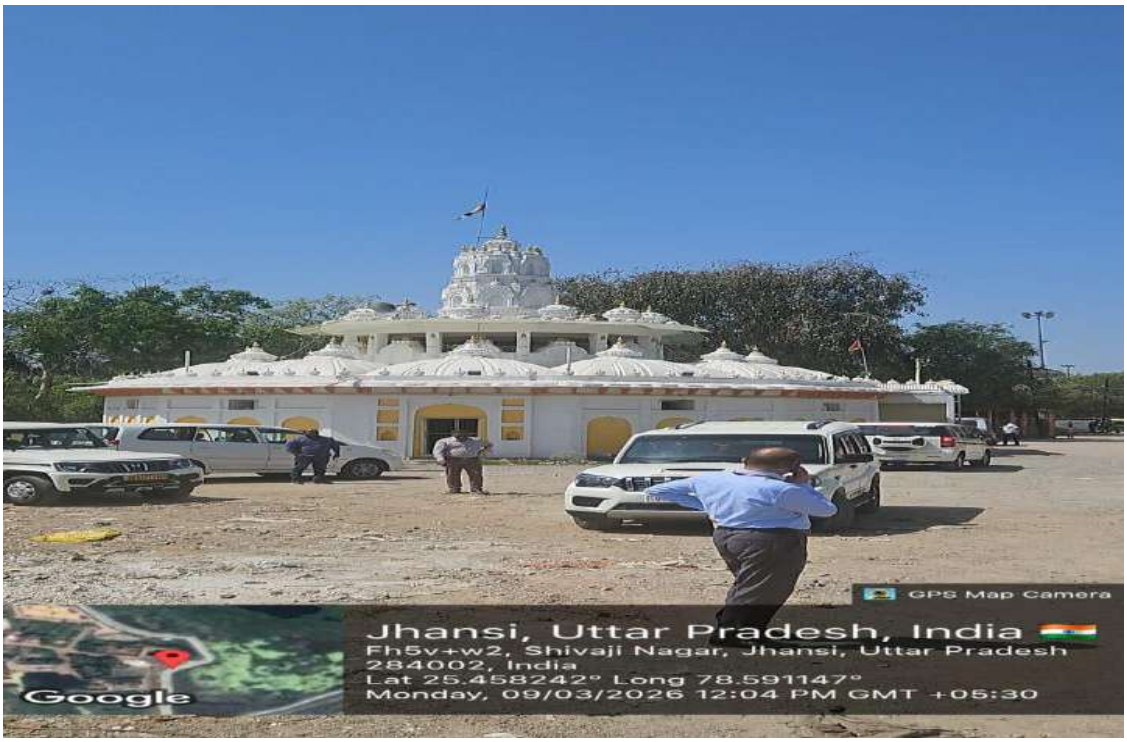


Photo 15: Temple at Laxmi Tal

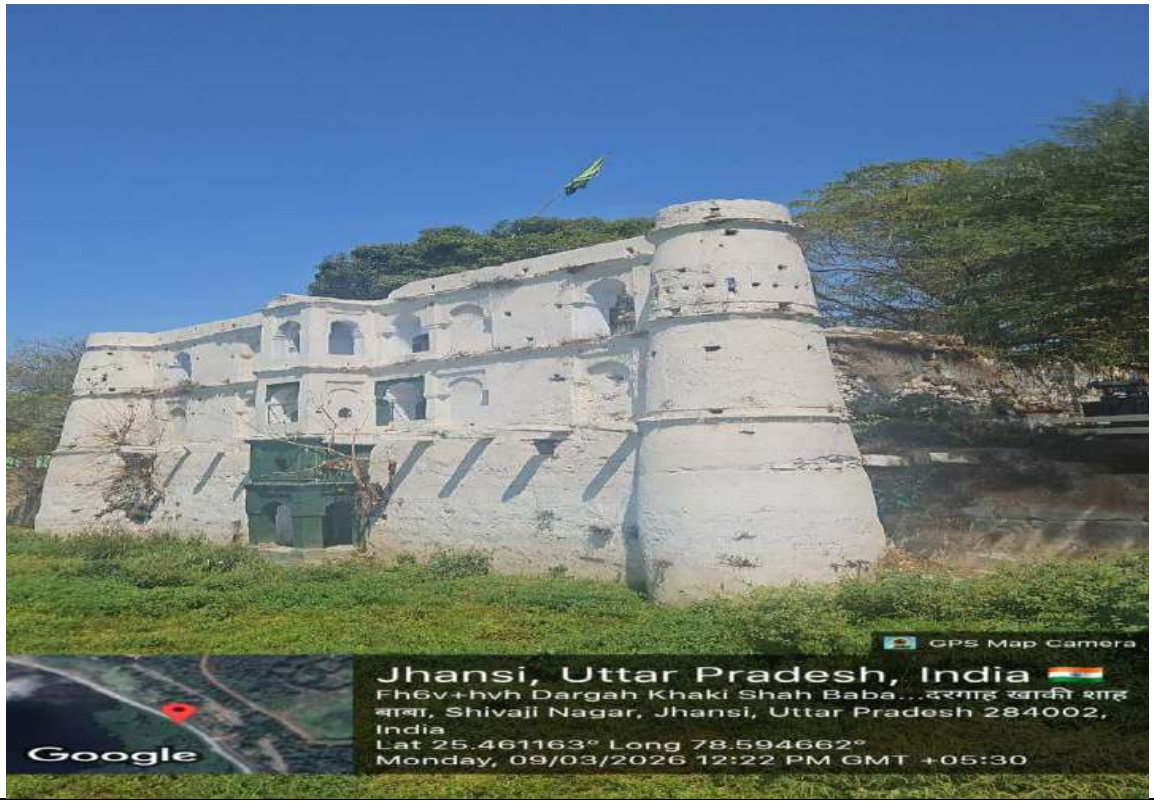


Photo 16: Majar at Laxmi Tal

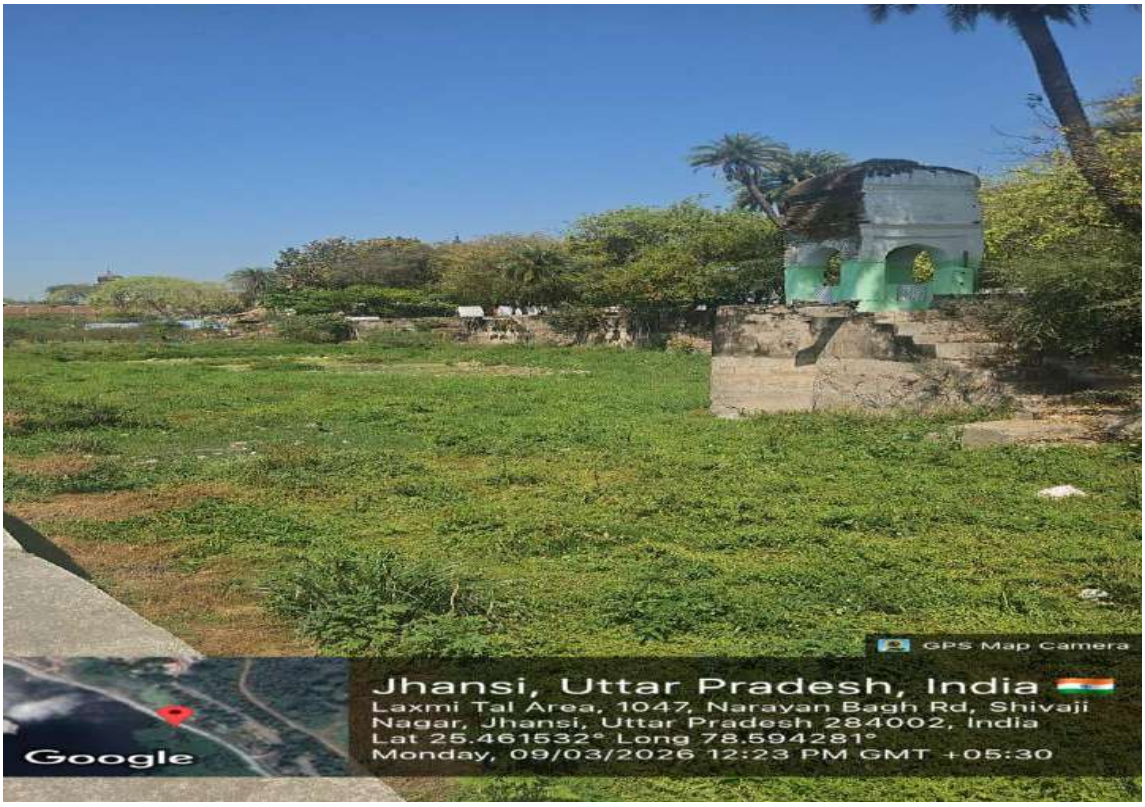


Photo 17: Structure at Laxmi Tal

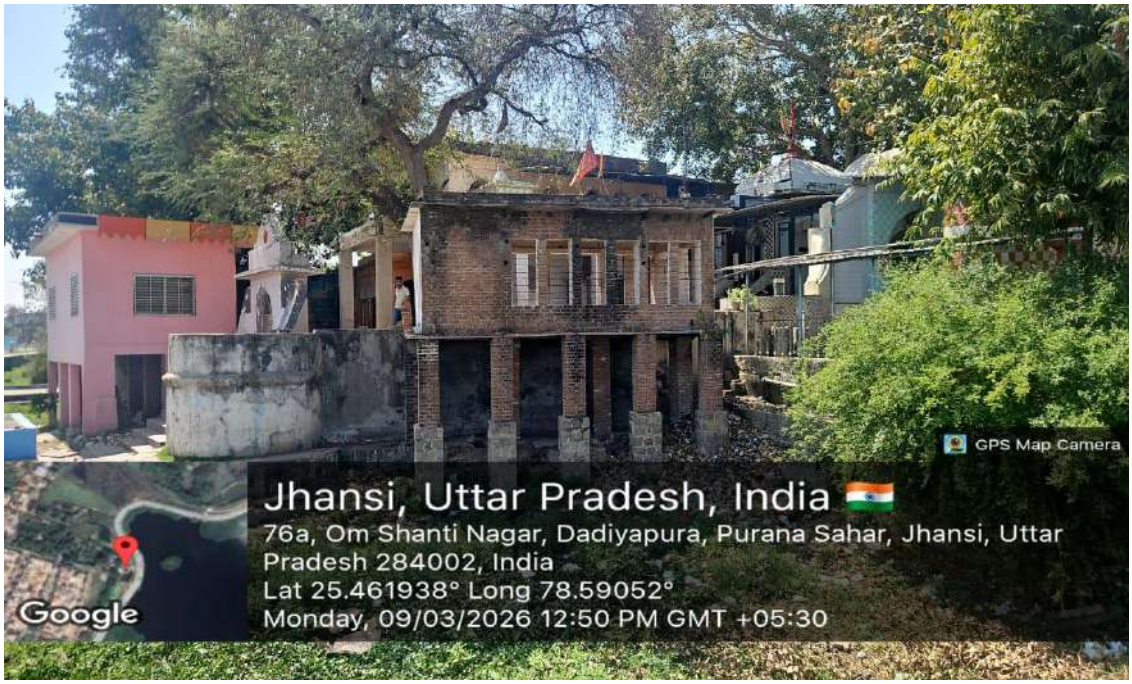


Photo 18: Encroachment at Laxmi Tal (Pillars)

Photo 19: Encroachment at Laxmi Tal (Temple Pillars)

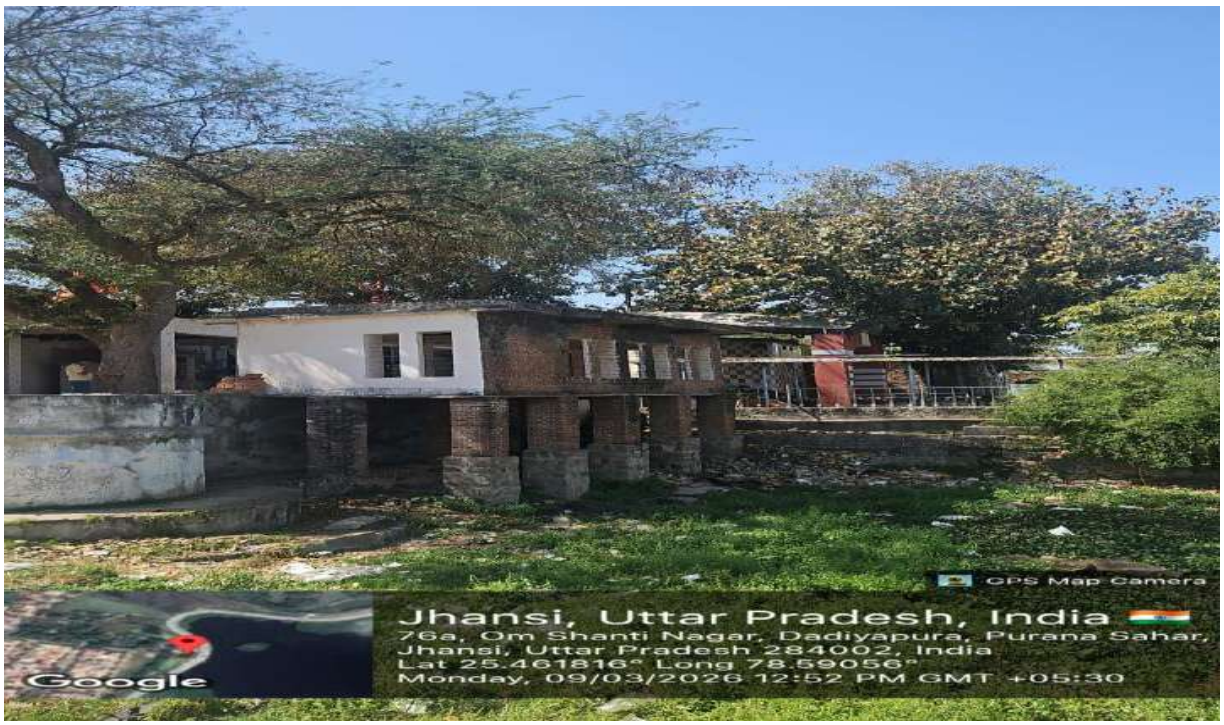


Photo 20: Encroachment at Laxmi Tal (Pillars)

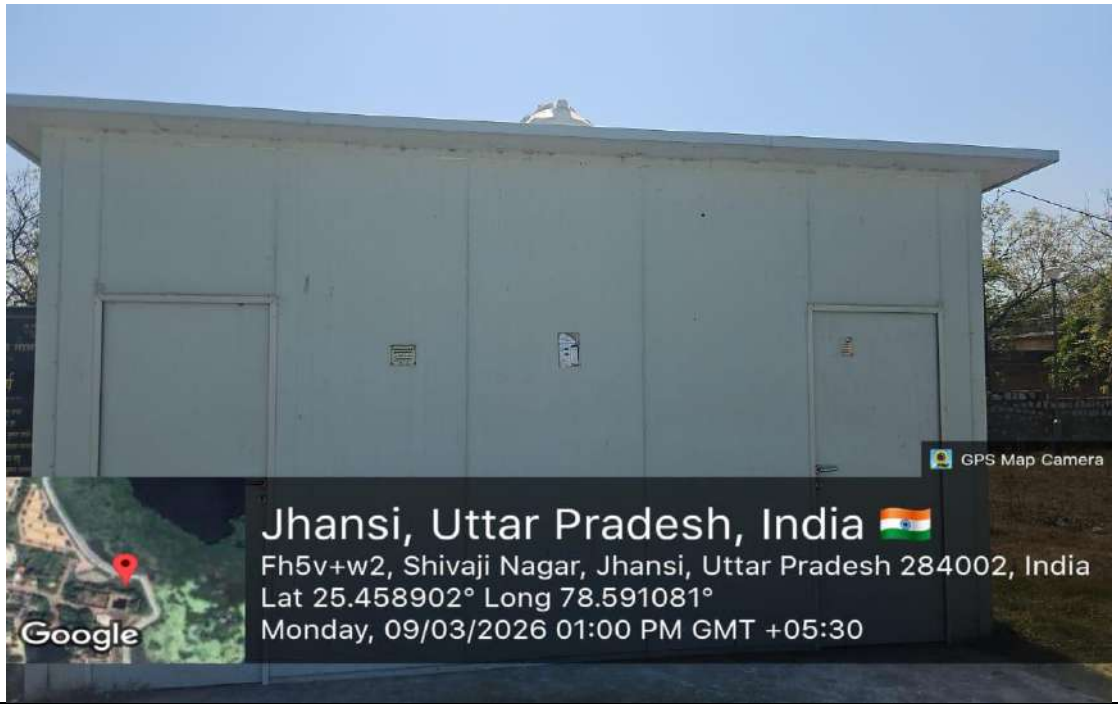


Photo 21: Structure at Laxmi Tal

Photo 22: Sewage Pumping Station

Photo 23: Temple at Laxmi Tal

Photo 24: Vacant Spaces near boundary of Laxmi Tal

Photo 25: Vacant Spaces near boundary of Laxmi Tal

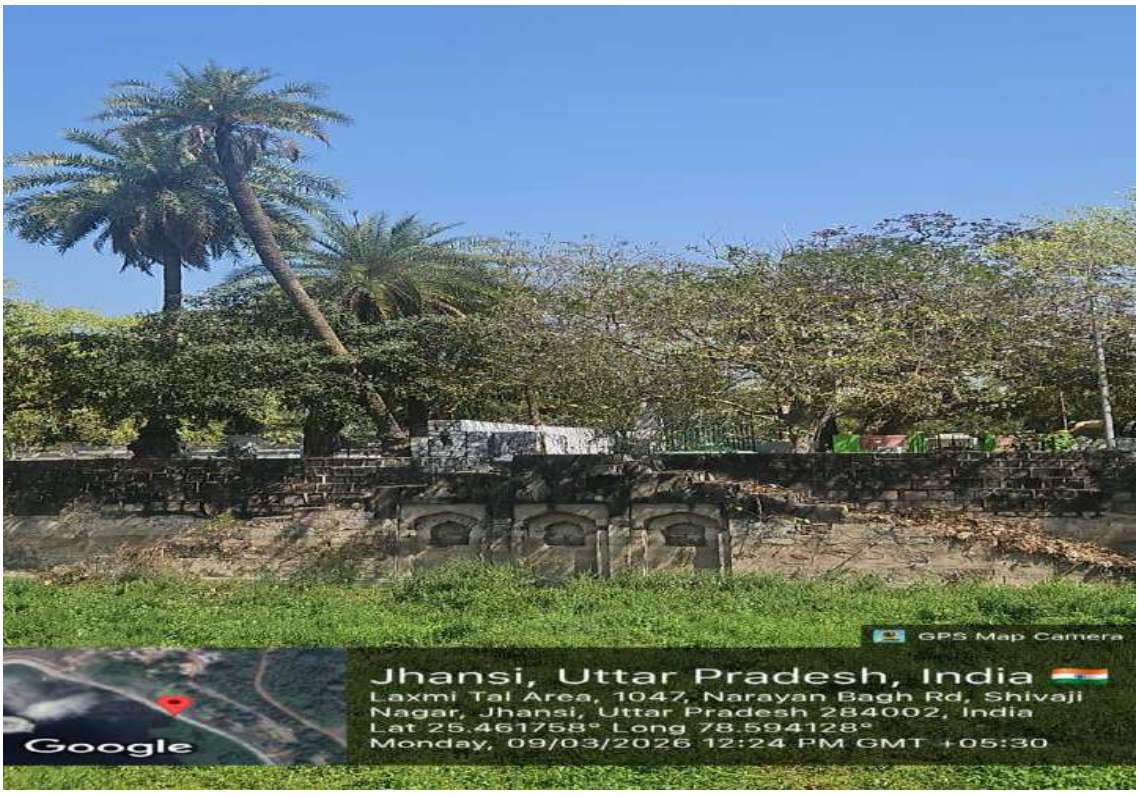


Photo 26: Vacant Spaces near boundary of Laxmi Tal

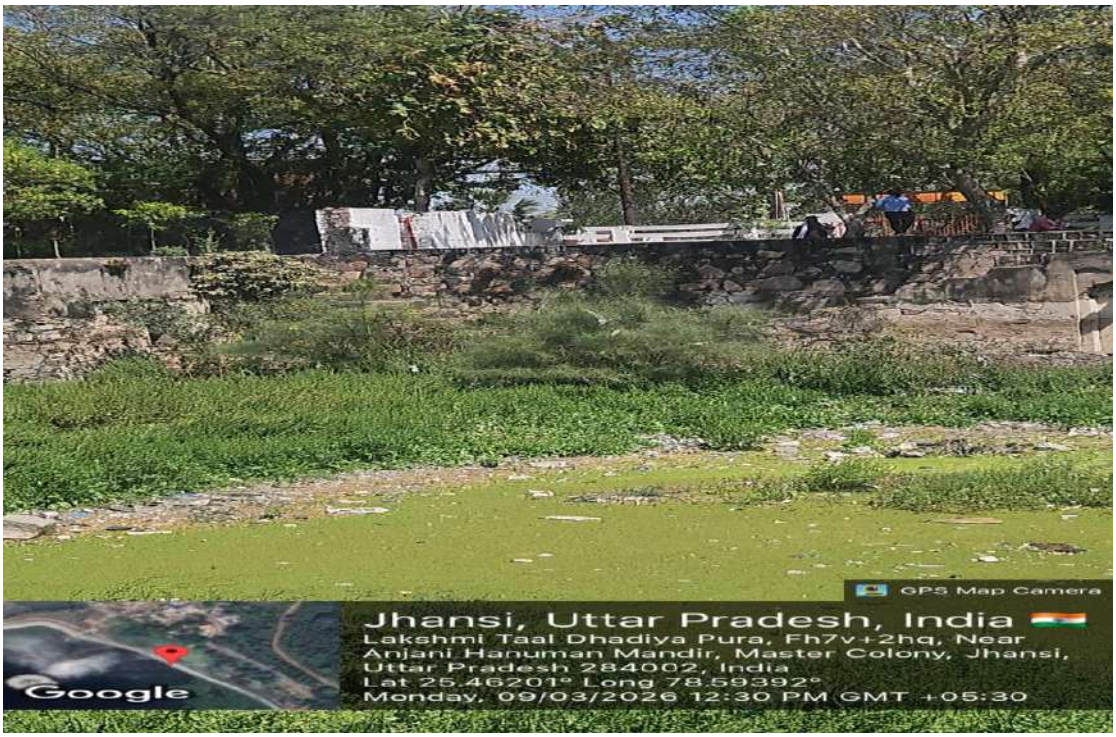


Photo 27: Vacant Space near boundary of Laxmi Tal

Photo 28: Plantations near boundary of Laxmi Tal

Photo 29: Plantations near boundary of Laxmi Tal

Photo 30: Plantations near boundary of Laxmi Tal

Photo 31: Vacant Spaces near boundary of Laxmi Tal

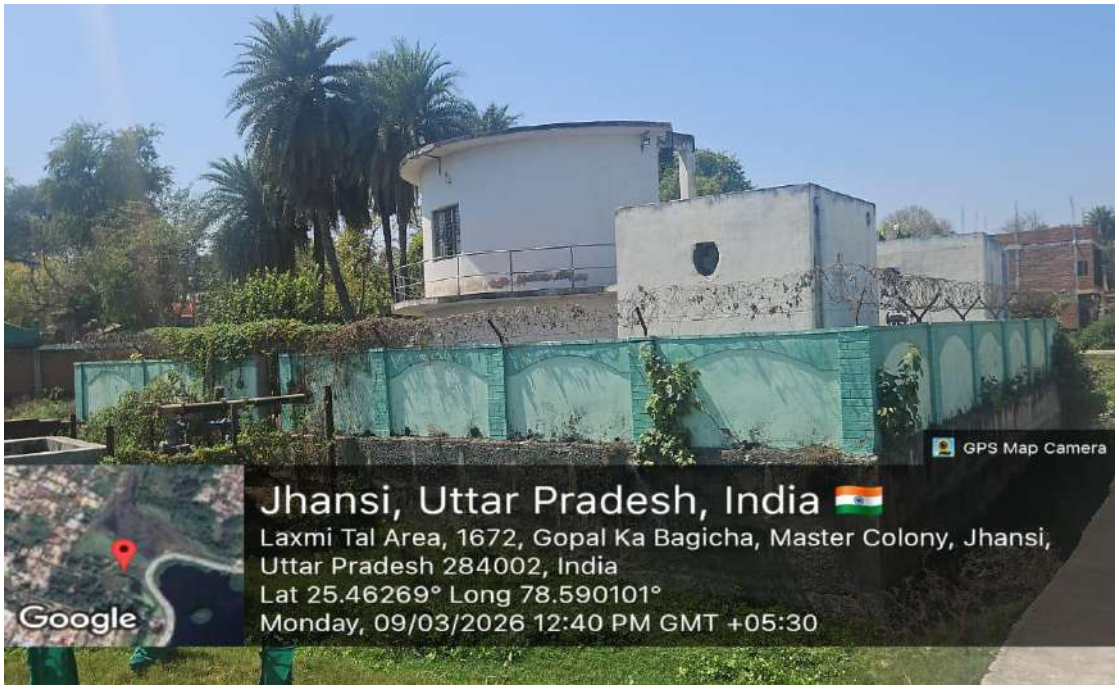


Photo 32: Sewage Pumping Station (SPS 2)

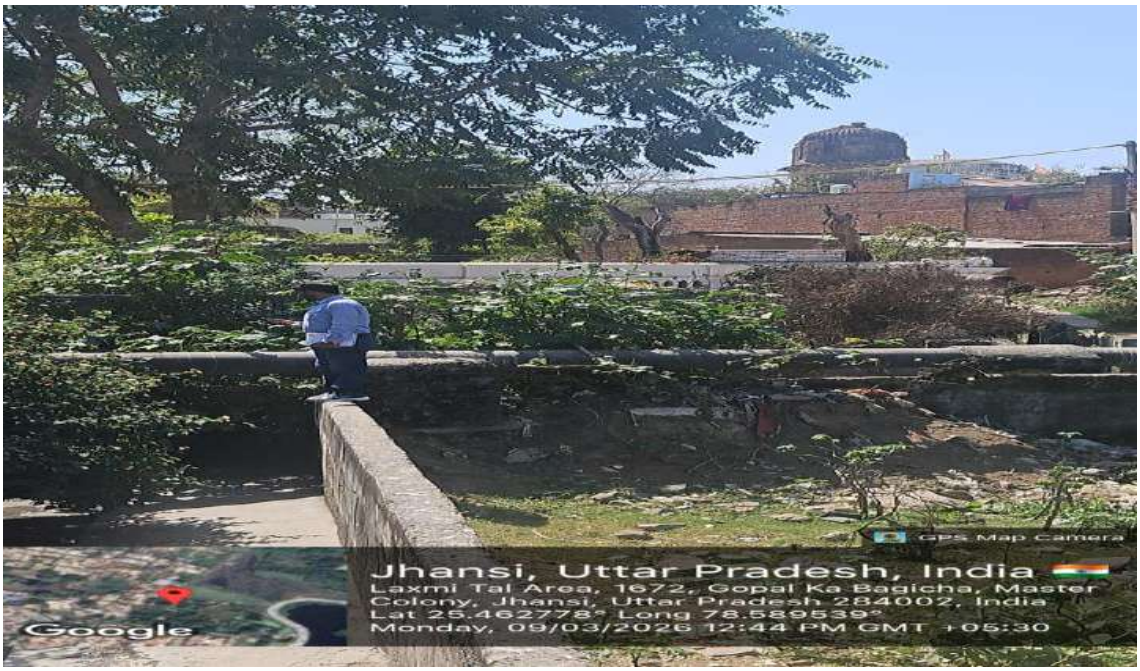


Photo 33: Sewage Pumping Station (SPS) area

Photo 34: Sewage Pumping Station (SPS) area

Photo 35: Old well inside boundary of Laxmi Tal

Photo 36: Photo showing Concrete Path at Laxmi Tal

Photo 37: Parking area at Laxmi Tal

Photo 38: Concrete Drain constructed in the periphery of Laxmi Tal

Photo 39: Statue in Water Body at Laxmi Tal

Photo 40: Water Body of Laxmi Tal

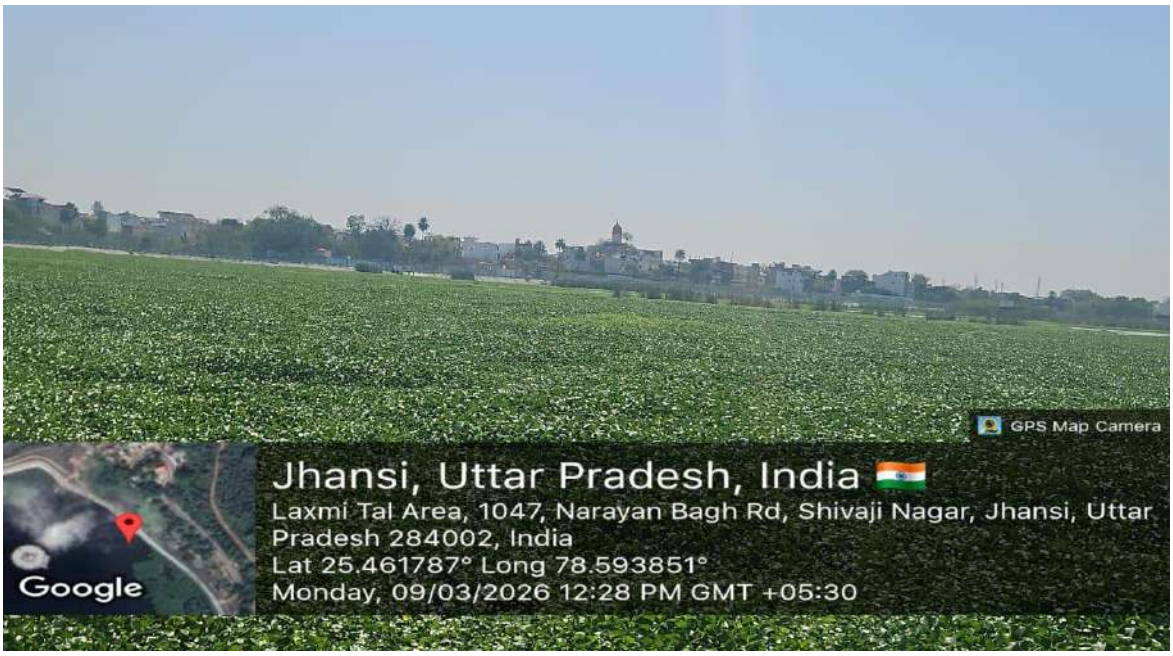


Photo 41: Water Body of Laxmi Tal

Photo 42: Photo showing Chain-Link Fencing around the Water Body of Laxmi Tal

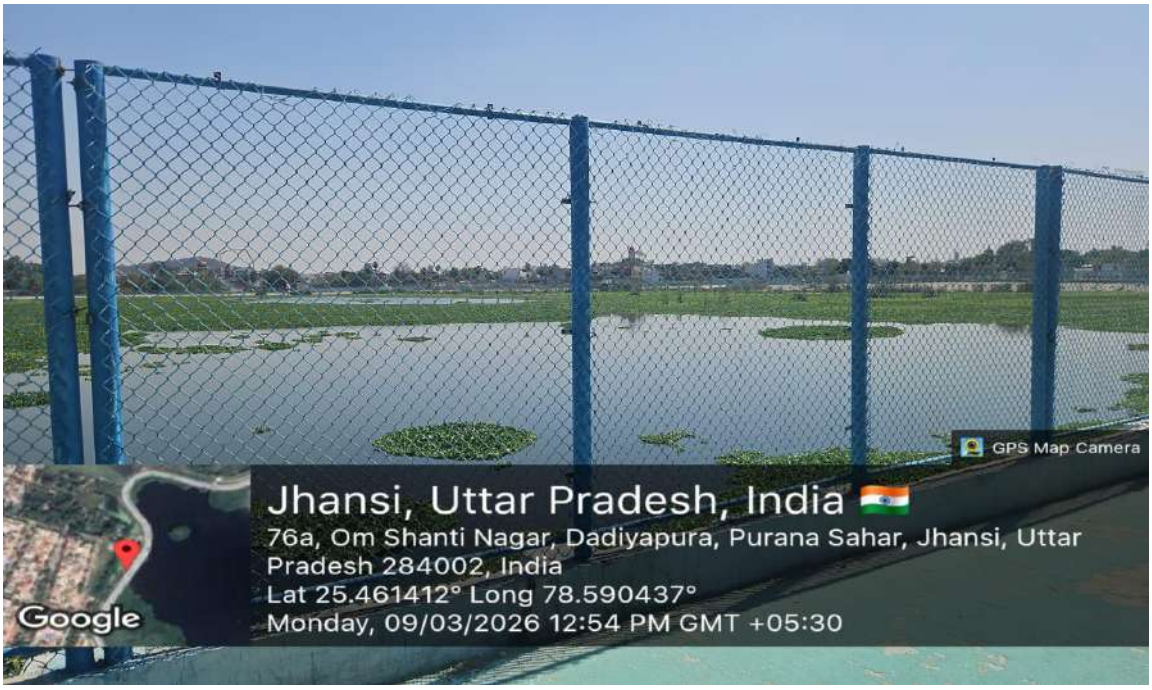


Photo 43: Photo showing Chain-Link Fencing around the Water Body of Laxmi Tal

Photo 44: Water Body of Laxmi Tal

Photo 45: Water Body of Laxmi Tal

Photo 46: Water Hyacinth in Laxmi Tal

Photo 47: Water ATM installed around Periphery of water Body

Photo 48: Path Around Periphery of water Body

****End of the Report****

Item Nos. 08 & 09 Court No. 1

BEFORE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Execution Application No. 38/2022
(IA No 333/2024, IA No 41/2023,
IA No 112/2023, IA No 425/2023)
In
Original Application No. 165/2021

Girja Shankar Rai & Ors. Applicant(s)

Versus

State of Uttar Pradesh & Ors. Respondent(s)

Narendra Kushwaha ..... Applicant in EA 38/2022

WITH
Original Application No. 1388/2024

Chandraprakash M. Tiwari Applicant

Versus

Union of India & Ors. Respondent(s)

Date of hearing: 08.01.2026

CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER

Applicant: Mr. Akash Vashishtha, Adv. for Applicant

Respondents: Mr. Bhanwar Pal Singh Jadon, Ms. Gargi Chaturvedi, Ms. Anjali Sharma, Mr. Shivansh Sharma & Ms. Atika Singh, Advs. for the State of UP
Mr. Gaurav Agarwal & Mr. Anushrestha Pratap Singh, Advs. for Jhansi Nagar Nigam in E.A 38/2022
Mr. Bhanu Sahay, Applicant in Person in I.A. No. 333/2024 (Through VC)

ORDER

1. By this execution application, the Applicant is seeking compliance of the order dated 14.09.2022 passed in OA No. 165/2021 and EA No. 02/2022 in OA No. 114/2021.

2. In the said OA/EA, the issue of protection of *Laxmi Tal* at Jhansi from un-authorised encroachment and pollution was raised. The Applicant

had also raised the issue of illegal encroachment in the *Laxmi Tal* where a big park was proposed and plotting was done.

3. On 14.09.2022, the Tribunal had recorded the assurance of the Principal Secretary, Urban Development, Uttar Pradesh regarding remedial action for protection of the water body and had accordingly disposed of the OA/EA by directing as under:

> *"xxx .....xxx.....xxx*
> *5. However, learned Principal Secretary, UD, UP, submits that upholding the law by removing the encroachment will in fact improve the law and order. We are of the view that the Rule of Law has to be upheld and it is absurd to say that if lawful action is taken law and order situation will deteriorate which means illegality should be tolerated and lawlessness allowed. It is responsibility of the State to protect Water bodies by way of completely stopping entry of sewage into the Tal which are significant for environment. The State is to act as trustee and not whimsically as thought by the Commissioner in taking an untenable plea to defeat the law. There is no question of deterioration of law and order in doing so.*
>
> *6. In this view of the matter, we record the assurance of learned Principal Secretary, UD, UP that further remedial action will be taken for protection of water body by controlling the pollution and removing the encroachments, following due process of law. It appears that against 26 MLD of STPs only 8-10 MLD is treated which needs to be looked into and remedied. In absence of recharging source for the Tal, treated sewage compliant with BOD and Fecal Coliform level may be used for filling the Tal and growing fisheries into it."*

4. The Applicant has filed the additional submissions dated 31.12.2025 stating that the order of the Tribunal has been flagrantly violated and the constructions in the *Tal* and the catchment area of the *Tal* have been made. Alongwith the additional submissions, the Applicant has also placed on record the photographs of on-going construction. The plea of the Applicant in respect of concretization of the pond area and surrounding area is as under:

> *"xxx .....xxx.....xxx*
> *2. **यह कि माननीय न्यायाधिकरण के समक्ष लक्ष्मी तालाब प्रकरण के विचाराधीन रहते हुए, संबंधित उत्तरदायी अधिकारियों/विभागों द्वारा जानबूझकर माननीय सर्वोच्च न्यायालय तथा माननीय न्यायाधिकरण द्वारा पारित आदेशों एवं दिशा-निर्देशों, तथा उनके अनुपालन हेतु केन्द्र एवं राज्य सरकार द्वारा जारी शासनादेशों की घोर अवहेलना की गई है।***

2. *That, despite the matter relating to Laxmi Talab being sub judice before this Hon'ble Tribunal, the concerned responsible officers/departments have deliberately and willfully violated the orders and directions issued by the Hon'ble Supreme Court of India and this Hon'ble Tribunal, as well as the Government Orders issued by the Central and State Governments for ensuring compliance thereof.*

3. ***यह कि उक्त अवमाननापूर्ण कृत्यों के अंतर्गत लक्ष्मी तालाब के कुल जलागम (कैचमेंट)** 33.068 **हेक्टेयर क्षेत्रफल में से लगभग** 12 **हेक्टेयर जलागम क्षेत्र को मनमाने एवं अवैध रूप से तालाब की प्राकृतिक परिधि से बाहर कर एवं पाटकर कंक्रीटीकरण कर दिया गया है, जिससे जलाशय के प्राकृतिक स्वरूप, जलागम संरचना एवं पर्यावरणीय संतुलन को गंभीर एवं अपूरणीय क्षति पहुँची है।***

3. *That, under the aforesaid contemptuous acts, out of the total catchment area of Laxmi Talab measuring 33.068 hectares, approximately 12 hectares of the catchment area have been arbitrarily and illegally removed from the natural periphery of the pond and filled with concrete, thereby causing serious and irreparable damage to the natural character of the water body, its catchment structure, and the ecological balance.*

xxx .....xxx.....xxx

7. ***यह कि नगर निगम द्वारा शहर के कसाई मण्डी, कुबेरू, जोशियाना, बंगलाघाट, डिमरयाना, ओम शांति नगर, तालपुरा, सागर गेट, लक्ष्मा गेट, ओरछा गेट, बड़ागांव गेट तथा डडियापुरा आदि क्षेत्रों से निकलने वाले नालों को सीधे लक्ष्मी तालाब के भीतर प्रवाहित किया गया था, इन नालों के माध्यम से विगत कई वर्षों से विशेष रूप से कसाई मण्डी से उत्पन्न पशु अवशेष, तथा अशोधित घरेलू, मल-मूत्र युक्त एवं अन्य प्रदूषित अपशिष्ट जल निरंतर बहकर तालाब में प्रवाहित होता रहा है, जिसके परिणामस्वरूप लक्ष्मी तालाब के भीतर उक्त अपशिष्ट से बनी गाद (स्लज) कई फीट तक जम चुकी है, जिसे दर्शाने वाले फोटोग्राफ/दृश्य साक्ष्य अभिलेख संख्या** 384 **और** 385 **पर स्पष्ट रूप से प्रदर्शित हैं।***

7. *That the Municipal Corporation had directly discharged the drains originating from the areas of Kasai Mandi, Kuberu, Joshiyana, Banglaghat, Dimrayana, Om Shanti Nagar, Talpura, Sagar Gate, Laxma Gate, Orchha Gate, Badagaon Gate, and Dadiyapura into Laxmi Talab. Through these drains, for several years, animal remains generated particularly from the slaughterhouse area (Kasai Mandi), along with untreated domestic sewage, human excreta, and other polluted waste water, continuously flowed into the pond, as a result of which sludge formed from such waste has accumulated to a depth of several feet within Laxmi Talab. The photographic and visual evidence depicting the same is clearly placed on record at Record Nos. 384 and 385.*

8. ***यह कि नगर निगम द्वारा लक्ष्मी तालाब के भीतर पूर्व से संचित अपशिष्ट से बनी गाद (स्लज) में बिल्डिंग कंस्ट्रक्शन से उत्पन्न अपशिष्ट को डालकर उसे मिश्रित किया गया तथा उक्त सामग्री के माध्यम से तालाब की जलागम (कैचमेंट) भूमि को पाट दिया गया, जिसके उपरांत वहाँ उपरोक्त कंक्रीटयुक्त***

स्थायी निर्माण कार्य करा दिया गया। उक्त कृत्य स्पष्ट रूप से पर्यावरणीय कानूनों, जल संरक्षण के सिद्धांतों तथा माननीय न्यायालयों/न्यायाधिकरणों द्वारा स्थापित विधिक मानकों का गंभीर उल्लंघन है।

8. *That the Municipal Corporation, by dumping waste generated from building and construction activities into the sludge formed from previously accumulated waste within Laxmi Talab and mixing the same therein, illegally filled up the catchment area of the pond, and thereafter carried out the aforesaid permanent concrete constructions thereon. The said acts constitute a serious violation of environmental laws, principles of water conservation, and the legal standards laid down by the Hon'ble Courts and Tribunals.*

xxx ……xxx……xxx

16. ***यह कि खसरा खतौनी अभिलेखों के अनुसार लक्ष्मी तालाब का कुल जलागम (कैचमेंट) क्षेत्रफल** 33.068 **हेक्टेयर हैं, किन्तु उक्त स्थलीय स्थिति के विपरीत, क्योकि प्रकरण के विचाराधीन रहते हुए, संबंधित उत्तरदायी अधिकारियों/विभागों द्वारा जानबूझकर उक्त क्षेत्र में से लगभग** 21 **हेक्टेयर क्षेत्रफल में कंक्रीटयुक्त कुंड/संरचना का निर्माण कर दिया गया है तथा शेष** 12 **हेक्टेयर जलागम क्षेत्र के कुछ भाग को मनमाने ढंग से तालाब की परिधि से बाहर कर शेष भाग को पाटकर कंक्रीटीकरण कर दिया गया है। उक्त अवैध कृत्यों के फलस्वरूप लक्ष्मी तालाब का प्राकृतिक जलागम क्षेत्र गंभीर रूप से प्रभावित हुआ है, जिसकी वास्तविक एवं वर्तमान स्थिति नीचे प्रदर्शित संलग्न गूगल इमेजरी से स्पष्ट रूप से परिलक्षित होती है।***

16. *That, as per the Khasra/Khatauni revenue records, the total catchment area of Laxmi Talab is 33.068 hectares. However, contrary to the said recorded and actual position, and while the matter is still under consideration, the concerned responsible officers/departments have deliberately constructed concrete ponds/structures over approximately 21 hectares of the said area. Further, certain portions of the remaining 12 hectares of the catchment area have been arbitrarily excluded from the periphery of the pond, and the rest has been illegally filled up and concretized.*

As a result of these illegal acts, the natural catchment area of Laxmi Talab has been seriously and adversely affected, the true and present condition of which is clearly reflected from the enclosed Google imagery displayed below."

5. If the allegation which is made by the Applicant in the additional submissions dated 31.12.2025 is correct then the Principal Secretary, Urban Development, State of Uttar Pradesh has failed to act in accordance with the assurance recorded in paragraph 6 of the order of the Tribunal dated 14.09.2022.

6. Hence, in order to ascertain correct position, we appoint a Joint Committee comprising of the representative of the CPCB, the representative of Survey of India and the representative of Regional Officer, MoEF&CC, Lucknow not below the rank of the Joint Secretary. The representative of RO, MoEF&CC, Lucknow will act as a nodal agency in this Joint Committee. The Joint Committee will visit the site, verify from the old revenue record the original area and boundaries of the *Laxmi Tal* and ascertain the area of the *Laxmi Tal* which has been encroached upon and the catchment/buffer area of the *Laxmi Tal* on which the constructions have been raised and also find out the status of on-going constructions and the persons/authorities responsible for raising such constructions and encroaching upon the *Laxmi Tal* or its catchment/buffer area. The Collector and Superintendent of Police, Jhansi will extend full cooperation to the Joint Committee for carrying out the aforesaid exercise. This exercise will be completed by the Joint Committee within a period of two months and the status report will be submitted immediately thereafter to the Tribunal.

7. List on 13.04.2026.

8. Let a copy of this order be forwarded to the CPCB, Survey of India, RO, MoEF&CC, Lucknow, Collector and Superintendent of Police, Jhansi for compliance.

Prakash Shrivastava, CP

Dr. A. Senthil Vel, EM

January 08, 2026
Execution Application No. 38/2022
(IA No 333/2024, IA No 41/2023,
IA No 112/2023, IA No 425/2023)
In Original Application No. 165/2021
dv

भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
क्षेत्रीय कार्यालय, लखनऊ
Regional Office, Lucknow
केन्द्रीय भवन, ग्यारवां तल, सेक्टर एच, अलीगंज, लखनऊ–226024
Kendriya Bhawan, 11th Floor, Sector H, Aliganj, Lucknow-226024, Phone No : 0522-2326696
Email : rocz.lko-mef@nic.in, goimoefrolko@gmail.com

File No. XXI/ENV/NGT/CC/213/2026/395 **Dated: 24.02.2026**

MINUTES OF THE FIRST MEETING OF THE JOINT COMMITTEE CONSTITUTED IN THE NGT MATTER IN E.A. No. 38 of 2022 IN O.A. 165 of 2021, GIRIJA SHANKAR RAI VS STATE OF U.P & ORS.

Date: 23.02.2026 Time. 04.00 PM

Background:

Hon'ble NGT vide order dated 08.01.2026 has directed as follows:

".....6. Hence, in order to ascertain correct position, we appoint a Joint Committee comprising of the representative of the CPCB, the representative of Survey of India and the representative of Regional Officer, MoEF&CC, Lucknow not below the rank of the Joint Secretary. The representative of RO, MoEF&CC, Lucknow will act as a nodal agency in this Joint Committee. The Joint Committee will visit the site, verify from the old revenue record the original area and boundaries of the Laxmi Tal and ascertain the area of the Laxmi Tal which has been encroached upon and the catchment/buffer area of the Laxmi Tal on which the constructions have been raised and also find out the status of on-going constructions and the persons/authorities responsible for raising such constructions and encroaching upon the Laxmi Tal or its catchment/buffer area. The Collector and Superintendent of Police, Jhansi will extend full cooperation to the Joint Committee for carrying out the aforesaid exercise. This exercise will be completed by the Joint Committee within a period of two months and the status report will be submitted immediately thereafter to the Tribunal.

7. List on 13.04.2026....."

Follow-up Action:

In compliance to directions of Hon'ble NGT in above said matter, first meeting of the committee was convened on 23.02.2026 in hybrid mode under the chairmanship of Deputy Director General of Forests, MoEF&CC, RO, Lucknow.

The List of the participants is annexed as **Annexure-A1. None present for District Magistrate Jhansi & SP, Jhansi.**

Shri Satya Prakash Negi, DDGF, Shri Nitin Joshi, Additional Surveyor General & Shr. Arvind Kumar, Scientist 'C' will represent MoEF&CC, RO, Lucknow, Survey of India &, Central Pollution Control Board, respectively.

Records of discussion are as follows:

At the onset, Dr. (R. B. Lal, Scientist 'F', MoEF&CC, Regional Office, Lucknow welcomed the committee members, explained about background of the matter and directions of Hon'ble NGT in detail through Power Point Presentation.

The matter was discussed thoroughly by the committee members and it was unanimously decided that certain information is needed to comply the Hon'ble Tribunal order:

1. The old revenue records of the original area and boundaries of Laxmi Tal are need before the site visit, such as 1359 Fasli, Naksha Nazree and copy of Khatauni of every five years.

(Action: DM, Jhansi)

2. Details of encroachments and encroachers surrounding the Laxmi Tal and catchment/buffer area.

(Action: DM, Jhansi & Municipal Commissioner, Jhansi MC)

3. Details of House Tax & Water Tax, if paid or asked to be paid from the encroachers?

(Action: Municipal Commissioner, Jhansi MC)

4. DFO, Jhansi and RO, UPPCB, Jhansi will coordinate with DM Jhansi, MC Jhansi & Jhansi Development Authority to provide all the requisite information to the Joint Committee.

(Action: DFO, Jhansi and RO, UPPCB, Jhansi)

5. Suitable officials familiar with the present matter may be nominated from Jhansi Development Authority, District Magistrate Office and Jhansi Municipal Corporation to assist the Joint Committee.

(Action: DM, Jhansi, Jhansi Development Authority, & Jhansi MC)

Site visit by the Joint Committee will be conducted on **09.03.2026** for on-the-spot assessment as per the direction of Hon'ble NGT. All the information as

mentioned above are required to be provided by the concerned authorities on or before 02.03.2026 positively for detailed study by the Committee members.

The meeting ended with thanks to all the participants.

This issues with the approval of competent authority.

****

Encl:

1. Hon'ble NGT order dated 08.01.2026

Yours sincerely,

(Dr. R. B. Lal)
Director/Scientist 'F'

Copy to committee members:

1. Shri Nitin Joshi, Additional Surveyor General, Survey of India, New Delhi. Email: zone[dot]north[dot]soi[at]gov[dot]in
2. Shri Arvind Kumar, Scientist E, RD, CPCB, Lucknow. Email: arvind.cpcb@gov.in
3. PPS to Deputy Director General of Forests, MoEF&CC, RO, Lucknow

Copy for further necessary action:

1. Chairman, Jhansi Development Authority, Jhansi. Email: jda_jhansi@rediffmail.com
2. District Magistrate, Jhansi. Email: dmjha@nic.in **with a request a depute a suitable Liaison Officer during the Jhansi visit of the NGT appointed Committee.**
3. Municipal Commissioner, Municipal Corporation, Jhansi. Email: nagarayukta@jnnjhansi.com, jnnjhansi@gmail.com
4. Superintendent of Police, Jhansi. Email: sspjsi-up@nic.in **with a request to deploy a team of police personnel along with lady constable to assist the NGT appointed Joint Committee during the Site Visit of Laxmi Tal, Jhansi.**
5. District Forest Officer, Jhansi. Email: dfojh-up@nic.in
6. Regional Officer, UPPCB, Jhansi. Email: rojhansi@uppcb.in

Copy for information:

1. The Chief Secretary, Uttar Pradesh, 101, 'B' Block, Lok Bhawan, U.P. Secretariat, Lucknow - 226001 Lucknow. Email: csup@nic.in

ANNEXURE-A1

List of Participants

S. No.	Name	Designation
1.	Shri Satya Prakash Negi	Deputy Director General of Forests, MoEF&CC, RO, Lucknow
2.	Shri Nitin Joshi	Additional Surveyor General, Survey of India, New Delhi.
3	Shri. D. N. Pathak	Director, Survey of India, Lucknow
3.	Dr. Arvind Kumar	Scientist 'C', CPCB, RD, Lucknow
3.	Dr. R. B. Lal	Scientist 'F', MoEF&CC, RO, Lucknow
4.	Dr. Amit Kumar Gupta	Scientist 'E', MoEF&CC, RO, Lucknow
6.	Shri Neeraj Arya	DFO, Jhansi
7.	Shri Imran Ali	RO, UPPCB, Jhansi

Joint Site Inspection Dated 9.03.2026 in EA no. 38 of 2022 in OA no. 165 of 2021, Girija Shankar Rai vs State of UP and others Before the Hon'ble NGT, New Delhi.

Attendance Sheet

Sr. No.	Name	Designation	Organization / Mob. No.	Signature
1.	Satya Prakash Negi	AAG, RO, Lucknow	8894222211	
2.	Nitin Joshi	Additional Surveyor General	Survey of India 9412841204	
3.	Arvind Kumar	Sc.'E'	CPCB RO Lucknow	03/03/2026
4.	Dr. R.B Lal	Sc. 'F'	MoEFCC RO Lucknow 9899106577	
5.	Imraan Ali	RO UPPCB Jhansi	UPPCB	
6.	MANISH CHAUDHARY	DEPUTY COMM. INDUSTRIES JHANSI	DIC	
7.	Manoj Verma,	JEA UPPCB Jhansi	UPPCB 9450077506	
8.	Pradeep Kumar Arya	DSS	SOI 9869093213	
9.	Gyanendra Kumar Pal	OS	SOI 9044136929	
10.	Vimlesh Kumar	R.F.O.	6388258514	

11.	Santosh Kumar.	ACF Mauranipur. (Jhansi)	Forest department	9335986760.
12.	Anand Kumar Mishra	Scientific Assistant	CPCB	9651814503
13.	Prateek Singh	Legal Assistant	MOEPSCC, RO Lucknow	9454550005
14.	R.C. Srivastava	Retd ADN). Nagar Nigam.	Nagar Nigam	9415031615.
15.	Arun Kumar	ADM (J)	Revenue	9912730074
16 -	Rahul Kumar Yadav	AMC - N.N.	Nagar Nigam	
17 -	Siddharth Gupta	Env. Eng. J.N.N.	Nagar Nigam	
18 -	Sunil Kum	JE JSCL	Jhansi Smart City	Sunil
19	Umare dag	RI		
20 -	Anil Kumar	RA		8318163811
21 -	Mukteshwar	Lekhpal	"	
22 -	Mukesh pal Singh	EE		9412506143
23	Ravi Kumar Shakya	J.E.	Jal Nigam	Mukteshwar 9140842245
				9473942722
				8218567886

उत्तर प्रदेश UTTAR PRADESH **AG R E EM ENT** FP 532412

This agreement entered into on this 12th July 2021 at Jhansi between Jhansi Smart City Limited (JSCL) a Special Purpose Vehicle which was incorporated on Twentieth day of September Two Thousand sixteen under the Companies Act, 2013 and represented by its Board of Directors (herein after referred to as "the Employer" which expression shall mean and include, wherever the context so requires or admits, its assignees, nominees, successors-in-interest and administrators)

And:

M/s BSC Projects Pvt. Ltd. having its head office at **1342, JJ Cluster Phase-III, Madanpur Khadar, Delhi-110076** represented herein by its Authorised Signatory as per resolution of the Board of Directors dated 10th March 2021(Mr. Bhanwar Singh S/o Mr. Ram Bharoshe R/o B-73, Sector-Alpha-1, Greater Noida, G.B. Nagar (UP) - 201310,hereinafter referred to as "The Contractor", (which expression shall mean and include, wherever the context so requires or admits, its successors-in-interest, administrators and executors)WHEREAS the Employer is desirous that the Contractor should execute "**Development of Laxmi Taal in Jhansi City"** as specified in the Contract Document /RFP (hereinafter called "the Works") at a cost of **Rs. 39,49,22,826/- (Rs Thirty-Nine Crore Forty-Nine Lakh Twenty-Two Thousand Eight Hundred Twenty-Six only) (Inclusive of GST).**The rates quoted by the Contractor shall be deemed to be inclusive of all other levies, royalty, Labour Cess, Toll Tax, if any, that the Contractor will have to pay for the performance of the Contract, together with all general risks, liabilities and obligations set out or implied in the Contract. The duration of the work will be **Eighteen months** including rainy season from the date of Signing of this agreement.

Forwarded विधि सलाहकार नगर निगम, झाँसी

NOW THIS AGREEMENT WITNESSTH as follows:

1. In this Agreement, words and expression shall have the same meaning as are respectively assigned to them in the conditions of contract including all the documents which shall be deemed to form and be ready and construed as part of this Contract Agreement here in after referred to.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and correct any defects therein conformity in all aspects within the provisions of the contract.

BSC Projects Pvt. Ltd.

Authorised Signatory

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28-6-21

क्रम स0............दिनांक......

क्रेता का नाम आरती कन्सट्रक्शन लि०

पिता / पति / पुत्री

पता झांसी

स्टाम्प विक्रेता–

ला0नं0-43 वैधता 31-03-2022 तक

कलैक्ट्रेट–झाँसी

हस्ताक्षर

10 JUL 2020

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and correct the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

4. The Contractor shall perform all the works specified in the Contract Document/ Tender within the stipulated time period and shall ensure the compliance of labour legislation, environment laws and all other applicable laws.

5. The following documents shall be deemed to form and be ready and construed as part of this Contract Agreement viz.

   i) Letter of Acceptance
   ii) Contractor's Bid as quoted
   iii) RFP documents including conditions of contract (General and Special), Drawing and Specifications, Bill of Quantities, all corrigendum and pre-bid responses, etc. and
   iv) Any other document listed in the RFP.
   v) All the correspondence exchanged, if any between the Employer and the Contractor after receipt of bids till signing of agreement.

6. The contractor shall indemnify JSCL and its Project Management Consultant staff on all accounts from all aspects while performing the scope of services of this project.

7. Any amendment and/or modifications to this agreement shall be valid and binding on either party, only if such amendment/modification is mutually agreed to in writing and executed by both parties.

8. If any provision contained herein should be held unlawful, becomes incapable of performance by either party, is rendered void or unenforceable for any reason, that provision shall be severed from this agreement and the other provisions shall continue to be valid and performed, as if the severed provision was never a part of this agreement.

9. If any provision is not contained herein or in tender document specifically, the same shall be dealt with in accordance with the decision of the Employer and binding on executing agency.

The Major Details of the Project are as under

a) Period for Execution/ Implementation----- 18 Months
b) Defect Liability Period ------------------------ 12 Months
c) Operation & Maintenance-------------------- 60 Months
d) Sub - contracting is allowed for the Job up to 25%.
e) The Contractor shall submit for approval a **Program** for the Works within **15 days** from the date of the Letter of Acceptance.The Program will be updated every 15days.

f) The contractor shall have a suitable insurance to cover all the risks that are likely to occur from the scope of services indicated in this project.

g) The contractor shall indemnify the employer and its Project Management Consultant staff on all accounts from all aspects while performing the scope of services of this project.

h) The contractor shall include in the contract price all expenses necessary to meet its obligations for making contributions towards employee benefits funds (such as provident fund, ESI benefits, old age pension and/or any other benefits/compensation legally payable) in compliance with all the statutory regulations and requirements.

True verified
वरिष्ठ विधि अधिकारी
नगर निगम, झाँसी

BSC Projects Pvt. Ltd.

Authorised Signatory

JSCL
Jhansi Smart City Ltd.
JHANSI

i) All records in this connection shall be properly maintained by the contractor and produced for scrutiny by the concerned authorities, to the owner/owner's representative whenever called for.

SCOPE OF WORK:

The scope of work is to develop following item as given below:

1. Dismantling and Site Clearance of existing structure in the site area and removing debris from site area.
2. Dressing of the bund wall with the addition of new elements like pathway, streetlights, benches, etc. as per BOQ items and approved by client / JSCL.
3. Development of Parks with landscaping are proposed, design as per BOQ items and approved by client / JSCL.
4. Designing & Construction of Entrance Plaza, Boating Deck, Vendors Zone, Viewing Decks & Parking area as per BOQ items and approved by client / JSCL.
5. Designing, Supply, installation & commissioning of Laser Light, Sound Show, CCTV Surveillance, attractive street lightings and Lamp posts in and around the Laxmi Tal as per BOQ items and approved by client / JSCL.
6. Supply and Installation of Cover Motor Boat Capacity of Capacity 20-25 seats as per BOQ items and approved by client / JSCL.
7. Revival of aquatic ecosystem by introduction of composite fish culture and aquatic plants inside the Laxmi Tal.
8. Designing and construction of RCC Bridge form entrance plaza to Bund wall as per BOQ items and approved by client / JSCL.
9. Designing and Improvement of road connectivity as per BOQ items and approved by client /JSCL.
10. Designing and construction of Boundary wall along the Laxmi Tal as per BOQ items and approved by client / JSCL.
11. Designing and construction of Nallah along the Laxmi Tal as per BOQ items and approved by client /JSCL.
12. Cleaning & De-silting of Laxmi Tal as per BOQ items and approved by client / JSCL.

However, considering the complexity of the project, a change in the scope initially conceived at the time of agreement is most likely. Such change in scope will result in addition of new works/ line items in the BOQ. Since this is a percentage rate contract, the rates of such items would be the same percentage below/above as quoted by the contractor against the benchmark cost of such items in the CPWD/SOR estimates.

Scope of work of contractor during Operation and maintenance (O&M) period

Maintenance of all assets created under this project

The contractor will be liable for O&M of all the assets created under this project as defined in BOQ. Maintenance works includes but not limited to- repair and replacements of all defective items (Civil, Electrical, Plumbing, landscaping, equipments like boats etc) routine maintenance, safety and security of assets and

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visitors etc. Broadly he is responsible for following assets/activities and any other activity or asset created under the project.

1) Bund wall& walkway
2) Entrance Plaza
3) Parking& Roads
4) Boating Deck and boats
5) Vendors Space/ vending zone/kiosks/carts
6) Viewing Decks
7) Parks and all landscaping works(hard scape and soft scape)
8) All electrical/lighting, plumbing and drainage works
9) Golf Cart/E-Vehicle
10) Drain & culvert Work
11) CCTV & Surveillance
12) Other items such as – boats, bridge, cauffer dam, public toilets, water quality maintenance(deweeding, desilting & dewatering, lake & drain treatment by biotech microorganisms, fish cultivation and aquatic plantation etc. as directed by JSCL.
13) Water ATMs.

Operational modalities

Contractor shall be responsible for operation & maintenance and proper upkeep of the Laxmi Taal Project Area for a period of 5 (Five) years from the date of handing over of the sites. The activities to be carried out by the Contractor during the O&M period shall include but not limited to the following:

- Contractor will follow guidelines issued by JSCL time to time regarding operation and maintenance of project area.
- JSCL will issue guidelines for important aspects like; Timing of operation, Operation of vending zones, Parking, boating, entrance ticketing etc. All revenue generated from Project area and activities within will belong to JSCL and it will issue detail guidelines for registration/ticketing/ revenue collection within the project area. JSCL on its discretion can lease these areas to other parties and contractor has to collaborate with these parties. Contractor on behalf of JSCL will collect revenue/ticketing as per modalities prescribed by JSCL time to time.
- Contractor will be responsible to operate and maintain the site for 24 Hours. He will operationalize the project for public as per the timing decided by JSCL.
- Contractor will only allow vendors/staff within the premise who are registered/ permitted by JSCL. Site shall be kept free from any other activity which is not allowed/ prescribed by JSCL. Contractor shall ensure that Laxmi Taal Project Area is not used for uses other then prescribed.
- Smoking, drinking alcohol, chewing tobacco, consumption of narcotics is strictly prohibited in Laxmi Taal Project Areas; Contractor will ensure that no such activity takes place in Laxmi Taal Project Area during its operational hours.
- Contractor will also ensure that no registered or unregistered (unauthorised) vendors sells Tobacco products, narcotics or alcohol in the Laxmi Taal Project Area, and as such none of the vendors/their staff/Contractor staff is under the influence of such substance during their duties in Laxmi Taal Project Area.

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- Food Safety and Hygiene standard: The Contractor will ensure hygienic conditions in the premise in general, and food/eatable items sold within Laxmi Taal Project Area., JSCL through its inspection team and health department officials will carry out periodic inspections before prior information to ensure that compliance with the food safety Rules and Regulations.

Maintenance modalities

Routine maintenance of the Laxmi Taal Project Area to be carried out by Contractor will include but not be limited to:

- Contractor will ensure highest standards of cleanliness in Laxmi Taal Project Area.
- Provide all routine cleanliness services in the Laxmi Taal Project Area; like sweeping, washing and mopping with water mixed with disinfectant etc.
- Contractor will maintain all parks and landscaping works (hardscape and softscape) as per given in this agreement.
- Contractor will remove trash, litter, broken glass, and solid waste etc from the Laxmi Taal Project Area to the nearby kudda addas.
- Routine cleaning of Sitting benches, gate, poles, and other MS structures, pathways, etc. as and when required.
- Contractor shall provide all water required for drinking, hand washing and cleaning and ensure regular checking and repairing of all supply lines and equipments.
- It is Contractor's responsibility to provide clean and hygienic toilets. The toilet shall be in good condition, odourless, clean. There shall be no leakage, broken urinal/WCs or broken sinks.
- All other facilities provided shall be in good/acceptable condition to JSCL. Contractor is required to maintain the facilities in good condition at all time of Laxmi Taal premise operation.
- Contractor shall be required to depute adequate staff to carry out his responsibilities as defined below. However, as Contractor is fully responsible for O&M as detailed out in this RFP, he may deploy additional staff as he deems fit. A minimum of following staff/manpower shall be deputed full time, on site, each and every day by Contractor:

Sl. No.	Sectors	Type of Staff/Description/Remarks	Number of Staff required
1	Administration Head	Administration modalities will be decided by JSCL	1
2	Administration staff	To work under admin head	3(min)
3	Super wiser and Maintenance head	The head shall be responsible for cleanliness, electric work etc.	1
4	Support Staff	Sweepers, electrician, gardeners etc.	8(min)
5	Security staff	Security Guards at the entrance, exit gate and inside the premises	6 (Min)
6	Parking staff	Parking management	4 (Min)
7	Boating staff	Drivers, Life guards, helper etc	For two boats
8	Tourist vehicles	Drivers and helpers	For two vehicles

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- The Contractor shall be responsible for the safety and security of vendors and visitors.
- Security guards shall be present from the opening and closing time of the Laxmi Taal Project Area and Contractor shall ensure that all the safety equipment are available and in operational condition at market area such as fire extinguisher, life jackets/belts, first aid etc.
- Contractor shall depute adequate staff to operate day time parking facilities on both sites.
- Contractor shall also ensure that no vendor occupies space on adjacent carriageway
- After completion of 5 years of O&M contractor will hand over all the assets created within the project area to JSCL in proper working condition to satisfaction of JSCL.
- Contractor will collaborate with other govt /private agencies involved/associated with this project such as; UPJN, State Electricity Board, Jhansi Nagar Nigam , Department of Tourism, ASI as per the directions of JSCL.

Operation and Maintenance of Parks/Landscaping

After the completion of works, Contractor shall undertake O&M of Parks/Landscaping for 5 years including all the assets created within the park, this will broadly include the following.

1. Opening and closing of park as per the timing decided by JSCL, and deploying security guards at gates and inside the park in appropriate numbers for safety and security.
2. All repair, replacement works (if desirable after inspection by JSCL) of all the assets /facilities created within the Parks.
3. Maintenance (watering/manuring/security/Disease prevention etc.) of all plants/shrubs/grass/flower beds etc. till maturity (establishment) period and O&M for 5 years after maturity (establishment) period.
4. Survival of all plants/grass/flowers and alike items will be the sole responsibility of contractor till the end of O&M period, and contractor shall handover the site with all plants in good/healthy condition to JSCL after maintenance period.
5. Schedule of maintenance works are to be carried out zone wise and site schedule shall be followed as directed by JSCL.
6. Maintenance of all soft landscape and hard scape areas as may be necessary for all round maintenance and keeping the area tidy including items such as; daily Watering of all green elements, cleaning/sweeping/washing of all hard/ brown elements, etc.
7. Cleaning daily the entire area by removing fallen dry leaves and all types of waste materials conveying and disposing collected wastes at a designated place by JSCL within 50 mts of boundary of project.
8. Collection of waste from dustbins within the park (and project area) and disposing it to a nearby collection point as decided by JSCL within 50 mts of the park.
9. Watering the whole green/landscape area under the contract daily at the rate of 4 to 5 liters per sqm area (minimum) , uniformly, using all tools and tackles like rubber hose, sprinkler.
10. Applying manure/composite manure by properly diluting and making into thin solution all as per direction of JSCL, once in a month or as directed by JSCL.
11. Clearing unwanted small trees, including uprooting of rank vegetation, grass, brush wood, removal of parthenium weeds and other unwanted plants/tall weeds,

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including disposal of rubbish at a distance of 50M, all as per detailed specification and as per instructions of the JSCL.

12. Contractors shall engage and deploy experienced highly skilled supervisors/gardeners and unskilled workers/helpers who have experience in working mechanisms for attending to maintenance of landscape and horticulture works. So engaged highly skilled supervisors/ gardeners and unskilled workers/helpers shall have ability to control landscape and horticulture maintenance works.
13. Electrical charges and water charges (municipal water supply) will be borne by JSCL separately on reimbursable basis.

Other Conditions

a) The Contractor shall arrange for inspection of major works, by Employer / Employer's representative at his own cost. Also, if required, the Contractor shall also carry out required tests for all the materials to be used in the Contract/ Works on regular basis or upon request of Employer/ Employers representative at Contractor's cost.

If the **value engineering** proposal is approved by the Employer the amount to be paid to the Contractor shall be 50% of the reduction in the Contract Price. The amount shall be paid after the completion of the project taking the final contract amount in consideration.

b) "The quantities provided in the **Bill of Quantities (BoQ) are tentative** and can vary up to any extent. Contractor has to calculate BOQ quantities as per approved design/ GFC drawing before start of execution/ construction work at site(s) for approval of Engineer – in - charge.

c) **Retention Money** to be deducted from the RA bills is **5%** (five Percent) of the work done.

d) **The liquidated damages** for the whole of the Works are **0.10** % (zero-point one percent) **per day**. The **maximum** amount of liquidated damages for the whole of the Works is **10%** (**ten percent**) **of the final Contract Price.**

e) Penalty **during execution:** The Contractor shall ensure due diligence to achieve progress of work not less than that indicated in the following milestones:

Lapse of 25% of the Contractual time- 10%
Lapse of 50% of the Contractual time- 30%
Lapse of 75% of the Contractual time- 65%
Lapse of 100% of the Contractual time-100%

In case of **continued default** or shortfall in progress, the Engineer in Charge may go on further enhancing the levy of liquidated damages, each time limited to 1% of the amount of contract per week of further default subject to maximum limit of five (5) percent of the Contract value.

Additional Clause:

Concerned Expert-PMC will be responsible for Quality control and execution of work within specified time and free to conduct surprise, random or in situ checks any time during the execution and after the completion of the work so as to have cross check in quality of works/projects and compliance to specifications and standards at all stages of the work. It is also clarifying that Concerned Expert-JSCL will also check the Quality and Progress of the work.

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Nothing in this clause shall reduce the overall responsibility of the Contractor regarding quality and he shall remain liable for any defect in the execution of the Project/Works at all stages. In case of default the Performance Security shall be forfeited and the Contractor will be blacklisted.

The Performance Security amount is 5% of the Contract Amount. The Performance Security shall be in the form of Bank Guarantee valid till 60 days beyond **Defect Liability Period** and/or Operation and Maintenance Period (whichever is later). The performance security shall be returned back after the issuing of the Final completion certificate and completion of Defect Liability Period, after applicable deductions due to the failure by the Contractor to provide services during Defect Liability Period.

Additional Performance Security shall be provided in the manner same as Performance Guarantee, if Bid is lower than 10% (ten percent) of estimated cost put to Tender.It shall be at the rate of 0.5% for every 1% above 10 %of the estimated value.

Mobilization Advance:

- The Advance Payments shall be: Ten percent (10%) of Contract Value. Amount of Bank Guarantee shall be equal to 110% of Mobilisation Advance Amount.
- Mobilisation Advance shall be paid in TWO equal instalments. First instalment shall be paid on submission and duly verification of Performance Guarantee and Mobilisation Advance Guarantee.
- Second instalment of the Mobilisation Advance shall be paid on full mobilisation at site and starting of execution/ construction.
- Mobilisation Advance Guarantee can be submitted in TWO equal Parts.
- The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis, but not later than the completion of the Seventy five percent (75%) of the initial project time period.

- The date by which "**as built**" **drawings are required is 15 days after the completion of the Contract period or with the Final Bill** whichever is earlier. **The amount to be withheld** for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is **1%** (One Percent) **of contract Value.**

- **Payment Schedule:** The payment for construction phase shall be made as per Bill of Quantities for actual quantities executed (subject to other provisions).

- Minimum Gross Bill amount for making Contractor eligible for submission of Payment Certificates shall be 10% of the contract value which shall be effective from 3rd Payment Certificates till virtual completion of the Project.

- Note: The minimum supporting documents required with the payment certificate (Intermediate/Final) are as follows as applicable as per activity schedule:

  (i) Test certificates of the material (provided by the manufacturer and/or Third-Party Inspection at manufacturer's work and/or test made at site/lab)

  (ii) Request for Inspections Forms (RFIs).

  (iii) Joint Measurement Sheet(s)

  (iv)Satisfactory Inspection and test certificate (if applicable) from the JSCL Officials.

Verified
विधि सलाहकार
नगर निगम, झाँसी

BSC Projects Pvt. Ltd.

Authorised Signatory

(v) Copies of receipts of Statutory Payments done up-to/ for the previous Payment Certificate(s).

- **Termination:** The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. Fundamental breach of Contract shall include, but shall not be limited to, the following:

i) The Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Engineer In Charge;

ii) The Engineer In Charge instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;

iii) The Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

iv) A payment certified by the Engineer In Charge is not paid by the Employer to the Contractor within 84 days of the date of the Engineer In Charge certificate.

v) The Engineer In Charge gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer In Charge;

vi) The Contractor does not carry out the works as per latest regulations and safety codes prevalent in the area in spite of regular written warnings to do so.

vii) The Contractor does not maintain a Security, which is required;

viii) The Contractor has delayed the completion of the works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the (Particular Conditions of Contract) PCC that is 100 days or

ix) If the Contractor, in the judgment of the Employer has engaged in Fraud and Corruption, as defined in paragraph 2. of the Appendix A to the GCC, in completing or in executing the Contract, then the Employer may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

Notwithstanding the above, the Employer may terminate the Contract. If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible. When either party to the Contract gives notice of a breach of Contract to the Engineer In Charge for a cause other than those listed under GCC Sub-Clause 57.2 the Engineer In Charge shall decide whether the breach is fundamental or not.

True verified
(एस०के० श्रीवास्तव एड०)
विधि सलाहकार
नगर निगम, झाँसी

x) Payment on Termination

If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer In Charge shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as specified in the PCC.

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Additional Liquidated Damages shall not apply if the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.
If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer In Charge shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractors personnel employed solely on the Works, and the contractors costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

Property: All Materials on the Site, Plant, Equipment, Temporary Works done, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.

Release from Performance: If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Engineer In Charge shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

xi) Suspension of Grant by GOI and/or State Government of UP:

In the event that the Government of India (GoI) and/or State Government of UP suspends the grant to the Employer, from which part of the payments to the Contractor are being made.

The Employer is obliged to notify the Contractor of such suspension within 7 days of having received the GoI and/or State Government of Uttar Pradesh suspension notice. All contractual notices, instructions and other correspondences pertaining to the contract shall always be in writing and will be valid. No verbal/oral communication shall be valid.

Dispute Resolution Procedure

The procedure of reference of disputes to the Dispute Resolution Board and its functioning shall be as per **Appendix A** below.

The disputes which remain unresolved by the Dispute Resolution Board may be referred by either Party to Arbitration. However, the contractor must approach & refer the Dispute Resolution Board before approaching for arbitration. In no case the contractor is expected to approach arbitration without exhausting the opportunity of Dispute Resolution Board.

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Appendix A

- **Dispute Resolution during Execution of the Contract**

- A 'dispute' implies an assertion of a right or a claim by one party and repudiation thereof by the other party, either expressed or implied, and may be by words or by conduct. A mere 'difference' is not necessarily a dispute; when the parties fail to resolve it, the difference culminates in dispute.

- *Dispute Resolution in a Construction Contract* Since arbitrations are fairly time consuming, it is always advisable to sort out the disputes mutually through the mechanism of adjudication through Dispute Resolution Board (DRB), which is a sort of voluntary arbitration. Arbitration can be resorted to if the adjudication decision is not forthcoming or is not acceptable to any party. For dispute resolution following procedure will be followed:

- 2.1 Dispute Resolution Board (DRB)

(a) A formal Sub-Clause of obtaining dispute resolution through DRB will be inserted in the Conditions of the Contract. A separate Dispute Resolution Agreement will also be drawn up, detailing therein provisions like: Eligibility of Members, date of commencement, manner of entry on the reference by the Members and their resignation; obligation of the Members, the Procuring Entity and the Contractor; terms of payment (monthly retainer ship fee, daily fee for travel & site visits, out of pocket expenses); manner of sharing the fees and expenses and of making payments, arrangements of site visits and their frequency, conduct of hearings; termination/ phasing out the activities of DRB, default of the Member, and action to be taken in case of dispute in relation to DRB Agreement, etc.

(b) DRB should be put in place within one month of Letter of Acceptance.

(c) The DRB for all projects costing more than Rs 10 crore will comprise of three Members, one each to be appointed by the Procuring Entity and the Contractor and approved by the other. The third Member, who will also act as the presiding Member, will be selected by the first two Members and approved by the parties. If either of the first two Members is not so selected and approved, or the parties fail to reach an agreement on the third Member then on request of either or both parties, appointment will be made by concerned Administrative Department in case of Government Departments and Head of the Organization (Chairman, etc.) concerned in other cases.

(d) The Members to be appointed shall be out of a panel maintained by the Department/ Organization concerned and should be experienced in the type of construction actually involved and/ or finance and accounts and/ or contractual documents. They should be persons of repute and integrity.

(e) If any dispute that arises at any stage between the Procuring Entity and the Contractor in connection with, or arising out of the Contract or the execution of the Works, including any disagreement by either party with any action, inaction, opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, should be carried to be settled amicably. If the dispute still remains unsettled, it shall be referred to the DRB.

(f) Both parties shall promptly make available all information, access to the Site, and appropriate facilities, as the DRB may require for the purposes of making a recommendation on such dispute.

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(g) Within 56 days after receiving such reference, or within such other period as may be proposed by the DRB and approved by both parties, the DRB shall give its recommendation with reasons. The recommendation shall be binding on both parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.

(h) If either party is dissatisfied with the recommendation, then either party may, within 28 days after receiving the recommendation, or if the DRB fails to give its recommendation within 56 days (or as otherwise approved), within 28 days after the mentioned period of 56 days has expired, give notice to the other party, with a copy to the Engineer-in-Charge, of its intention to commence arbitration proceedings.

(i) If the DRB has given its decision within the stipulated period, and no notice of intention to commence arbitration as to such dispute has been given by either party within 28 days of the said decision, then the decision of DRB shall become final and binding.

Arbitration

(a) Any dispute in respect of which the recommendations (if any) of DRB has not become final and binding, shall be finally settled by arbitration in accordance with the Indian' Arbitration and Conciliation Act, 1996, or any statutory amendment thereof

(b) The Arbitral Tribunal will comprise three Members, one each to be appointed by the Procuring Entity and the Contractor. The third Member, who will also act as the presiding Member, will be appointed by mutual consent of the first two Members. If the parties fail to reach an agreement on the third Member, then on request of either or both parties, appointment will be made by concerned Administrative Department in case of Government Departments and Head of the Organization (Chairman, etc.) concerned in other cases.

(c) The Tribunal shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer-in-Charge, and any decision of the DRB, relevant to the dispute

(d) Neither party shall be limited in the proceedings before the Tribunal to the evidence nor arguments previously put before the DRB to obtain its decision, or to the reasons for dissatisfaction given in its notice of dissatisfaction.

(e) Arbitration may be commenced prior to or after completion of the Works.

- **Language:** All proceedings before DRB/ arbitral tribunal shall be in the Language of the Contract/English.
  Terms and conditions for engagement of DRB Member and Chairman The terms and conditions including the remuneration and other facilities to be given to the Members of DRB and Arbitrators in case of civil engineering construction contracts/ consultancies shall be as notified by the State Government from time to time. *Each Party to the Contract (the Contractor/Consultant) shall be responsible for paying one-half of the remuneration.* Since the fee structure has to be agreed by both the parties i.e. Procuring Entity and Contractor/ Consultant, the fee structure may also be got accepted by the respective Contractor/ Consultants.
  In the contracts, the fee structure as per arbitration act 1996 schedule IV which is being reproduced as below may be included as part of the bidding documents/ contract documents and the acceptance of the fee structure by the Contractors/ Consultants may be kept as a pre-condition for signing the Contract.

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Jhansi Smart City Ltd. JSCL JHANSI

[THE FOURTH SCHEDULE]

[*See* section 11(*14*)] Sum in dispute	Model fee
Up to Rs. 5,00,000	Rs. 45,000
Above Rs. 5,00,000 and up to Rs. 20,00,000	Rs. 45,000 plus 3.5 per cent. of the claim amount over and above Rs. 5,00,000
Above Rs. 20,00,000 and up to Rs. 1,00,00,000	Rs. 97,500 plus 3 per cent. of the claim amountover and above Rs. 20,00,000
Above Rs. 1,00,00,000 and up to Rs. 10,00,00,000	Rs. 3, 37,500 plus 1 per cent. of the claim amount over and above Rs. 1,00,00,000
Above Rs. 10,00,00,000 and up to Rs. 20,00,00,000	Rs. 12, 37,500 plus 0.75 per cent. of the claim amount over and above Rs. 1,00,00,000
Above Rs. 20,00,00,000	Rs. 19, 87,500 plus 0.5 per cent. of the claim amount over and above Rs. 20,00,00,000 with a ceiling of Rs. 30,00,000.

Force Majeure

Force Majeure are risks due to riots (other than those among Contractor's or its subcontractor's/ supplier's employees) and civil commotion (in so far as both these are uninsurable), war (whether declared or not), invasion, act of foreign enemies, hostilities, civil war, rebellion, insurrection, military or usurped power, an act of Government, an act of God, such as lightening, unprecedented floods, tornado, and damage from aircraft

- Delay in the receipt of 'construction status' drawings from the Architect provided that, in the opinion of the Owners representative, the Contractor has made every effort and endeavour to minimize the effect of such delays.
- Any approved changes in the scope of work directed by Owner, Architect, and Consultant which in the opinion of the Owners representative entail the requirement of additional time for completion of the Work.

The right of the Contractor to proceed with the Work shall not be terminated because of any delay, subject to the time limits set forth in this clause, in the execution of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, or the Sub-Contractors, defined under Force Majeure, as Acts of God or that of the public enemy, restraints of Governing States, fires and floods.

The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party:

a) Any strike, work-to-rule action, go-slow or similar labour difficulty
b) Late delivery of equipment or material (unless caused by Force Majeure event),
c) Economic hardship and
d) Changes in applicable laws.

If the Contractor is wholly prevented from the performance of the Contract for a period in excess of **thirty (30) consecutive days** because of a Force Majeure, the Owner may terminate this Contract by fifteen (15) days written notice delivered to the Contractor, and **if the period of the Force Majeure exceeds one hundred and twenty (120) consecutive days**, **the Contractor may terminate this Contract by fifteen (15) days written notice to the Owner.** In the event this Contract is so terminated, the Contractor shall be paid for the costs of the Work actually executed up to the date of termination. Such costs shall not include loss of profits or for any other expenses of the Contractor or Sub-Contractors such as salaries or wages of the employees or workers, hire charges for plant and machinery, expenses towards maintenance of establishment,

BSC Projects Pvt. Ltd.

Authorised Signatory

demobilization, break charges or any other expense. Failure to agree on an equitable settlement shall be deemed to be a dispute.

(f) NOTICES

All notices required to be given under this agreement shall be deemed to be sufficiently given if they are forwarded by registered post A.D./hand delivery with acknowledgment to:

The Chief Executive Officer,

Jhansi Smart City Limited

Email : jhansismartcitylimited@gmail.com

The Contractor at:

_____

_____

(g) This agreement shall be constructed and interpreted in accordance with the laws of India. The courts at Jhansi alone, to the exclusion of all other courts elsewhere in India, shall have jurisdiction to try any dispute arising out of this Agreement.

THE ORIGINAL OF THIS AGREEMENT SHALL BE WITH THE EMPLOYER AND THE SIGNED DUPLICATE OR XEROX COPY OF THE AGREEMENT SHALL BE HANDED OVER TO THE CONTRACTOR.

In witness where of the parties hereto have here unto set their hands on the day and year written above

Signature

(_____)

Additional Chief Executive Officer,
Jhansi Smart City Limited

Signed and delivered by the ACEO JSCL by the hands of (Shadab Aslam),
and Constituted attorney in the presence of

1. MANVINDER SINGH M SINGH
2. Rajnath Singh

Signature
Authorised Signatory

(_____)

M /s BSC Projects Pvt. Ltd.
1342, JJ Cluster Phase - III,
Madanpur Khadar,
Delhi-110076

Signed and delivered by the hands of (Than Singh), Authorised Signatory of M/s BSC Projects Pvt. Ltd.

In the presence of

1. Than Singh
   Vikas Yadav
   Vill - Parsouni, Post - Bhathi Peoria -
   Aadhar No - 539404193266
   Vikas
2. Sandeep Kumar
   Plot No 440, Sector - MU - 2nd.
   Greater Noida (G.B Nagar) U.P.
   Adhaar No
   316305917964

BSC Projects Pvt. Ltd.
Authorised Signatory

हरित झाँसी। स्वच्छ झाँसी।

झाँसी नगर निगम, झाँसी

कार्यालय नगर आयुक्त, झाँसी

OFFICE OF THE MUNICIPAL COMMISSIONER, JHANSI

e-mail: nagarayukta@jnnjhansi.com Office Contact No:0510-2332097

संख्या 406 **/ पी0ए0 / अ0न0आ0 / न0नि0 / 2025–26** **दिनांकः** 07 **/** 03 **/ 2026**

प्रेषक,

अपर नगर आयुक्त
नगर निगम, झाँसी।

सेवा में,

जिलाधिकारी,
झाँसी।

महोदय,

कृपया आपके कार्यालय पत्र सं0–73 / स्था0नि0लि0–एन0जी0टी0 –अनुपालन / 2025 –26 दिनांक 06.03.2026 के क्रम में अवगत कराना है कि पर्यावरण, वन जलवायु परिवर्तन मंत्रालय, क्षेत्रीय कार्यालय, लखनऊ के पत्र संख्या– XXI/ENV/NGT/CC/2026/305 दिनांक 24.02.2026 की प्रति संलग्न कर इस आशय से प्रेषित है कि कार्यवृत्त में दिये गये निर्देशों के क्रम में लक्ष्मीतालाब के रूप में दर्ज जमीन पर किसी भी प्रकार का आवासीय, व्यवसायिक आदि भवन एवं किसी भी प्रकार का निजी भू अतिक्रमण नहीं पाया गया जिस कारण गृहकर / जलकर आरोपित नहीं है।

कृपया अवगत होने का कष्ट करें।

संलग्नक :– उपर्युक्तानुसार।

भवदीय

07.03.26

(राहुल कुमार यादव)
अपर नगर आयुक्त
झाँसी नगर निगम, झाँसी।

प्रतिलिपि :–

नगर आयुक्त महोदया को सादर सूचनार्थ प्रेषित।

अपर नगर आयुक्त
झाँसी नगर निगम, झाँसी।

महोदय

मौजा डड़ियापुरा तहसील व जिला झाँसी की खतौनी वर्ष 1421-1426 के खाता सं० 445 में रकवा 33-068 हे० भूमि लक्ष्मी तालाब के नाम से दर्ज कागजात है। उक्त तालाब के चारो तरफ बाउन्ड्री बनी हुई है। तथा 07 प्राचीन मन्दिर व 01 मजार बने हुए है। उक्त तालाब की सीमा मे कोई भी अवैध अतिक्रमण नही पाया गया है। किसी भी प्रकार का कोई वर्तमान मे अतिक्रमण नही है।

आख्या श्रीमान जी की सेवा मे सादर प्रेषित है।

ह० अपठनीय
लेखपाल
07/3/2026

ह० अपठनीय
07-03-026

ह० अपठनीय
N-T(C)
7-3-26

भूलेख - खतौनी
राजस्व परिषद, उत्तर प्रदेश

Hindi

खाता विवरण (अप्रमाणित प्रति)

जनपद : झांसी
तहसील : झांसी
ग्राम : डड़ियापुर
ग्राम कोड : 218668
फसली वर्ष : 1421-1426 (01 जुलाई, 2019 से 30 जून, 2025)
खाता संख्या :

श्रेणी : 6-1/अकृषिक भूमि - जलमग्न भूमि ।

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश
लक्ष्मी तालाब / . / .	1630 1631 1369	0.0400	
	1666 1647 1629	0.3760	
	1668 1669 1628	0.0770	
	1651 1650 1312	0.3320	
	1649 1662 1667	0.1620	
	1645 1289मि. 1247	0.0610	
	1646 1289 1316	0.0160	
	1291 1307 1670	0.1380	
	1246 1248 1288	0.6840	
	1292/2 1293 1294	0.5430	
	1295 1296 1297	0.2910	

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश
	1298 1299 1300	0.2790	
	1303 1305 1306	0.1860	
	1308 1317 1318	0.0160	
	1319 1321 1575	0.5020	
	1648 1652 1653	0.6810	
	1654 1655 1656	0.1050	
	1657 1658 1659	0.3240	
	1660 1664 1665	0.5090	
	1671 1675 1686	0.2190	
		0.6060	
		0.2950	
		0.4620	
		0.6600	
		0.2430	
		0.4130	
		0.0410	
		0.1700	
		0.4130	
		0.1010	
		0.3280	
		0.5100	
		0.2750	
		0.3040	
		0.2230	
		0.2310	

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश
		0.1620	
		0.4130	
		0.4620	
		0.0120	
		0.2800	
		0.2950	
		0.5510	
		0.1130	
		1.3330	
		0.0770	
		0.0320	
		0.2710	
		0.7000	
		0.4130	
		0.0690	
		15.9450	
		0.4170	
		0.1210	
		0.1210	
		0.1700	
		0.0890	
		0.0810 ✓	
		0.1090 ✓	
		0.0160	

फ. 6-1/अकृषिक भूमि - जलमग्न भूमि ।

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (हे.)	आदेश	टिप्पणी
योग	60	33.0680		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के वाद ग्रस्त /विक्रय /भू-नक्शा /नामांतरण बही) हेतु खसरा संख्या पर क्लिक करें।

महोदय,

कृपया सादर अवगत कराना है कि मौजा डड़ियापुरा तहसील व जिला झाँसी की खतौनी वर्ष 1421-1426 के खाता सं०-445 में रकबा 33.068 हे० भूमि लक्ष्मी तालाब के नाम से दर्ज है, जिसका सम्पति विभाग के कर्मचारी/अधिकारी के साथ दिनांक- 07-03-2026 को निरीक्षण किया गया। सम्पति विभाग की आख्यानुसार- अवैध अतिक्रमण नहीं होने के कारण हाउस टैक्स/जलकर आरोपित नहीं है। आख्या सादर सेवा में प्रेषित है।,

07-03-2026

07-03-2026
R.I.

LAXMI TAL, JHANSI

MAP 1

SCALE 1:2000

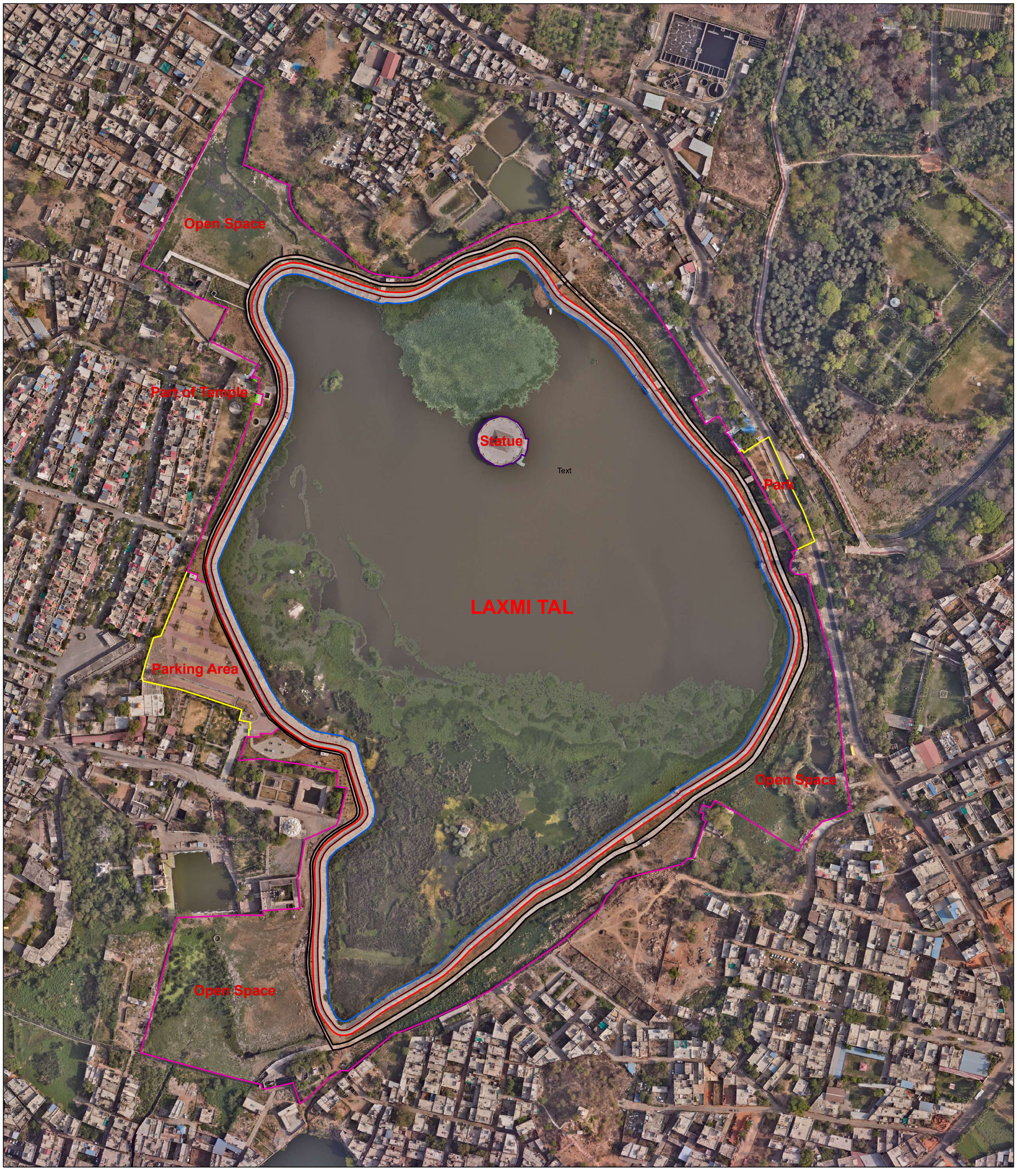
N

LAXMI TAL, JHANSI

MAP 2

SCALE 1:2000

N



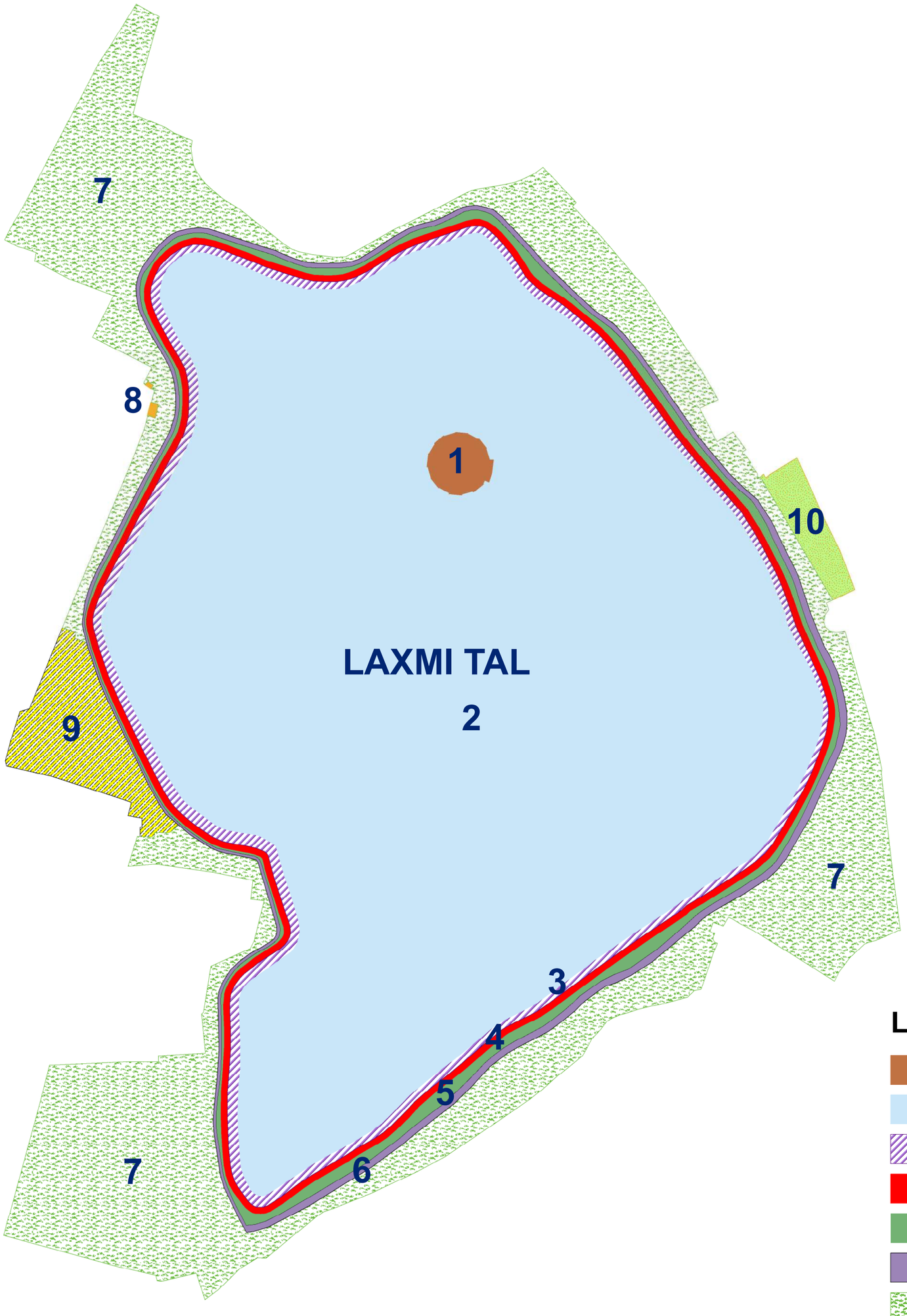
Annexure No.8

LAXMI TAL, JHANSI

MAP 3

SCALE 1:2000

N



S. No.	Particulars	Area (In ha)
1	Statue Area inside Tal	0.16
2	Water Body	20.76
3	Area around the water Body (Concrete bund and Chain link fence)	1.15
4	Concrete Path around the Water body	0.91
5	Vacant Space between concrete Path & Drain	0.82
6	Concrete Drain around the Path	0.73
7	Vacant space interspersed with plantations	7.60
8	Construction in the buffer area (Two temples)	0.01
9	Parking Area	0.71
10	Park Area	0.24
	TOTAL AREA	**33.08**

Legend

- Statue_inside_Tal
- Laxmi_Tal_water
- Area_around_the_Concrete_bund_and_Chain_link_fence
- Path_around_the_Water_body
- Open_Space_between_Path_and_Drain
- Drain_around_the_Path
- Open_space_interspersed_with_plantations
- Temple_Part_in_Tal
- Parking_Area_of_LaxmiTal
- Park_Area_in_LaxmiTal

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड
UTTAR PRADESH POLLUTION CONTROL BOARD

संदर्भ सं0 Ref. No H30692/सी-2/सा0-364/का0 ब0 नोटिस/25 दिनांक Date 25/7/25

सेवा मे,

मैसर्स जियो मिलर एण्ड कम्पनी प्रा0लि0,
जी0एम0 हाउस, एफ–3/2 ओखला इण्ड0 एरिया, फेज–1,
नई दिल्ली –110020

यह कि 26 एम0एल0डी0 एस0टी0पी0 लक्ष्मी ताल, जनपद–झांसी में सीवेज शोधन हेतु स्थापित एवं संचालित है। एस0टी0पी0 की सीवेज शोधन क्षमता 26 एम0एल0डी0 है, जिसे जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 यथासंशोधित की धारा–25/26 एवं वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 यथासंशोधित की धारा–21 के प्राविधानो के अन्तर्गत एस0टी0पी0 के संचालन हेतु राज्य बोर्ड से पूर्व सहमति प्राप्त किया जाना आवश्यक है।

यह कि आप द्वारा राज्य बोर्ड से वैध सहमति प्राप्त किये बिना 26 एम0एल0डी0 एस0टी0पी0 लक्ष्मी ताल, जनपद–झांसी का संचालन किया जा रहा है जोकि जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 यथासंशोधित की धारा–25/26 एवं वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 यथासंशोधित की धारा–21 का उल्लघन है।

अतः उपरोक्त वर्णित परिस्थितियों मे राज्य बोर्ड को प्रदत्त शक्तियों के अधीन जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 की धारा–33(ए) के अन्तर्गत 26 एम0एल0डी0 एस0टी0पी0 लक्ष्मी ताल, जनपद–झांसी के विरूद्ध सक्षम अधिकारी के अनुमोदनोपरान्त निम्नानुसार कारण बताओ नोटिस जारी किये जाते है :–

"यह कि आप द्वारा राज्य बोर्ड से संचालनार्थ सहमति प्राप्त किये बिना 26 एम0एल0डी0 एस0टी0पी0 लक्ष्मी ताल, जनपद–झासी का संचालन किये जाने के दृष्टिगत क्यों न जल (प्रदूषण निवारण तथा नियत्रण) अधिनियम, 1974 के प्राविधानो के अन्तर्गत एस0टी0पी0 के संचालन हेतु उत्तरदायी अधिकारियों/संस्था के विरूद्ध वैधानिक कार्यवाही प्रारम्भ कर दी जाए।"

उपरोक्त के सम्बध में पूर्ण विवरण के साथ अपना उत्तर 15 दिन के अन्दर बोर्ड को प्रेषित करें। निर्धारित समयावधि में उत्तर प्राप्त न होने अथवा संतोषजनक उत्तर प्राप्त न होने पर एस0टी0पी0 के संचालन हेतु उत्तरदायी अधिकारियों/संस्था के विरूद्ध जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 यथासंशोधित के प्राविधानों के अन्तर्गत जारी करण बताओ नोटिस की पुष्टि कर दी जायेगी, जिसका पूर्ण उत्तरदायित्व एस0टी0पी0 के संचालन हेतु उत्तरदायी अधिकारियों/संस्था का होगा।

सक्षम अधिकारी के अनुमोदनोपरान्त पत्र निर्गमन हेतु अधिकृत।

Digitally signed by
ATULESH YADAV
Date: 25-07-2025
14:02:11
मुख्य पर्यावरण अधिकारी (वृत्त–2)

प्रतिलिपिः–निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. जिलाधिकारी, झासी।
2. क्षेत्रीय अधिकारी, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, झांसी को इस निर्देश के साथ प्रेषित कि उक्त जारी नोटिस की प्रति सम्बंधित को प्राप्त कराते हुए अनुपालन आख्या 15 दिन के अन्दर बोर्ड मुख्यालय प्रेषित करें।

SEWAGE ANALYSIS REPORT

GEO MILLER & CO. PVT. LTD., JHANSI

PERIOD: 01.02.2026 TO 28.02.2026 — 26 MLD SEWAGE TREATMENT PLANT, U.P. JAL NIGAM, JHANSI, U.P.

Annexure No. 10

SL	DATE	Raw Sewage at inlet	INLET				OUTLET				4 MLD TTP		
			pH	TSS (Mg/L)	COD (Mg/L)	BOD {Mg/L}	pH	TSS (Mg/L)	COD (Mg/L)	BOD (Mg/L)	pH	BOD (Mg/L)	DO (MG/L)
1	01-02-2026	13.98	7.6	227	374	150	7.5	8	39	7.0	7.5	2.0	4.3
2	02-02-2026	15.23	7.6	220	368	162	7.5	7	40	7.2	7.5	2.2	4.0
3	03-02-2026	13.47	7.4	253	341	174	7.3	9	38	6.8	7.3	2.5	4.2
4	04-02-2026	14.15	7.4	245	394	168	7.3	7	42	7.0	7.3	2.7	4.5
5	05-02-2026	14.39	7.5	239	379	156	7.4	8	37	6.9	7.4	2.6	4.9
6	06-02-2026	12.95	7.5	224	387	180	7.4	7	41	7.3	7.4	2.8	4.7
7	07-02-2026	13.38	7.7	233	356	162	7.6	8	36	7.5	7.6	2.3	4.4
8	08-02-2026	14.25	7.5	240	380	154	7.5	9	38	7.2	7.5	2.1	4.1
9	09-02-2026	13.46	7.6	248	396	145	7.5	7	40	6.9	7.5	2.4	4.2
10	10-02-2026	15.62	7.5	254	387	150	7.4	9	37	6.4	7.4	2.0	4.5
11	11-02-2026	14.20	7.5	262	364	138	7.4	6	32	6.0	7.4	2.2	4.8
12	12-02-2026	13.83	7.4	258	341	144	7.3	7	35	6.2	7.3	2.5	4.6
13	13-02-2026	14.49	7.4	249	332	168	7.3	8	28	6.5	7.3	2.8	4.3
14	14-02-2026	13.90	7.5	235	304	160	7.4	7	26	6.3	7.4	2.6	4.0
15	15-02-2026	14.85	7.5	228	338	155	7.5	8	30	6.1	7.5	2.9	4.2
16	16-02-2026	13.27	7.6	240	360	132	7.5	6	32	5.8	7.5	2.7	4.4
17	17-02-2026	15.08	7.6	231	324	140	7.6	7	28	6.0	7.6	2.4	4.7
18	18-02-2026	13.57	7.7	237	349	156	7.6	8	27	6.4	7.6	2.2	4.5
19	19-02-2026	15.31	7.6	226	320	170	7.5	6	24	6.1	7.5	2.0	4.1
20	20-02-2026	14.33	7.6	219	336	157	7.5	7	28	5.7	7.5	2.5	4.0
21	21-02-2026	14.87	7.8	225	352	165	7.7	8	32	6.2	7.7	2.3	4.3
22	22-02-2026	15.26	7.7	230	340	149	7.6	6	30	5.9	7.6	2.1	4.2
23	23-02-2026	16.07	7.8	241	316	138	7.7	7	28	6.4	7.7	2.4	4.4
24	24-02-2026	16.30	7.9	255	334	144	7.8	8	31	6.0	7.8	2.2	4.1
25	25-02-2026	13.29	7.8	263	372	150	7.7	7	32	6.3	7.7	2.6	4.3
26	26-02-2026	14.32	7.8	249	348		7.7	6	28		7.7		4.5
27	27-02-2026	15.18	7.7	240	369		7.6	7	31		7.6		4.7
28	28-02-2026	14.29	7.7	251	340		7.6	8	34		7.6		4.9
G.M.C.P.L	**Grand Total**	**403.29**											

TTP FLOW REPORT

GEO MILLER & CO. PVT. LTD., JHANSI

26 MLD SEWAGE TREATMENT PLANT, U.P. JAL NIGAM, JHANSI, U.P.

SR .NO	DATE	Totalizer 1	Totalizer 2	Total MLD
1	01-02-2026	1442255	1282056	3.05
2	02-02-2026	1443207	1283944	2.84
3	03-02-2026	1444041	1285810	2.70
4	04-02-2026	1444462	1288349	2.96
5	05-02-2026	1444672	1291219	3.08
6	06-02-2026	1446939	1292192	3.24
7	07-02-2026	1448857	1293234	2.96
8	08-02-2026	1450940	1294271	3.12
9	09-02-2026	1452888	1295513	3.19
10	10-02-2026	1454744	1296537	2.88
11	11-02-2026	1456785	1297546	3.05
12	12-02-2026	1458512	1298589	2.77
13	13-02-2026	1460868	1299373	3.14
14	14-02-2026	1462972	1300359	3.09
15	15-02-2026	1465060	1301231	2.96
16	16-02-2026	1466046	1303045	2.80
17	17-02-2026	1466518	1305623	3.05
18	18-02-2026	1466759	1308312	2.93
19	19-02-2026	1468586	1309555	3.07
20	20-02-2026	1470842	1310539	3.24
21	21-02-2026	1472660	1311571	2.85
22	22-02-2026	1474539	1312612	2.92
23	23-02-2026	1475587	1314744	3.18
24	24-02-2026	1477744	1315827	3.24
25	25-02-2026	1480010	1316871	3.31
26	26-02-2026	1481052	1318789	2.96
27	27-02-2026	1483125	1319836	3.12
28	28-02-2026	1485369	1320790	3.20
Total Flow				**84.90**
Average Flow				**3.03**

SEWAGE ANALYSIS REPORT

GEO MILLER & CO. PVT. LTD., JHANSI

PERIOD: 01.01.2026 TO 31.01.2026 — 26 MLD SEWAGE TREATMENT PLANT, U.P. JAL NIGAM, JHANSI, U.P.

SL	DATE	Raw Sewage at inlet	INLET				OUTLET				4 MLD TTP		
			pH	TSS (Mg/L)	COD (Mg/L)	BOD (Mg/L)	pH	TSS (Mg/L)	COD (Mg/L)	BOD (Mg/L)	pH	BOD (Mg/L)	DO (MG/L)
1	01-01-2026	14.22	7.9	241	308	139	7.8	7	31	6.5	7.8	2.6	4.7
2	02-01-2026	13.07	7.8	236	330	130	7.7	9	34	6.3	7.7	2.4	4.5
3	03-01-2026	13.49	7.8	229	354	144	7.7	6	32	6.7	7.7	2.3	4.8
4	04-01-2026	14.31	7.7	234	388	152	7.6	8	35	7.2	7.6	2.2	4.4
5	05-01-2026	13.56	7.8	225	360	128	7.7	7	33	6.7	7.7	2.5	4.2
6	06-01-2026	14.89	7.9	230	328	120	7.8	8	36	6.3	7.8	2.1	4.6
7	07-01-2026	13.47	7.8	217	314	132	7.7	9	32	6.5	7.7	2.4	4.8
8	08-01-2026	14.26	7.6	206	298	140	7.5	6	34	6.2	7.5	2.2	5.0
9	09-01-2026	14.43	7.6	211	336	134	7.5	7	35	6.6	7.5	2.7	4.7
10	10-01-2026	10.25	7.7	220	310	130	7.6	8	37	6.9	7.6	2.5	4.6
11	11-01-2026	13.01	7.6	231	328	124	7.5	7	40	7.4	7.5	2.3	4.3
12	12-01-2026	13.69	7.8	240	354	132	7.7	8	38	7.0	7.7	2.6	4.5
13	13-01-2026	14.15	7.8	227	320	140	7.7	7	36	7.2	7.7	2.2	4.1
14	14-01-2026	13.40	7.9	214	374	152	7.8	8	35	6.7	7.8	2.4	4.4
15	15-01-2026	13.16	7.7	209	368	138	7.6	6	32	6.3	7.6	2.7	4.6
16	16-01-2026	14.59	7.7	228	340	144	7.6	7	36	6.8	7.6	2.5	4.2
17	17-01-2026	13.87	7.9	216	352	150	7.8	8	40	7.2	7.8	2.8	4.5
18	18-01-2026	14.06	7.8	223	304	142	7.7	7	32	6.9	7.7	2.6	4.3
19	19-01-2026	14.27	7.8	240	332	126	7.7	9	36	6.6	7.7	2.2	4.7
20	20-01-2026	13.11	7.7	235	349	155	7.6	8	39	6.3	7.6	2.4	4.4
21	21-01-2026	15.02	7.7	229	324	162	7.6	9	35	6.7	7.6	2.7	4.8
22	22-01-2026	13.70	7.9	218	309	168	7.8	7	38	6.8	7.8	2.3	4.6
23	23-01-2026	14.38	7.9	210	355	174	7.8	8	42	6.6	7.8	2.6	4.9
24	24-01-2026	13.96	7.8	224	380	165	7.7	7	36	7.2	7.7	2.5	4.7
25	25-01-2026	13.01	7.7	230	342	180	7.6	9	34	7.5	7.6	2.8	4.5
26	26-01-2026	14.72	7.9	215	360	172	7.8	7	38	7.8	7.8	2.4	4.3
27	27-01-2026	13.09	7.8	221	344	186	7.7	8	40	8.0	7.7	2.7	4.0
28	28-01-2026	4.35	7.8	233	353	162	7.7	9	37	7.7	7.7	2.6	4.4
29	29-01-2026	4.91	7.6	219	376	174	7.5	8	36	7.5	7.5	2.2	4.2
30	30-01-2026	12.40	7.7	207	394	168	7.6	7	38	7.2	7.6	2.5	4.6
31	31-01-2026	14.38	7.8	216	416	156	7.7	9	44	7.0	7.6	2.8	4.3
G.M.C.P.L	**Grand Total**	**407.18**											

	TTP FLOW REPORT			
	GEO MILLER & CO. PVT. LTD., JHANSI			
	26 MLD SEWAGE TREATMENT PLANT, U.P. JAL NIGAM, JHANSI, U.P.			
SR .NO	DATE	Totalizer 1	Totalizer 2	Total MLD
1	01-01-2026	1390450	1249269	2.90
2	02-01-2026	1392851	1250020	3.15
3	03-01-2026	1394917	1250764	2.81
4	04-01-2026	1397690	1251011	3.02
5	05-01-2026	1399791	1251510	2.60
6	06-01-2026	1400997	1253394	3.09
7	07-01-2026	1402040	1255221	2.87
8	08-01-2026	1403026	1257165	2.93
9	09-01-2026	1403985	1258906	2.70
10	10-01-2026	1405227	1260804	3.14
11	11-01-2026	1406210	1262641	2.82
12	12-01-2026	1408768	1262983	2.90
13	13-01-2026	1411361	1263400	3.01
14	14-01-2026	1413883	1263728	2.85
15	15-01-2026	1416319	1263992	2.70
16	16-01-2026	1418101	1264850	2.64
17	17-01-2026	1419888	1265793	2.73
18	18-01-2026	1421754	1266437	2.51
19	19-01-2026	1423622	1267169	2.60
20	20-01-2026	1425465	1267806	2.48
21	21-01-2026	1426501	1269740	2.97
22	22-01-2026	1427484	1271897	3.14
23	23-01-2026	1428616	1273815	3.05
24	24-01-2026	1429580	1275651	2.80
25	25-01-2026	1430541	1277380	2.69
26	26-01-2026	1431583	1279088	2.75
27	27-01-2026	1434106	1279435	2.87
28	28-01-2026	1435212	1279469	1.14
29	29-01-2026	1436443	1279498	1.26
30	30-01-2026	1438677	1279844	2.58
31	31-01-2026	1441268	1279993	2.74
Total Flow				**84.44**
Average Flow				**2.72**

SEWAGE ANALYSIS REPORT

GEO MILLER & CO. PVT. LTD., JHANSI

PERIOD: 01.12.2025 TO 31.12.2025 — 26 MLD SEWAGE TREATMENT PLANT, U.P. JAL NIGAM, JHANSI, U.P.

SL	DATE	Raw Sewage at inlet	INLET				OUTLET				4 MLD TTP		
			pH	TSS (Mg/L)	COD (Mg/L)	BOD {Mg/L}	pH	TSS (Mg/L)	COD (Mg/L)	BOD (Mg/L)	pH	BOD (Mg/L)	DO (MG/L)
1	01-12-2025	13.51	7.6	273	340	150	7.5	9	36	7.0	7.5	2.1	4.3
2	02-12-2025	12.98	7.6	267	368	146	7.5	8	38	6.8	7.4	2.3	4.1
3	03-12-2025	14.66	7.7	251	324	138	7.6	9	34	7.1	7.6	2.5	4.4
4	04-12-2025	13.82	7.9	270	300	130	7.8	7	38	6.9	7.8	2.4	4.7
5	05-12-2025	13.46	7.9	259	338	142	7.8	8	35	6.6	7.8	2.2	4.5
6	06-12-2025	14.21	7.8	264	343	128	7.9	9	37	6.8	7.7	2.5	4.8
7	07-12-2025	13.94	7.8	259	351	136	7.7	8	38	7.0	7.7	2.3	4.9
8	08-12-2025	13.68	7.7	248	308	140	7.6	7	40	6.7	7.6	2.6	4.5
9	09-12-2025	14.39	7.9	251	320	146	7.8	8	36	6.9	7.7	2.4	4.3
10	10-12-2025	15.15	7.8	243	344	150	7.7	7	34	7.1	7.6	2.2	4.4
11	11-12-2025	13.72	7.6	257	360	144	7.5	8	35	6.8	7.5	2.5	4.6
12	12-12-2025	14.39	7.7	238	304	136	7.6	9	36	7.3	7.6	2.4	4.2
13	13-12-2025	12.60	7.5	249	280	148	7.4	8	32	7.1	7.4	2.3	4.0
14	14-12-2025	13.89	7.6	255	310	140	7.5	7	34	6.9	7.5	2.1	4.5
15	15-12-2025	14.05	7.6	236	348	154	7.5	9	36	6.7	7.5	2.6	4.3
16	16-12-2025	14.71	7.8	241	335	160	7.7	8	38	7.0	7.7	2.2	4.4
17	17-12-2025	15.82	7.8	220	344	172	7.7	9	40	6.8	7.7	2.4	4.7
18	18-12-2025	13.65	7.9	237	380	165	7.8	8	39	7.2	7.8	2.5	5.0
19	19-12-2025	14.43	7.9	228	365	159	7.8	7	37	7.5	7.8	2.3	4.9
20	20-12-2025	13.68	7.7	206	340	150	7.7	9	36	7.1	7.7	2.1	4.6
21	21-12-2025	12.90	7.7	243	378	156	7.6	8	38	6.9	7.6	2.2	4.3
22	22-12-2025	13.02	7.6	237	360	148	7.6	9	35	7.3	7.6	2.6	4.4
23	23-12-2025	14.59	7.8	251	328	140	7.7	6	32	7.0	7.7	2.4	4.2
24	24-12-2025	13.50	7.8	260	304	132	7.7	8	34	6.7	7.7	2.3	4.1
25	25-12-2025	14.87	7.7	253	330	145	7.6	7	36	6.4	7.6	2.7	4.4
26	26-12-2025	13.16	7.8	247	318	152	7.7	8	32	6.1	7.7	2.5	4.7
27	27-12-2025	13.45	7.9	269	334	160	7.8	9	35	5.9	7.8	2.2	4.5
28	28-12-2025	12.90	7.9	258	320	154	7.8	8	34	6.2	7.7	2.4	4.3
29	29-12-2025	14.34	7.8	245	294	148	7.7	7	30	6.5	7.7	2.6	4.6
30	30-12-2025	13.05	7.9	237	350	140	7.8	9	32	6.3	7.8	2.3	4.8
31	31-12-2025	14.61	7.8	250	374	135	7.7	8	35	6.6	7.7	2.4	4.5
G.M.C.P.L	**Grand Total**	**431.13**											

GEO MILLER & CO. PVT. LTD.

	TTP FLOW REPORT			
	GEO MILLER & CO. PVT. LTD., JHANSI			
	26 MLD SEWAGE TREATMENT PLANT, U.P. JAL NIGAM, JHANSI, U.P.			
SR .NO	DATE	Totalizer 1	Totalizer 2	Total MLD
1	01-12-2025	1312687	1241820	2.74
2	02-12-2025	1314654	1242366	2.51
3	03-12-2025	1316641	1243009	2.63
4	04-12-2025	1318727	1243332	2.41
5	05-12-2025	1320850	1243976	2.77
6	06-12-2025	1322973	1244399	2.55
7	07-12-2025	1325186	1244831	2.65
8	08-12-2025	1327507	1245154	2.64
9	09-12-2025	1329830	1245718	2.89
10	10-12-2025	1332262	1246150	2.86
11	11-12-2025	1334694	1246693	2.98
12	12-12-2025	1337238	1246905	2.76
13	13-12-2025	1339670	1247226	2.75
14	14-12-2025	1342123	1247438	2.67
15	15-12-2025	1344576	1247559	2.57
16	16-12-2025	1347029	1247682	2.58
17	17-12-2025	1349593	1247803	2.69
18	18-12-2025	1352247	1247924	2.78
19	19-12-2025	1354811	1248045	2.69
20	20-12-2025	1357576	1248166	2.89
21	21-12-2025	1360119	1248166	2.54
22	22-12-2025	1362875	1248166	2.76
23	23-12-2025	1365640	1248220	2.82
24	24-12-2025	1368308	1248263	2.71
25	25-12-2025	1371094	1248284	2.81
26	26-12-2025	1373970	1248316	2.91
27	27-12-2025	1376846	1248370	2.93
28	28-12-2025	1379614	1248413	2.81
29	29-12-2025	1382492	1248467	2.93
30	30-12-2025	1385368	1248532	2.94
31	31-12-2025	1388233	1248586	2.91
Total Flow				**85.04**
Average Flow				**2.74**

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 13 अक्तूबर, 2017

सा.का.नि. 1265(अ).—केन्द्रीय सरकार, पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 6 और धारा 25 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, पर्यावरण (संरक्षण) नियम, 1986 का और संशोधन करने के लिए निम्नलिखित नियम बनाती है, अर्थात् : —

1. **संक्षिप्त नाम और प्रारम्भ :—**(1) इन नियमों का संक्षिप्त नाम पर्यावरण (संरक्षण) संशोधन नियम, 2017 है ।

(2) ये राजपत्र में उनके प्रकाशन की तारीख को प्रवृत्त होंगे ।

2. पर्यावरण (संरक्षण) नियम, 1986 की अनुसूची-1 में, क्रम संख्यांक 104 और उससे सम्बन्धित प्रविष्टियों के पश्चात्, निम्नलिखित क्रम संख्यांक और प्रविष्टियां अन्तःस्थापित की जाएगी, अर्थात् :—

क्र. सं.	उद्योग	मानदंड	मानक	
1	2	3	4	
		बहिर्स्राव निस्सारण मानक (निपटान के सभी ढंगों को लागू)		
"105	मल उपचार संयंत्र (एसटीपी)		अवस्थान	सांद्र का निम्नलिखित से अधिक न होना
			(क)	(ख)
		पीएच	देश में कहीं भी	6.5-9.0
		जैव-रासायनिक ऑक्सीजन मांग (बीओडी)	महानगर* अरूणाचल प्रदेश, असम, मणिपुर, मेघालय, मिजोरम, नागालैण्ड, त्रिपुरा, सिक्किम, हिमाचल प्रदेश, उत्तराखंड, जम्मू-कश्मीर राज्यों और	

			अंदमान और निकोबार द्वीप, दादरा और नागर हवेली, दमण और दीव और लक्षद्वीप के सिवाय, सभी राज्यों की राजधानी ।	
			ऊपर उल्लिखित से भिन्न क्षेत्र/प्रदेश	30
		कुल निलंबित ठोस पदार्थ (टीएसएस)	महानगर* अरूणाचल प्रदेश, असम, मणिपुर, मेघालय, मिजोरम, नागालैण्ड, त्रिपुरा, सिक्किम, हिमाचल प्रदेश, उत्तराखंड, जम्मू-कश्मीर राज्यों और अंदमान और निकोबार द्वीप, दादरा और नागर हवेली, दमण और दीव और लक्षद्वीप के सिवाय, सभी राज्यों की राजधानी ।	<50
			ऊपर उल्लिखित से भिन्न क्षेत्र/प्रदेश	<100
		फेकल कोलीफॉर्म (एफसी) (अतिसंभाव्य संख्या प्रति 100 मिलीलिटर एमपीएन/100 मिलीलिटर	देश में कहीं भी	<1000

*मुम्बई, दिल्ली, कोलकाता, चेन्नई, बेंगलूरू, हैदराबाद, अहमदाबाद और पुणे महानगर हैं ।

टिप्पण :

(i) पीएच और फैकल कौलीफॉर्म के सिवाय, मिलीग्राम/लिटर में सभी मूल्य ।

(ii) ये, मानक जलाशयों में निस्सारण और भूमि निपटान/अनुप्रयोगों के लिए लागू होंगे ।

(iii) फैकल कौलीफॉर्म के लिए मानक औद्योगिक प्रयोजनों के लिए उपचारित बहिर्स्राव के उपयोग के सम्बन्ध में लागू नहीं होंगे ।

(iv) ये मानक 1 जून, 2019 को या उसके पश्चात् कमीशन किए जाने वाले सभी मल उपचार संयंत्रों (एसटीपी) को लागू होंगे और पुराने/विद्यमान मल उपचार संयंत्र (एसटीपी) राजपत्र में इस अधिसूचना के प्रकाशन की तारीख से पांच वर्ष की अवधि के भीतर इन मानकों को प्राप्त करेंगे ।

(v) समुद्र में उपचारित बहिर्स्राव के निस्सारण के मामले में, इसे उचित समुद्री मुहाने के माध्यम से किया जाएगा और विद्यमान तट निस्सारण को समुद्री मुहानों में संपरिवर्तित किया जाएगा और उन मामलों में, जहां समुद्री मुहाना निस्सारण के बिन्दु पर 150 गुणा न्यूनतम आरम्भिक तनुकरण और निस्सारण बिन्दु से दूर 100 मीटर के किसी बिन्दु पर 1500 गुणा न्यूनतम तनुकरण प्रदान करता है, तब विद्यमान सन्नियम साधारण निस्सारण मानकों में विनिर्दिष्ट किए गए अनुसार लागू होंगे ।

(vi) उपचारित बहिर्स्राव का पुनःउपयोग/पुनःचक्रण तथा उन मामलों में, जहां उपचारित बहिर्स्राव के भाग का पुनःउपयोग और पुनःचक्रण किया जाता है जिसमें मानवीय सम्पर्क की सम्भावना अन्तर्वलित है, ऊपर यथा विनिर्दिष्ट मानक लागू होंगे ।

(vii) केन्द्रीय प्रदूषण नियंत्रण बोर्ड/राज्य प्रदूषण नियंत्रण बोर्ड/प्रदूषण नियंत्रण समितियां, पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 5 के अधीन स्थानीय परिवेश को ध्यान में रखते हुए, अधिक कठोर सन्नियम जारी कर सकेगा/कर सकेंगी ।

[फा. सं. क्यू-15017/2/2008/-सीपीडब्ल्यू]

अरुण कुमार मेहता, अपर सचिव

टिप्पण : मूल नियम भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (i) में का.आ. सं. 844(अ), तारीख 19 नवम्बर, 1986 द्वारा प्रकाशित किए गए थे और तत्पश्चात् उनमें निम्नलिखित अधिसूचनाओं द्वारा संशोधन किए गए थे, अर्थात् :— का.आ. 433(अ), तारीख 18 अप्रैल, 1987; सा.का.नि. 176(अ), तारीख 2 अप्रैल, 1996; सा.का.नि. 97(अ), तारीख 18 फरवरी, 2009; सा.का.नि. 149(अ), तारीख 4 मार्च, 2009; सा.का.नि. 543(अ), तारीख 22 जुलाई, 2009; सा.का.नि. 739(अ), तारीख 9 सितम्बर, 2010; सा.का.नि. 809(अ), तारीख 4 अक्तूबर, 2010; सा.का.नि. 215(अ), तारीख 15 मार्च, 2011; सा.का.नि. 221(अ), तारीख 18 मार्च, 2011; सा.का.नि. 354(अ), तारीख 2 मई, 2011; सा.का.नि. 424(अ), तारीख 1 जून, 2011; सा.का.नि. 446(अ), तारीख 13 जून, 2011; सा.का.नि. 152(अ), तारीख 16 मार्च, 2012; सा.का.नि. 266(अ), तारीख 30 मार्च, 2012; सा.का.नि. 277(अ), तारीख 31 मार्च, 2012; सा.का.नि. 820(अ), तारीख 9 नवम्बर, 2012; सा.का.नि. 176(अ), तारीख 18 मार्च, 2013; सा.का.नि. 535(अ), तारीख 7 अगस्त, 2013; सा.का.नि. 771(अ), तारीख 11 दिसम्बर, 2013; सा.का.नि. 2(अ), तारीख 2 जनवरी, 2014; सा.का.नि. 229(अ), तारीख 28 मार्च, 2014; सा.का.नि. 232(अ), तारीख 31 मार्च, 2014; सा.का.नि. 325(अ), तारीख 7 मई, 2014; सा.का.नि. 612(अ), तारीख 25 अगस्त, 2014; सा.का.नि. 789(अ), तारीख 11 नवम्बर, 2014; का.आ. 3305(अ), तारीख 7 दिसम्बर, 2015; का.आ. 4(अ), तारीख 1 जनवरी, 2016; सा.का.नि. 35(अ), तारीख 14 जनवरी, 2016; सा.का.नि. 281(अ), तारीख 7 मार्च, 2016; सा.का.नि. 496(अ), तारीख 9 मई, 2016; सा.का.नि. 497(अ), तारीख 10 मई, 2016; सा.का.नि. 978(अ), तारीख 10 अक्तूबर, 2016; और अंतिम बार अधिसूचना संख्यांक सा.का.नि. 1016(अ), तारीख 28 अक्तूबर, 2016 द्वारा संशोधित किए गए थे ।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 13th October, 2017

G.S.R. 1265(E).—In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. **Short title and commencement.—**(1) These rules may be called the Environment (Protection) Amendment Rules, 2017.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in Schedule – I, after serial number 104 and the entries relating thereto, the following serial number and entries shall be inserted, namely:—

Sl. No.	Industry	Parameters	Standards	
1	2	3	4	
		Effluent discharge standards (applicable to all mode of disposal)		
"105	Sewage Treatment Plants (STPs)		Location	Concentration not to exceed
			(a)	(b)
		pH	Anywhere in the country	6.5-9.0
		Bio-Chemical Oxygen Demand (BOD)	Metro Cities*, all State Capitals except in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammu and Kashmir, and Union territory of	20

			Andaman and Nicobar Islands, Dadar and Nagar Haveli Daman and Diu and Lakshadweep	
			Areas/regions other than mentioned above	30
		Total Suspended Solids (TSS)	Metro Cities*, all State Capitals except in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammu and Kashmir and Union territory of Andaman and Nicobar Islands, Dadar and Nagar Haveli Daman and Diu and Lakshadweep	<50
			Areas/regions other than mentioned above	<100
		Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml	Anywhere in the country	<1000

*Metro Cities are Mumbai, Delhi, Kolkata, Chennai, Bengaluru, Hyderabad, Ahmedabad and Pune.

Note :

(i) All values in mg/l except for pH and Fecal Coliform.

(ii) These standards shall be applicable for discharge into water bodies as well as for land disposal/applications.

(iii) The standards for Fecal Coliform shall not apply in respect of use of treated effluent for industrial purposes.

(iv) These Standards shall apply to all STPs to be commissioned on or after the 1st June, 2019 and the old/existing STPs shall achieve these standards within a period of five years from date of publication of this notification in the Official Gazette.

(v) In case of discharge of treated effluent into sea, it shall be through proper marine outfall and the existing shore discharge shall be converted to marine outfalls, and in cases where the marine outfall provides a minimum initial dilution of 150 times at the point of discharge and a minimum dilution of 1500 times at a point 100 meters away from discharge point, then, the existing norms shall apply as specified in the general discharge standards.

(vi) Reuse/Recycling of treated effluent shall be encouraged and in cases where part of the treated effluent is reused and recycled involving possibility of human contact, standards as specified above shall apply.

(vii) Central Pollution Control Board/State Pollution Control Boards/Pollution Control Committees may issue more stringent norms taking account to local condition under section 5 of the Environment (Protection) Act, 1986".

[F. No. Q-15017/2/2008-CPW]

ARUN KUMAR MEHTA, Addl. Secy.

Note : The principal rules were published in the Gazette of India, Extraordinary, Part II, Section 3,Sub-section (i) *vide* number S.O. 844 (E), dated the 19th November, 1986 and subsequently amended *vide* the following notifications, namely:—

S.O. 433 (E), dated the 18th April 1987; G.S.R. 176(E) dated the 2nd April, 1996; G.S.R. 97 (E), dated the 18th February, 2009; G.S.R. 149 (E), dated the 4th March , 2009; G.S.R. 543(E), dated the 22nd July,2009; G.S.R. 739 (E), dated the 9th September, 2010; G.S.R. 809(E), dated the 4th October, 2010, G.S.R.

215 (E), dated the 15th March, 2011; G.S.R. 221(E), dated the 18th March, 2011; G.S.R. 354 (E), dated the 2nd May, 2011; G.S.R. 424 (E), dated the 1st June, 2011; G.S.R. 446 (E), dated the 13th June, 2011; G.S.R. 152 (E), dated the 16th March, 2012; G.S.R. 266(E), dated the 30th March, 2012; and G.S.R. 277 (E), dated the 31st March, 2012; and G.S.R. 820(E), dated the 9th November, 2012; G.S.R. 176 (E), dated the 18th March, 2013; G.S.R. 535(E), dated the 7th August, 2013; G.S.R. 771(E), dated the 11th December, 2013; G.S.R. 2(E), dated the 2nd January, 2014; G.S.R. 229 (E), dated the 28th March, 2014; G.S.R. 232(E), dated the 31st March, 2014; G.S.R. 325(E), dated the 7th May, 2014; G.S.R. 612, (E), dated the 25th August 2014; G.S.R. 789(E), dated the 11th November 2014; S.O. 3305(E), dated the 7th December, 2015; S.O.4(E), dated the 1st January 2016; G.S.R. 35(E), dated the 14th January 2016; G.S.R. 281 (E), dated the 7th March, 2016; G.S.R. 496(E), dated the 9th May, 2016; G.S.R.497(E), dated the 10th May, 2016; G.S.R.978(E), dated the 10thOctober, 2016; and lastly amended vide notification G.S.R. 1016(E), dated the 28th October, 2016.

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Designated Best Use Water Quality Criteria

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	**A**	Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organised)	**B**	Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Drinking water source after conventional treatment and disinfection	**C**	Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	**D**	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	**E**	pH betwwn 6.0 to 8.5 Electrical Conductivity at 25C micro mhos/cm Max.2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l

“Indicative Guidelines for Restoration of Water Bodies”

(in compliance to Hon’ble NGT Order dated 10.05.2019 in M.A.No. 26/2019 in OA.No. 325 of 2015)

Central Pollution Control Board
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Indicative Guidelines for Restoration of Water Bodies
(Polluted Lakes, Ponds and Rivers)

1 Introduction

Adequate availability of water of required quality is pre-requisite for survival and quality of human life. Surface water bodies like lakes, ponds, reservoirs, tanks and rivers were treated as community resource or asset over the centuries. In urban areas also such water bodies played an important role as a source of drinking water, absorption of flood water and a conduit for ground water recharge. They were being nurtured, protected, conserved and managed by the active participation of the local community without any code of conduct or rule. In turn, these water bodies have been catering the local human and livestock populations. The introduction of public water supply and ground water development through tube wells and hand pumps in the modern times, coupled with urbanization and industrialization induced pollution, a tectonic shift in the attitude of the people towards these water bodies has been witnessed. Both locals as well as the government have started neglecting this asset and have stopped caring, nurturing and conserving these community resources. Mushrooming urban, industrial and infrastructure development has further changed the status of these water bodies from community resources to a mere dumping ground or sink for solid wastes, construction debris, domestic sewage, industrial effluents, religious offering etc. resulting in severe degradation in the quality of such resources.

India has had abundant supply of water resources. However, from being a water abundant country India is gradually progressing towards water scarcity due to increasing population pressure, urbanization and uncontrolled growth. At present it is sustaining 18 per cent of world population with 4 per cent of global water

resources. Therefore, management of water resources has assumed great importance. Today availability of water resources is a major issue and is a big challenge facing our country.

In order to revive, restore and rehabilitate the traditional water bodies, the Government of India launched a Scheme for Repair, Renovation and Restoration (RRR) of water bodies which has multiple objectives like comprehensive improvement and restoration of water bodies thereby increasing tank storage capacity, ground water recharge, increased availability of drinking water, improvement in agriculture/horticulture productivity, improvement of catchment areas of tank commands, environmental benefits through improved water use efficiency by promotion of conjunctive use of surface and ground water, community participation and self-supporting system for sustainable management for each water body, capacity Building of communities in better water management and development of tourism, cultural activities, etc. by providing Central Grant to State Governments under a Pilot Scheme directly linked to agriculture during the remaining period of X^{th} Five Year Plan in January 2005. Keeping in view the benefits arising out of the implementation of the scheme, it was extended to XII Plan as well. Further, the Ministry of Environment, Forest and Climate Change is implementing a Centrally Sponsored Scheme of National Plan for Conservation of Aquatic Eco-systems (NPCA) since February, 2013 for conservation and management of identified lakes and wetlands in the 11 country in a holistic and integrated manner. Under the scheme financial assistance is provided to the concerned State Governments for undertaking various activities for conservation of wetlands and lakes, which also include a small component of lake front development and beautification, especially in urban lakes.

The National Water Policy (2012) formulated by MoWR,RD&GR advocates conservation, promotion and protection of water and highlights the need for augmenting the availability of water through rain water harvesting, direct use of

rainfall and other management measures. Further, the Standing Committee on Water Resources (2012-13) in their 16th Report on “Repair, Renovation and Restoration (RRR) of Water Bodies” also substantiated that *encroachment on water bodies is threatening the existence of a large number of water bodies and throwing consequent challenges of depleting ground water resources, occurrence of devastating floods in urban areas as well as water scarcity. Afore-said Committee suggested steps required to remove encroachment and to restore the water bodies.*

In recent years several metro cities such as Mumbai and Chennai have witnessed unprecedented flood. Encroachment of river bed is one of the reasons of flooding since it reduces the desired waterway of the river. Inadequacies of flood protection works, reduction in the water holding capacity of natural reservoirs in the basin due to progressive siltation, breaching of river banks, raising of river bed caused by deposition of silt are also the reasons. Encroachments happen due to number of local factors, thus issue is to be looked into by concerned State Government as per the prevailing rules and regulations of the respective State/UT.

As per MoWR, RD & GR, total number of water bodies have declined in the States which may be attributed to (i) increase in population and density of population per square kilometer; (ii) change in land use pattern; (iii) shift from paddy based agriculture to cash crop cultivation; (iv) depletion of ground water; (v) rapid Urbanization; (vi) unplanned urbanization and development activities; (vii) boom in construction activity; (viii) new water bodies have been developed to meet the additional requirement of water for drinking water and irrigation arising due to increase in population; (ix) some of the water bodies mainly, wells in southern group of islands were lost due to submergence of coastal area during tsunami in 2004.

NITI Aayog based on a study warning that India is facing its 'worst' water crisis in history and that demand for potable water will outstrip supply by 2030 if remedial steps are not taken. Nearly 600 million people faced high to extreme water stress. Also, made predictions that twenty-one cities, including Delhi, Bengaluru, Chennai and Hyderabad will run out of groundwater by 2020, affecting 100 million people. If matters are to continue, there will be a 6% loss in the country's Gross Domestic Product (GDP) by 2050. Moreover, critical groundwater resources, which accounted for 40% of India's water supply, are being depleted at "unsustainable" rates and up to 70% of India's water supply is "contaminated" 'Therefore*, water resource available to the country should be brought within the category of utilizable resources to the maximum possible extent.*

Therefore, existing scenario necessitates formulation of guidelines for restoration of water bodies keeping in view (i) to make pollution free water bodies and to meet the desired water quality criteria; (ii) to preserve excess water during monsoon, (iii) to restore and augment storage capacities of water bodies (iv) to serve and enhance ground water recharge; (v) increased availability of water for different intended purposes etc., These guidelines are only indicative guidelines and limited to restoration of ponds, lakes, polluted rivers or streams and divided into two parts i.e., stagnated surface water bodies such as ponds, lakes and rolling surface water bodies such as rivers or streams. However, concerned stakeholders are advised to conduct detailed gap analysis to enable to include related action plans for restoration of water bodies for ensuring compliance to Hon'ble NGT order dated 10.05.2019. For understanding aspects relating to restoration of water bodies, the documents already published or issued by Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR), Ministry of Housing and Urban Development also be referred as given at Sl. No. 7 References of these indicative guidelines.

This requires an understanding on the status of the water bodies, their suitable use, need for management and conservation so that they serve as a good

resource for future, potential strategies for long-term management especially in the urban areas, which are facing severe water shortage. It should include (i) Recognition Phase, (ii) Restoration Phase; (iii) Protection Phase; (iv) Improvement Phase and (v) Sustenance phase

2. Recognition Phase

Identification and recognition of the problem (inventory of existing and lost water bodies (due to encroachment, pollution, diversion etc.), analysis of cause of the problem and its effect and development of alternative solutions of problem as detailed below: -

2.1 Collection and maintenance of historical information relating to the water bodies

Based on the records available or remote sensing data or GIS maps, interaction with the public living in the vicinity of the water body, following information relating to the water bodies should be collected and records maintained by the concerned department in the State/UT: -

2.1.1 Stagnated water bodies such as ponds/lakes

A. ***Geographical details of the water body: -*** GPS Location and address of the water body, size or dimensions, area, elevation above mean sea level, ownership of the water body, boundaries with earmarking, map of water body (Digital map or remote sensing or satellite map over the years/National Wetland Atlas) with salient features

B. ***Hydrological description of the water body: -*** area, category of lake or pond (natural or man-made), average and maximum depth of stored water (during monsoon and non-monsoon period), total storage capacity, main source of water (rainfall/groundwater seepage/catchment

runoff/direct or indirect flow from any river or stream or creek), water permanence (permanent or intermittent), destination of excess water from pond or lake, purpose used to serve (like drinking water source, fisheries and agriculture or cultivation of aquatic food plants, recreational and aquatic sports, ground water recharge, act as a sink for sediments, habitat for noteworthy animal species, migratory birds or any other purpose), status of lakes or ponds in terms of % open water and aquatic vegetation.

C. Catchment Description

- Details on natural drains or flood channels and their flows contributing to water accumulation.
- Major Towns, total population living around the water body, any sewage contribution from the towns, total sewage generation, total no. of existing STPs and their treatment capacities, if any.
- Major industrial clusters or estates contributing to pollution in water body, total no. of industries (sector-wise), sector-wise total industrial effluent generation, existing industrial effluent treatment capacity [(both captive and Common Effluent Treatment Plants (CETPs)], if any.
- Total waste generation (waste like municipal solid waste, plastic waste, industrial hazardous waste, construction and demolition waste), existing provision for collection, transportation, treatment and disposal practices in the vicinity;
- Any other relevant information such as: - (i) Declared Wetland Ramsar sites, (ii) Bio-diversity details such as flora and fauna biodiversity (list of plant species, list of animal species, species of conservation significance (rare, endangered, threatened, endemic species), major plant invasive alien species and extent of invasion, major animal invasive alien species and extent of invasion.

2.1.2 River or streams

A. ***Digital map*** *of river under consideration with its tributaries showing salient features.*

B. ***Geographical and Hydrological description of polluted river***

Origin of the river and confluence with any other water body, length of travel of the river before confluence with any other water body, velocity of flow (in m/sec), average cross-sectional area (in m^2), average depth of flow (in m) during monsoon and non-mon-soon period, volume of flow or discharge (in m^3 /sec), tributaries of the river under consideration for restoration, GPS location details of all the tributaries and drains confluence with the river or stream; drains or channels contributing to river pollution;

C. ***Catchment description***

- Purpose used to serve by the river or streams
- Major towns along the banks of the river, town-wise total population (with projection for the next 20 years), total water consumption (both supply by local or urban bodies and the ground water consumption), total sewage generation pattern, no. of STPs and the treatment capacity.
- Major industrial estates or clusters along the banks of the river, Industry-sector –wise no. of industries, total water consumption, total industrial effluent generation and existing mechanism for treatment of industrial effluent.
- GPS location details of STPs, CETPs and their capacities, if any
- Ground water status, its utilization and the quality.

- Agricultural practices and the control measures with respect to agricultural runoff.
- Flora and fauna including biodiversity etc.

Also, water being state subject, the State Government or Union Territory Administration should assign the task of maintaining historical records pertaining to each water body to concerned Department in the State/UT and also to designate one responsible Department to enable to take necessary remedial actions as and when situation demands.

2.2 Digital Mapping of all the collected information

All the collected information to be located on the map and such details to be periodically updated and maintained by the concerned department in the State/UT.

3. Restoration Phase includes declaring the 'designated best use' in order to formulate strategies and to decide degree of treatment required for restoration of such water body, if required, selection of best solution to problems identified and application of the solution to the problems of the land which vary from case-to-case, to achieve the designated best use water goals as detailed below: -.

3.1 Designation of water body for its use by the State/UT

The landscape of India is dotted with large number of lakes, reservoirs and wetlands. Historically, the water bodies such as ponds or lakes have met water demands of the population for centuries and a community management system had sustained them for a long period of time.

In a water body or its part, water is subjected to several types of uses. Depending on the types of uses and activities, water quality criteria have been specified to determine its suitability for a particular purpose. Among the various

types of users there is one use that demands highest level of water quality or purity and that is termed as “Designated Best Use” in that stretch of water body. Based on this, water quality requirements have been specified for different uses in terms of primary water quality criteria. The Primary Water Quality Criteria for bathing water already prescribed under Environment (Protection) Rules, 1986**.**

Every pond, lake, river or stream falling under the jurisdiction of the concerned Department of the State Government or UT Administration is required to declare for its ‘designated best use’ in order to formulate strategies and to decide degree of treatment required for restoration of such water body, if required. In the absence of such information, it would be difficult for the regulatory authorities to formulate the strategies to be prepared in case restoration of such water bodies is required.

Water being the State subject, such list of water bodies with designated best use with all the relevant information collected by the concerned Department of the State/UT Administration is required to be submitted to the concerned State Pollution Control Board (SPCB)/Pollution Control Committee (PCC), Central Pollution Control Board (CPCB) as well as MoEF & CC, MoWR, RD & GR.

3.2 National Restoration Goals (Ponds, Lakes and Rivers)

‘Water quality criteria-designated best use’ water quality parameters as given at **Annexure-I** is required to be followed as ‘National Restoration Goals (for Ponds, Lakes or Rivers)’. However, this national restoration goals or criteria given at Annexure-I is only indicative and national restoration goals issued from time to time need to be followed for restoration of water bodies.

Monitored water quality of the water body (lakes and ponds) for relevant parameters (monitored at least 8 times in a year) (average mean value) is compared with the ‘National Restoration Goals’. In case of ponds or lakes, if the monitored water quality of the selected water body is complying at least i.e.,

6 out of 8 times to the designated best use water quality parameters, then such pond or lake is fit for the 'designated best use' and if not then requires remedial measures for its restoration**.** *This criterion is applicable only in case of ponds and lakes.*

In case of rivers or streams, the criteria issued from time to time by CPCB for categorization of monitoring location need to be followed and accordingly, the strategies to be formulated for its restoration to achieve at least bathing water quality criteria. Criteria for categorization of river monitoring location is ~~are~~ given in ***Annexure-II. This criterion is to screen the potential locations having pollution (w.r.t bathing water quality parameters i.e., BOD and Faecal Coliform only) and requires more comprehensive examination to identify all the possible sources of pollution.***

3.3 Steps to be followed for restoration of stagnated polluted ponds or lakes

Conservation and restoration requires a systematic and comprehensive plan to study selective and representative freshwater ecosystems. Details of the study should include the status of ponds or lakes or rivers, their suitable use, management and conservation so that they serve as a good resource for future use and formulation of strategies for long-term management especially in the urban areas.

3.3.1 World Lake Vision

The World Lake Vision has been developed by International Lake Environment Committee (ILEC), Japan (https://www.ilec.or.jp/en/pubs/), in collaboration with UNEP , aiming at illuminating the growing crisis in management of lake ecosystem, articulating principles to guide the transition towards managing lakes for their sustainable use and to provide a practical blueprint for ensuring long-term health of lakes and integrity of their survival and economic development. The Seven Principles of Sustainable Lake Management are:

- A harmonious relationship between humans and nature is essential for the sustainable use of lakes.
- A lake drainage basin is the logical starting point for planning and management actions for sustainable lake use.
- A long-term, preventive approach directed to preventing the causes of lake degradation is essential.
- Policy development and decision making for lake management should be based on sound science and best available information.
- The management of lakes for their sustainable use requires the resolution of conflicts among competing users of lake resources taking into account the needs of present and future generations and of nature.
- Citizens and other stakeholders should be encouraged to participate meaningfully in identifying and resolving critical lake problems.
- Good governance, based on fairness, transparency and empowerment of all stakeholders, is essential for sustainable lake use.

The restoration of any water body should be considered only based on the needs and its utilities. *General steps to be followed for restoration of water bodies includes following: -*

3.3.2 Assessment of water quality of the selected water body

Water quality of all the designated best use water bodies are required to be monitored for relevant parameters and as per frequency prescribed under 'guidelines for water quality monitoring 2017' by Ministry of Environment, Forest and Climate Change (MoEF & CC)**.** *Wherever, frequency is not suggested, water bodies are required to be monitored following the standard protocols for collection of samples by the concerned department at least once in a month ~~or~~ but not less than 08 months in a year (covering pre and post-monsoon period)*

3.3.3 Need for restoration of water body

The monitored values of the water body is analyzed based on the criteria suggested under these guidelines or criteria issued from time to time by CPCB for identification of polluted lakes or ponds or rivers or streams and decision be taken for restoration of water body. The criteria suggested for river monitoring location is to use for initial screening and identification of potential hotspots on the river. A comprehensive examination of water quality is required for identifying sources.

3.3.4 Identification of sources of pollution, quantification and assessing detailed gap analysis

Following steps to be followed for idenfication of sources of pollution, its quantification and for carrying out detailed gap analysis

A. Desk Review and Reconnaissance Survey

Identification of various sources contributing to pollution in ponds or lakes–need to be carried out based on desk survey (available information or data/ google map/ historical records) and physical reconnaissance survey (based on physical visual observations, interactions with the local public etc.,) for identification and ascertaining the sources of pollution of ponds or lakes. All the possible sources of pollution should be identified which may be

- open channels or drainage channels contributing untreated sewage or untreated or partially treated effluent discharge from existing sewage treatment plant in the vicinity (or)
- any untreated industrial effluent discharges either from the individual industry or any common effluent treatment plant (CETP) located in the vicinity (or)

- improper disposal of solid waste (plastic waste/ municipal solid waste/industrial hazardous waste/sludges from septic tanks or sewage treatment plants (STPs) or hazardous waste disposal from common effluent treatment plants (CETPs) (or)
- Run off from nearby agricultural fields, if any.
- Social and cultural misuse of ponds or lakes by local communities especially for immersion of idols during festival seasons.
- Any open-defecation around the ponds or lakes by the people living in the vicinity due to lack of sanitary facilities in their dwellings or colonies and fencing all around such water body.
- Physical condition of weed growth and necessity for dredging- Aquatic plants growing in ponds and lakes are beneficial for fish and wildlife as they provide food, dissolved oxygen, and spawning and nesting habitat for fish and waterfowl. Aquatic plants can trap excessive nutrients and detoxify chemicals. However, dense growths (over 25% of the surface area) of algae and other water plants can cause (i) Fish kills; (ii) Fish flavor problems; (iii) Pond water odor problems; (iv) Drinking water taste problem and (v) Stunted fish growth.
- Silting or sediments in the ponds or lakes due to improper disposal of waste including construction and demolition waste or silt contribution from drainage channels which reduces storage capacity and accumulation of contaminated sludges.
- Status of aesthetic conditions around the water body
- Condition of the banks or bunds, spill over (provision to ensure smooth flow of excess floods on downstream especially during monsoon period) or flood channels including obstructions if any.

- Encroachment of waterbodies due to urbanization
- Condition of Eutrophication of lakes or ponds due to inadequate measures (due to indiscriminate discharge of Industrial effluents, run-off from agricultural fields, refuse and discharge of sewage, domestic wastes like food remnants, soaps, detergents cause depleted levels of dissolved oxygen in water lead to a situation where other aquatic life-forms cannot survive).
- Available In-situ available technological options for restoration of ponds or lakes (such as aeration, bio-remediation) in lakes or plants)

B. Detailed gap analysis

Detailed gap analysis to be made w.r.t municipal sewage, industrial effluent and waste management with a projection of at least 15 to 20 years, existing infrastructure for management of municipal sewage, industrial effluents and waste management in the catchment area of the water body under consideration for its restoration including volumetric flow details of all the channels or drains contributing to pollution in water body, as detailed below: -

- ***Sewage management:*** **-** Total population (with projected population at least for the next 20 years) living around the water body, total water consumption (taking into account both water supply by local/urban bodies as well as ground water consumption), total sewage generation (with projected generation quantities), total no. of existing STPs and their treatment capacities and the observed gap with regard to the sewage management (gap may be estimated in the catchment of waterbody).

- ***Industrial effluent management: -*** Industrial clusters or estates contributing to pollution in water bodies, total no. of industries, estimation of total water consumption by the industries, total industrial effluent generation, existing treatment capacity (both captive and common effluent treatment plants (CETPs), gap in industrial effluent management and the requirement for captive or common effluent treatment plants

- ***Waste Management: -*** waste-wise total waste generation, existing provisions for collection, transportation, treatment and disposal (in compliance to the concerned rules) with their capacities and waste-wise gap analysis and the requirements for their management

C. Identification of other associated issues which requires attention as a part of restoration of pond or lake

Apart from identification of all possible pollution sources, detailed gap analysis, additional measures required on case-to-case basis to be identified especially in case of ponds or lakes w.r.t the following aspects: -

- Buffer Zone development maintenance and the existing activities within the buffer zone.
- Feasibility for Bio-diversity park in case adequate land is available in the vicinity of ponds or lakes.
- Greenery development in the vicinity of the ponds or lakes.
- Introduction of recreation facilities such as paddle boats, building jetty.
- Machinery and the man power requirement for maintenance of

the restored water body.

- Existing provision for disposal of waste arising from the de-siltation and de-weeding activity of a pond or lake.
- Awareness and training requirements.
- Any other related measures required also be analyzed for inclusion of such actions while making action plans for restoration of water body (E.g., aesthetic point of view, bins for rubbish management which may be generated due to visitors).

4. **Protection Phase** that takes care of the general health of the water body and ensures normal functioning. A long-term, preventive approach directed to preventing the causes of waterbody degradation is essential.

4.1 Preparation of action plans

Action plans to be prepared based on the historical information collected, desk review, reconnaissance survey conducted, detailed gap analysis for ensuring additional measures required for restoration of water body (vary from case-to-case) covering both direct and indirect measures with specific time targets and the organization responsible for implementation of action plans with budget estimates. Action plans should include covering following aspects: -

A. **Sewage Management: -** for management of sewage inflow if any (which is causing eutrophication of lake or pond) by having adequate infrastructure for treatment of sewage through adequate capacity of sewage treatment plants (STPs) or combination of other low cost treatment technologies for ensuring discharge norms notified under Environment (Protection) Act, 1986 and same should be ensured by an individual generator of sewage as well as by the concerned local or urban body.

B. Industrial effluent management: - for management of industrial effluent inflow by having adequate infrastructure for treatment of industrial effluent in the form of captive industrial effluent treatment plants or through common effluent treatment plants by the respective industry contributing to the pollution of water bodies and same also should be ensured by the respective State Industrial Development Corporations or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC). Adoption of state-of-the technologies for production processes and for ensuring treatment of generated industrial effluent (feasibility adoption of zero liquid discharge).

C. Management of waste

- Adequate infrastructure should be ensured for management of wastes (such as municipal solid waste, industrial hazardous waste, construction and demolition waste, plastic waste, e-waste) in accordance with the respective provisions notified under the Environment (Protection) Act,1986, by all the concerned.

- Periodic physical removal of improperly disposed wastes (such as municipal solid waste, construction and demolition waste, plastic waste, industrial hazardous waste, human and animal night soils) by the concerned local or urban body.

D. De-siltation

- Periodic removal of nutrient enriched accumulated sludges in ponds and lakes helps in ground water recharge potential, removal of contaminated sediments as well as increases storage capacity of lakes or ponds.

- Sediments removed from the ponds or lakes should be stored in a designated area (till moisture is completed drained out) at a suitable distance away from ponds or lakes and such dried sediments should be removed immediately so that sediments will not become a part of ponds or lakes once again especially in the event of any rain fall. Depending on the characteristics, such sediments after draining may be used as manure (complying to the manure quality prescribed under Solid Waste Management Rules, 2016 as amended from time to time or disposed of in accordance with the relevant provisions notified under Environment (Protection) Act, 1986.

E. De-weeding

- **Periodic dredging** (once in three months) of 80 % of dense and thickly covered aquatic plants viz., floating plants such as algae, duckweed, watermeal, water hyacinth; submerged plants such as milfoil, hydrilla, water lettuce, curly-leaf pondweed, clasping-leaf pondweed, coontail, sago pondweed, water lilly, water shield etc., bottom sediment, and associated nutrients should be carried out. De-weeding methods include: -

- **Preventive measures**

  - such as proper design and construction of ponds or lakes including levelling and smoothing of banks

- **Manual or physical control measures**

  - Manual or physical control measures such as non-chemical and non-motorized measures be taken for removal of weeds (manual harvesting) using hand pulling, rakes, cutters, benthic barriers, drawdown, aeration, shading and weed rollers as these measures are typically very low, however, such measures

are labor intensive and are therefore better suited to small, less established weed populations. Hand pulling and raking may result in turbid or murky water and may create plant fragments that can subsequently spread to new sites.

- **Mechanical control measures**
  - Using motor-driven under water weed cutters or floating weeds, rotovators essentially large-scale underwater rototillers for tilling up lake or pond sediments as well as to chop and loosen plant roots, or draglines (in case of underwater pond or lake dredging) (or) dry-land excavation machinery such as bulldozers (in case of drained ponds or lakes) shall be used (or)
  - Limiting the amount of sunlight available to aquatic plants by floating black plastic sheeting on the water surface (or) use of dark-colored and nontoxic water dyes (such as nigrosine, aniline and aqua-shade)

- **Biological controls** i.e., introducing aquatic animals and plants that eat or compete with waterweeds. Herbivorous animals (those that eat plants) include a wide variety of insects, snails, crayfish, tadpoles, turtles, fish (sterile, triploid grass carp), ducks, geese, and swans which can be stocked in ponds or lakes to consume aquatic plant.

- **Application of common aquatic herbicides** for **control of lake or pond weeds**

Use of herbicides is not recommended as it may kill fish in ponds or lakes. Herbicides should be used in a controlled and systematic way under the supervision of the expert and general herbicides that may be used for weed control are as given below-

- *For Algae (microscopic, filamentous, Chara) control- Herbicides such as copper sulfate, copper chelates, endothall,, simazine)*

- *Submerged Plants (coontail, watermilfoil, pondweeds such as sago, curlyleaf, leafy) control- Herbicides such as Endothall, Diquat, simazine, fluridone may be used*

- *Free-floating plants (duckweed, watermeal) control:- Herbicides such as Diquat, simazine may be used*

- *Rooted-floating plants such as (waterlilies, spanerdock) control- Herbicides such as Glyphosate and 2,4,-D may be used*

- *Emergent plants (cattails, perennial grasses, and broadleaves) control: - Herbicides such as Glyphosate may be used*

F. Prohibition of discharges or disposal of waste or washing activity and action against violators

- Ban on discharge of industrial effluent or sewage or waste (such as municipal solid waste or industrial hazardous waste or plastic waste or construction and demolition waste or sludges from septic tanks/ STPs/CETPs) into lakes or ponds or drainage channels connected with ponds or lakes or open defecation in the vicinity as well as washing of clothes or wading of cattle

- Stringent actions be taken against violating industry by the SPCB/PCC as per provisions under Water (Prevention and Control of Pollution) Act, 1974 as well as Environment (Protection) Act, 1986

- Levying of fine or Environmental Compensation on the violators for improper disposal of sewage or industrial effluent or wastes into lakes or ponds.

G. Stabilization of earthen bunds and the drainage channels as well as silt and soil erosion control measures

- Stabilization of earthen embankments, shore line protection with vegetative or rock riprap to avoid soil erosion and the inflow drainage channels with the stone revetment or pitching so as to avoid rapid seepage or leakages

- All the inflow drainage channels should be provided with suitable silt barriers or sediment traps or sediment detention basins at suitable intervals for control of silt especially during monsoon.

- Also, at all the outfalls of drainage channels, suitable strains or traps should be provided to control inflow of all the floating materials and periodic removal of floating materials should be ensured.

H. Protection drainage basin including preservation of drainage channels

A lake or pond drainage basin is the logical starting point for planning and management actions for sustainable lake or pond use. A long-term, preventive approach for preventing the causes of degradation is essential.

- Historically the drainage channels which used to carry natural runoff from the drainage basin and presently carrying either untreated municipal sewage or industrial effluent or both and contributing to pollution of water bodies eventually due to encroachment in view of urbanization. All such drainage channels need to be restored by interventions such as (i) stoppage of inflow of untreated municipal

sewage or industrial effluent. If required, interaction and diversion of untreated sewage or industrial effluent from such drainage channels by routing through properly designed dedicated sewerage network to ensure conveyance and for ensuring treatment and disposal through STPs/CETPs. Feasibility of in-situ treatment of treated sewage and industrial effluent within drainage channels and prior to the inflow into the water bodies also be explored by the concerned authorities.

- Major channels running from the larger watersheds should be identified based on the historical data and such drainage channels should be preserved and protected with suitable buffer land without any impervious cover. This aspect should be ensured by the State Local/ Urban Development/Town Planning authorities while planning or expansion of a locality.

I. Removal of encroachments and blockades

- The Stat Government or UT Administration should maintain records pertaining to the boundaries of each pond or lake in the respective State/UT and necessary steps should be taken and ensured removal of all encroachments in the water body spread area/water body boundary as and when required.

- Removal of encroachments in the drainage channels should be carried out periodically to facilitates enhancement in aeration naturally in the water body

- Refrain from granting any consent for establishment for large scale projects in the catchment areas.

- Pond or lake boundary should be provided with fence (permanent / temporary fencing) to avoid unauthorized entry.

J. Flood Control Measures

- Excess floods from drainage basin be controlled with a provision of properly designed ‘spill way’ with a provision of controlled gates for smooth flow of excess water or run off during monsoon.

- Remove all encroachments (lake bed, storm water drains) to prevent calamities related to floods and to facilitate inter connectivity of water bodies.

- Removal all blockades at inlet or outlets should be ensured to avoid stagnation or blockage of storm water.

5. Improvement phase that deals with overall improvement in the water body and its uses including resolution of conflicts among competing users of lake resources taking into account the needs of present and future generations and of nature.

5.1 Adoption of In-situ techniques for in-situ remediation of ponds or lakes

A. Physical treatment approaches

Aeration (using surface aerators or , submerged aerators or a combination of both may be used to increase the dissolved oxygen in the water body, which is used by microorganisms to degrade the pollutants. Aeration also aids in mixing the different thermal layers of the water body, resulting in de-stratification, exposing the lower-most layers to atmospheric air. The need and extent of aeration is calculated based on the water quality parameters, depth of water body, ambient temperatures, wind conditions

etc.). Apart from aeration, methods such as wastewater diversion, periodic de-weeding and sediment dredging, proper maintenance of drainage channels or feeder channels also helps in increase in dissolved oxygen)

B. **Chemical treatment approaches**

Flocculation using chemicals like alum and neutralizing chemicals especially during acidification (increase in pH level of the stagnated water body)

C. **In-situ techniques**

- *Using aquatic plants* (Macrophytes such as water hyacinth (Eichhornia crassipes) and water lettuce (Pistia stratiotes), Whorl-leaf watermilfoil (Myriophyllum verticillatum), pondweed (Potamogeton spp.), common reed (Phragmites communis), cattail (Typha latifolia), duckweed (Lemna gibba) and canna (Canna indica)

- *Using aquatic animals* such as clams, snails and other filter-feeding shellfish

- *Using biological techniques* may be used to decompose, transform and absorb water pollutants. However, concentration and frequency of dosing of the microbial cultures is decided based on the volume of the water body, water quality parameters, ambient temperatures and extent of algal growth [as per literature (i) an enzyme namely Phycoplus and the nutrients are mixed thoroughly and sprayed into the pond within 2-3 weeks' time significance difference may be seen; (ii) treatment method based on hydroponics technique that cleans the lake by absorbing nutrients dissolved in the water and thereby supporting living species inside the lake; (iii) floating

treatment wetlands (FTW) which are artificial islands made of chemically inert materials, gravel having floating characteristics with plants that stay afloat on the lake or ponds such as wetland plants, water hyacinth, mosquito repellents and ornamental plants like cattails, bulrush, citronella, canna, hibiscus, fountain grass, flowering herbs, tulsi and ashwagandha) which helps in cleaning the lake or pond through hydroponics system, (iv) Introduction of mixture of nutrients to grow algae formed by diatoms (the most basic, single-cell life form found in water bodies) which helps in release of oxygen into water and in turn aerobic bacteria present in water body helps to break down the organic matter and convert the pollutants to base constituents and also reduces odors from the lakes or ponds. The diatoms are eaten by zooplanktons that are, in turn, consumed by fish].

5.2 Drainage basin management

- Drainage basin management includes control of non-point sources, structural and land treatment measures (regular monitoring of structures and systems and carrying out necessary rehabilitation and modernization programmes), interception and diversion of nutrients, sediments control (terracing, contour farming, grassed water ways, prior to reaching stagnated water body.

- Crop management, crop residue management and creation of shelter belts, good Irrigation practices, run off control provisions from agriculture runoff laden with excess fertilizers and pesticides

5.3 Green or Buffer Zone

- Buffer Zone around a lake or pond (at least 50 to 100 m periphery) should be maintained as green belt zone or no activity zone and no activity is allowed within the buffer zone by the concerned Departments in the State/UT. In case, any activity presently existing within the buffer zone (50 to 100 m), such as residential or commercial or industrial activity should take necessary measures to prevent discharge of any wastes into the water body.

- Within the buffer zone, no impervious cover is allowed and mainly plantation with a dense population of deeply rooted plants, trees, shrubs and grasses should be created so as to absorb nutrients (which promotes aquatic plant growth and a shift in the water quality) that comes directly from the anthropogenic activities.

5.4 Creation of biodiversity environment

In case the water body happens to be a site for the visit by migratory birds the number and type of trees by the side of the water body and water channels have also to be monitored to ensure adequate shelter as well as suitable environment for egg laying and propagation of bird species.

5.5 Monitoring of Implementation of action plans for restoration of ponds or lakes

The action plans are to be prepared and submitted to CPCB for seeking approval. The action-plan should include activity-wise action points, specific time lines, organization responsible for implementation, budget estimates as well as Program Evaluation and Review Technique (**PERT**) chart for implementation of action plans within the specified timelines, Upon approval of action plans for restoration

of ponds or lakes, thereafter, execution of action plans to begin and to be mentioned on monthly basis by the Monitoring Committee to be constituted under the Chairmanship of Principal Secretary (Environment) of the respective State Government or Union Territory Administration. The monitoring committee should review the progress on implementation of the action plans at least once in three months and apprise the Chief Secretary of the State/UT periodically.

A model lake restoration technique is given at **Figure 1** and a model flow chart for restoration of Ponds or Lakes is given in **Figure 2**.

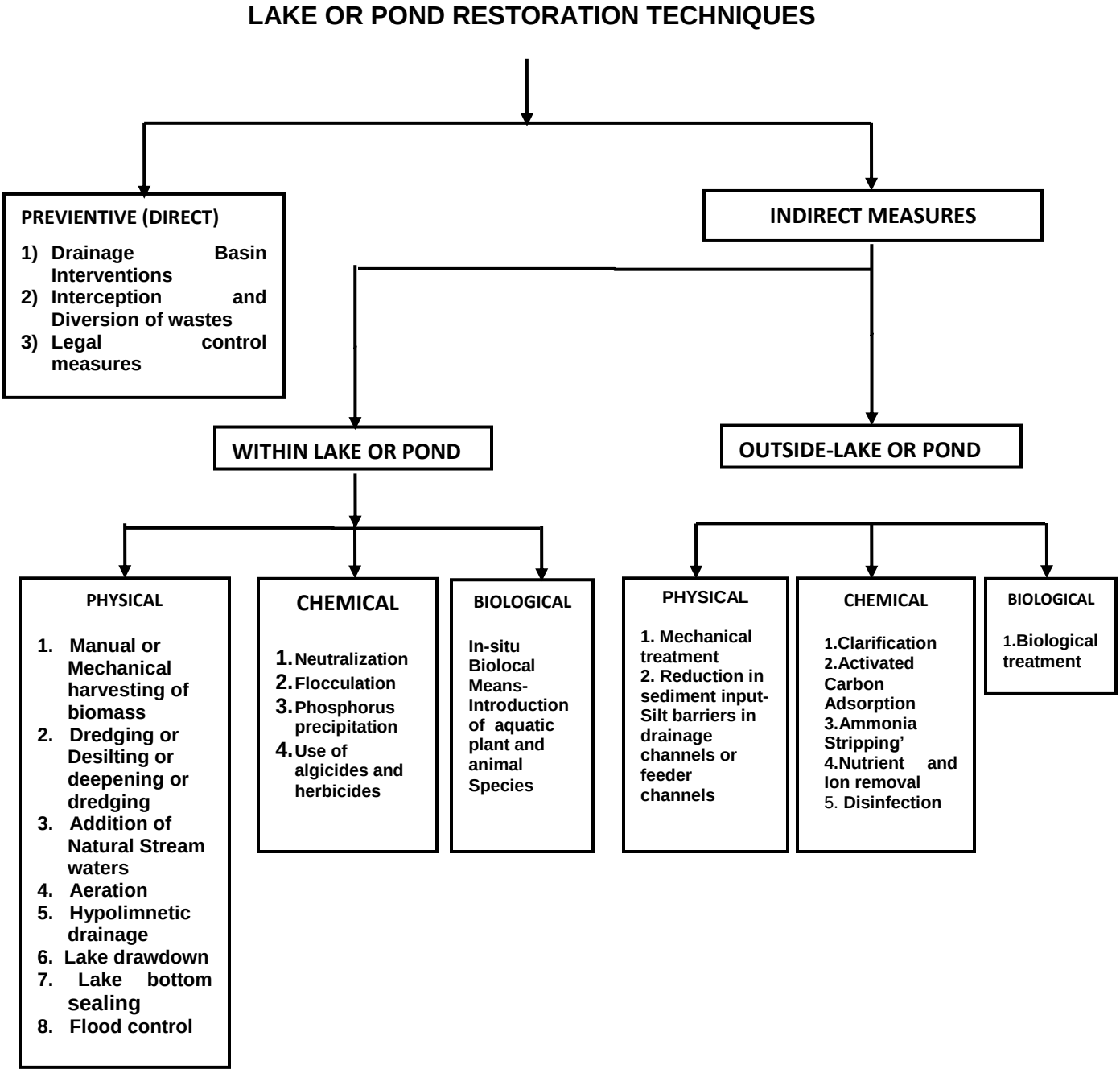

Figure 1. A Model Lake or Pond Restoration Technique

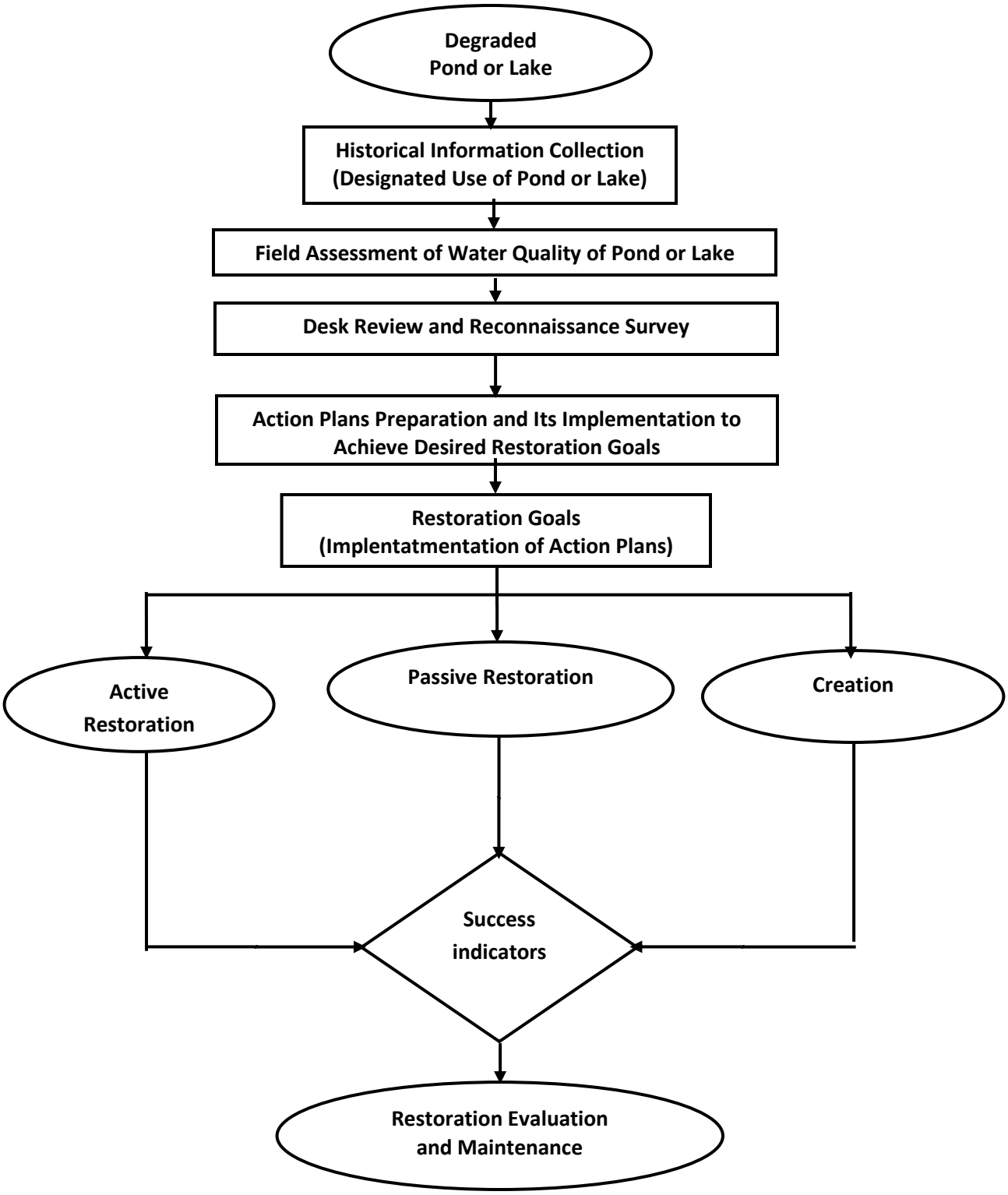

Figure 2. Model Flow Chart for Restoration of Pond or Lake

5.6 Steps involved in preparation of Action Plan for rejuvenation of polluted river stretches

A. Background Information (Refer to Sl. No. 2.1.2)

(i) Digital map of identified polluted river with its tributaries
(ii) Geographical and hydrological description of polluted river
(iii) Catchment description- uses of river, towns, cities and villages, industries (sector-wise no. of industries), ground water status and its utilisation, agricultural practices, flora and fauna etc.

B. Water Quality of River and Its Tributaries

(i) Water quality of river and its tributaries (at least for five years)
(ii) Quality assigned as per modified Water Quality Criteria **(Annexure-I)**

C. Identification of Causes of Pollution in Catchment Area of the River

- **Industrial Pollution**

(i) List of water polluting industries, industry sector-wise: water consumption, effluent generation and quantity of industrial effluent discharged into river
(ii) Status on granting of Consent under Water (Prevention and Control of Pollution) Act, 1974
(iii) Status on granting of authorization under the Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016 as amended (as applicable)
(iv) Compliance status and action taken (Placing in public domain)
(v) Final disposal mode of treated industrial effluents (i.e., disposal on land or drain or ZLD or drain connected to CETP etc.,)
(vi) Performance status of captive Effluent Treatment Plants (if applicable)
(vii) Existing Common Effluent Treatment Plants (CETPs) and their performance status.
(viii) Regulation of small scale industries/tiny units'/service units discharging effluents/sludge disposal into drains/landfill or any other mode of disposal

- **Ground water management**

(i) Status of ground water level-reserves in the catchment area of river under consideration
(ii) Blocks identified as over exploited, critical, semi-critical and safe (as per Central Ground Water Board (CGWB) if any)

(iii) Status of permissions granted by Central Ground Water Board (CGWB) to the industries and other Development projects in the catchment area of river.
(i) Compliance of conditions stipulated by CGWB and subsequently by SPCB.
(ii) Ground water sources (Hand –pumps, Wells, Tube Wells) identified in the catchment area of the river and the characteristics (at least for the period of two years);
(iii) Ground water sources (Hand –pumps, Wells, Tube Wells) identified as non-potable for human consumption in river stretch with Geo-genic/or polluted due to industries.
(iv) Compliance on ground water charging imposed by Rain Water Harvesting Mechanism.
(v) Existing mechanism for supply of potable water to the human population in the affected areas.
(vi) Health deformities /clinical reports in polluted river stretch areas in view of ground water contamination.

- **Sewage treatment and disposal: -**

(i) Cities, towns and villages located on the bank of river stretches discharging sewage effluents through drains into the river.
(ii) Quantification and pollution load of sewage generated by a city/town/village.
(iv) Status of septage management.
(v) Listing of drains carrying sewage and trade effluents joining river and determining flow and characteristics with details of catchment contributing sources (drainage maps from major /minor irrigation development of State/or local body).
(vi) Existing sewage treatment capacities and performance of Sewage Treatment Plants and their compliance Status
(vii) Final mode of disposal of treated sewage as well as sludge management

- **Waste management in the catchment area of river: -**

(i) Area-wise Hazardous waste generation, treatment and final mode of disposal and the existing infrastructure.
(ii) Area-wise Status on municipal solid waste generation, treatment and final mode of disposal and the existing infrastructure
(iii) Area-wise Status on bio-medical waste generation, treatment and final mode of disposal and the existing infrastructure
(iv) Any other waste generation, treatment and final mode of disposal and the existing infrastructure

- **River catchment information**

(i) Regulation of Flood Plain Zone
(ii) Encroachment in Flood Plain Zone
(iii) Plantation status
(iv) Flow data of river/tributary

- **Gap Analysis and Identification of the problems in the identified polluted river catchment: -**

(i) Sewage generation, existing infrastructure with treatment capacities and the observed gaps w.r.to infrastructure for sewage management
(ii) Industrial effluent generation, existing infrastructure with treatment capacities and the observed gaps w.r.to infrastructure for industrial effluent management
(iii) Waste generation, existing infrastructure with treatment capacities, designed life of the treatment and disposal facilities as applicable and the observed gaps w.r.to infrastructure for waste management
(iv) Any other relevant issues

(Note: - All the details such as river and its tributaries, area-wise population, sources and water consumption quantities, sewage generation, existing infrastructure for sewage management and the gaps observed, area-wise industries (industry sector-wise no. of industries), sources of water and water consumption quantities (industry-sector-wise), industrial effluent generation, existing infrastructure for treatment (like Captive ETPs, CETPs), final mode of disposal of industrial effluents, waste generation and its management with existing infrastructure, characteristics of river and its tributaries, identified contaminated ground water resource areas has to be detailed in the map preferably a digital map)

D. The River Rejuvenation Action Plan:-

After having complete based information as detailed under earlier paras A to D above, Action Plans on each Activity with time-lines can be framed. The key components of action plan may follow the suggested points as given the Table below:

S. No	Key Activity and Components		Agency to perform the task	Proposed Specific Time Frame for implement ation of action plan
1	**Industrial Pollution Control**			
	(a)	Inventorisation of water polluting industries	SPCB	
	(b)	Grant of consents	SPCB	
	(c)	Compliance verification	SPCB/ District Magistrate (DM)	
	(d)	Planning for CETP (as applicable)	SPCB+ State Industries Department or of Industries	
	(e)	Insisting on ZLD measures, recycling/reuse of treated industrial effluents	SPCB	
	(f)	Prohibition of disposal of effluents into drains except during rainy season subject to complying to effluent discharge norms for disposal in surface water.	SPCB + DM	
	(g)	Covering small and tiny units and not allowing discharge of effluents either individually or combined	SPCB+ Local Body/ Urban Body	
	(h)	Publishing list of defaulting industries in local newspapers and involving public in reporting deliberate discharges (without entering in the premises-backyard water and reporting running of industry against the closure orders.	SPCB + DM	
	(i)	Hazardous or Non Hazardous Waste Management Plan and no dumps anywhere except at identified locations	SPCB + DM	
	(j)	Reporting Non-Compliance of CGWB	SPCB +	

		conditions and closure of Non complying units.	CGWB	
	(k)	Levying compensation or fines for non-compliances as empowered to UPPCB under the Hon'ble NGT Order Dtd. 13/07/2017 in Ganga Matter in case of Tanneries.	SPCB	
	(l)	Other Action as relevant	SPCB + Concerned Agency of State	
2	**Ground Water Protection**			
	(a)	Declaration of Polluted Blocks	CGWB	
	(b)	Embargo on Water pollution /over-abstraction of industries as per block status	CGWB	
	(c)	Rain water harvesting	Local Body + DM	
	(d)	Identification of Geo-genic contamination (as applicable)	CGWB	
	(e)	Identification of industries discharging industrial effluent illegally and levying fine on such industries including closure of such industries	SPCB + CGWB	
	(f)	Remediation of contaminated ground water (due to discharge of industrial /sewage) with the recovered funds from the default industry	SPCB + CGWB	
	(g)	Capping of contaminated tube wells and Potable water supply through alternate measures in the affected areas of groundwater	Water Supply Department	
3	**Sewage Management**			
	(a)	Identification of cities, towns and villages discharging sewage into river/tributary	State Local and Urban Development and Executing Agencies	
	(b)	Identifying drains joining river and their quantification and characterizations of pollution load		
	(c)	Preparation of Detailed Project Report (DPR) for interception and diversion (I & D) of drains to sewage treatment plant (STP) for which suitable site to be identified and plan for utilization of treated sewage.		

	(d)	Execution of STP works and necessary infrastructure and ensuring household sewer connection for full utilization of STP		
	(e)	Regular cleaning of drains and prohibiting disposal of garbage/plastic and filthy material into drains including dairy waste		
	(f)	Restoration of natural drains for carrying only storm water (but not sewage)	Local and Urban Bodies + State Water Resources + State Irrigation Department + SPCB	
	(g)	Ensuring utilization of treated sewage for beneficial use such as agriculture, construction activity, washing/flushing/cleaning, industrial cooling etc.,	Local and Urban Bodies + State Irrigation Department + SPCB	
	(h)	Interception and Diversion of sewage from Drains and connectivity to STPs	Local and Urban Bodies	
4	**Flood Plain Zone (FPZ) Protection**			
	(a)	Demarcation of FPZ and not permitting encroachments	State Irrigation Department	
	(b)	Adopting good irrigation practices to conserve water	State Irrigation Department /DFO	
	(c)	Plantation and bio-diversity parks in FPZ	State Forest Department	
5	**E-Flow**			
	(a)	E-Flow determination/gauging	State Irrigation Department	
	(b)	Regulation of flow from barrages	State Irrigation Department	
6	**Health Impact Assessment Reports-Treatment Services**			

	(a)	Epidemiological survey in the catchment to find out water-born diseases/ health issues	State Health Department	
	(b)	Providing treatment services to the diseased persons in the catchment area		
7	**Education and Awareness**			
	(a)	Regular involvement of educational institutions for creating awareness and conservation programmes	State Education Department with concerned Departments	
8	**Funding for execution of Action Plans**			
	(a)	Pooling of financial resources of state and central assistance	State Finance Commission/ MoUD and MoWR, RD & GR	

E. Monitoring of Implementation of Action Plans for Rejuvenation of Polluted River Stretches:-

(i) In compliance with Hon'ble NGT Order dated 20/09/2018 (OA No. 673 of 2018), State/UT Level 'River Rejuvenation Committee (RRC)' constituted firstly has to ensure timely preparation of action plans (before 20/11/2018).

(ii) Prepared actions plans need to be submitted to CPCB for random scrutiny as well as for approvals.

(iii) Thereafter, execution of action plans to begin and to be mentioned on monthly basis by the 'RRC' under overall supervision of the Principal Secretary (Environment) of the respective State Government or Union Territory Administration.

A model flow chart for rejuvenation of polluted river is given in **Figure 3**

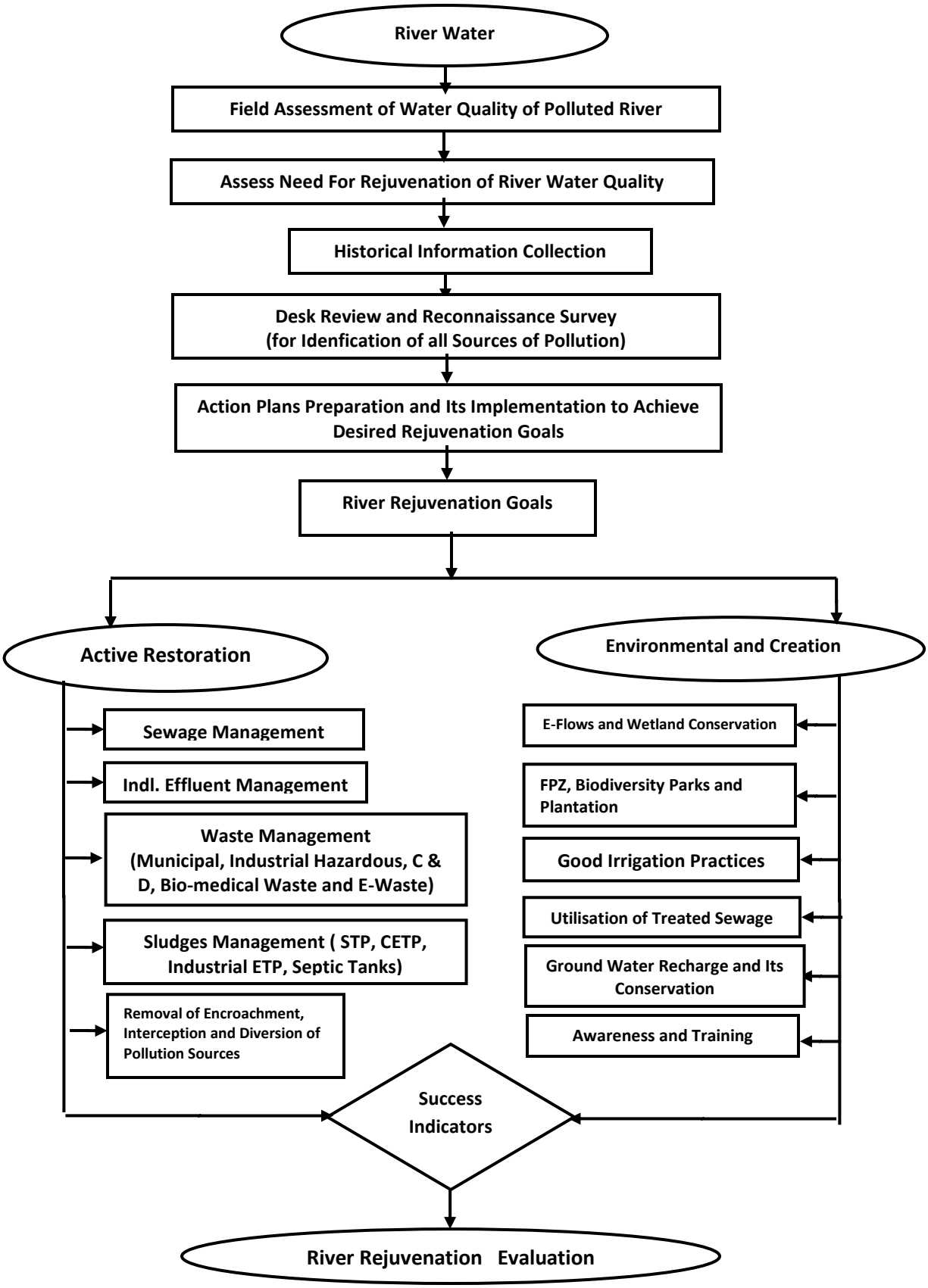

Figure 3. Model Flow Chart for Rejuvenation of Polluted Rivers

6. Sustenance Phase

Good governance, based on fairness, transparency and empowerment of all stakeholders, is essential to sustain the restoration efforts. Also, ownership of each waterbody should be decided, as most of them face indefinite sustenance due to multiplicity of administrative control and/or lack of specific action by singular authority. The in charge authority should treat the water body as ‘natural resources’, to act as the potential catalysts to better civic health, provide recreation, improve tourism, possibly meet water-needs of local people, etc. Such gains shall be attained only after the water bodies are treated on eco system based approach.

6.1 Awareness

Awareness for citizen’s groups, resident welfare associations, local organizations, activist groups, green organizations, political organizations, educational institutions and government agencies in protection of the water bodies should be organized periodically by the concerned authorities through campaigns, electronic media in vernacular languages also be ensured by the concerned authorities

6.2 Training

Organizing periodic trainings through identified and reputed institutions for all the concerned on aspects relating to maintenance during post- restoration phase of the water body.

6.3 Promoting Public Participation

Promoting active public participation (with the help of schools, colleges and universities, NGOs) for identifying and resolving critical lake or pond problems as

well as periodic maintenance and restoration of water body from aesthetic and restoration point of view should be organized.

6.4 Dissemination of Information

Water quality of the pond or lake should be displayed at the main entrance of the pond or lake boundary and such water quality data also connected to the servers of concerned custodian State Department (s) as well as State Environment Department, respective State Pollution Control Board (SPCB)/Pollution Control Committee (PCC). Display boards also should be provided at all the salient points on **'Do's and Don'ts'** for the public.

6.5 Recreational Centre

Creation of pond or lakes can be converted into recreational centers with boating activities, walkways and benches for visitors on charge basis so as to generate revenue for operation and maintenance of the lake or pond areas

7. References

- Parliamentary Standing Committee Report 2016-"Repair, Renovation and Restoration of Water Bodies- Encroachment on Water Bodies and Steps Required to Remove the Encroachment and Restore the Water Bodies" (https://eparlib.nic.in/handle/123456789/65926?view_type=browse)

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- GUIDELINES FOR REPAIR, RENOVATION AND RESTORATION OF WATER BODIES WITH DOMESTIC SUPPORT (2009)

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- OA No. 200 of 2014 Titled M.C. Mehta Vs Union of India -(River Ganga) Order of HON'BLE NGT Dated 10/12/2015; and 13/07/2017.

- OA No. 231 of 214 Titled Doaba Paryavaran Samiti Vs State of UP & Ors. (on river Hindon) Order of HON'BLE NGT Dated 08/08/2018
- OA No. 673 of 2018 Titled News item published in "The Hindu" authored by Shri Jacob Koshy titled "More river stretches are now critically polluted: CPCB" Order of HON'BLE NGT Dated 20.09.2018, 19.12.2018 and 08.04.2019

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Annexure-I

Water Quality Criteria-Designated Best Use

Designated-Best-Use	Class of Water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	Total Coliforms Organism in MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20C 2mg/l or less
Outdoor bathing (Organised)	B*	Faecal Coliform in MPN/100ml: 500 (desirable) and 2500 (Maximum Permissible) Faecal streptococci in MPN/100 ml: 100 (desirable) and 500 (maximum Permissible) pH between 6.5 to 8.5 Dissolved Oxygen: 5mg/l or more Biochemical Oxygen Demand 3 Day BOD, 27 ^{O} C: 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20C 3mg/l or less
Propagation of Wild life and Fisheries	D	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling	E	pH between 6.0 to 8.5 Electrical Conductivity at 25 ^{O}C micro mhos/cm Max.2250 Sodium Absorption Ratio Max. 26 Boron Max. 2mg/l

* ***Class B as per Primary Water Quality Criteria for Bathing Water (Water Used for Organised Outdoor Bathing) as per Environment (Protection) Rules, 1986***

Annexure-II

CRITERIA FOR CATEGORISATION OF RIVER MONITORING LOCATION

1. Introduction

Water Quality monitoring is an essential component to maintain and restore the wholesomeness of resources by way of prevention and control of pollution as prescribed under the Water (Prevention and Control of Pollution) Act, 1974. However, the Water (Prevention and Control of Pollution), Act, 976 does not define the level of wholesomeness to be maintained or restored in different water bodies of the country. In view of the said reason, the Central Pollution Control Board (CPCB) has tried to define the wholesomeness of water in terms of safe human uses, and thus, taken human uses of water as base for identification of water quality objectives for different water bodies in the Country. It is considered ambitious to maintain or restore all natural water body at pristine level which is possible only by taking proper control measures. The level and degree of treatment required can be decided depending on the categorization of the polluted river locations/stretch, as per the criteria detailed below:-

2. Categorization of River Monitoring Location

The water quality data is required to be analyzed and primarily mean or average values of Biochemical Oxygen Demand (BOD) and Faecal Coliform (FC) need to be estimated. Then, based on the total score estimated for the parameters BOD (weightage- 70 %) and FC (Weightage- 30 %), based on the criteria, the monitoring location is categorized as 'polluted' location. The polluted monitoring locations in a continuous sequence are defined as 'polluted river stretch'. However, actual self-purification distance need to be estimated based on the requisite input parameters which depend on the case-to-case and the local conditions.

The monitoring locations may be categorized in five classes from Category I to Category –VI. i.e., critically polluted to Good or Fit for Bathing i.e., Category –I indicates 'critically polluted'; Category-II indicates 'severely polluted'; Category-III indicates 'moderately polluted', Category –IV indicates 'less polluted', Category –V indicates 'Good' or Fit for Bathing'

Above suggested criteria is intended only for categorization of the river monitoring locations. However, if any State/UT desires to identify any other water body such as lakes, tanks may also apply these criteria depending on the need and the requisite achievable goals for rejuvenation of such water bodies.

Table 1 to Table 3 gives the mean or average BOD/Faecal Coliform values or range and the corresponding scores as well as categorization of the monitoring location

Table 1. Observed Mean or Average BOD Value in mg/l and corresponding BOD Score

S. No	*Mean or Average* **BOD (Weightage-70 %)**	
	Mean or Average BOD (in mg/l)	**BOD Score (X)**
1	> 48	100
2	24-48	80
3	12-24	60
4	6-12	40
5	≤ 6	20

Table 2. Observed Mean or Average Faecal Coliform (in MPN/100 ml) and corresponding FC Score

S. No	**Mean or Average Faecal Coliform (Weightage -30 %)**	
	Mean or Average Faecal Coliform (in MPN/100 ml)	**FC Score (Y)**
(1)	> 5,00,000	100
(2)	5000 to 5,00,000	80
(3)	5000 to 50,000	60
(4)	500 to 5000	40
(5)	≤500	20

Table 3. Total Score and corresponding Category of River Monitoring Location

S. No	Total Score* (Z')	Category ~~Priority~~ Class of the Monitoring location	Category of Monitoring location
(1)	81-100	Category -I	Critically Polluted
(2)	61-80	Category--II	Severely Polluted
(3)	41-60	Category -III	Moderately Polluted
(4)	21-40	Category -IV	Less Polluted
(5)	≤ 20	Category -V	Good or Fit For Bathing

Note:

(i) Above criteria must be considered only for the river locations having monitored at least for 2 years and 8 observations in each year covering at least pre-monsoon and post-monsoon period;

(ii) *Above criteria is a preliminary screening criteria for categorizing monitoring locations. However, comprehensive assessment needs to be done by States/UTs to arrive at the extent of contamination;*

(iii) *Please refer to the procedure for estimation of Total Score given in S.No 3.;*

2.1 **Criteria for Category- I – Critically Polluted: -** If the Total score is 81-100, then the monitoring location is categorized as **'Critically Polluted'.**

2.2 **Criteria for Category- II – Severely Polluted: -** If the Total score is 61-80, then the monitoring location is categorized as **'Severely Polluted'**

2.3 **Criteria for Category- III-Moderately Polluted: -** If the Total score is 41-60, then the monitoring location is categorized as **'Moderately Polluted'**

2.4 **Criteria for Category-IV –Less Polluted: -** If the Total score is 21-40, then the monitoring location is categorized as **'Less Polluted'**.

2.5 **Criteria for Category -V-Good or Fit for Bathing:-**If the Total score is ≤ 20, then the monitoring location is categorized as **'Good or Fit for Bathing'.**

*For easy understanding, flow chart given in **Figure 4** and steps for calculating the total score may also be referred in the subsequent paras:-*

3. Steps for calculating total score and categorizing of monitoring location : -

(i) *Depending on the average BOD measured value, assign the BOD score (X) as given in **Table 1.***

(ii) *Similarly depending on the average FC measured value, assign the FC Score (Y) as given in **Table 2.***

(iii) *Total score **(Z)** is estimated as: BOD Score **(X)** **X** (Weightage of BOD i.e., 70 %) + FC Score **(Y)** **X** (Weightage for FC i.e., 30 %). and*

(iv) *Now compare calculated Total Score (Z) with the **Z'** Value given in the Table 3 and the monitoring location is categorized suitably.*

For easy understanding following examples may be referred in the subsequent paras.

E.g. (1): *At a particular monitoring location, the average values of BOD and the FC values are observed as 6 mg/l and 9000 MPN/100 ml respectively. Then, the total score is calculated as*

- *X is the BOD Score corresponding to the mean BOD value of 6 mg/l as per* ***Table 1*** *= 20*
- *Y is the FC Score corresponding to the average FC value of 9000 MPN/100 ml as per* ***Table 2*** *= 60*
- *Calculated Total Score* ***(Z)*** *=* ***X*** *X* ***Weightage of BOD*** *+* ***Y*** *X* ***Weightage of FC*** *i.e.,20 X 0.7 + 60 X 0.3 = 14 + 18= 32.*
- *Compare 39 value with the* ***Z'*** *values given in* ***Table 3*** *to decide on the ~~Priority~~ Category of the Monitoring Location. In this case, monitoring location is Category-IV i.e., 'Less Polluted',*

E.g.(2): *At a particular monitoring location, the average value of BOD and the FC values are observed as 2 mg/l and 45 MPN/100 ml respectively. Then, the total score is calculated as*

- *X is the BOD Score corresponding to the average BOD value of 2 mg/l as per* ***Table 1*** *= 20*
- *Y is the FC Score corresponding to the average FC value of 45 MPN/100 ml as per* ***Table 2*** *=20*
- *Calculated Total Score* ***(Z)*** *is calculated as =* ***X*** *X* ***Weightage of BOD*** *+* ***Y*** *X* ***Weightage of FC*** *i.e., 20 X 0.7 + 20 X 0.3 =20*
- *Compare 20 value with the* ***Z'*** *values given in* ***Table 3*** *to decide on the Category of the Monitoring Location. In this case, monitoring location is Category-V i.e., 'Good' or Fit for Bathing*

E.g. (3): *At a particular monitoring location, the average value of BOD and the FC values are observed as 2 mg/l and 550000 MPN/100 ml respectively. Then, the total score is calculated as*

- *X is the BOD Score corresponding to the average BOD value of 2 mg/l as per* ***Table 1*** *= 20*

- *Y is the FC Score corresponding to the average FC value of 550000 MPN/100 ml as per **Table 2** = 100*

- *Calculated Total Score **(Z)** = **X** X **Weightage of BOD** + **Y** X **Weightage of FC** i.e., 20 X 0.7 + 100 X 0.3 = 44.*

- *Compare 100 value with the **Z'** values given in **Table 3** to decide on the Category of the Monitoring Location. In this case, monitoring location is Category-III i.e., Moderately Polluted'*

E.g.(4): *At a particular monitoring location, the average value of BOD and the FC values are observed as 45 mg/l and 400 MPN/100 ml respectively. Then, the total score is calculated as*

- *X is the BOD Score corresponding to the average BOD value of 45 mg/l as per **Table 1** = 80*

- *Y is the FC Score corresponding to the average FC value of 400 MPN/100 ml as per **Table 2** = 20*

- *Calculated Total Score **(Z)** = **X** **X** **Weightage of BOD + Y X Weightage of FC** i.e., 80 X0.7 + 20 X 0.3 = 62.*

- *Compare 100 value with the **Z'** values given in **Table 3** to decide on the Category of the Monitoring Location. In this case, monitoring location is 'Category-II i.e., Severely Polluted'*

E.g (5): *At a particular monitoring location, the average values of BOD and the FC values are observed as 24 mg/l and 200000 MPN/100 ml respectively. Then, the total score is calculated as*

- *X is the BOD Score corresponding to the mean BOD value of 24 mg/l as per **Table 1** = 60*

- *Y is the FC Score corresponding to the average FC value of 200000 MPN/100 ml as per **Table 2** = 80*

- *Calculated Total Score **(Z)** = **X** X Weightage **of BOD** (70 %) + Y X **Weightage of FC** (30 %) i.e.,60 X 0.7 + 80 X 0.3 = 42 + 24= 66.*

- *Compare 90 value with the **Z'** values given in **Table 3** to decide on the Category of the Monitoring Location. In this case, monitoring location is Category-II i.e., 'Severely Polluted',*

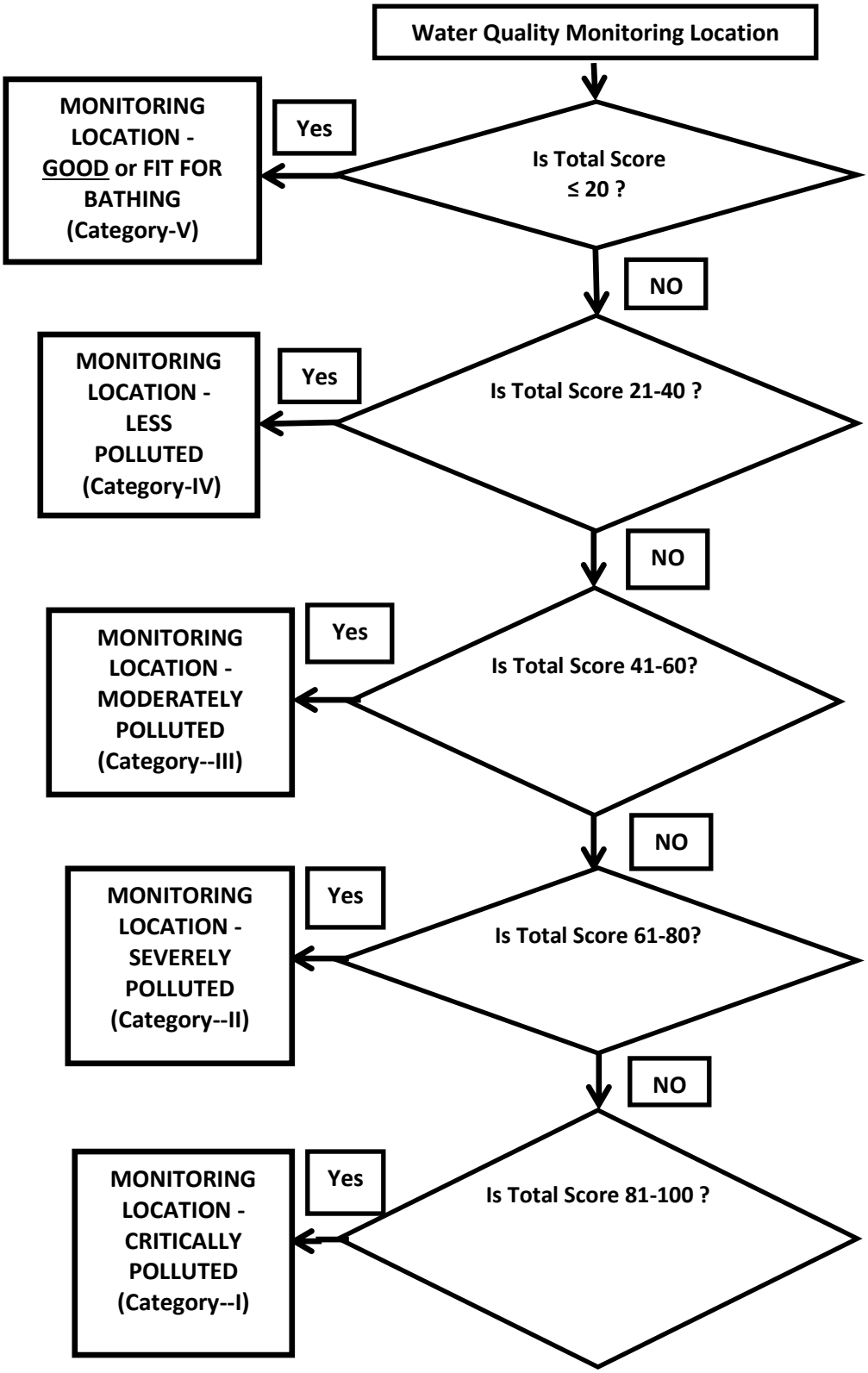

Figure 4. Flow Chart Showing Criteria for Categorization of River Monitoring Location