

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI**

**Original Application No. 673/2018**

**IN THE MATTER OF:**

**NEWS ITEM PUBLISHED IN 'THE HINDU' AUTHORED BY SHRI. JACOB KOSHY**

**Titled**

**"More river stretches are now critically polluted: CPCB"**

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**

**HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER**

**HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

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**DATED: 20<sup>TH</sup> SEPTEMBER, 2018.**

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**ORDER**

1. This application has been registered on the basis of a news item dated 17.09.2018 in "The Hindu" under the heading "More river stretches are now critically polluted: CPCB"<sup>1</sup>.
2. According to the news item, 351 polluted river stretches have been noted by the Central Pollution Control Board (CPCB). 117 such stretches are in the States of Assam, Gujarat, and Maharashtra. The CPCB has apprised the concerned States of the extent of pollution in the rivers. According to the news item, most polluted stretches are from Powai to Dharavi – with Biochemical Oxygen Demand (BOD) 250 mg/L; the Godavari - from Someshwar to Rahed – with BOD of 5.0-80 mg/L; the Sabarmati – Kheroj to Vautha – with BOD from 4.0-147 mg/L; and the Hindon – Saharanpur to Ghaziabad – with a BOD of 48-120 mg/L. The CPCB has a programme to monitor the quality of rivers by measuring BOD. BOD greater than or equal to 30mg/L is termed as 'Priority I', while that between 3.1-6 mg/L is 'Priority V'. The CPCB considers a BOD less than 3mg/L an indicator of a healthy river. In its 2015 Report<sup>2</sup>, the CPCB had identified 302 polluted stretches on 275 rivers, spanning 28 States and six Union Territories. The number of such stretches has now been found to be 351.

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<sup>1</sup> <https://www.thehindu.com/news/national/more-river-stretches-critically-polluted-cpcb/article24962440.ece>

<sup>2</sup> <http://cpcb.nic.in/cpcb/RESTORATION-OF-POLLUTED-RIVER-STRETCHES.pdf>

3. The question for consideration is whether any direction is necessary by this Tribunal, if river stretches are polluted as per the report of CPCB, which is a statutory body under the Water (Prevention and Control of Pollution) Act, 1974, (the Water Act).
4. The matter has been considered by the Hon'ble Supreme Court and this Tribunal in several cases to which reference will be made at appropriate place in the order. The matter was recently reviewed in a Chamber Meeting held on 10.09.2018 amongst all the Members of the Tribunal and the representatives of the CPCB, the Department of Water Resources, the Ministry of Environment, Forest & Climate Change, the Niti Ayog, the National Mission for Clean Ganga, Ministry of Housing and Urban Affairs, the representatives of the States of Maharashtra, Gujarat, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Bihar, Punjab, Uttar Pradesh, NCT of Delhi and the Union Territory of Daman & Diu. The object of the meeting was to discuss as to how the level of fitness for bathing in all the rivers must be achieved at the earliest. The Tribunal was open to consider the matter on judicial side. Accordingly, we proceed to consider the same in the light of inputs available in public domain.
5. There is no dispute with the proposition that the water is the lifeline for existence. Shortage of clean water is a matter of serious concern. Checking of pollution in the rivers is integrally linked not only to the availability of clean potable water but also to the protection of environment.
6. Article 48A of the Constitution casts a duty on the State to protect and improve the environment. Article 51A imposes a fundamental duty on every citizen to protect and improve the environment. The Stockholm Declaration (1972) recommended prevention of pollution by adopting the 'Precautionary Principle', the 'Polluter Pays Principle' and the principle of 'Sustainable Development'.
7. The Water Act was enacted to provide for prevention and control of water pollution. The Central and State Boards have been established under the said Act. The Act

prohibits use of any stream or well for disposal of polluting matter. Standards to be maintained can be laid down. The Parliament has passed the Environment (Protection) Act, 1986 to protect and improve the quality of environment. The Central Government is authorized to issue appropriate directions for protection of environment to the concerned authorities.

8. Considering the issue of pollution in River Ganga by the leather industry at Kanpur, the Hon'ble Supreme Court of India in *M.C. Mehta Vs. Union of India &Ors.*<sup>3</sup>, held that the discharge of the pollutants in Ganga could not be permitted directly or indirectly.

9. Again, in *M.C. Mehta Vs. Union of India &Ors.*<sup>4</sup>, directions to enforce the statutory provisions by the municipal bodies and the industries by stopping discharge of untreated sewage and effluents in River Ganga were issued. It was noted that the water pollution caused serious diseases, including Cholera and Typhoid. Water pollution could not be ignored and adequate measures for prevention and control are necessary. It was also observed that the educational institutions must teach atleast for one hour in a week lessons relating to protection and improvement of environment. Awareness should be created by organizing suitable awareness programs. In the same matter, the issue of Calcutta tanneries was considered in *M.C Mehta Vs. Union of India And Ors.*<sup>5</sup>, (*Calcutta Tanneries' Matter*). The tanneries were directed to be shifted by adopting the 'Precautionary Principle' so as to prevent discharge of effluents in the River Ganga.

10. Dealing with the control of pollution in river Pallar in Tamil Nadu, the Hon'ble Supreme Court in *Vellore Citizen' Welfare Forum Vs. Union of India*, (1996) 5 SSC 647 observed:

*"13. The Precautionary Principle and the Polluter Pays Principle have been accepted as part of the law of the land. Article 21 of the Constitution of India guarantees protection of life and personal liberty. Articles 47, 48-A and 51-A(g) of the Constitution are as under:*

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<sup>3</sup> (1987) 4 SCC 463 ¶14

<sup>4</sup> (1988) 1 SCC 471

<sup>5</sup> (1997) 2 SSC 411



*“47. Duty of the State to raise the level of nutrition and the standard of living and to improve public health.—The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health.*

*48-A. Protection and improvement of environment and safeguarding of forests and wildlife.—The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.*

*51-A. (g) to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.”*

*Apart from the constitutional mandate to protect and improve the environment there are plenty of post-independence legislations on the subject but more relevant enactments for our purpose are: the Water (Prevention and Control of Pollution) Act, 1974 (the Water Act), the Air (Prevention and Control of Pollution) Act, 1981 (the Air Act) and the Environment (Protection) Act, 1986 (the Environment Act). The Water Act provides for the constitution of the Central Pollution Control Board by the Central Government and the constitution of the State Pollution Control Boards by various State Governments in the country. The Boards function under the control of the Governments concerned. The Water Act prohibits the use of streams and wells for disposal of polluting matters. It also provides for restrictions on outlets and discharge of effluents without obtaining consent from the Board. Prosecution and penalties have been provided which include sentence of imprisonment. The Air Act provides that the Central Pollution Control Board and the State Pollution Control Boards constituted under the Water Act shall also perform the powers and functions under the Air Act. The main function of the Boards, under the Air Act, is to improve the quality of the air and to prevent, control and abate air pollution in the country. We shall deal with the Environment Act in the latter part of this judgment.*

*16. The constitutional and statutory provisions protect a person's right to fresh air, clean water and pollution-free environment, but the source of the right is the inalienable common law right of clean environment. It would be useful to quote a paragraph from Blackstone's commentaries on the Laws of England (Commentaries on the Laws of England of Sir William Blackstone) Vol. III, fourth edition published in 1876. Chapter XIII, "Of Nuisance" depicts the law on the subject in the following words:*

*“Also, if a person keeps his hogs, or other noisome animals, or allows filth to accumulate on his premises, so near the house of another, that the stench incommodes him and makes the air unwholesome, this is an injurious nuisance, as it tends to deprive him of the use and benefit of his house. A like injury is, if one's neighbour sets up and exercises any offensive trade; as a tanner's, a tallow-chandler's, or the like; for though these are lawful and necessary trades, yet they should be exercised in remote places; for the rule is, 'sic uteretur, ut alienum non leadas'; this therefore is an actionable nuisance. And on a similar principle a constant ringing of bells in one's immediate neighbourhood may be a nuisance.*

*... With regard to other corporeal hereditaments; it is a nuisance to stop or divert water that used to run to another's meadow or mill; to corrupt or poison a watercourse, by erecting a dye-house or a lime-pit, for the use of trade, in the upper part of the stream; to pollute a pond, from which another is entitled to water his cattle; to obstruct a drain; or in short to do any act in common property, that in its consequences must necessarily tend to the prejudice of one's neighbour. So closely does the law of England enforce that excellent rule of gospel-morality, of 'doing to others, as we would they should do unto ourselves'."*

11. The Central Government was directed to constitute an Authority under section 3 (3) of the Environment Act which can take measures to reverse the damage and recover the cost from the individuals responsible.

12. In *S. Jagannath Vs. Union of India &Ors.*<sup>6</sup>, effluents discharged by commercial shrimp culture farms were directed to be controlled. An authority was directed to be constituted headed by former Judge of the High Court to protect fragile coastal areas.

13. In the news item published in Hindustan Times titled "And Quiet Flows The Maily Yamuna"<sup>7</sup>, steps were directed to be taken to check pollution in river Yamuna.

14. In *Tirupur Dyeing Factory Owners Association Vs. Noyyal River Ayacutdars Protection Association &Ors.*<sup>8</sup>, directions were issued to check pollution in river Noyyal in the State of Tamil Nadu. A Committee headed by a former Judge of the High Court was appointed to assess the extent of damage and to identify the victims and based on the said report direction to cover damages and to stop pollution were issued by the High Court. Upholding the said directions, it was observed that if the pollution is not checked, the industrial activity has to be closed; cost for restoration has to be covered from those responsible for the pollution.

15. In spite of directions in several Judgments, discharge of untreated sewage and industrial effluents in rivers and water bodies is continuing at a large scale. Sewage treatment capacity is disproportionate to the sewage generated. Reports have

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<sup>6</sup> (1997) 2 SCC 87

<sup>7</sup>(2009) 17 SSC 720

<sup>8</sup> (2009) 9 SSC 737

found high level of Coliform in water bodies. According to some estimates, 75 to 80 % water is polluted in India. Number of polluted river stretches is on the increase. It is patent that statutory framework is inadequate or those who man the statutory authorities are not able to perform the duties assigned to them. This aspect has to be reviewed by the concerned Governments.

16. We may also refer to some of orders of this Tribunal on the subject.

17. In *Manoj Mishra Vs. Union of India*<sup>9</sup>, the Tribunal dealt with the pollution of river Yamuna in the light of directions of the Hon'ble Supreme Court. The Tribunal noted that right to clean and healthy environment was a Fundamental Right of the inhabitants. In violation of the said Right, the debris and solid waste were being dumped on the river bed. Encroachments have taken place, resulting in damage to the environment. Storm water drains which were polluted, were meeting the river at several points without being cleaned. The failure to manage extraction of ground water and diverting the river water for irrigation and other purposes beyond reasonable norms was resulting in obstructing the flow of the river. Dumping of untreated sewerage and industrial effluents was a major source of pollution.

18. An Expert Committee was appointed which suggested setting up of STPs to tackle this problem. It was seen that on account of pollution, vegetables grown in the area, irrigated by the polluted water were a health hazard and caused diseases like cancer. The Committee appointed by the Tribunal recommended that solid waste dump should be removed from the flood plains and construction activities on the flood plains should be stopped. All Settlements on the flood plains should be relocated. Construction of new barrages and roads, railways and metro bridges, and embankments and bunds should not be permitted. In exceptional cases, if it is permitted, a critical assessment of their potential impact should be assessed. Environmental clearance should be made necessary. High level of lead was found in 23% of the children as a result of pollution adversely affecting their health. The food crops were contaminated. The ground water was contaminated. Mercury

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<sup>9</sup> O.A. No. 6/2012, 2015 ALL(I) NGT REPORTER (1) (DELHI) 139



concentration was 200 times the standards on account of location of thermal power plant. The Faecal Coliform- bacteria were 30 times the standards. There was presence of high level of pesticides, heavy metals and other harmful matters in the vegetables/vegetation grown on the river bank.

19. Accordingly, the Tribunal issued several directions for cleaning the river and protecting the flood plains. The implementation of above directions was monitored from time to time in the last three years.

20. On 26.07.2018, the Tribunal recorded that there was a failure of the Administration in complying with the directions, even after more than three years, which made it necessary for the Tribunal to exercise power as an Executing Court under Section 25 of the National Green Tribunal Act, 2010. The Tribunal directed constitution of a two-member Monitoring Committee, comprising a former Chief Secretary of Delhi and a former Expert Member of the Tribunal so that the said Committee could prepare a time bound action plan and closely oversee the execution of the order of this Tribunal on a regular basis.

21. The Tribunal also dealt with the problem of level of pollution in river Ganga which is 2025 km. The two main sources of pollution, which were noted, are the industrial pollution and the municipal sewage. Apart from this, diversion of water and extraction of groundwater reduced the flow of the river which adversely affected its eco-system and vitality. The serious industrial pollution was caused by the leather industries at Jajmau, Kanpur and Unnao. The Tribunal considered the initiatives taken by the Central Government by way of Ganga Action Plan-I and Ganga Action Plan-II. It was also noted that the said initiatives had failed to bring about the desired results. The Tribunal disposed of the matter on 10.12.2015 with regard to Phase-I, Segment-A i.e. from Gaumukh to Haridwar. The rest of the matter was dealt with by subsequent Judgement dated 13.07.2017 in *M.C. Mehta Vs. Union of India*<sup>10</sup>.

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<sup>10</sup>O.A No. 200 of 2014, 2017 NGTR (3) PB 1

The directions issued by the Tribunal included regulation of dumping of municipal solid waste and other wastes, prevention and control of sewage and industrial effluents, encroachments of floodplains, regulation of diversion of water and extraction of groundwater, cleaning of the drains meeting the river Ganga, maintaining environmental flow of the river, checking constructions on floodplains, setting up of regulating or stopping industrial activity of polluting nature, checking mining activities and disposal of bio-medical and other wastes, etc.

22. The implementation of the above directions was taken up from time to time. It was found that inspite of huge expenditure already incurred and efforts of the Committees monitoring the directions of this Tribunal as well as initiatives of the Government authorities, the requisite result has not been achieved. The water did not meet the requisite standards. The Tribunal had to appoint a Committee headed by a former High Court Judge vide order dated 06.08.2018.

23. On an earlier date on 27.07.2018, the Tribunal directed that the results of tests of water samples at various locations should be displayed on the website of Central Pollution Control Board (CPCB). It was noted that water from Haridwar to Kanpur was unfit for drinking and with few exceptions, even unfit for bathing. There was dumping of Chromium at and around Jajmau and Kanpur. There was violation of provisions of the Water Act, 1974 requiring closing of industries and prosecution. The Tribunal hoped that at one point of time the red sign in the map which was displayed on the website of the CPCB will be converted to green with the improvement in water quality. Till then, the progress could not be held to be satisfactory.

24. On 13.07.2018, in *Mahendra Pandey Vs. Union of India &Ors.*<sup>11</sup>, pollution in river Ramganga was considered. River Ramganga is a tributary of River Ganga. It was found that in surface water samples, there was presence of heavy metals like Iron (Fe), Zinc (Zn), Copper (Cu) and Mercury (Hg). The level of Mercury was found above the screening levels (i.e. Indian Drinking Water standard). The stand of the

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<sup>11</sup>O.A. No. 58/2017



Uttar Pradesh Pollution Control Board was that there was difficulty in locating the site for construction of secured landfill. The Tribunal noted that the hazardous waste was required to be disposed of in a scientific manner. Illegal dumping of e-waste was required to be stopped. It was noted that pollution was being caused by electronic waste processing which was generating Milled Black Powder. This resulted in contamination of water with heavy metals.

25. On 24.07.2018 in *Sobha Singh &Ors. Vs. State of Punjab &Ors.*<sup>12</sup>, the Tribunal considered the issue of pollution of River Sutlej and River Beas. The pollution resulted in toxicity and accumulation of Chromium, Nickel, Zinc and pesticides. The polluted drains were found meeting River Sutlej. The untreated industrial waste as well as the domestic waste was being dumped without any adequate action being taken by the Pollution Control Boards. Failure to check pollution was established by various inspections. In spite of steps taken in four years, with almost fifty adjournments and the directions of the Tribunal, the situation did not improve as expected. Accordingly, the Tribunal constituted an Independent Monitoring Committee which included a social activist to oversee the execution of directions of the Tribunal.

26. On 31.07.2018 in *Nityanand Mishra Vs. State of M.P. &Ors.*<sup>13</sup>, pollution of Son river was considered. Illegal sand mining activity was found to be resulting in affecting the flow of the river. Construction of barrage and operation of industries were affecting the habitat and breeding of *Gharials*. The Tribunal issued directions to stop illegal pollution for protection of the river and the wildlife near the Bansagar Dam and constituted a Committee to oversee the compliance of the directions of the Tribunal.

27. As already noted, on 06.08.2018, after reviewing the progress in the matter of River Ganga and finding that the progress did not meet the expectations of the Tribunal, the Tribunal exercised its jurisdiction under Section 25 of the National Green Tribunal Act, 2010 and constituted a Monitoring Committee headed by a former

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<sup>12</sup>O.A.No. 101/2014

<sup>13</sup>O.A. No. 456/2018

Judge of the High Court to execute the directions already issued in a time bound manner. It was also observed that public education and public involvement were required to be considered.

28. On 07.08.2018 in “Stench Grips Mansa’s Sacred Ghaggar River (Suo-Moto Case)<sup>14</sup>”, this Tribunal considered pollution of river Ghaggar and failure of the authorities to check the same. The report of the Joint Inspection Committee showed that the pollution in the river was beyond the prescribed standards. There was failure on the part of the Pollution Boards in checking the pollution. In spite of several directions in the last four years by the Tribunal, the situation has not improved. The Tribunal directed that a Special Task Force (STF) must be constituted in every District and in every State. In a District, the STFs should comprise of District Magistrate, Superintendent of Police, Regional Officer of the State Pollution Control Boards in concerned District and one person to be nominated by the District Judge in every District in his capacity as Head of the District Legal Services Authority. At the State level, it was to comprise of the Chief Secretary, the Environment Secretary, the Secretary of Urban Development and Secretary of Local Bodies. The STFs were required to publish reports on the website. The Tribunal also constituted a Committee headed by a former Judge to oversee the compliance of the directions.

29. On 08.08.2018, in *Doaba Paryavaran Samiti Vs. State of U.P. & Ors.*<sup>15</sup>, pollution in river Hindon was the subject matter of consideration. The matter was taken up on the allegation that 71 persons in Baghpat district died and more than 1000 persons were affected by diseases on account of pollution. The Tribunal noted that there was contamination of groundwater on account of pollution caused by sugar, paper, distilleries and tannery industries. An inspection team, appointed by the Tribunal, found that 124 industries were causing pollution. It was noted that no punitive action has been initiated. The pollution caused included discharge of Mercury. The Tribunal observed that sources of contaminated water are required to be closed. The victims of diseases are required to be rehabilitated. A statement that there are

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<sup>14</sup>O.A. No. 138/2016 (T<sub>NHRC</sub>)

<sup>15</sup> O.A. No. 231/2014

302 river stretches in the country was noted and the CPCB was directed to identify atleast 10 most critical stretches and prepare an action plan, in similar format as that of river Hindon.<sup>16</sup> The directions issued by the Tribunal include making functionaries of the statutory authorities accountable for their failure, making potable water available, sources of contamination being closed, action plans being prepared at District, State and National levels for restoration of water quality and reversing the damage. The Committee headed by a former Judge of High Court was also constituted to oversee the execution of the directions.

30. On 17.08.2018, in *Arvind Pundalik Mhatre Vs. Ministry of Environment, Forest and Climate Change &Ors.*<sup>17</sup>, the matter of pollution of River Kasardi was considered and directions were issued to remedy the situation and the Tribunal appointed a Committee headed by a former Judge of the High Court to oversee the compliance of the directions.

31. On 23.08.2018 in *Meera Shukla Vs. Municipal Corporation, Gorakhpur &Ors.*<sup>18</sup>, pollution of Ramgarh Lake, Ami River, Rapti River and Rohani River in and around District Gorakhpur on account of discharge of untreated sewage and industrial effluents was considered. It was noted that there was no proper management of solid waste disposal, leading to vector borne diseases and health problems. The pollution was caused, inter-alia, by sugar industries and other factories. The underground water was contaminated with arsenic. In the year 2012, 557 persons died with encephalitis deaths. In the last 30 years, 50,000 people had died. A financial package of Rs. 4,000 crore was given by the Central Government to fight the said diseases but there is no proper utilization of the amount. Apart from the 557 death in Gorakhpur District, more deaths had taken place in the area as stated in the news report dated 16.07.2013. The total deaths reported were 1256 in the year 2012. The Tribunal accordingly directed necessary steps to be taken to remedy

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<sup>16</sup> Hindon action plan prepared by CPCB is explained in para 46

<sup>17</sup> O.A. No. 125/2018,

<sup>18</sup> O.A. No. 116/2014,



the situation and also appointed a Committee headed by a former Judge of the High Court to oversee the compliance of directions of the Tribunal.

32. On 24.08.2018, in *Amresh Singh Vs. Union of India &Ors.*<sup>19</sup>, the matter of pollution of the Chenab and Tawi Rivers was considered and directions were issued to remedy the situation which was to be overseen by a Committee headed by a former High Court Judge.

33. Similarly, in respect of river *Subarnarekha in Sudarsan Das Vs. State of West Bengal &Ors.*<sup>20</sup>, this Tribunal considered the matter and also appointed a Committee headed by a former Judge of the High Court to oversee the compliance of the directions.

34. There are instances of many other cases involving pollution of rivers which have come up for consideration before this Tribunal. It is not necessary to refer to all the cases.

35. We are of the view that the situation is far from satisfactory and action is required to be taken on war footing. Once statutory framework in the form of Water Act and the Environment Act is in place and the standards have been laid down by the Central Pollution Control Board, the matter cannot rest at ascertaining and identification of polluted stretches. There has to be meaningful further action to restore the minimum prescribed standards for all the rivers of the country. The polluter has to pay the cost of restoring the damage.

36. Without casting any aspersions on the statutory bodies, it is an acknowledged fact that the Pollution Control Boards have not been able to take adequate steps for keeping the standards of water within the prescribed limits. They have not been able to stop dumping of wastes, discharge of municipal or industrial effluents in rivers and water bodies. One of the reasons which has been frequently highlighted is the unsatisfactory manning of the Pollution Control Boards. This aspect was

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<sup>19</sup> Execution Application No. 32/2016 in O.A. No. 295/2016,

<sup>20</sup>O.A.No. 173 of 2018

considered by the Hon'ble Supreme Court in *TechiTagi Tara Vs. Rajendra Singh*

*Bhandari &Ors.* <sup>21</sup> as follows:

"33. Unfortunately, notwithstanding all these suggestions, recommendations and guidelines the SPCBs continue to be manned by persons who do not necessarily have the necessary expertise or professional experience to address the issues for which the SPCBs were established by law. The Tata Institute of Social Sciences in a Report published quite recently in 2013 titled "Environmental Regulatory Authorities in India: An Assessment of State Pollution Control Boards" had this to say about some of the appointments to the SPCBs: "An analysis of data collected from State Pollution Control Boards, however, gives a contrasting picture. It has been observed that time and again across state governments have not been able to choose a qualified, impartial, and politically neutral person of high standing to this crucial regulatory post. The recent appointments of chairpersons of various State Pollution Control Boards like Karnataka (A a senior BJP leader), Himachal Pradesh (B a Congress party leader and former MLA), Uttar Pradesh (C appointed on the recommendation of SP leader X), Arunachal Pradesh (D a sitting NCP party MLA), Manipur Pollution Control Board (E a sitting MLA), Maharashtra Pollution Control Board (F a former bureaucrat) are in blatant violation of the apex court guidelines. The apex court has recommended that the appointees should be qualified in the field of environment or should have special knowledge of the subject. It is unfortunate that in a democratic set up, key enterprises and boards are headed by bureaucrats for over a decade. In this connection, it is very important for State Governments to understand that filling a key regulatory post with the primary intention to reward an ex-official through his or her appointment upon retirement, to a position 9 Item Nos. 07-08 July 20, 2018 dv for which he or she may not possess the essential overall qualifications, does not do justice to the people of their own states and also staffs working in the State Pollution Control Boards. The primary lacuna with this kind of appointment was that it did not evoke any trust in the people that decisions taken by an ex-official of the State or a former political leader, appointed to this regulatory post through what appeared to be a totally non-transparent unilateral decision. Many senior environmental scientists and other officers of various State Pollution Control Boards have expressed their concern for appointing bureaucrats and political leader as Chairpersons who they feel not able to create a favourable atmosphere and an effective work culture in the functioning of the board. It has also been argued by various environmental groups that if the government is unable to find a competent person, then it should advertise the post, as has been done recently by states like Odisha. However, State Governments have been defending their decision to appoint bureaucrats to the post of Chairperson as they believe that the vast experience of IAS officers in handling responsibilities would be easy. Another major challenge has been appointing people without having any knowledge in this field. For example, the appointment of G with maximum qualification of Class X as Chairperson of State Pollution Control Board of Sikkim was clear violation of Water Pollution and Prevention Act, 1974."

34. The concern really is not one of a lack of professional expertise – there is plenty of it available in the country – but the lack of dedication and willingness to take advantage of the resources available and instead benefit someone close to the powers that be. With this couldn't care-less attitude, the environment and public trust are the immediate casualties. It is unlikely that with such an attitude, any substantive effort can be made to

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<sup>21</sup> (2018) 11 SCC 734

*tackle the issues of environment degradation and issues of pollution. Since the NGT was faced with this situation, we can appreciate its frustration at the scant regard for the law by some State Governments, but it is still necessary in such situations to exercise restraint as cautioned in State of U.P. v. Jeet S. Bisht.*

*35.. Keeping the above in mind, we are of the view that it would be appropriate, while setting aside the judgment and order of the NGT, to direct the Executive in all the States to frame appropriate guidelines or recruitment rules within six months, considering the institutional requirements of the SPCBs and the law laid down by statute, by this Court and as per the reports of various committees and authorities and ensure that suitable professionals and experts are appointed to the SPCBs. Any damage to the environment could be permanent and irreversible or at least long-lasting. Unless (2007) 6 SCC 586 corrective measures are taken at the earliest, the State Governments should not be surprised if petitions are filed against the State for the issuance of a writ of quo warranto in respect of the appointment of the Chairperson and members of the SPCBs. We make it clear that it is left open to public spirited individuals to move the appropriate High Court for the issuance of a writ of quo warranto if any person who does not meet the statutory or constitutional requirements is appointed as a Chairperson or a member of any SPCB or is presently continuing as such."*

37. This Tribunal also considered this matter in order dated 20.07.2018, in the case of *Satish Kumar vs. U.O.I &Ors.*,<sup>22</sup> and observed as follows:

*"Accordingly, we suggest that the Central Government as well as State Governments may appoint persons with judicial background to deal with the issues which may require the knowledge of legal and judicial system in the Pollution Control Boards and the local authorities. Such persons can also advise such bodies on manner of compliance of law so that such bodies can be saved from unnecessary litigation and charges of failure to comply with law.*

*24. Presence of a person with judicial background will help the Pollution Control Boards as well as local bodies to effectively discharge their administrative and judicial functions in an efficient manner. We are informed that in some of the Pollution Control Boards and Local Bodies, Judicial officers are already being engaged.*

*25. We thus call upon the Central Government and all the State Governments to take a call on this issue consistent with the observation of the Hon'ble Supreme Court in *Techi Tagi Tara (Supra)*"*

38. In order to do so, an officer of Superior Judicial Services may have to be taken on deputation by requesting the concerned High Court on the pattern of Law Secretaries of States.

39. As already noted, well known causes of pollution of rivers are dumping of untreated sewage and industrial waste, garbage, plastic waste, e-waste, bio-medical waste, municipal solid waste, diversion of river waters, encroachments of catchment areas and floodplains, over drawl of groundwater, river bank erosion on account of illegal sand mining. In spite of directions to install Effluent Treatment Plants (ETPs),

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<sup>22</sup>O.A No. 56 (T<sub>HC</sub>) of 2013



Common Effluent Treatment Plants (CETPs), Sewage Treatment Plants (STPs), and adopting other anti-pollution measures, satisfactory situation has not been achieved. Tough governance is the need of the hour. If pollution does not stop, the industry has to be stopped. If sewage dumping does not stop, locals have to be made accountable and their heads are to be prosecuted. Steps have to be taken for awareness and public involvement.

40. River Water is considered to be fit for bathing when it meets the criteria of having Bio-chemical Oxygen Demand (BOD) less than 3.0 mg/L, Dissolved Oxygen more than 5.0 mg/L and Faecal Coliform bacteria to be less than 500 MPN/100 ml.

41. According to the "Restoration of Polluted River Stretches- Concept & Plan" published by CPCB in January, 2018, 30,042 million litres per day (MLD) of domestic sewage is generated from urban areas along the polluted river stretches. The installed sewage treatment capacity is about 16,846 MLD, leaving a gap of about 13,196 MLD (43.9%). There is a large gap in sewage treatment capacity and generation of sewage in urban areas.

42. As already noted, according to latest assessment by the CPCB, there are 351 polluted river stretches in India i.e. where the BOD content is more than 3mg/L. The plan of CPCB is to target enhancement of river flow. The plan for restoration of polluted river stretches is proposed to be executed through two-fold concepts. One concept is to target enhancement of river flow through interventions on the water sheds/catchment areas for conservation and recharge of rain water for subsequent releases during lean flow period in a year. This concept will work on dilution of pollutants in the rivers and streams to reduce concentration to meet desired level of water quality. Other concept is of regulation and enforcement of standards in conjunction with the available flow in rivers /streams and allocation of discharges with stipulated norms.

43. The water quality assessment of aquatic resources by CPCB, on long term basis, has provided information on the segments of rivers that are not meeting water quality

criteria and have been identified as polluted. Assessment studies carried out on the sources of Restoration of Polluted River Stretches pollution in the rivers has highlighted the need for creation of infrastructure facilities (STPs /CETPs/ETPs) for management of wastewater in line with low flow or no flow of fresh water in the rivers and streams. In order to have a practical solution to augment non-monsoon availability of water, CPCB has suggested four phases for full scale water shed management in the upper reaches of catchment of the rivers and streams. The suggested phases for water shed management may be (a) Recognition phase (b) Restoration phase (c) Protection phase (d) Improvement phase.

(a) Recognition Phase is identification and recognition of the problem, analysis of the cause of the problem and its effect and development of alternative solutions of problem.

(b) Restoration Phase includes two main steps viz. selection of best solution to problems identified and application of the solution to the problems of the land.

(c) Protection Phase takes care of the general health of the watershed and ensures normal functioning. The protection is against all factors, which may cause deterioration in watershed condition.

(d) Improvement Phase deals with overall improvement in the watershed and all land is covered.

44. Attention is paid to agriculture and forest management and production, forage production and pasture management, socio-economic conditions to achieve the objectives of watershed management.

45. The river action plans are designed for control of pollution and to restore the water quality of the rivers. The infrastructure development for treatment of sewage always remains short of the waste water generation. The ever growing population and increasing water use in the urban centres has outpaced the plan for creation of infrastructure. The river action plans although have not improved the quality of the

water resources, however in absence of such plans, the quality of aquatic resources would have been further deteriorated.

46. River Hindon has been taken up as a model for preparation of action plan for restoration of water quality.<sup>23</sup> Salient features of the Action Plan are:

- i. Execution of field surveys to assess pollution load generated by industries and sewage generated in a city or town discharging sewage and trade effluent into river Hindon and its tributaries.
- ii. Collating water quality monitoring data of Hindon and its tributaries and assigning the class as per primary water quality criteria.
- iii. Water quality assessment of river in context of sewage/industrial drain outfalls with dilution and distance factors.
- iv. Laying time-limes for regulating industrial pollution control by ensuring consent compliance and closing the defaulting industries till they comply with the norms stipulated to them.
- v. Setting up of STPs in towns located in the river catchment and emphasis on utilization of treated sewage.
- vi. Adopting water conservation practices, ground water regulation, flood plain zone management and maintaining environmental flow.

47. The polluted river stretches have been divided in five priority categories i.e., I, II, III, IV, V depending upon the level of BOD. Following are the parameters for assessing the criteria:

**I. Criteria for Priority I**

- (a) Monitoring locations exceeding BOD concentration 30 mg/L has been considered as it is the standard of sewage treatment plant and in river it appears without dilution.(River locations having water quality exceeding discharge standards for BOD to fresh water sources)
- (b) All monitoring locations exceeding BOD concentration 6 mg/L on all occasions.
- (c) Monitoring locations exceeding 3 mg/L BOD are not meeting desired water quality criteria but does not affect to Dissolved

<sup>23</sup> <http://cpcb.nic.in/NGT/CPCB-Reply-Affidavit-Report-on-Hindon-Action-Plan.pdf>



Oxygen level in water bodies. If BOD exceeds 6mg/L in water body, the Dissolved Oxygen is reduced below desired levels.

- (d) The raw water having BOD levels upto 5 mg/L are does not form complex chemicals on chlorination for municipal water supplies. Hence the water bodies having BOD more than 6 mg/L are considered as polluted and identified for remedial action.

## II. Criteria for Priority II

- (a) Monitoring locations having BOD between 20-30 mg/L.  
 (b) All monitoring locations exceeding BOD concentration 6 mg/L on all occasions.

## III. Criteria for Priority III

- (a) Monitoring locations having BOD between 10-20 mg/L.  
 (b) All monitoring locations exceeding BOD concentration 6 mg/L on all occasions.

## IV. Criteria for Priority IV

- (a) Monitoring locations having BOD between 6-10 mg/L.

## V. Criteria for Priority V

- (a) Monitoring locations having BOD between 3-6 mg/l.  
 (b) The locations exceeding desired water quality of 3mg/l BOD.

| Polluted River Stretches- State wise-Priority wise |   |    |     |    |    |             |
|--|---|----|-----|----|----|-------------|
| STATE  | I | II | III | IV | V  | Grand Total |
| ANDHRA PRADESH                                     |   |    |     | 2  | 3  | 5           |
| ASSAM  | 3 | 1  | 4   | 3  | 33 | 44          |
| BIHAR  |   |    | 1   |    | 5  | 6           |
| CHHATTISGARH                                       |   |    |     | 4  | 1  | 5           |
| DAMAN, DIU AND DADRA<br>NAGAR HAVELI               | 1 |    |     |    |    | 1           |
| DELHI  | 1 |    |     |    |    | 1           |
| GOA  |   |    | 1   | 2  | 8  | 11          |
| GUJARAT  | 5 | 1  | 2   | 6  | 6  | 20          |
| HARYANA  | 2 |    |     |    |    | 2           |
| HIMACHAL PRADESH                                   | 1 | 1  | 1   |    | 4  | 7           |
| JAMMU & KASHMIR                                    |   | 1  | 2   | 2  | 4  | 9           |
| JHARKHAND  |   |    |     | 3  | 4  | 7           |
| KARNATAKA  |   |    | 4   | 7  | 6  | 17          |
| KERALA   | 1 |    |     | 5  | 15 | 21          |
| MADHYA PRADESH                                     | 3 | 1  | 1   | 3  | 14 | 22          |
| MAHARASHTRA  | 9 | 6  | 14  | 10 | 14 | 53          |
| MANIPUR  |   | 1  |     |    | 8  | 9           |
| MEGHALAYA  | 2 |    |     | 3  | 2  | 7           |
| MIZORAM  |   |    | 1   | 3  | 5  | 9           |
| NAGALAND   | 1 |    | 1   | 2  | 2  | 6           |
| ODISHA   | 1 |    | 3   | 2  | 13 | 19          |
| PUDUCHERRY   |   |    |     | 1  | 1  | 2           |

|                    |           |           |           |           |            |            |
|--------------------|-----------|-----------|-----------|-----------|------------|------------|
| PUNJAB             | 2         |           |           | 1         | 1          | 4          |
| RAJASTHAN          |           |           | 1         |           | 1          | 2          |
| SIKKIM             |           |           |           |           | 4          | 4          |
| TAMIL NADU         | 4         |           |           | 1         | 1          | 6          |
| TELANGANA          | 1         | 2         | 2         | 2         | 1          | 8          |
| TRIPURA            |           |           |           |           | 6          | 6          |
| UTTAR PRADESH      | 4         |           | 1         | 2         | 5          | 12         |
| UTTARAKHAND        | 3         | 1         | 1         | 4         |            | 9          |
| WEST BENGAL        | 1         | 1         | 3         | 4         | 8          | 17         |
| <b>Grand Total</b> | <b>45</b> | <b>16</b> | <b>43</b> | <b>72</b> | <b>175</b> | <b>351</b> |

| Polluted River Stretches- Priority I & Priority II |             |                                     |                                   |          |
|--|-------------|-------------------------------------|-----------------------------------|----------|
| STATE  | RIVER NAME  | RIVER STRETCH                       | BOD RANGE/<br>MAX VALUE<br>(mg/L) | PRIORITY |
| ASSAM  | BHARALU     | GUWAHATI TO CHILARAI NAGAR          | 52.0                              | I        |
|  | BORSOLA     | ALONG SARABBHATTI, GUWAHATI         | 34.0                              | I        |
|  | SILSAKO     | ALONG CHACHAL, GUWAHATI             | 34.0                              | I        |
|  | SORUSOLA    | ALONG PALTAN BAZAR, GUWAHATI        | 30.0                              | II       |
| DAMAN, DIU AND DADRA NAGAR HAVELI                  | DAMANGANGA  | SILVASSA TO DAMAN JETTY, MOTI DAMAN | 10 - 80                           | I        |
| DELHI  | YAMUNA      | WAZIRABAD TO ASGARPUR               | 9 - 80                            | I        |
| GUJARAT  | AMLAKHADI   | PUNGUM TO BHARUCH                   | 40 - 45                           | I        |
|  | BHADAR      | JETPUR VILLAGE TO SARAN VILLAGE     | 426.0                             | I        |
|  | BHOGAVO     | SURENDRANAGAR TO NANA KERALA        | 67.0                              | I        |
|  | KHARI       | LALI VILLAGE TO KASHIPURA           | 235.0                             | I        |
|  | SABARMATI   | KHEROJ TO VAUTHA                    | 4 - 147                           | I        |
|  | VISHWAMITRI | VADODARA TO ASOD                    | 6 - 21                            | II       |
| HARYANA  | GHAGGAR     | RORKI TO SIRSA                      | 6 - 482                           | I        |
|  | YAMUNA      | PANIPAT TO SONEPAT                  | 4 - 55                            | I        |
| HIMACHAL PRADESH                                   | SUKHANA     | SUKHNA TO PARWANOO                  | 54.0                              | I        |
|  | MARKANDA    | KALA AMB TO NARAYANPUR              | 3.2 - 24                          | II       |
| JAMMU & KASHMIR                                    | DEVIKA      | GURU RAVIDAS TEMPLE TO NAINSU       | 3.4-22                            | II       |
| KERALA   | KARAMANA    | MALEKKDU TO THIRUVALLAM             | 56.0                              | I        |
| MADHYA PRADESH                                     | CHAMBAL     | NAGDA TO RAMPURA                    | 12 - 80                           | I        |
|  | KHAN        | KABIT KHEDI TO KHAJRANA             | 30.8 - 80                         | I        |
|  | KSHIPRA     | SIDDHAWAT TO TRIVENISANGAM          | 4 - 38                            | I        |
|  | BETWA       | MANDIDEEP TO VIDISHA                | 3.3 - 20.2                        | II       |
| MAHARASHTRA  | GODAVARI    | SOMESHWAR TEMPLE TO RAHED           | 5.0-88                            | I        |
|  | KALU        | ALONG ATALE VILLAGE                 | 75.0                              | I        |
|  | KUNDALIKA   | SALAV TO ROHA                       | 3.8-65                            | I        |
|  | MITHI       | POWAI TO                            | 250.0                             | I        |

|               |                 |  |           |    |
|---------------|-----------------|--|-----------|----|
|               |                 | DHARAVI  |           |    |
|               | MORNA           | AKOLA TO TAKALIJALAM                                 | 52.8      | I  |
|               | MULA            | BOPODI TO AUNDH GAON                                 | 33-35     | I  |
|               | MUTHA           | SHIVAJI NAGAR TO KHADAKWASLA DAM                     | 5.0-42.5  | I  |
|               | NIRA            | SANGAVI TO SHINDEWADI                                | 12.5-35   | I  |
|               | VEL             | NHAVARE TO SHIKARPUR                                 | 30.2      | I  |
|               | BHIMA           | VITHALWADI TO TAKLI                                  | 8.0-22.0  | II |
|               | INDRAYANI       | MOSHIGAON TO ALANDIGAON                              | 12.5-22   | II |
|               | MULA-MUTHA      | THEUR TO MUNDHWA BRIDGE                              | 14-22     | II |
|               | PAWANA          | DAPODI TO RAVET                                      | 15.5-24   | II |
|               | WAINGANGA       | TUMSA TO ASHTI                                       | 10.4-22.4 | II |
|               | WARDHA          | GHUGHUS TO RAJURA                                    | 7.0-22.0  | II |
| MANIPUR       | NAMBUL          | SINGDA DAM TO BISHNUPUR                              | 3.6-23.7  | II |
| MEGHALAYA     | UMKHAHRAH       | MAWLAI TO SHILLONG                                   | 30-90.2   | I  |
|               | UMSHYRPI        | UMSHYRPI BRIDGE TO DHANKETI                          | 38.5-95.0 | I  |
| NAGALAND      | DHANSIRI        | CHECK GATE TO DIPHU BDG                              | 7.0-50.0  | I  |
| ODISHA        | GANGUA          | D/S BHUWANESHWAR                                     | 14-39     | I  |
| PUNJAB        | GHAGGAR         | SARDULGARH TO MUBARAKPUR                             | 9.0-380   | I  |
|               | SATLUJ          | RUPNAGAR TO HARIKA BRIDGE                            | 3.8-108   | I  |
| TAMIL NADU    | CAUVERY         | METTUR TO MAYILADUTHURAI                             | 3.3-32    | I  |
|               | SARABANGA       | THATHAYAMPATTI TO T.KONAGAPADI                       | 78.0      | I  |
|               | THIRUMANIMUTHAR | SALEM TO PAPPARAPATTI                                | 190.0     | I  |
|               | VASISTA         | MANIVILUNDHAN TO THIYAGANUR                          | 675.0     | I  |
| TELANGANA     | MUSI            | HYDRABAD TO NALGONDA                                 | 4.0-60.0  | I  |
|               | MANJEERA        | GOWDICHARLA TO NAKKAVAGU                             | 5.0-26    | II |
|               | NAKKAVAGU       | GANDILACHAPET TO SEVALAL THANDA                      | 26.0      | II |
| UTTAR PRADESH | HINDON          | SAHARANPUR TO GHAZIABAD                              | 48-120    | I  |
|               | KALINADI        | MUZAFFAR NAGAR TO GULAOTHI TOWN                      | 8 - 78    | I  |
|               | VARUNA          | RAMESHWAR TO CONF WITH GANGA, VARANASI               | 4.5-45.2  | I  |
|               | YAMUNA          | ASGARPUR TO ETAWAH SHAHPUR TO ALLAHABAD (BALUA GHAT) | 12.0-55   | I  |
| UTTARAKHAND   | BHELA           | KASHIPUR TO RAJPURA ATNDA                            | 6.0-76.0  | I  |
|               | DHELA           | KASHIPUR TO GARHUWALA, THAKURDWARA                   | 12 - 80   | I  |
|               | SUSWA           | MOTHROWALA TO RAIWALA                                | 37.0      | I  |
|               | KICHHA          | ALONG KICHHA   | 28.0      | II |
| WEST BENGAL   | VINDHADHARI     | HAROA BRIDGE TO MALANCHA BURNING GHAT                | 26.7-45.0 | I  |
|               | MAHANANDA       | SILIGURI TO BINAGURI                                 | 6.5-25    | II |



| Polluted River Stretches- Priority III, IV & V |                         |  |                                   |          |
|--|-------------------------|--|-----------------------------------|----------|
| STATE  | RIVER NAME              | RIVER STRETCH                          | BOD RANGE/<br>MAX VALUE<br>(mg/L) | PRIORITY |
| ANDHRA PRADESH                                 | KUNDU                   | NANDYAL TO MADDURU                     | 7.7                               | IV       |
|  | TUNGABHADRA             | MANTHRALAYAM TO BAVAPURAM              | 3.2 - 6.7                         | IV       |
|  | GODAVARI                | RAYANPETA TO RAJAHMUNDRI               | 3.1 - 3.4                         | V        |
|  | KRISHNA                 | AMRAVATHI TO HAMSALA DEEVI             | 3.2                               | V        |
|  | NAGAVALI                | ALONG THOTAPALLI                       | 3.2                               | V        |
| ASSAM  | DEEPAR BILL             | DEEPAR BILL TO GUWAHATI                | 10.6                              | III      |
|  | DIGBOI                  | LAKHIPATHE, RESERVE FOREST             | 14.0                              | III      |
|  | KAMALPUR                | ALONG KAMALPUR                         | 18.6                              | III      |
|  | PANCHNAI                | ORANG TO BORSALA                       | 11.4                              | III      |
|  | BRAHAMPUTRA             | KHERGHAT TO DHUBRI                     | 3.2 - 6.4                         | IV       |
|  | KHARSANG                | ASSAM-ARUNANCHAL BORDER TO LONGTOM-1   | 7.2                               | IV       |
|  | PAGLDIA                 | NALBARI TO KHUDRA SANKARA              | 8.2                               | IV       |
|  | BARAK                   | PANCHGRAM TO SILCHAR                   | 3.5 - 4.2                         | V        |
|  | BAROI                   | DOWNSTREAM OF BRIDGE AT NH-52          | 3.6                               | V        |
|  | BEGA                    | ALONG MANGALDOI                        | 4.5                               | V        |
|  | BEKI                    | BARPETA ROAD TO JYOTI GAON             | 3.5                               | V        |
|  | BHOGDOI                 | JORHAT TO DULIAGAON                    | 4.5                               | V        |
|  | BOGINADI                | LAKHIMPUR TO DIBRUGARH                 | 4.2                               | V        |
|  | BORBEEL                 | ALONG RAMNAGAR, DIGBOI                 | 3.8                               | V        |
|  | BORDOIBAM BEELMUKH      | ALONG BEELMUKH BIRD SANCTUARY, DHEMAJI | 5.2                               | V        |
|  | BURHIDIHING             | MARGHERITA TO TINSUKIA                 | 4 - 4.6                           | V        |
|  | DHANSIRI                | GOLAGHAT TO KATHKETIA                  | 4.3 - 5.6                         | V        |
|  | DIKHOW                  | NAGINI MORA TO DIKHOMUKH               | 3.2                               | V        |
|  | DIKRONG                 | ALONG BANDARDEWA                       | 3.2                               | V        |
|  | DIPLAI                  | ALONG SILGARA, KOKRAJHAR               | 3.2                               | V        |
|  | DISANG                  | DILLIGHAT TO GUNDAMGHAT                | 4.2                               | V        |
|  | GABHARU                 | ALONG TUMIUKI, SONITPUR                | 5.4                               | V        |
|  | HOLUDUNGA               | ALONG SOMARAJAN, DHEMA JI              | 4.8                               | V        |
|  | Jai Bharali             | ALONG SONITPUR                         | 3.1                               | V        |
|  | JHANJI                  | JORHAT TO CHAWDANG                     | 3.8                               | V        |
|  | KALONG                  | NAGAON TO MORI KALONG                  | 3.7 - 4.3                         | V        |
|  | KAPILI                  | NAGAON TO KAMPUR TOWN                  | 5.5                               | V        |
|  | KILLING                 | ALONG MOREGAON                         | 5.8                               | V        |
|  | KOHORA                  | KOHORA TO MOHPARA                      | 4.4                               | V        |
|  | KULSI                   | ALONG CHAYGAON                         | 3.6                               | V        |
| MALINI   | ALONG RAMNAGAR, SILCHAR | 5.3                                    | V                                 |          |
| MORA BHARALI                                   | ALONG TEZPUR            | 5.2                                    | V                                 |          |

|                                       |               |                                  |                        |      |
|---------------------------------------|---------------|----------------------------------|------------------------|------|
|                                       | PARASHALI     | ALONG DEMORIA                    | 4.0                    | V    |
|                                       | PUTHIMARI     | ALONG PUTHIMARI                  | 4.8                    | V    |
|                                       | RANGA         | ALONG GERAMUKH                   | 3.8                    | V    |
|                                       | SAMAGURI      | ALONG SAMAGURI,<br>NAGAON        | 4.0                    | V    |
|                                       | SANKOSH       | ALONG GOLAKGANJ                  | 3.3                    | V    |
|                                       | SON           | ALONG DEODHAR,<br>KARIMGANJ      | 4.3                    | V    |
|                                       | SONAI         | SONAI TO DAKSHIN<br>MOHANPUR     | 4.4                    | V    |
|                                       | TENGA PUKHURI | ALONG<br>KUKURACHOWA<br>GAON     | 4.0                    | V    |
| BIHAR                                 | SIRSIA        | RUXOL TO KOIREA<br>TOLA (RAXAUL) | 20.0                   | III  |
|                                       | FARMAR        | ALONG JOGBANI                    | 3.6                    | V    |
|                                       | GANGA         | BUXAR TO<br>BHAGALPUR            | 3.2 - 4.2              | V    |
|                                       | POONPUN       | GAURICHAK TO<br>FATUHA           | 3.3                    | V    |
|                                       | RAM REKHA     | HARINAGAR TO<br>RAMNAGAR         | 5.0                    | V    |
|                                       | SIKRAHNA      | ALONG<br>NARKATIAGANJ            | 4.5                    | V    |
| CHHATTISGARH                          | HASDEO        | KORBA TO URG                     | 3.6 - 7                | IV   |
|                                       | KHAROON       | BUNDRI TO RAIPUR                 | 3.3 - 7.2              | IV   |
|                                       | MAHANADI      | ARRANG TO SIHAWA                 | 3.3 - 8                | IV   |
|                                       | SEONATH       | SHIMGA TO BEMTA                  | 3.4 - 8.4              | IV   |
|                                       | KELO          | RAIGARH TO<br>KANAKTORA          | 3.8                    | V    |
| GOA                                   | SAL           | KHAREBAND TO<br>MOBOR            | 4.2 - 16.8             | III  |
|                                       | MANDOVI       | MARCELA TO VOLVOI                | 3.3 - 6.2              | IV   |
|                                       | TALPONA       | ALONG CANACONA                   | 6.8                    | IV   |
|                                       | ASSONORA      | ASSONORA TO<br>SIRSAIM           | 3.3                    | V    |
|                                       | BICHOLIM      | BICHOLIM TO<br>CURCHIREM         | 4.8                    | V    |
|                                       | CHAPORA       | PERNEM TO MORJIM                 | 3.5 - 5.2              | V    |
|                                       | KHANDEPAR     | PONDA TO OPA                     | 3.4                    | V    |
|                                       | SINQUERIM     | ALONG CANDOLIM                   | 3.6                    | V    |
|                                       | TIRACOL       | ALONG TIRACOL                    | 3.9                    | V    |
|                                       | VALVANT       | SANKLI - BICHOLIM<br>TO PORIEM   | 4.3                    | V    |
|                                       | ZUARI         | CURCHOREM TO<br>MADKAI           | 3.2 - 5.1              | V    |
|                                       | GUJARAT       | DHADAR                           | KHOTDA TO<br>CHANDPURA | 16.0 |
| TRIVENI                               |               | TRIVENI SANGAM TO<br>BADALPARA   | 11.0                   | III  |
| AMRAVATI<br>(TRIBUTARY OF<br>NARMADA) |               | ALONG DADHAL,<br>ANKALESHWAR     | 10.0                   | IV   |
| DAMANGANGA                            |               | KACHIGAON TO VAPI                | 8.0                    | IV   |
| KOLAK                                 |               | KIKARLA TO SALVAV                | 8.0                    | IV   |
| MAHI                                  |               | SEVALIA TO<br>BAHADARPUR         | 4.5 - 7                | IV   |
| SHEDHI                                |               | DHAMOD TO KHEDA                  | 9.0                    | IV   |
| TAPI                                  |               | KHADOD (BARDOLI)<br>TO SURAT     | 8.0                    | IV   |
| ANAS                                  |               | DAHOD TO<br>FATEHPURA            | 5.0                    | V    |
| BALEHWAR KHADI                        |               | PANDESARA TO<br>KAPLETHA         | 4.0                    | V    |
| KIM                                   |               | SAHOL BRIDGE TO<br>HANSOL        | 3.1                    | V    |
| MESHA                                 |               | ALONG SHAMLAJI                   | 4.0                    | V    |
| MINDHOLA                              |               | ALONG SACHIN                     | 6.0                    | V    |
| NARMADA                               |               | GARUDESHWAR TO<br>BHARUCH        | 5.0                    | V    |
| HIMACHAL<br>PRADESH                   | SIRSA         | NALAGARH TO SOLAN                | 8 - 16                 | III  |
|                                       | ASHWANI       | ALONG YASHWANT<br>NAGAR          | 3.2                    | V    |
|                                       | BEAS          | KULLU TO<br>DEHRAGOPIPUR         | 6.0                    | V    |

|                 |                       |  |            |     |
|-----------------|-----------------------|--|------------|-----|
|                 | GIRI                  | ALONG SAINJ  | 4.4 - 6    | V   |
|                 | PABBAR                | ALONG ROHRU  | 3.6 - 4    | V   |
| JAMMU & KASHMIR | BANGANGA              | PONY SHED TO BATHING GHAT                                    | 6 - 14     | III |
|                 | CHUNT KOL             | MAULANA AZAD BRIDGE TO KANIKADAL                             | 14.5       | III |
|                 | GAWKADAL              | GAWKADAL BRIDGE TO NOHATA                                    | 9.0        | IV  |
|                 | TAWI                  | SURAJNAGAR TO BELICHARANA                                    | 5 - 8.3    | IV  |
|                 | BASANTER              | SAMBA TO CHAKMANGARAKWAL                                     | 5 - 6      | V   |
|                 | CHENAB                | JAL PATAN TO PARGAWAL  | 5.0        | V   |
|                 | JHELAM                | CHATTABAL WEIR TO ANANTNAG                                   | 3.2 - 5.5  | V   |
|                 | SINDH                 | ALONG DUDERHAMA  | 3.7        | V   |
| JHARKHAND       | GARGA                 | ALONG TALMUCHU   | 6.2        | IV  |
|                 | SANKH                 | KONGSERABASAR TO BOLBA                                       | 8.4        | IV  |
|                 | SUBARNAREKHA          | HATIA DAM TO JAMSHEDPUR                                      | 3.4 - 10   | IV  |
|                 | DAMODAR               | PHUSRO ROAD BDG TO TURIO                                     | 3.9        | V   |
|                 | JUMAR                 | KANKE DAM TO KADAL   | 3.3        | V   |
|                 | KONAR                 | ALONG TILAYA AND KONAR                                       | 3.4 - 3.6  | V   |
|                 | NALKARI               | ALONG PATRATU  | 3.8        | V   |
| KARNATAKA       | ARKAVATHI             | HALLI RESERVOIR TO KANAKAPURA TOWN                           | 14.0       | III |
|                 | LAKSHMANTIRTHA        | KATTEMALAVADI TO HUNSUR                                      | 7.1 - 12.4 | III |
|                 | MALPRBHA              | KHANAPUR TO DHARWAD  | 7.3 - 17.3 | III |
|                 | TUNGABHADRA           | HARIHAR TO KORLAHALLI  | 4 - 19     | III |
|                 | BHADRA                | HOLEHUNNUR TO BHADRAVATHI                                    | 5.5 - 7.8  | IV  |
|                 | CAUVERY               | RANGANATHITTU TO SATHYAMANGALAM BRIDGE                       | 3.1 - 6.7  | IV  |
|                 | KABINI                | NANJANAGUD TO HEJJIGE  | 3.6 - 6.5  | IV  |
|                 | KAGINA                | SHAHABAD TO HONGUNTA   | 4.6 - 7.4  | IV  |
|                 | KALI                  | HASAN MAAD (WEST COAST PAPER MILL) TO BOMMANAHALLI RESERVOIR | 6.5        | IV  |
|                 | KRISHNA               | YADURWADI TO TINTINI BRIDGE                                  | 3.1 - 6.2  | IV  |
|                 | SHIMSHA               | YEDIYAR TO HALAGUR   | 4 - 10     | IV  |
|                 | ASANGI NALLA          | ALONG ASANGI   | 4.4        | V   |
|                 | BHIMA                 | GHANAPUR TO YADGIR   | 3.3 - 6    | V   |
|                 | KUMARDHARA            | ALONG UPPINANGADI  | 4.0        | V   |
|                 | NETRAVATHI            | UPPINANGADI TO MANGALURU                                     | 4.0        | V   |
| TUNGA           | SHIVAMOGA TO KUDLI    | 4.3  | V          |     |
| YAGACHI         | ALONG YAGACHI, HASSAN | 4.0  | V          |     |
| KERALA          | BHARATHAPUZHA         | ALONG PATAMBI  | 6.6        | IV  |
|                 | KADAMBAYAR            | MANCKAKADAVU TO BRAHMAPURAM                                  | 5.9 - 6.4  | IV  |
|                 | KEECHERI              | PULIYANNOR TO KECHERY  | 6.4        | IV  |
|                 | MANIMALA              | KALLOOPARA TO THONDRA  | 6.3 - 6.4  | IV  |
|                 | PAMBA                 | MANNAR TO THAKAZHY   | 3.3 - 7.8  | IV  |
|                 | BHAVANI               | ALONG ELACHIVAZHY  | 5.4        | V   |
|                 | CHITRAPUZHA           | IRUMPANAM TO KARINGACHIRA                                    | 4.6        | V   |



|                   |                            |  |           |     |
|-------------------|----------------------------|--|-----------|-----|
|                   | KADALUNDY                  | ALONG<br>HAJIRAPPALLY/<br>HAJIYARPALLI     | 3.6       | V   |
|                   | KALLAI                     | THEKEPURAM TO<br>ARAKKINAR                 | 4.5       | V   |
|                   | KARUVANNUR                 | ALONG KARUVANNUR                           | 3.5       | V   |
|                   | KAVVAI                     | ALONG KAVVAI                               | 3.9       | V   |
|                   | KUPPAM                     | THALIPARAMBA TO<br>VELICHANGOOL            | 3.1 - 3.8 | V   |
|                   | KUTTIYADY                  | ALONG KUTTIYADY                            | 5.0       | V   |
|                   | MOGRAL                     | ALONG MOGRAL                               | 3.1       | V   |
|                   | PERIYAR                    | ALWAYE-ELOOR TO<br>KALAMASSERY             | 3.2 - 5.1 | V   |
|                   | PERUVAMBA                  | ALONG PERUVAMBA                            | 3.9       | V   |
|                   | PUZHACKAL                  | OLARIKKARA TO<br>PUZHACKAL                 | 3.8       | V   |
|                   | RAMAPURAM                  | ALONG RAMAPURAM                            | 3.3       | V   |
|                   | THIRUR                     | NADUVILANGADI TO<br>THALAKKADATHUR         | 3.6       | V   |
|                   | UPPALA                     | POYYA TO MULINJA                           | 3.2       | V   |
| MADHYA<br>PRADESH | SONE                       | ALONG AMLAI                                | 12.4      | III |
|                   | GOHAD                      | GOHAD DAM TO<br>GORMI                      | 6.3       | IV  |
|                   | KOLAR                      | SURAJNAGAR TO<br>SHIRDIPURAM               | 7.5       | IV  |
|                   | TAPI                       | NEPANAGAR TO<br>BURHANPUR                  | 4.6 - 8   | IV  |
|                   | BICHIA                     | SILPARI TO<br>GADHAWA                      | 3.5       | V   |
|                   | CHAMLA                     | ALONG BADNAGAR,<br>UJJAIN                  | 4.0       | V   |
|                   | CHOUPAN                    | ALONG VIJAIPUR                             | 3.4       | V   |
|                   | KALISOT                    | MANDIDEEP TO<br>SAMARDHA VILLAGE           | 4.1       | V   |
|                   | KANHAN                     | KANHAN IN<br>CHINDWARA<br>DISTRICT BOUNDRY | 3.2       | V   |
|                   | KATNI                      | ALONG KATNI                                | 3.5       | V   |
|                   | KUNDA                      | KHARGONE TO KHEDI<br>KHURD                 | 4.0       | V   |
|                   | MALEI                      | JAORA TO BARAUDA                           | 3.5       | V   |
|                   | MANDAKINI (MP)             | ALONG CHITRAKUT                            | 5.8       | V   |
|                   | NEWAJ                      | ALONG SHUJALPUR                            | 4.0       | V   |
|                   | PARVATI                    | BATAWADA TO<br>PILUKHEDI                   | 3.2       | V   |
|                   | SIMRAR                     | ALONG KATNI                                | 3.9       | V   |
| TONS              | CHAKGHAT TO<br>CHAPPAR     | 3.5  | V         |     |
| WAINGANGA         | CHINDWARA TO<br>BALAGHAT   | 3.2  | V         |     |
| MAHARASHTRA       | GHOD                       | ANNAPUR TO<br>SHISHUR                      | 10.2      | III |
|                   | KANHAN                     | BHANDARA TO<br>NAGPUR                      | 9.8-16.4  | III |
|                   | KOLAR (MAH)                | ALONG KORADI                               | 18.0      | III |
|                   | KRISHNA                    | SHINDI TO<br>KURUNDWAD                     | 3.4-14.0  | III |
|                   | MOR                        | JALGAON TO AMODA                           | 16.0      | III |
|                   | PATALGANGA                 | KHADEPADA TO<br>KOPOLI                     | 5.0-18    | III |
|                   | PEDHI                      | NARAYANPUR TO<br>BHATKULI                  | 20.0      | III |
|                   | PENGANGA                   | MEHKAR TO<br>UMARKHED                      | 8.6-20    | III |
|                   | PURNA                      | DHUPESHWAR TO<br>ASEGAON                   | 10.2-18.4 | III |
|                   | TAPI                       | RAVER TO SHAHADA                           | 8.0-12.0  | III |
|                   | URMODI                     | DHANGARWADI TO<br>NAGTHANE                 | 12.4      | III |
|                   | VENNA                      | MAHABALESHWAR<br>TO MAHULI                 | 7.2-12.5  | III |
|                   | WAGHUR                     | SUNASGAON TO<br>SAKEGAON                   | 18.0      | III |
| WENA              | KAWADGHAT TO<br>HINDONGHAT | 10.2-13.8                                  | III       |     |

|           |                |                                  |         |     |
|-----------|----------------|----------------------------------|---------|-----|
|           | BINDUSAR       | SWARAJ NAGAR TO SNEHNAGAR        | 8.0     | IV  |
|           | BORI           | ALONG AMALNER                    | 9.2     | IV  |
|           | CHANDRABHAGA   | PANDHARPUR TO SHEGAON DHUMALA    | 7.5-9.5 | IV  |
|           | DARNA          | IGATPURI TO SANSARI              | 5.0-9.0 | IV  |
|           | GIRNA          | MALEGAON TO JALGAON              | 6.6-9.0 | IV  |
|           | HIWARA         | PACHORA TO NIMBORA               | 8.6     | IV  |
|           | KOYNA          | KARAD TO PAPDARDE                | 8.6     | IV  |
|           | PEHLAR         | PELHAR DAM TO GOLANI NAKA        | 7.0     | IV  |
|           | SINA           | SOLAPUR TO BANKLAGI              | 8.5     | IV  |
|           | TITUR          | ALONG CHALISGAON, JALGAON        | 7.8     | IV  |
|           | AMBA           | BENSE TO ROHA                    | 4.8     | V   |
|           | BHATSA         | SHAHAPUR TO BHADANE              | 4.8-6.0 | V   |
|           | GOMAI          | LONKHEDA TO SHAHDA               | 6.0     | V   |
|           | KAN            | KAVATHE TO SAKARI                | 5.0     | V   |
|           | MANJEERA       | LATUR TO NANDED BRIDGE           | 5.0     | V   |
|           | PANCHGANGA     | SHIROL TO KOLHAPUR               | 3.2-5.8 | V   |
|           | PANZARA        | VARKHEDE TO DHULE                | 6.0     | V   |
|           | RANGAVALI      | TINTEMBA TO NAVAPUR              | 5.0     | V   |
|           | SAVITRI        | DADLI TO MUTHAVALI               | 3.2-5.0 | V   |
|           | SURYA          | DHAMNI DAM TO PALGHAR            | 4.4-5.0 | V   |
|           | TANSA          | ALONG THANE                      | 6.0     | V   |
|           | ULHAS          | KALYAN TO BADLAPUR               | 4.0-5.0 | V   |
|           | VAITARNA       | GANDHRE TO SARASHI               | 4.0     | V   |
|           | VASHISTI       | KHERDI TO DALVATNE               | 3.2-3.4 | V   |
| MANIPUR   | IMPHAL         | KANGLA MOAT TO SAMUROU           | 3.4-6.4 | V   |
|           | IRIL           | KANGLA SIPHAI TO UKHRUL          | 3.2     | V   |
|           | KHUGA          | KHUGA LAKE TO CHURACHANDPUR      | 3.1-3.6 | V   |
|           | KHUJAIROK      | MOREH TO MAOJANG                 | 4.3     | V   |
|           | LOKCHAO        | BISHNUPUR TO LOKTAK LAKE         | 4.5     | V   |
|           | MANIPUR        | SEKMAIJAN TO THOUBAL             | 3.6-4.3 | V   |
|           | THOUBAL        | SHONG KONG TO PHADOM             | 3.5     | V   |
| MEGHALAYA | WANGJING       | WANGJING TO HEIROK               | 4.1-4.3 | V   |
|           | KYRHUKHLA      | SUTNGA TO KHLIERIAT              | 10.0    | IV  |
|           | NONBAH         | NANGSTOIN TO WAHRIAT             | 6.0-7.5 | IV  |
|           | UMTREW         | BYRNIHAT TO MORANG DALA          | 6.2-8.0 | IV  |
|           | LUKHA          | MYNDIHATI TO SHYMPLONG           | 6.0     | V   |
| MIZORAM   | MYNTDU         | JOWAI TO PAMHADEM                | 5.2     | V   |
|           | TIAU           | ALONG CHAMPHAI                   | 11.3    | III |
|           | TLAWNG         | ALONG ZOBAWK, SAIRANG TO BAIRABI | 3.1-6.7 | IV  |
|           | TUIPUI         | ALONG CHAMPHAI                   | 8.2     | IV  |
|           | TUIVAWL        | ALONG KEIFANG                    | 6.8     | IV  |
|           | CHITE          | ALONG ARMED VENG                 | 3.7     | V   |
|           | MAT            | ALONG SERCHHIP                   | 5.5     | V   |
|           | SAIKAH         | ALONG LAWNGTLAI                  | 4.4     | V   |
| TUIKUAL   | ALONG SERCHHIP | 6.0                              | V       |     |

|            |                             |  |          |     |
|------------|-----------------------------|--|----------|-----|
|            | TUIRIAL                     | ALONG TUIRIAL,<br>AIZWAL                         | 3.4-4.6  | V   |
| NAGALAND   | DZUNA                       | ALONG KOHIMA                                     | 6.0-13.0 | III |
|            | CHATHE                      | MEDZIPHEMA TO,<br>DIMAPUR                        | 7.0      | IV  |
|            | DZU                         | KOHIMA TO DZUKO<br>VALLEY                        | 7.0      | IV  |
|            | DZUCHA                      | ALONG KOHIMA                                     | 4.0      | V   |
|            | SANO                        | ALONG KOHIMA                                     | 4.0      | V   |
| ODISHA     | GURADIH NALLAH              | ALONG ROURKELA                                   | 11.3     | III |
|            | KATHAJODI                   | CUTTACK TO URALI                                 | 5.8-11.2 | III |
|            | NANDIRAJHOR                 | D/S TALCHER                                      | 2.7 - 13 | III |
|            | DAYA                        | BHUBANESWAR TO<br>BARAGARH                       | 4.0-7.3  | IV  |
|            | KUAKHAI                     | URALI TO<br>BHUBANESWAR                          | 6.7-7.7  | IV  |
|            | BANGURU NALLAH              | ALONG TALCHER<br>RENGALI                         | 3.2      | V   |
|            | BHEDEN                      | ALONG BHEDEN                                     | 3.6      | V   |
|            | BRAHAMANI                   | ROURKELA TO<br>BIRITOL                           | 5.8-6.0  | V   |
|            | BUDHABALNAGA                | MAHULIA TO<br>BARIPADA                           | 3.5      | V   |
|            | KUSUMI                      | ALONG ANGUL<br>TALCHER                           | 3.2      | V   |
|            | MAHANADI                    | SAMBALPUR TO<br>PARADEEP                         | 3.6      | V   |
|            | MANGALA                     | ALONG PURI                                       | 5.7      | V   |
|            | NAGAVALLI                   | JAYKAYPUR TO<br>RAYAGADA                         | 3.5      | V   |
|            | NUNA                        | ALONG BIJIPUR, PURI                              | 3.1      | V   |
|            | RATNACHIRA                  | ALONG<br>BHUBHNEHWAR,<br>PURI                    | 3.3      | V   |
|            | RUSHIKULYA                  | PRATAPPUR TO<br>GANJAM                           | 3.4      | V   |
|            | SABULIA                     | ALONG<br>JAGANNATHPATNA,<br>RAMBHA               | 5.0      | V   |
| SERUA      | KHANDAETA TO<br>SANKHATRASA | 4.8  | V        |     |
| PUDUCHERRY | ARASALAR                    | ALONG KARAİKAL                                   | 7.0      | IV  |
|            | CHUNNAMBAR                  | ALONG<br>ARIYANKUPPAM                            | 6.0      | V   |
| PUNJAB     | KALI BEIN                   | SULTANPUR LODHI<br>TO CONF TO BEAS               | 9.0      | IV  |
|            | BEAS                        | ALONG MUKERIAN                                   | 3.8      | V   |
| RAJASTHAN  | BANAS                       | ALONG BISALPUR<br>DAM, SWAROOPGANJ,<br>NEWTA DAM | 13.2     | III |
|            | CHAMBAL                     | SAWAIMADHOPUR<br>TO KOTA                         | 3.2-4.8  | V   |
| SIKKIM     | MANEY KHOLA                 | ADAMPOOL TO<br>BURTUKK                           | 3.2-4.5  | V   |
|            | RANGIT                      | DAM SITE (NHPC) TO<br>TREVANI                    | 3.2-3.8  | V   |
|            | RANICHU                     | NAMLI TO SINGTAM                                 | 3.8-4.0  | V   |
|            | TEESTA                      | MELLI TO<br>CHUNGTHANG                           | 4.0-4.3  | V   |
| TAMIL NADU | BHAVANI                     | SIRUMUGAI TO<br>KALINGARAYAN                     | 3.3-6.6  | IV  |
|            | TAMBIRAPANI                 | PAPPANKULAM<br>TO ARUMUGANERI                    | 3.1-4.0  | V   |
| TELANGANA  | KARAKAVAGU                  | ALONG PALWANCHA                                  | 18.0     | III |
|            | MANER                       | WARANGAL TO<br>SOMNAPALLI                        | 6-20.0   | III |
|            | GODAVARI                    | BASAR TO KHAMMAM                                 | 4.0-9.0  | IV  |
|            | KINNERSANI                  | ALONG PALWANCHA                                  | 10.0     | IV  |
|            | KRISHNA                     | THANGADIGI TO<br>WADAPALLY                       | 5.0-6.0  | V   |
| TRIPURA    | BURIGAON                    | ALONG BISHALGARH                                 | 3.9      | V   |
|            | GUMTI                       | TELKAJILA TO<br>AMARPUR                          | 3.9      | V   |
|            | HAORA                       | AGARTALA TO<br>BISHRAMGANJ                       | 3.2-4.0  | V   |
|            | JURI                        | ALONG  | 4.9      | V   |



|               |                      |                                |           |     |
|---------------|----------------------|--------------------------------|-----------|-----|
|               |                      | DHARMANAGAR                    |           |     |
|               | KHOWAI               | ALONG TELIAMURA                | 3.3       | V   |
|               | MANU                 | ALONG KAILASHAHAR              | 3.5-3.6   | V   |
| UTTAR PRADESH | GOMTI                | SITAPUR TO VARANASI            | 3.1-18.0  | III |
|               | GANGA                | KANNAUJ TO VARANASI            | 3.5-8.8   | IV  |
|               | RAMGANGA             | MURADABAD TO KANNAUJ           | 6.6       | IV  |
|               | BETWA                | HAMIRPUR TO WAGPURA            | 3.5-4.2   | V   |
|               | GHAGHARA             | BARHALGANJ TO DEORIA           | 4.0-4.5   | V   |
|               | RAPTI                | DOMINGARH TO RAJGHAT           | 4.7-5.9   | V   |
|               | SAI                  | UNNAO TO JAUNPUR               | 4.0-4.5   | V   |
|               | SARYU                | AYODHYA TO ELAFATGANJ          | 4.3       | V   |
| UTTARAKHAND   | KALYANI              | D/S PANT NAGAR                 | 16.0      | III |
|               | GANGA                | HARIDWAR TO SULTANPUR          | 6.6       | IV  |
|               | KOSI                 | SULTANPUR TO PATTIKALAN        | 6.4       | IV  |
|               | NANDOUR              | ALONG SITARGANJ                | 5.6-8.0   | IV  |
|               | PILKHAR              | IN THE VICINITY OF RUDRAPUR    | 10.0      | IV  |
| WEST BENGAL   | CHURNI               | SANTIPUR TOWN TO MAJHADIA      | 10.3-11.3 | III |
|               | DWARKA               | TARAPITH TO SADHAK BAMDEB GHAT | 5.6-17.0  | III |
|               | GANGA                | TRIBENI TO DIAMOND HARBOUR     | 5.0-12.2  | III |
|               | DAMODAR              | DURGACHAKM TO DISHERGARH       | 4.4-8.2   | IV  |
|               | JALANGI              | LAAL DIGHI TO KRISHNA NAGAR    | 8.3       | IV  |
|               | KANSI                | MIDNAPORE TO RAMNAGAR          | 9.9       | IV  |
|               | MATHABHANGA          | MADHUPUR TO GOBINDAPUR         | 8.5       | IV  |
|               | BARAKAR              | KULTI TO ASANSOL               | 5.7       | V   |
|               | DWARAKESHWAR         | ALONG BANKURA                  | 1-5.6     | V   |
|               | KALJANI              | BITALA TO ALIPURDWAR           | 6.0       | V   |
|               | KAROLA               | JALPAIGURI TO THAKURER KAMAT   | 3.9       | V   |
|               | MAYURKASHI           | SURI TO DURGAPUR               | 5.2       | V   |
|               | RUPNARAYAN           | KOLAGHAT TO BENAPUR            | 3.1-5.8   | V   |
|               | SILABATI             | GHATAL TO NISCHINDIPUR         | 3.8       | V   |
| TEESTA        | SILIGURI TO PAHARPUR | 3.3                            | V         |     |

48. In view of above, it is absolutely necessary that Action Plans are prepared to restore the polluted river stretches to the prescribed standards. The Action Plans may cover the following:

#### **A) Source control**

Source control includes industrial pollution control and treatment and disposal of domestic sewage as detailed below:-

##### **(a) Industrial pollution control**

- (i) Inventorisation of industries
- (ii) Categories of industry and effluent quality

- (iii) Treatment of effluents, compliance with standards and mode of disposal of effluents
- (iv) Regulatory regime.

**(b) Channelization, treatment, utilization and disposal of treated domestic sewage.**

- (i) Identification of towns in the catchment of river and estimation of quantity of sewage generated and existing sewage treatment capacities to arrive at the gap between the sewage generation and treatment capacities;
- (ii) Storm water drains now carrying sewage and sullage joining river and interception and diversion of sewage to STPs,
- (iii) Treatment and disposal of septage and controlling open defecation,
- (iv) Identification of towns for installing sewerage system and sewage treatment plants.

**(B) River catchment/Basin Management-Controlled ground water extraction and periodic quality assessment**

- (i) Periodic assessment of groundwater resources and regulation of ground water extraction by industries particularly in over exploited and critical zones/blocks.
- (ii) Ground water re-charging /rain water harvesting
- (iii) Periodic ground water quality assessment and remedial actions in case of contaminated groundwater tube wells/bore wells or hand pumps.
- (iv) Assessment of the need for regulating use of ground water for irrigation purposes.

**(C) Flood Plain Zone.**

- (i) Regulating activities in flood plain zone.
- (ii) Management of Municipal, Plastic, Hazardous, Bio-medical and Electrical and Electronic wastes.
- (iii) Greenery development- Plantation plan.

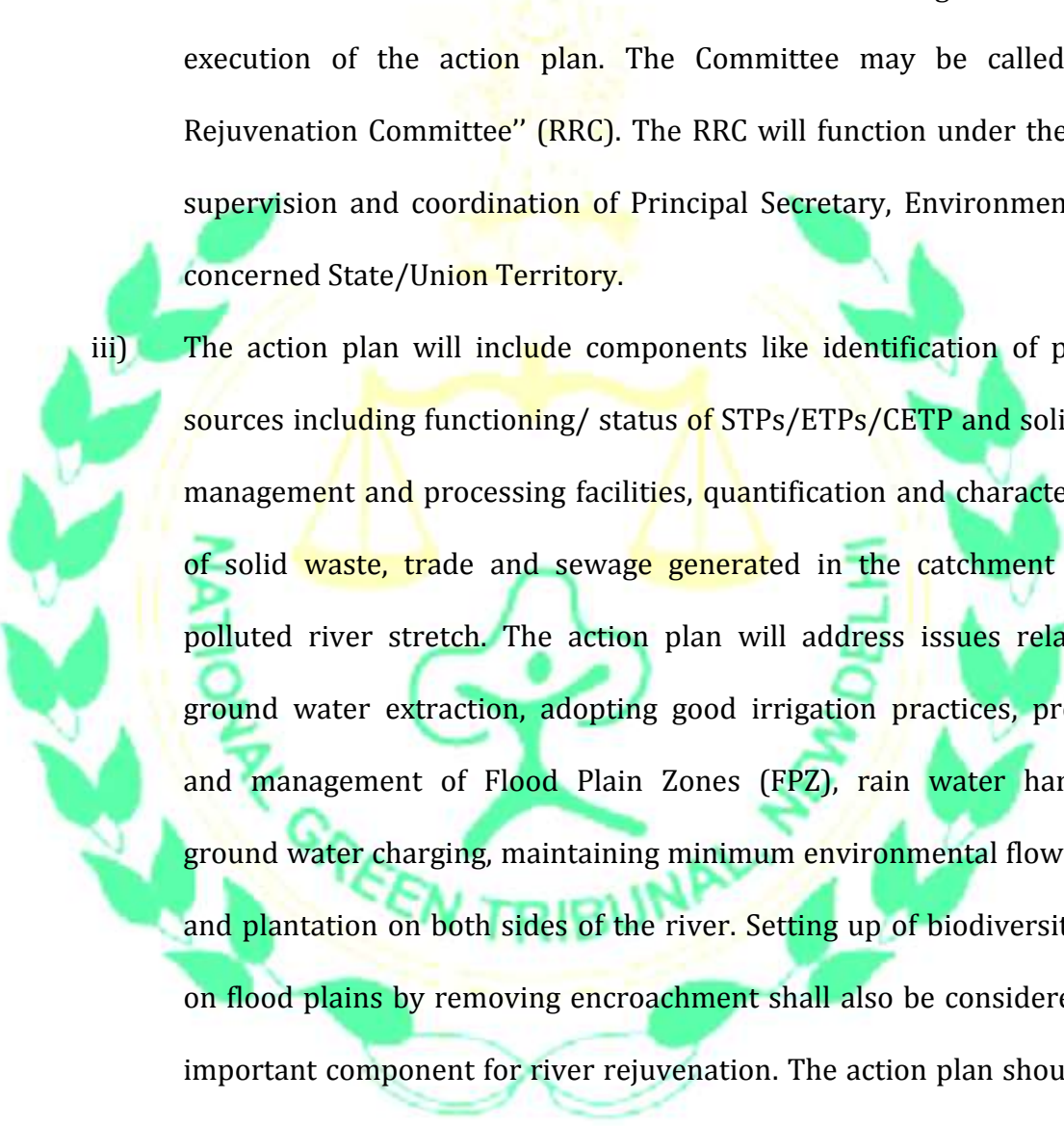
**(D) Ecological/Environmental Flow (E-Flow)**

- (a) Issues relating to E-Flow
- (b) Irrigation practices

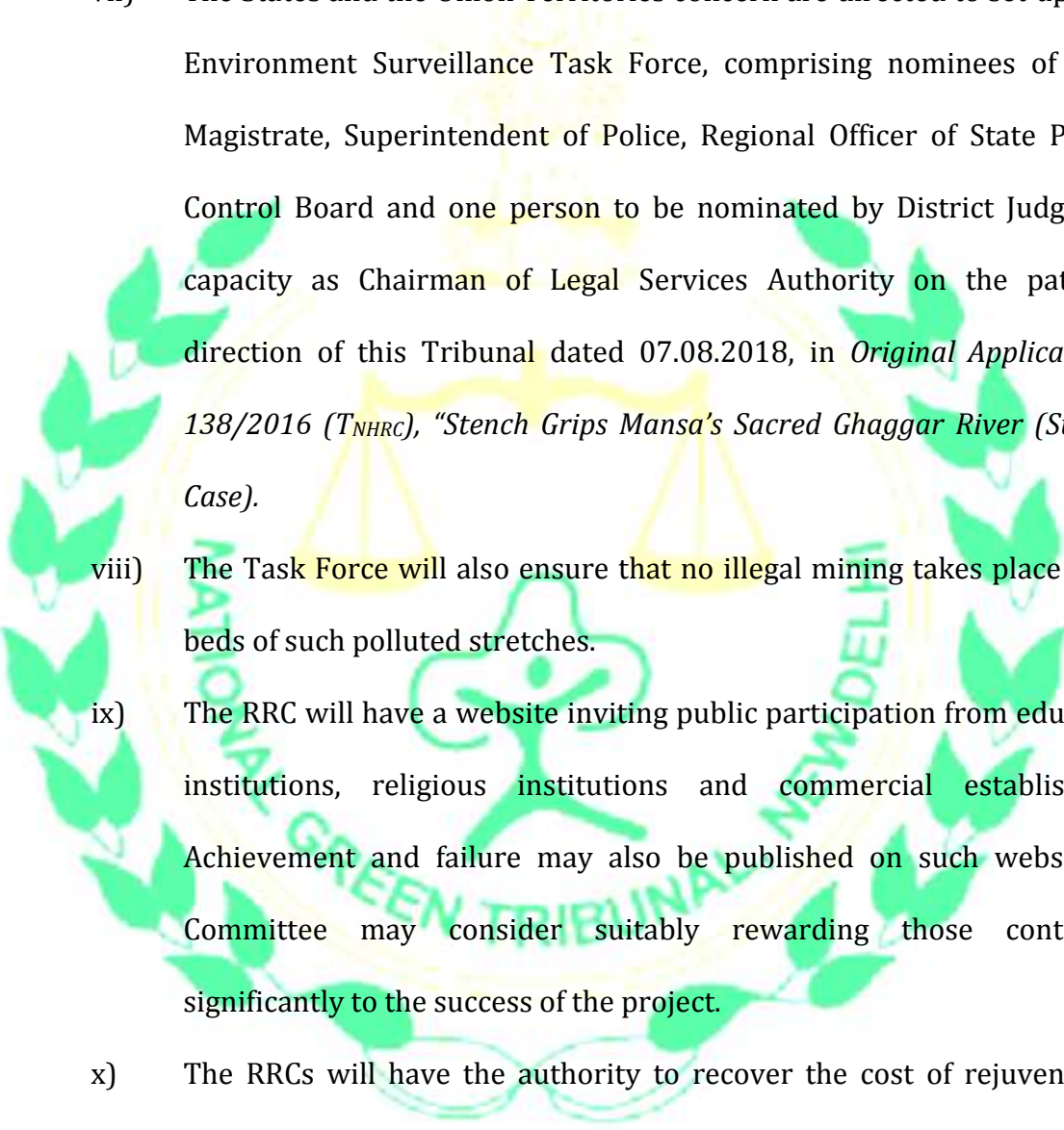
**(E)** Such other issues which may be found relevant for restoring water quality to the prescribed standards.

49. Model Action Plan for Hindon River, already prepared by the CPCB, may also be taken into account.

50. In view of above, we consider it necessary to issue the following directions:

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- i) All States and Union Territories are directed to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e BOD < 3 mg/L and FC < 500 MPN/100 ml) within six months from the date of finalisation of the action plans.
- ii) The action plans may be prepared by four-member Committee comprising, Director, Environment., Director, Urban Development., Director, Industries., Member Secretary, State Pollution Control Board of concerned State. This Committee will also be the Monitoring Committee for execution of the action plan. The Committee may be called "River Rejuvenation Committee" (RRC). The RRC will function under the overall supervision and coordination of Principal Secretary, Environment of the concerned State/Union Territory.
- iii) The action plan will include components like identification of polluting sources including functioning/ status of STPs/ETPs/CETP and solid waste management and processing facilities, quantification and characterisation of solid waste, trade and sewage generated in the catchment area of polluted river stretch. The action plan will address issues relating to; ground water extraction, adopting good irrigation practices, protection and management of Flood Plain Zones (FPZ), rain water harvesting, ground water charging, maintaining minimum environmental flow of river and plantation on both sides of the river. Setting up of biodiversity parks on flood plains by removing encroachment shall also be considered as an important component for river rejuvenation. The action plan should focus on proper interception and diversion of sewage carrying drains to the Sewage Treatment Plant (STP) and emphasis should be on utilization of treated sewage so as to minimize extraction of ground or surface water. The action plan should have speedy, definite or specific timelines for execution of steps. Provision may be made to pool the resources, utilizing funds from State budgets, local bodies, State Pollution Control Board/ Committee and out of Central Schemes.



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- iv) The Action Plans may be subjected to a random scrutiny by a task team of the CPCB.
  - v) The Chief Secretaries of the State and Administrators/ Advisors to Administrators of the Union Territories will be personally accountable for failure to formulate action plan, as directed.
  - vi) All States and Union Territories are required to send a copy of Action Plan to CPCB especially w.r.t Priority I & Priority II stretches for approval.
  - vii) The States and the Union Territories concern are directed to set up Special Environment Surveillance Task Force, comprising nominees of District Magistrate, Superintendent of Police, Regional Officer of State Pollution Control Board and one person to be nominated by District Judge in his capacity as Chairman of Legal Services Authority on the pattern of direction of this Tribunal dated 07.08.2018, in *Original Application No. 138/2016 (TNHRC), "Stench Grips Mansa's Sacred Ghaggar River (Suo-Motu Case)*.
  - viii) The Task Force will also ensure that no illegal mining takes place in river beds of such polluted stretches.
  - ix) The RRC will have a website inviting public participation from educational institutions, religious institutions and commercial establishments. Achievement and failure may also be published on such website. The Committee may consider suitably rewarding those contributing significantly to the success of the project.
  - x) The RRCs will have the authority to recover the cost of rejuvenation in Polluter Pays Principle from those who may be responsible for the pollution, to the extent found necessary. In this regard, principle laid down by this Tribunal in order dated 13.07.2017 in *O.A No. 200 of 2014, M.C Mehta Vs. U.O.I* will apply. Voluntary donations, CSR contribution, voluntary services and private participation may be considered in consultation with the RRC.

51. We understand that the State Pollution Control Boards or other authorities are having funds deposited under the order of the Tribunal besides funds available

under Consent Mechanism. The said funds may be utilized for the purpose of expenditure for the Committees, including preparation and execution of action plans in accordance with the provisions contained in the Water Act, 1974.

52. A copy of this be sent by e-mail to all the concerned i.e. the Ministry of Water Resources, Ministry of Environment, Forest & Climate Change, Ministry of Housing and Urban Affairs, the Niti Ayog, National Mission for Clean Ganga, Central Pollution Control Board, Chief Secretaries of all the States and Union Territories for compliance.

53. The RRCs will send progress reports by e-mail at [filing.ngt@gmail.com](mailto:filing.ngt@gmail.com) on or before 15.12.2018.

54. Needless to say, that order of National Green Tribunal is binding as a decree of Court and non-compliance is actionable by way of punitive action including prosecution, in terms of the National Green Tribunal Act, 2010.

55. Put up for consideration of the Report on 19<sup>th</sup> December, 2018.



....., CP  
(Adarsh Kumar Goel)

....., JM  
(S.P. Wangdi)

....., EM  
(Dr. Nagin Nanda)

**New Delhi**  
**September 20, 2018**