

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/ 522

Date: 7/12/20

Ld. Registrar General,
Hon'ble National Green Tribunal,
Faridkot House, Copernicus Marg,
DELHI

Subject: Fifth Report of the Monitoring Committee appointed in OA No. 6/2012- Manoj Mishra vs UOI and Ors

Dear Sir,

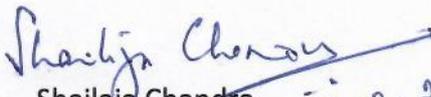
The Hon'ble NGT vide its order dated 26.7.18 in OA no. 06.2012 –Manoj Mishra vs UOI and Ors had appointed a Monitoring Committee to monitor implementation of the Judgment dated 13.1.15 and orders thereafter.

The Monitoring Committee was directed by Hon'ble NGT in its order dated 6.7.2020 to submit its report by 30.11.2020 with copy to all stakeholders for their comments. Accordingly, the 5th report (in two parts- Main Report and Annexures) prepared by YMC based on the Action taken reports/Status reports received from various stakeholders and the various review meetings taken by YMC is enclosed herewith.

- A short extension of one week was sought by the YMC to submit its report due on 30.11.2020. Also, a copy each of the report is also being separately forwarded to the Chief Secretaries of Delhi, Haryana and UP, the VC, DDA and other stakeholders for their comments/feedback.

It is requested that the 5th Report be placed before the Hon'ble Tribunal for its perusal.

Yours faithfully,


Shailaja Chandra, 7.12.20.
Member,
Monitoring Committee for Yamuna
Encl: as above

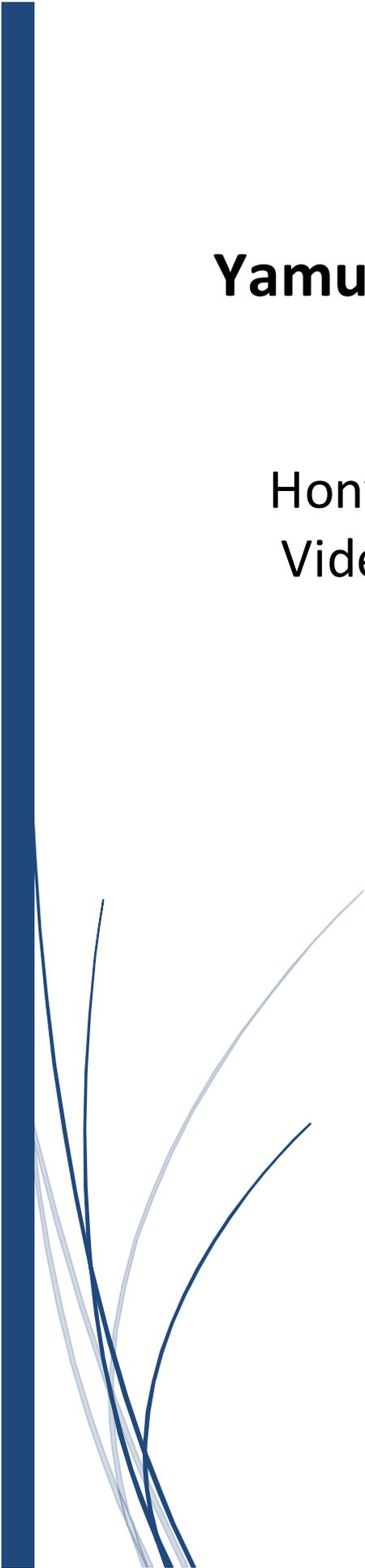

B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

Fifth Report of the Yamuna Monitoring Committee

Appointed by the
Hon'ble National Green Tribunal
Vide order Dated 26th July 2018

Shailaja Chandra
B.S. Sajwan

Dated 7th December, 2020.



**FIFTH REPORT PREPARED BY THE
YAMUNA MONITORING COMMITTEE**

For the
REJUVENATION OF THE
RIVER YAMUNA
&
ABATEMENT OF POLLUTION

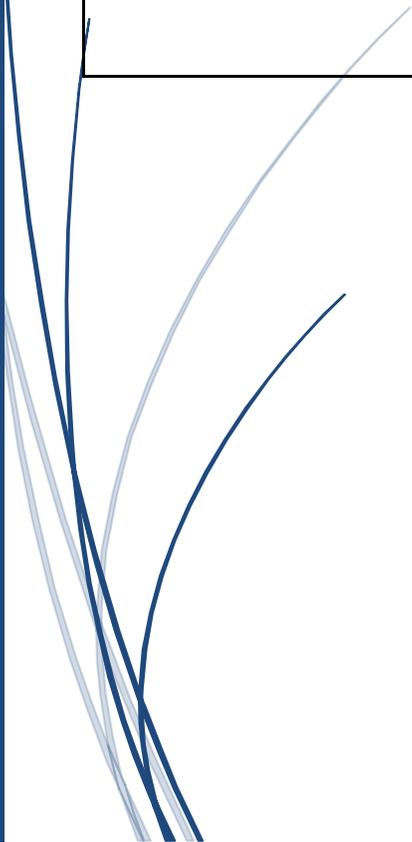


Table of Contents

Volume 1

List of Abbreviations.....	ii
Overview	ix
Chapter 1: Environmental Flow.....	1
Chapter 2: DDA and Demarcation of the Flood Plains and Conservation Activities	8
Chapter 3: Quality of River water.....	24
Chapter 4: Sewage Treatment Plants	33
Part I - Status Report on the Construction, Upgradations and Functioning of DJB STPs as reviewed by YMC.....	33
Part II - Functioning of Existing STPs.....	48
Part III -Short Term measures for Increasing Capacity utilization.....	49
Part IV - Long Term Measures for Better Capacity Utilization.....	51
Part V - Decentralized STPs.....	53
Part VI -In- situ Bio/Phyto-remediation in drains.....	55
Chapter 5: Interceptor Sewer Project (ISP)	57
Chapter 6: Repair and maintenance of Drains	62
Chapter 7: Industrial Pollution and CETPs	78
Chapter 8: Sewage and Faecal Sludge Management.....	90
Chapter 9: Online Monitoring of STPs, CETPs and Yamuna.....	104
Chapter 10: Use of treated Waste Water	110
Chapter 11: Industry Interface	121
Chapter 12: State of Haryana and pollution of the River Yamuna.	126
Chapter 13: State of Uttar Pradesh and Pollution of the River Yamuna.....	136

List of Abbreviations

BOD - Biochemical Oxygen Demand

CCTV - Closed-Circuit Television

CEO - Chief Executive Officer

CETPs - Common Effluent Treatment Plants

CMC – Consent Management Cell

COD – Chemical Oxygen Demand

CPCB - Central Pollution Control Board

CSE - Centre for Science and Environment

CWC - Central Water Commission

DDA - Delhi Development Authority

DJB - Delhi Jal Board

DM - District Magistrate

DMC-Delhi Municipal Corporation (Includes North, South and East)

DMRC – Delhi Metro Rail Corporation

DO - Dissolved Oxygen

DPCC - Delhi Pollution Control Committee

DSIIDC - Delhi State Industrial and Infrastructure Development Corporation

DTU – Delhi Technological University

DTTDC - Delhi Tourism and Transportation Development Corporation

DUSIB - Delhi Urban Shelter Improvement Board

DWS &SD - Delhi Water Supply and Sewage Disposal Undertaking

EC – Environmental Compensation

EDMC – East Delhi Municipal Corporation

EPCA - Environment Pollution Control Authority

EYC – Eastern Yamuna Canal

GAIL – Gas Authority of India Limited

GMDA - Gurugram Metro Development Authority

GNCT – Government of National Capital Territory

GOI – Government of India

GPS - Global Positioning System

GSDL - Geospatial Delhi Limited

HPCB - Haryana State Pollution Control Board

HSIIDC - Haryana State Industrial & Infrastructure Development Corporation

HSPCB - Haryana State Pollution Control Board

HSVP - Haryana State Vikas Parishad

HYMC - Haryana Yamuna Monitoring Committee

IDMC- Integrated Drain Management Cell

I&FCD – Irrigation & Flood Control Department

IIT - Indian Institutes of Technology

INTACH - Indian National Trust for Art and Cultural Heritage

ISP – Interceptor Sewer Project

JICA - Japan International Cooperation Agency

MC - Monitoring Committee

MCF - Municipal Corporation of Faridabad

MCG - Municipal Corporation of Gurugram

MGD - Million Gallons per Day

MLD - Million Litres Per Day

MoEF &CC - Ministry of Environment, Forest and Climate Change

MoJS - Ministry of Jal Shakti

MOSPI – Ministry of Statistics and Programme Implementation

MoU – Memorandum of Understanding

MoWR, RD&GR - Ministry of Water Resources, River Development & Ganga Rejuvenation

MSW - Municipal Solid Waste

NDMC – New Delhi Municipal Corporation

NEERI - National Environmental Engineering Research Institute

NGO - Non-Governmental Organization

NGT – National Green Tribunal

NHAI – National Highway Authority of India

NIC - National Informatics Centre

NIH - National Institute of Hydrology

NMCG-National Mission for Clean Ganga

North DMC – North Delhi Municipal Corporation

OLMS – Online Monitoring System

PHED - Public Health Engineering Department

PMC – Project Monitoring Consultant

PPP - Polluter Pays Principal

PWD – Public Works Department

RWA - Resident Welfare Association

SDMC – South Delhi Municipal Corporation

SMP - Sewerage Master Plan

SOP - Standard Operating Procedures

SPV – Special Purpose Vehicle

STP - Sewage Treatment Plants

STPP – Sodium Tri Poly Phosphate

TSS – Total Suspended Solid

UD - Urban Development

ULB - Urban Local Body

UYRB - Upper Yamuna River Board

WII-Wildlife Institute of India

WYC – Western Yamuna Canal

ZLD- Zero liquid discharge

Volume 2

LIST OF ANNEXURES

Chapter 2: DDA and Demarcation of the Flood Plains and Conservation Activities

<i>Annexure C-2/1: Draft from DDA for formation of Committee.....</i>	<i>1</i>
<i>Annexure C-2/2: Communication with DDA from YMC for formation of committee.....</i>	<i>6</i>
<i>Annexure C-2/3: Comments of YMC on DDA proposal.....</i>	<i>11</i>
<i>Annexure C-2/4: Comments of YMC on DDA proposal.....</i>	<i>16</i>
<i>Annexure C-2/5: Minutes of the review meeting with DDA on 3.09.2020.....</i>	<i>18</i>
<i>Annexure C-2/6: Minutes of the second review meeting with DDA on 30.09.2020.....</i>	<i>22</i>
<i>Annexure C-2/7: Removal of encroachments and demolition programmers on the floodplains..</i>	<i>29</i>
<i>Annexure C-2/8: ATR of MOM on 23-9-2020 by YMC with DDA.....</i>	<i>30</i>
<i>Annexure C-2/9: Status of 'Restoration and Rejuvenation of River Yamuna floodplains' as of November'20.....</i>	<i>36</i>
<i>Annexure C-2/10: A report on DDA South Delhi Biodiversity Park.....</i>	<i>38</i>

Chapter 3: Quality of River water

<i>Annexure C-3/1: Water quality status of river Yamuna</i>	<i>62</i>
<i>Annexure C-3/2: Trend analysis by CPCP.....</i>	<i>63</i>
<i>Annexure C-3/3: Trend analysis by DPCC.....</i>	<i>69</i>
<i>Annexure C-3/4: Foam formation report by CPCB.....</i>	<i>78</i>
<i>Annexure C-3/5: Foam formation report by DPCC.....</i>	<i>84</i>

Chapter 4: Sewage Treatment Plants

<i>Annexure C-4/1: Minutes of review meeting with DJB held on 13.10.20.....</i>	<i>106</i>
<i>Annexure C-4/2: Minutes of meeting of YMC with PCCF and HoD of Forest on 10.11.20.....</i>	<i>117</i>
<i>Annexure C-4/3: The Delhi preservation of trees act 1994.....</i>	<i>122</i>
<i>Annexure C-4/4: Minutes of meeting with PMC of Rithala & Kondli.....</i>	<i>130</i>
<i>Annexure C-4/5: Section 69 of DJB act of 1998.....</i>	<i>145</i>
<i>Annexure C-4/6: Report of STPs & their design parameters.....</i>	<i>146</i>
<i>Annexure C-4/7: Upgradations plan of 16 STPs of DJB& estimated cost of upgradations Rs. 2127 crores.....</i>	<i>147</i>
<i>Annexure C-4/8: Analysis report of DPCC in respect of STPS for October 2020.....</i>	<i>149</i>

Chapter 5: Interceptor Sewer Project (ISP)

<i>Annexure C-5/1: Minutes of second review meeting with DJB on 19.10.20.....</i>	<i>152</i>
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Chapter 6: Repair and maintenance of Drains

<i>Annexure C-6/1: Status report on drains in Delhi.....</i>	<i>162</i>
<i>Annexure C-6/2: Report by DTU of plugged sewer lines of DJB.....</i>	<i>165</i>

Chapter 7: Industrial Pollution and CETPs

<i>Annexure C-7/1: List of Industrial Areas.....</i>	<i>171</i>
<i>Annexure C-7/2: Minutes of Meeting regarding Industrial pollution in Yamuna and functioning of CETPS.....</i>	<i>173</i>
<i>Annexure C-7/3: ATR of Consent Mgmt. Cell of DPCC against water polluting industries/units.....</i>	<i>182</i>
<i>Annexure C-7/4: Realization of Environmental Compensation.....</i>	<i>183</i>
<i>Annexure C-7/5: Analysis report of DPCC laboratory of CETPs in Delhi for October 2020.....</i>	<i>184</i>
<i>Annexure C-7/6: Efforts being made for filling of the vacant posts & strengthening of DPCC.....</i>	<i>186</i>

Chapter 8: Sewage and Faecal Sludge Management

<i>Annexure C-8/1: SOP for collection, transportation & disposal of septage from households of unauthorized/unsewered colonies.....</i>	<i>188</i>
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Chapter 9: Online Monitoring of STPs, CETPs and Yamuna

<i>Annexure C-9/1: Report on OLMS calibration of STPs received from DJB.....</i>	<i>194</i>
<i>Annexure C-9/2: Analysis report of STPs by DPCC.....</i>	<i>196</i>
<i>Annexure C-9/3: OLMS status of CETPs in the month of September 2020.....</i>	<i>198</i>
<i>Annexure C-9/4: CPCB Directions under Section 18(1) (b) of Water (Prevention & Control of Pollution) Act 1974 to Haryana.....</i>	<i>199</i>
<i>Annexure C-9/5: CPCB Directions under Section 18(1) (b) of Water (Prevention & Control of Pollution) Act 1974 to UP.....</i>	<i>202</i>

Chapter 10: Use of treated Waste Water

<i>Annexure C-10/1: Letter of CS, Delhi to Commissioner North DMC for use of treated waste water.....</i>	<i>205</i>
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<i>Annexure C-10/2: Minutes of review meeting taken by YMC with CEO DJB.....</i>	<i>207</i>
<i>Annexure C-10/3: Details of treated effluent taken by various agencies from DJB STPs from May-20 to Sept-20.....</i>	<i>213</i>
<i>Annexure C-10/4: ATR of DJB of 3rd meeting held on 28.10.20.....</i>	<i>215</i>

Chapter 11: Industry interface

<i>Annexure C-11/1: Minutes of meeting held with CII on 5.10.20 for CSR activities.....</i>	<i>221</i>
<i>Annexure C-11/2: Minutes of meeting held with FICCI on 20.10.2020.....</i>	<i>227</i>

Chapter 12: State of Haryana and pollution of the River Yamuna

<i>Annexure C-12/1: Minutes of meeting held with Haryana on 06.07.2020</i>	<i>230</i>
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Chapter 13: State of Uttar Pradesh and Pollution of the Yamuna

<i>Annexure C-13/1: Letter to Chief Secretary (UP) regarding NGT directions on drains.....</i>	<i>241</i>
<i>Annexure C-13/2: Minutes of meeting dt. 7.1.20 with Principal Secretary (UD) and Principal Secretary (E&F) of U.P.....</i>	<i>244</i>
<i>Annexure C-13/3: Letter dt. 21.9.20 to PS (I&FC) regarding violation of NGT order.....</i>	<i>249</i>
<i>Annexure C-13/4: Letter dt. 1.10.20 to Chief Secretary (UP) for status of projects to control pollution in Yamuna.....</i>	<i>252</i>
<i>Annexure C-13/5: PPT of meeting with Chief Secretary (UP) on 28.9.20.....</i>	<i>255</i>
<i>Annexure C-13/6: Field inspection report on STPs/CETPs/ETPS by Technical Expert Advisor of YMC.....</i>	<i>263</i>
<i>Annexure C-13/7: Report of CPCB on UP issue of Yamuna pollution.....</i>	<i>267</i>
<i>Annexure C-13/8: Compliance report of the directions issued by YMC in the meeting on 28.9.20.....</i>	<i>268</i>

OVERVIEW

This is the fifth report being submitted by the Yamuna Monitoring Committee to the Hon'ble National Green Tribunal pursuant to its orders dated 6.7.20 in OA No.06/2012-Manoj Mishra vs UOI and ors. The ensuing report of the YMC gives the progress on the directions in this Order, which emanates from numerous earlier orders and directions of the Tribunal.

The YMC was set up by the Hon'ble Tribunal's order dated 26.7.18 and had submitted an action plan covered in specific chapters. The same structure is being followed in all reports, including this one.

As directed by the Tribunal the current Report after submission to NGT will be sent to the Chief Secretaries of Delhi, Haryana and Uttar Pradesh and to key officers connected with the abatement of pollution and the rejuvenation of the river Yamuna. NGT has observed that in the past some of the parties to the matter had mechanically filed action taken reports even when there is no contest to the recommendations of the committee as such. It has required that the responses be limited to the desirability of recommendations of the Committee and not on mechanically filing action taken reports which have already been considered by the Committee and on which the recommendations have been made.

Considerable progress has been made on several matters which affect the cleaning and revival of the River Yamuna. In some cases the developments have been better-than-expected – attributable to the leadership shown by those at the helm of affairs. That this has happened despite curtailment of numerous activities caused by the COVID-19 pandemic must be recognised. To some extent the lack of progress at other places can be attributed to several officers being on leave sporadically, financial and administrative approvals getting delayed and a loss of momentum because of a climate of unpredictability.

In this situation the YMC is thankful that many officers came to meet the committee face-to-face, which greatly helped in the members being able to communicate the seriousness of the situation and the need for oversight and introducing systemic changes to accelerate performance. The one-to-one meetings held particularly with the new Vice-Chairman DDA, the

new Chairman of CBCB, the Additional Chief Secretary, Urban Development, GNCT Delhi, the technical officers, consultants and agencies connected with the YAP III projects, representatives of the Confederation of Indian industry (CII), the Principal Chief Conservator of Forests among others, have all led to accelerated outcomes in a short time. This has enabled the Committee to make studied recommendations based on the perception and the advice it received. These interactions paved the way for holding several follow-up meetings on video conference which provided a forum for focused discussion. Months of hedging and ambiguity were overcome as a result.

Video conferencing also made it possible to hold detailed and productive meetings with the Chief Secretaries of Haryana and Uttar Pradesh as without their leadership, it would not be possible to surmount the interdepartmental and jurisdictional issues which were constantly being brought up. Although a lot remains to be done, there are some positive outcomes which this report contains. Although nowhere near the achievement of the milestones and timelines laid out by NGT, it is a matter of some satisfaction that the Governments of Haryana and Uttar Pradesh have started to give primacy to intractable problems and begun implementing the directions issued.

The progress from July 2020 to end- November 2020 brings to the fore substantial and visible improvement in the execution of biodiversity and wetland projects which had been moving at a very slow pace. Surveillance activities, repossession of floodplain land which was under different kinds of encroachment has improved and the response to complaints from organisations outside the government has been receptive and swift.

The need for regular interagency coordination and the creation of an inclusive body to oversee the management of the floodplains, has been recognised by the DDA but YMC has pointed out that for such a body to succeed it must bring together the strengths and capabilities of over 16 stakeholders. The river is after all a creature of the hinterland and not merely the floodplains. Until now the prevention of pollution has been seen through the lens of official jurisdiction only. The fact that the river front is finally being viewed as an integrated entity requiring imagination, regulation and enforcement is perhaps the most redeeming

feature of the progress made in the last few months. With several parallel efforts underway taken up by different departments of the Government, there is a need to harmonise the approach to ultimately measure outcomes by the quality of the river water and not by individual project based achievements.

The whole subject of environmental flow, changing the cropping patterns to grow less water intensive crops, keeping vigil over extraction of groundwater require visionary thinking. The report of the National Institute of Hydrology is unlikely to make much headway without focused attention on the specifics of what needs to be done to prevent the loss of water and its diversion and extraction for irrigation. Maintaining the flow of one of the most important rivers in the country is not an end in itself but only the beginning of ensuring that human health does not suffer. Restoring the ecological balance has to be seen as essential – not optional. The state of Haryana has brought imaginative legislations and provided incentives to move to new cropping patterns but unless these appeal to farmers the possibility of reducing the diversion and exploitation of groundwater will not stop. In that case the possibility of enhancing the environmental flow would be remote.

Another aspect is the need for much greater engagement of the political executive as well as public representatives to build public participation and sustained involvement. Without the active participation of the elected representatives partnerships with industry, community level organisations and citizens groups may not be possible. Unless there is zero tolerance for creating pollution and regulation and enforcement is welcomed for the greater good of the citizenry, departmental efforts will remain sporadic.

The capital city cannot continue to be in a situation where large sections of the public are discharging sewage into the storm water drains which empty into the river. Seen from the lens of as things were in 2018, there is a perceptible change trying to collect septage and trap sewage in the drains and channelizing it for treatment as a transitional measure until the sewerage infrastructure is built is satisfying. However, the execution in the last few months by the urban local bodies and by DJB is stated to have slackened due to pandemic-related problems. The delay in applying the polluter pays principle and levying sewerage charges

despite the orders of the apex court and of NGT over several years is disheartening; more so when after many public announcements on septage collection and levy of annual charges there is no tangible movement.

It is a matter of regret that the quality of river water remains abysmally bad and the reports of CPCB and DPCC have brought out unacceptable levels of BOD as high as 57 mg/L and zero DO levels in some months which prevail despite all efforts. Ultimately if there is no improvement in the quality of river water it begs the question as to whether future generations will ever see the river as it existed before unorganised human habitations, illegal industrial activity and solid waste dumping ruined the river. The only hope is that with the biodiversity projects fructifying soon, the citizenry will have access to beautiful open spaces and recreational areas from where parts of the river can be enjoyed. It is hoped that the upcoming biodiversity parks would flourish and nature lovers, schoolchildren and ordinary citizens would be able to enjoy them in the not so far future. The report brings out what is on the anvil.

One of the positive features which was covered in the previous reports of YMC was building public awareness. During 2019, with the leadership of different officers in the Education Department, tens of thousands of schoolchildren were exposed to the good and bad points of the river Yamuna. Through a series of events, competitions and other imaginative activities children were becoming attuned to understanding the importance of the river and what is needed to keep it clean. With the closure of schools and all public events that momentum has unfortunately been lost. It is hoped that the government will revive the initiatives taken particularly as the cleaning of the Yamuna is a commitment of the Delhi Government.

Some other positive features which need to be mentioned is the steps taken by several agencies to start using treated waste water in thousands of parks maintained by DDA and the Municipal Corporations. Likewise, the operationalisation of the online monitoring systems linked to the servers of CPCB and DPCC giving real-time information on the functioning of the Sewage Treatment Plants and the Common Effluent Treatment Plants and bringing the information in public domain through the websites of CPCB and DPCC gives satisfaction. With

persistence from different officers and agencies the systems have finally fallen into place. It is now up to the officers and engineers to use the systems as a tool for anticipating pollution ridden problems and instituting a rapid response to derive best advantage from technology.

The overview in its very nature cannot encompass all the positive developments or capture numerous areas of grave concern which persist and are contained in the ensuing the chapters of this report.

It is hoped that the National Green Tribunal will find the report of use in receiving an appraisal of the progress made in the last five months on the implementation of detailed orders passed by the Tribunal. It has been a rare opportunity for the YMC to get to the entrails of what ails the river Yamuna and even if the progress appears to be slow, one thing is certain – the overall attention that the Yamuna is getting within Delhi is undoubtedly because of the stringent orders of NGT.

YMC thanks the Hon'ble Tribunal for the exceptional opportunity extended to the committee.

Chapter-1

Environmental Flow

NGT's order dated 11.9.19

- a) *"The impact on ground water regime due to pilot project may be monitored by CPCB, DPCC and CGWA. The study being carried out by the National Institute of Hydrology, Roorkee (NIH) on directions of NMCG may be completed as per schedule by March 2020.*
- b) *The current regime of Environmental flows may be augmented especially in lean seasons by way of coordination amongst member states stakeholders".*

Present Status as reviewed by the YMC:

On the suggestion of the YMC, Ministry of Jal Shakti undertook an E- flow study for the Delhi stretch of the river Yamuna through the National Institute of Hydrology (NIH) Roorkee. The report submitted by the NIH on 01.05.2020 was discussed in the meeting held in the Ministry of Jal Shakti on 22.5.20. The YMC had been invited to participate in the meeting and had inter alia suggested notifying the E- flow during different months of the year when the minimum lean season flow during January/February needed 23 cumecs. YMC also drew attention to the policy measures needed to achieve the recommended flow in consultation with all the stake-holders.

In the report submitted to the Hon'ble Tribunal on 29.06.20 the YMC had requested the Hon'ble Tribunal to issue the following directions:

1. *"That the recommended E- flow is a scientific study and all stakeholders should treat it as a critical parameter for revival of the river.*
2. *The, MOJS, UYRB and the riparian states of Uttarakhand, HP, UP, Haryana and Delhi who are beneficiary states under the Water Sharing agreement of 1994 to rework the water sharing arrangement to permit release of the recommended E- flow at Hathnikund barrage.*

3. *The NMCG, UYRB, MOJS and the riparian states should identify policy and water conservation measures, including measures for enhancing water use efficiency of agricultural practices and promoting cultivation of less water intensive crops through price support mechanisms.*
4. *The NMCG and MOJS should prepare a road map, with timelines in consultation with state governments and other stake holders for the implementation of various policy and conservation measures.*
5. *CGWB and CPCB be directed to monitor the status of ground water in floodplains areas where shallow reservoirs have been created and if the outcomes are encouraging, direct GNCTD and States of Haryana and UP taking up such works in their areas along the floodplains (II) DDA and Demarcation of the Flood.”*

After perusal of the YMC’s report Hon’ble Tribunal on 06.07.2020 passed the following directions:

“Third major issue is of e-flow which has to be worked at administrative level. Apart from authorities in Delhi, the States of Haryana and UP cannot avoid their responsibility. Undertaking awareness programme and involving civil society is essential. Effective institutional monitoring mechanism has to be evolved.

The issue of e-flow may be resolved by the Principal Committee as recommended by YMC

We have carefully perused the recommendations of the YMC. We are in agreement with the same. The directions proposed are essential for compliance of orders of this Tribunal and environmental norms.”

Environmental Flow:

A. Comments of NMCG

The National Mission on Clean Ganga, Ministry of Jal Shakti has sent a status report on the implementation of the Hon’ble NGT’s direction reproduced below:

“Status Report in respect of NMCG/ MoJS on the Action Points covered in the Final Report of Yamuna Monitoring Committee.

- 1. NMCG was asked by YMC to have estimation of quantitative enhancement possible with water conservation measures introduced in the Yamuna river basin to be done as a part of the NIH study:***

Status:

NIH, Roorkee was awarded a study titled “Environmental Flow Assessment for Yamuna River from Hathnikund Barrage to Okhla Barrage”. The objectives of the study undertaken by NIH are as follows:

- To assess environmental flows for Yamuna river from Hathnikund barrage to Okhla barrage.*
- To suggest management options for maintaining the recommended e-flows.*

The draft final report was submitted by NIH in May' 2020 and presentation was also made before the Hon'ble Minister of Jal Shakti during meeting dated 03.06.2020 and before Secretary, D/o Water Resources, River Development & Ganga Rejuvenation (WR, RD &GR) cum Chairman, Principal Committee of Hon'ble NGT(Yamuna) during meeting dated 22.05.2020.

Following management strategies have been recommended for maintaining e-flows in the study reach:

- i. Increase in irrigation efficiency and reduction in diversions to Western Yamuna Canal (WYC) /Eastern Yamuna Canal (EYC):*** *In present scenario, only 42.7% and a meagre 8.5% of inflows at Hathnikund barrage are released into the river during monsoon and non-monsoon seasons, respectively. Adoption of scientific water management practices such as proper assessment of command area size, proper fixing of outlet sizes to match the crop water requirements, scientific estimation of crop water demands, scheduling of irrigation based on soil-water-plant interactions, minimising evaporation losses from irrigated fields through use of mulches, conjunctive use of surface water and groundwater, blending of water for irrigation application in salinity-affected areas, and technological up-gradation by adoption of sprinkler/micro-sprinkler/drip irrigation systems can help in achieving the desirable level of irrigation efficiency.*

- ii. Regulate groundwater withdrawal in the basin especially in the Mawi-Baghpat stretch and augment groundwater recharge in order to sustain base flows** – practices like shifting from traditional Rabi crops (wheat) to water intensive crops viz., paddy/sugarcane cultivation during Rabi season due to assured water supply and for better monetary returns, has led to receding groundwater levels all along the river stretch from downstream of Kalanaur to Baghpat, which in turn has affected the base flow contribution to the flows in Yamuna in this stretch during the non-monsoon period. As an option, farmers may be encouraged to cultivate less water intensive crops like cotton crop in place of water guzzling paddy crop and employing efficient water use practices such as micro-sprinkler, drip irrigation.
- iii. Augmentation of non-monsoon inflows at Hathnikund barrage by creating storage of monsoon runoff in the upstream reaches**- three multi-purpose storage projects — Lakhwar, Kishau and Renuka — in the Upper Yamuna Basin are already under consideration by Department of Water Resources, River Development and Ganga Rejuvenation. These three projects are expected to augment the seasonal water availability in the downstream sections of the river. As per preliminary analysis by Uttarakhand Jal Vidyut Nigam Limited (UJVNL), Dehradun, it is estimated that the **water availability corresponding to 90% dependability in the non-monsoon season from November to June will increase by approximately 168%.**
- iv. Treatment of effluent coming through various drains meeting river Yamuna** - the non-monsoon average BOD of the drains discharging in the river ranges from 19.6 mg/l to 262.2 mg/l. **If the effluents joining river Yamuna through these drains are treated at source with BOD level of 10mg/l, the river will become healthy to sustain biodiversity, else around 390 cumec flow will be required to be discharged from Wazirabad barrage, which is not a viable solution.** Therefore, it is suggested to identify the industries/municipalities not treating the effluents to the desired levels and force them to treat the effluents before discharging in the drains meeting river Yamuna.

In terms of the objectives of project sanctioned to NIH, the final report has been submitted by NIH and further aspects related to estimation of quantitative enhancement

possible with water conservation measures introduced in the Yamuna river basin are proposed to be taken up in another study.”

2. *MoJS has been directed to notify recommended E- flow in the river Yamuna within two months.*

Status:

A meeting to discuss the recommendations/ results of the draft final report submitted by NIH-Roorkee for project titled “Environmental flow assessment for Yamuna river from Hathnikund barrage to Okhla barrage” was held on 03.06.2020 via video conferencing under the Chairmanship of Hon’ble Minister, M/o Jal Shakti. The meeting was attended by Hon’ble Minister of State, M/o Jal Shakti, Sh. SriramVedire, Advisor, M/o Jal Shakti and officials from NMCG and NIH-Roorkee. Based on the discussions, following has been decided.

- i. *A detailed action plan on increasing water use efficiency in irrigation sector may be evolved.*
- ii. *A concept paper on long term action plan for rejuvenation of river Yamuna in Delhi stretch may be developed.*

Further decision on notification or otherwise on recommended E-flow in the river Yamuna will be taken thereafter.

3. *MoJS , States of Haryana, UP, Delhi Uttarakhand and HP were directed to review the Water sharing arrangement of 1994 for ensuring E- flow in the river Yamuna.*

Status:

As per terms of MoU between UP, Haryana, Rajasthan, HP and NCT of Delhi dated 12.5.1994, the agreement is for review after the year 2025 if any of the Basin States so demand.
“

YMC’s Comments:

Since NMCG and Ministry of Jal Shakti is already seized of the matter further developments on E-flow and the water conservation measures by basin states will have to be monitored for achieving the overall objective of river rejuvenation.

B. Report of Irrigation & Flood Control Department (IFCD) of GNCT on Shallow Reservoirs Created for Impounding the Monsoon Flows and Recharge of Ground Water.

The Status report from IFCD was received on 24.11.2020 covering:

- Shallow reservoirs created for impounding of monsoon flows and
- Recharge of Ground water.

The Report is brief and is reproduced below in full :-

“CREATION OF WATER BODIES/ RESERVOIRS IN FLOOD PLAINS OF RIVER YAMUNA BY RETAINING EXCESS WATER IN THE RIVER DURING MONSOON SEASON FROM PALLA TO WAZIRABAD”- Report by GNCT’s Irrigation & Flood Control Department.

The pilot project for recharge of Yamuna flood plain was initiated in the year 2019 on an area of 40 acre (30-acre Private Land and 10 acre Gram Sabha Land) near ShankNo.16 on RME. The private land was taken on a lease of 3 years @ Rs. 77000/- per acre per year with annual increment @ of 7% simple interest. The foundation stone for the pilot project was laid by Hon’ble Minister Jal Shakti, GoI, Hon’ble Chief Minister, Delhi and Hon’ble Minister (I&FC) on dated 09.08.2019. The work of pilot project was started on 10.08.2019 near shank no. 16 at RME and a pond/ reservoir in 17.60 acres was excavated with an average depth of 1.5 metre. A rise of 1 to 1.3 metre was observed in the piezometers due to flood in the River in the year 2019. The average infiltration rate pre-monsoon and post monsoon was observed to be 375 mm/ hour and 90 mm/ hour respectively. Due to heavy flood, about 66% siltation of the excavated pond had taken place. The estimated volume of water recharged due to pond was 190 MG.

The report on the results of the pilot project submitted by PMC was shared with CWC, CGWB, DPCC, CPCB. The CWC, CGWB and CPCB have given their comments in the meetings held in their offices on the report of the pilot project, wherein, it was stated to continue the pilot project for a further period of 1-2 years. Decision was taken by the Govt of Delhi to continue with the pilot project for two more years as per the recommendation of CWC and CGWB.

In the year-2020, the work of excavation of pond/ reservoir was started on 24.06.2020 and has been already completed on 10.07.2020 in an area of 26 acre (out of 43 acre; 17 acre area has been used for banking of excavated earth). The pond has been excavated in an average depth of 1.75 Metre with quantity of excavation as approx. 1,93,000 Cubic Metre.

Further, the work of installation of 20 Nos. Piezometers (10 nos. within the flood plain with 30 m depth and 10 nos. outside the flood plain with 70 m depth) has also been completed

in due consultation with CGWB. 20 Nos. Piezometers have been constructed in and around the flood plain area from village Palla to village Hiranki in the year 2020. A total No. of 33 Piezometers are now available in and around the flood plain including 13 Nos. Piezometers constructed in the year 2019. The pre-monsoon average rate of infiltration in the pond has been calculated to be 650 mm/ hour. A rise of 0.5 to 2.0 metre has been observed in the piezometers due to flood in the River in the year 2020. The bottom of the inner slopes of the banks on all sides have been protected with bamboo chicks with anchorage to prevent erosion of slopes.

During the monsoon season in the year 2020, very low discharge has been released from Hathnikund barrage in river Yamuna (Maximum discharge being 36557 Cusec only on 25.08.2020) due to which only 3 cycles of filling of pond with flood water could be observed. The pond/reservoir has dried out after receding of flood water in the river.

The report on the results and observations of the pilot project 2020 has been submitted by the Project Management Consultant has been prepared and same has been shared with various deptts like CWC, CGWB, Principal Committee NGT, CPCB etc. for their perusal and suggestions/ feedback to decide further course of action regarding the implementation of the project on a larger scale.”

Comments of the YMC:

CPCB in its Status report submitted to the YMC has also confirmed that Scientist from CGWB had visited the site on 29th June 2020 and the monitoring of ground water, both in terms of quality and quantity, is still continuing. The ground water level in the project area will require to be monitored so that lessons learnt can be used to recommend more such projects.

Chapter - 2

DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

Extracts pertaining to DDA in NGT Order dated 5.3.20

Demarcation and Rejuvenation of the Flood Plains:

- a) *DDA may undertake physical demarcation of the entire floodplain within three months and thereafter, after taking re-possession within next three months, fence such areas and convert them into bio-diversity parks as per the action plan proposed by them. DDA will be liable to pay a sum of Rs. 5Lakh per month till compliance of this direction from 01.04.2020 which may be recovered from the erring officers and deposited with the CPCB for restoration of the environment. The Monitoring Committee will look into the compliance.*
- b) *No activity of edible crop/ cultivation on the floodplain may be undertaken. The **DDA** may ensure compliance in the same manner as direction (a) above with regard to accountability of officers.*
- c) *The DDA to assign the task of demarcation, re-possession, fencing and development of bio-diversity park thereon to an appropriate and dedicated institutional set up.*
- d) *DDA shall complete the work of putting of CCTVs and keep the area secure from further encroachments as such.*
- e) *The agencies (Railways, NHA and GAIL) shall give requisite permission to DDA for launch of optical fibre cable within one month of the receipt of such request after which the DDA will be free to proceed subject to any objection there against being considered by this Tribunal.*
- f) *The UP-Irrigation Department shall give permission to DDA for the execution of CCTVs related work to the DDA within one month of the receipt of such request after which the DDA will be free to proceed subject to any objection there against being considered by this Tribunal.*

- g) *DDA to strictly regulate illegal dumping of malba or carrying the same to flood plain by collecting compensation wherever violations are found and submit action taken report to Monitoring Committee.*
- h) *The prohibition with regard to the throwing of pooja material or any kind of other material in river Yamuna except only designated sites to be ensured by **DDA**, GNCT, UP and Haryana.*
- i) *The Transports Departments of GNCT, UP and Haryana need to enforce the said polluter pays principle so that no malba is dumped on the flood plains.*
- j) *In view of comments of the Monitoring Committee, the DDA is directed to undertake the work of restoration of flood plains so that such flood plains undertake or performs the requisite ecological functions and DDA submits an action plan with timelines to Monitoring Committee in this regard, within one month from today. The two commentary tracks okay.*

Directions Related to the Establishment of an SPV

In orders from 11.9.19 onwards NGT had directed DDA to constitute a Special Purpose Vehicle (SPV) preferably within two weeks for the rejuvenation of river Yamuna. The functions of such entity will include ecological restoration of the flood plain zones, setting up of bio-diversity parks, artificial wetlands, phyto-remediation of drains at the river mouth locations, maintaining the vigil and undertaking flow measurement, creating ecological services, removing encroachments and undertaking other activities, including river front development. It may also take steps to attract and educate the citizens and nature enthusiasts for nature related activities, including building environmental temper amongst the citizenry, without in any manner causing any damage to the floodplains.

5.3.20.

DDA in its submission with regard to River Front Management Authority has stated that since the land in Delhi is with the Govt. of India and DDA is the agency authorised to manage land parcels in Delhi, land owned by the DDA along the river front cannot be transferred to any other agency. **The DDA has suggested that to ensure better coordination amongst the various agencies, River Front Society or Special Purpose Vehicle be considered.**

However in its response dated 17.2.2020. DDA went back on this and said it was not possible to set up any Authority within an Authority.

6.7.20

NGT did not accept the DDA's contention that it cannot constitute an agency by whatever name it is called and the Tribunal proceeded to issue directions thereon.

It was noted by the Tribunal's that the DDA has been constituted under the Delhi Development Act, 1957 and its statutory responsibility is development of Delhi and all matters ancillary thereto. Section 5 A enables the authority to constitute as many committees as may be necessary for various purposes. It directed that a dedicated agency needed to be in place which can focus on issues relating to the river rejuvenation and also involve civil society or such other experts/institutions as may be found necessary for ecological restoration of the floodplain zones, setting up of biodiversity parks, artificial wetlands, phyto-remediation of drains at the river mouth locations, maintaining the vigil and undertaking flow measurement, removing encroachments and undertaking activities including river front development.

Such a body was also expected to take steps to attract and educate citizens and nature enthusiasts for nature related activities including building environmental temper amongst the citizenry without in any manner causing any damage to the floodplains is already directed by the Tribunal.

The NGT had expressed the hope that Yamuna rejuvenation could be a model for the rejuvenation of 351 river stretches in the country given its location in the national capital where all expert authorities and funds are available.

The NGT further directed that DDA must forthwith comply with the earlier direction instead of finding lame excuses and taking a stand of avoiding public duty. YMC was asked to continue to monitor compliance of the directions for the time being.

In compliance with the directions of NGT, the new Vice-Chairman DDA discussed the matter with YMC and was apprised with the day-to-day problems that arise on the riverfront, each segment of the river presenting different kinds of challenges requiring completely different approaches. However if the river is to benefit from multifarious efforts which are on

the anvil, there has to be oversight with a focus on the river and not on departmental and divisional issues.

The Vice-Chairman thereafter sent a draft order proposing the establishment of a River Yamuna Management Committee under the chairmanship of the Lieutenant Governor proposed to be set up under section 5 A of the DDA act **Annexure C-2/1**.

Comments of YMC

YMC noted that although an effort had been made to address the objectives enunciated by NGT, the structure does not lend itself to accepting full-time responsibility for several facets of river rejuvenation and protection as the proposed committee under the Chairmanship of the Lieutenant Governor Delhi was expected to meet once in six months. Such Committees are only effective if there is a structure below which does the monitoring and can apprise the Committee under the LG about multifarious challenges and whether the action taken was adequate. It had been proposed that the Member Secretary would be the Principal Commissioner(Horticulture)in the DDA. This division of DDA has no direct interface with the urban local bodies, the police and with different Departments of GNCT like Irrigation & Flood Control and DJB , which was essential to be effective..

YMC in its communication at **Annexure C-2/2** pointed out several areas where there was a need for rectification of the proposed order clarifying that this was YMC's own opinion and had not been placed before NGT. The most important modifications suggested was the need to have an Executive Committee under the Vice-Chairman DDA to meet every two months and to have empowered Subcommittees which would attend to and expressly monitor different aspects like surveillance, completion of biodiversity projects, identifying new projects, providing oversight for encroachment and demolition activities and the provision of civic amenities to facilitate the entry of the public in various developed natural areas, subject to conditions. Several other suggestions were made and the documents are at **Annexure C-2/3** and **Annexure C-2/4**.

DDA has now sent a draft order which may kindly be seen at **Annexure C-2/1**. This order has been drafted keeping in mind YMC's suggestion to have an Executive Committee which will meet every three (not two months) as was suggested under the Chairmanship of the Vice-

Chairman DDA. The need to have an Advisory Committee of experts as well as different subcommittees has been recognised in the new formulation and catered for but the Constitution and terms of reference of the Sub committees have not been delineated in the order. If they only meet inside committee rooms and give general advice it will serve little purpose. It is essential that the Sub-committees have authority to visit the areas they oversee and their advice is documented and placed before the Executive Committee.

Several other responsibilities have also been brought under the overall umbrella of the RYMC including responsibility for conserving the riverine ecosystem, groundwater recharge, to provide recreational and cultural facilities while making the river physically and visually accessible to the people, to promote ecotourism, to prevent encroachments/illegal activities and oversee reclamation of land, besides devise strategies for phyto-remediation of drains at the mouth of the river. The promotion of education on water conservation, cleaning and recycling of water through various departments and NGOs, have been also included in the terms of reference of the RYMC under the Lieutenant Governor.

Coordination with DJB, MCDs, departments of GNCTD, UP Irrigation department, as well as experts has been provided for. The need for a public-private partnership mode has been recognised and there is a mention of the management of the Ghats and the organisation of public events in the greenway areas so as to generate revenue to manage and maintain the floodplains.

The Executive committee has 15 members most of whom are there in ex-officio capacity and they represent the key departments whose presence is necessary on such a committee. There is a window for involving reputed institutions from the relevant fields for a specific period of three years. YMC's suggestion to see that the Commissioner Industries is also represented has been accepted. All the Municipal Corporations, the police, and DJB are represented on the committee.

DDA's draft order may kindly be seen at **Annexure C-2/1**.

The sub committees would be needed to monitor , coordinate and supervise matters connected with the quality of river water, management and maintenance of the floodplains and to enforce the directions of the RYMC.

Comments of YMC

After modification as now done, the main RYMC and the Executive Committee assisted by the Subcommittees if they work with a sense of purpose and direction and have autonomy to act without waiting for approvals of the RYMC but subject to overall guidelines, can together achieve much of what is needed for the flood plain rejuvenation.

It is however the opinion of the YMC that many such committees though well-intentioned either do not meet or the work is not handled with a sense of ownership. This requires executive leadership and the willingness to be receptive to public suggestions and concerns. The mere fact of bureaucratic representation will not give results.

YMC had recommended that reports of the committee should be placed in public domain every six months which would give citizens an insight into what has been achieved. This suggestion has been watered down because it has been assigned to the Executive Committee to submit a report on the activities taken up during the period to RYMC and to publish an Annual Report on the status of the Yamuna floodplains and river Yamuna, after approval of the RYMC. YMC feels that scores of annual reports of prepared and uploaded but the public does not get an idea of achievements, challenges and what is being done about them.

While the Executive Committee may bring out the annual report, it would be in everyone's interest if whatever is transacted in the quarterly meetings is put up by way of a comprehensive report and released to the press at a press conference. In that way there would be at least some public interface and if any issues are to be raised, there would be an opportunity for citizens and the media to do so.

Of particular importance is the fact that there exists an elected government with direct authority for matters connected with water, sewage, the environment and river rejuvenation and these are being addressed and implemented by various Departments of the Government. Second, though the committee under the LG would be able to give a direction, it needs to receive inputs from different sources. That source cannot be vested entirely only in the DDA which has no connection with solid and liquid waste discharge by households and by formal and informally set up industries but which are sources of maximum pollution. Septage management is also an integral part of the efforts made to contain pollution emanating from households by

providing for registered collectors who have to deposit the sewage in pumping stations designated by DJB. Huge projects for upgrading, rehabilitating and constructing new STPs and septage collection are in progress. Those efforts have to be monitored systematically as elaborately discussed in Chapter 4 of this report.

Through Government orders the Municipal Corporations have been made responsible for seeing that the septage collection services are run within their jurisdictions and the District Magistrates have been authorised under a government notification to enforce the regulations. None of these departments/officers report to the DDA and if this work is added onto the RYMC it would diffuse matters which need constant monitoring and unwittingly provide alibis for inaction.

It is therefore the suggestion of the YMC that there should be another Executive Committee under the Additional Chief Secretary Urban development to monitor the above aspects. There is already an IDMC under the Chief Secretary which has held seven meetings referred to elsewhere in the report. But that committee does not seem to be overseeing anything beyond phyto-remediation/bioremediation projects although the recommendation was for overarching oversight of the progress on issues like septage management, prevention of solid waste dumping, imposition of environmental compensation and use of treated water.

In the last meeting held with the Additional Chief Secretary on 23.11.2020 for the first time for the first time YMC saw some effort to attend the meeting after reviewing the coordination and implementation issues connected with the functions of the DJB and the Municipal Corporations. Therefore it is best that monitoring of the projects, schemes and strategies connected with DJB and the Urban Local Bodies is done by the Department responsible for handling the budgets, issue of notifications, Cabinet notes and Government orders and whose head is designated as the Director Urban Local Bodies under the MCD Act. This step will provide a focal point for several issues and although the YMC found that three of the Principal Secretary's in charge of Urban Development had failed to provide the leadership and supervision needed despite exhortations from YMC's, it is hoped that now that the position has been upgraded to a more senior level (Additional Chief Secretary) there would be greater responsiveness. In the context of setting up the RYMC it is important to distinguish between

activities connected with the floodplains and appurtenant rejuvenation projects and those connected with , programs, schemes and enforcement action which is a purely a function of the Government and local bodies. To that end there is a need for Government involvement and oversight of the pollution related functions which is not a DDA responsibility.

Other Important directions pertaining to DDA in NGT Order dated 11.9.19

NGT had noted :

“DDA had failed to remove the debris and to secure the area by erecting barbed wire fencing. The DDA was also required to furnish a performance guarantee in the sum of Rs. 50 Lakhs with the CPCB. While highlighting the need for Demarcation and Rejuvenation of the Flood Plain as brought out by the YMC NGT observed that the following steps were required to be taken:

- 1. Physical demarcation of the entire floodplain to be done by DDA.*
- 2. No construction activity in the demarcated floodplain.*
- 3. Repossessing the floodplain area under illegal and unauthorized possession*
- 4. Polluter Pays Principle: Compensation of 50,000 INR. This compensation will be utilized for Restoration and Rejuvenation work.*
- 5. Prohibition of throwing Pooja material or any kind of other material in River Yamuna except only the designated sites. Violators to pay 5,000 INR on ‘Polluter Pays Principle.’*
- 6. Existing wetlands and water bodies should be deepened and enlarged and provide more water bodies.*
- 7. Floodplains shall be restored, preserved and beautified in accordance with the reports of the experts committee.*
- 8. Restricted activities of Floriculture/ Silviculture can be carried out subjected to permission.”*

Monitoring undertaken by YMC from July 2020 onwards.

In pursuance of NGT’s directions YMC kept up the pressure and held one face-to-face meeting and three videoconferences with the Vice-Chairman DDA after issuing a detailed agenda listing NGT’s directions and the timelines which had been indicated by the Authority and which had been exceeded. The meetings were as follows: –

1. The Vice-Chairman of DDA paid a courtesy call on YMC on 6.8.20 when the absence of coordination was brought to his notice along with the fact that progress on specific activities contained in the repeated orders of NGT had been slow. He was given a thorough briefing on all aspects of the floodplain related directions of the Tribunal.
2. A meeting was held on 23rd September to review the progress of demarcation and surveillance activities, eviction of encroachers, illegal dumping repossession of land which had been allotted temporarily to the DMRC, NHAI, PWD and others and the need to establish contact with the Government of Uttar Pradesh and pursue the Department of Irrigation in the state because work on rejuvenation activities in the UP portion of the floodplain should go hand in hand with activities on the Delhi floodplain. Specific cases of delayed land matters which were connected with unending litigation were also brought to his notice which were resulting in continuing habitation/cultivation on the floodplain completely contrary to NGT's specific orders. **Minutes are at Annexure C-2/5.**
3. A review meeting was held on 30.9.20 to review the progress on the restoration of the Yamuna floodplain through constructed wetlands and biodiversity projects. The Vice-Chairman give an account of the progress at each point. For the first time YMC was told that apart from payment of Rs. 35 crores for the Asita (East)project which had been technically vetted and administratively approved by the Government of Uttar Pradesh, there was an additional need for Rs. 53 crores plus Rs. 10 crores for which the estimates had been sent to the Government of Uttar Pradesh. YMC had never been informed about these areas before and sought more details.
4. **The Vice-Chairman informed the YMC that the Government of India is implementing a plan for connecting the central vista to the Yamuna River. This is a fresh point as far as YMC is concerned and although it has been reported widely in the newspapers, there is no official communication to YMC after the meeting.**
5. **YMC asked the Vice-Chairman to see that the directions on the protection of the floodplains should be explained appropriately and NGT kept informed of the**

developments. No details were however shared with YMC. Minutes at Annexure C-2/6.

6. A separate meeting was held on 6.10.20 to discuss the progress on the SPV or any other entity which could effectively pay focused attention to the need for oversight, surveillance, maintenance, enforcement of floodplain related activity; also the preparation and execution of a unified plan for providing public access to developed areas like nature walks, green spaces, parks and cycle tracks and to build public awareness as directed by NGT.

For the first time there was receptivity of the need for such an independent body which would have the wherewithal and commitment to focus on the river Yamuna and its floodplains. No minutes were issued but this has already been dealt with in the preceding portion of this chapter.

It is being recounted here to show that numerous efforts had to be made to be able to get the attention of the VC and his officers and it is a matter of satisfaction that after nearly 20 months of ambivalence one saw receptivity for a cause.

Progress on the Directions of NGT

An Action Taken Note has been sent by DDA and the progress is recapitulated below:

- (i) **Matters related to demarcation, surveillance, enforcement and protection.** It has been certified that the demarcation of one in 25 years floodplains from Wazirabad to Jaitpur has been completed on both banks through the erection of also 591 bollards. 310 flag posts and 24 signboards and another 29 will be completed shortly. Details of the CCTV cameras have been given and new locations have also been suggested by Prof CR Babu which are being attended to.

120 security guards have been deployed round-the-clock in three shifts at vulnerable points along with four patrolling vehicles along the entire Yamuna floodplain to check illegal dumping of malba and to prevent encroachment. 222 challans have been issued by now with 186 in the year 2019 and 35 in 2020. However, the State Transport Authorities of Delhi, Haryana, UP, Rajasthan and Punjab have not responded to requests from DDA for cancellation of the registration of the vehicles. This is despite NGT's orders which although it is a small

matter in the totality of so many activities points to an unwillingness to take deterrent action despite numerous efforts having been made by DDA to take it up with the State transport authorities. It shows that such matters are not taken seriously.

If the strategy of installing so many CCTV's is to be belied by non-action on the part of the enforcement authority of the states where the vehicle is registered, it amounts to open defiance and it is necessary that the STA's concerned are taken to task and held accountable through the Chief secretaries of the states, so that it is apparent that at least in Delhi there is zero tolerance for dumping on the floodplain. It will also act as a deterrent to many government departments whose contractors or using the floodplains for projects within Delhi.

(ii) Repossession of land occupied by agriculturists.

It has been reported that approximately 870.70 acres of land has been cleared from encroachment by June 2020. Since then 214.68 acres has been further retrieved until 19.11.2020 and 105 acres is proposed to be cleared by the end of December 2020. Through this plan 319.68 acres will be retrieved from encroachment by DDA belonging to the floodplains of the river Yamuna by the end of December 2020. This is in addition to the 870.70 acres already cleared. Details have been provided at annexure B of DDA's action taken report at **Annexure C-2/7**.

(iii) Eviction of encroachments:

DDA has now responded to say that most encroachments are in the 'O' zone in Khizrabad. Removal was initiated but further action is being taken only after markings are made on the survey plan. A joint inspection was carried out to identify the encroachments but the exact identification of land could not be ascertained from the khasra numbers. It has been decided that a survey map has to be prepared and the khasra numbers superimposed thereon. The fresh demolition program will only be done thereafter. This should have been anticipated and involvement of the revenue authorities had been suggested by YMC two years ago but the demolitions were carried out in a haphazard manner leading to court stays and the authorities in DDA not even knowing whether the occupants had any legal rights or not. DDA needs to have this survey work completed within this year and to commence with the demolition program for disputed areas of Khijrabad executed immediately thereafter. In non-disputed areas demolition

should continue because these are petty waste pickers et cetera and they erect their jhuggies and shanties late at night. Vigil has to be maintained as it is builders and colonisers who encourage the construction particularly in the winter months.

(iv) Release of funds by UPA Irrigation department

There are three pockets of land under the jurisdiction of UP government which include:
– table at 5 of annexure a of DDA under the heading release of funds by UP Irrigation department.

S.No.	Agenda Items of YMC	Status Report/Comments of DDA.
1.	Release of fund by UP Irrigation Department.	Land belongs to UP Irrigation Department. Three parts under U.P. Govt. jurisdiction includes: (i) Old Railway Bridge to ITO Barrage (Eastern Bank) having an area of 107 Ha. costing Rs. 35 Cr. Approx. (ii) NH-24 to DND Flyway (Eastern Bank) having an area of 162.75 Ha. Costing Rs. 53 Cr. Approx. (iii) Hindon cut wetland having an area of 30 Ha. Costing Rs. 10 Cr. Approx. The total 299.75 Ha. of land falls under U.P. Irrigation Department, estimated cost for the Restoration and Rejuvenation works is Rs. 98 Cr. Approximately. No fund has been released by UP Govt. till date in spite of sanction of Rs. 10 Cr. to UP irrigation department by UP Govt.

A total of 299.75 ha of land was under the UP Irrigation Department and the cost for restoration and rejuvenation works out to Rs. 98 crores approximately with the breakup given at **Annexure C-2/8**.

Until now DDA had only informed the YMC about one project at a cost of Rs. 35 crores which was being pursued for the last almost 18 months. UP Principal Secretary Irrigation had told YMC Member SC of having personally taken up the matter with the Chief Minister. After the subject was first broached on a visit to the biodiversity Park with the then Vice-Chairman DDA on 7.12.20, YMC has pursued the release of funds at every conceivable level in the Government of Uttar Pradesh. In all meetings the officers including the Engineer in Chief of UP Irrigation had assured that the money would be released and the UP Government had found

the technical estimates of DDA in order. Despite that, the funds have not been released and now DDA says that an additional Rs53 crores and Rs. 10 crores are needed which had never been mentioned earlier.

YMC has not gone into the justification as it is a new development. Looking at the extreme delay in the release of Rs. 35 crores it is unlikely that an additional Rs. 63 cr would be provided by the Government of Uttar Pradesh. NGT is being requested to issue a direction to the Government of Uttar Pradesh as the restoration and rejuvenation activities on the floodplains on both sides of the river are necessary to improve the ecological balance and maintain biodiversity. There is no point in developing one side of the river and leaving the other side either fallow or under illegal cultivation. The need for making payment (although at that time it was only Rs. 35)was emphasised by the YMC in the meeting held with the Chief Secretary, Uttar Pradesh on 28.9.2020. None of the officers including the CS held out any hope of making the payment. Without a firm, time bound direction this will not fall into place and some way has to be found to bring it to the notice of the political executive that this is affecting the overall plans for rejuvenation of the river Yamuna – a matter which is not specific to only to any agency or government but requires ownership by all.

If the floodplain has to be protected obviously an agency which has domain knowledge, experience and is well-versed in setting up biodiversity Parks and wetlands needs to be engaged and that happens to be the Delhi Development Authority in so far as Delhi is concerned. It is unfortunate that this matter has been brought up by DDA only now but even so it is in public interest that directions are given to the Government of Uttar Pradesh to execute the restoration and rejuvenation projects or pay DDA and get it done.

The hold-up on the side of Uttar Pradesh Government is long and protracted and requires strong intervention by NGT by summoning the Principal Secretary Irrigation of the Government of Uttar Pradesh and the Vice-Chairman DDA and giving them one month's time to sort out details and take up this matter before the NMCG as it is integral to the cleaning of the Ganga.

Since this is not going to be resolved through the official channels it may require a direction which makes it incumbent upon the political executive in the Ministry of Jal Shakti and

the Government of Uttar Pradesh to find funds for this important work which is so necessary to restore the ecology of the river. A total of 299.75 ha of land is under the UP Irrigation department and the cost for restoration and rejuvenation works out to Rs. 98 crores approximately with the breakup of 35 crores + Rs 53 crores +10 crores according to the latest estimates **Annexure-C-2/8. The justification and the financial budget has not been examined by YMC.**

(v) Malba dumping on the floodplains

Different agencies including DDA have been using the floodplain to dump debris (construction and demolition waste). For the first time DDA has given a report at Annexure A which shows that concrete cubes, C and D waste, have been removed at different locations like Mayur Vihar, near Nizamuddin Bridge, Khizrabad, Asita East, Western Bank near Sarai Kale Khan, Signature Bridge. The agencies involved were the NHAI, Delhi PWD, DTTDC, DMRC, and DDA itself.

YMC was receiving constant complaints on its Twitter handle besides letters and complaints from different organisations. The matter was taken up with the Vice-Chairman DDA and he was requested to see that such complaints were responded to on social media, immediately because the organisation was getting a bad name. The YMC requested that the complainant should be associated with the efforts to remove the debris so that they knew what was happening on a day-to-day basis. This was done and now DDA has begun to respond to complaints made on social media. The total amount of Malba/C&D waste which has been reported by DDA to have been removed from different sites along the floodplain amounts to **45,293 metric tons Annexure C-2/8.**

The above sequence indicates that there has been substantial progress in the protection/surveillance/removal of Malba from the floodplains. The pressure will have to be maintained but it is for the first time the DDA has instituted tangible measures keep track of cumulative progress and begun to maintain records.

The involvement of river -related NGOs who have been highly critical in social media has helped keep the pressure up. It is however a continuous exercise and will require a permanent

and dedicated group to provide oversight on the ground. Fortunately this is one of the terms of reference of the proposed River Yamuna management committee proposed by DDA.

(vi) Status of restoration and rejuvenation Projects on the River Yamuna Floodplains

The Position is explained in the note below which has been extracted from the report of DDA which is at **Annexure C-2/9**.

Status of 'Restoration and Rejuvenation of River Yamuna floodplains' as of November'20

S.No	Project Area	DDA Area	Phase-I status
1.	Old Railway Bridge to ITO Barrage (Eastern Bank) – Asita East	90 Ha	95% completed (Timeline revised to 30.11.20 from 31.10.20)
2.	NH24 to DND Flyway (Western Bank)	100 Ha	95% completed (Timeline revised to 30.11.20 from 31.10.20)
3.	Old Railway Bridge to ITO Barrage (Western Bank)- Asita West	200 Ha (93Ha already completed)	Timeline (30.06.21- for the balance 107 Ha area) The works are yet to start at site.
4.	DND to proposed Kalindi By-Pass (Western Bank)-Khijrabad (Entrusted to CEMDE)	115 Ha	50% completed Timeline- 31.01.21 only for construction of wetlands.
5.	Wazirabad Barrage to ISBT Bridge (Eastern Bank) around GarhiMandu Village &Usmanpur Village	236.5 Ha	Timeline -30.09.21
6.	ITO to NH-24 (Eastern Bank)- Area South of CWG Village Area	90 Ha	Timeline -31.08.21 The work is yet to start at site.
7.	NH-24 to DND Flyway (Eastern Bank) Part Area-I	235 Ha	-----
8.	NH-24 to DND Flyway (Eastern Bank) Part Area-II- Hindon Cut Wetlands I&II (Entrusted to CEMDE)	15 Ha	
9.	Wazirabad to old Railway Bridge (Western Bank) Qudisia Ghat (Entrusted to INTACH)	66 Ha (Sur Ghat-13.6Ha, Eco-trail-33 Ha, Qudisia Ghat-16 Ha, Yamuna Bazaar Area- 3.4 Ha)	Timeline (30.06.21)
10.	Geeta Colony Bridge to ITO	30 Ha	Planning is being re-worked.

	Barrage (Western Bank) Eco-Tourism Bundh	(14 Ha land is with DESU (IPGCL) Land department has been requested to take back the land)	
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(vii) South Delhi Biodiversity Park

There has been substantial progress on these wetland projects. The details are given in an exhaustive note at **Annexure C-2/10**. It is noteworthy that the discharge from 25 drains carrying raw sewage of about 1200 to 1500 MLD (excluding about 1000 MLD of polluted water from Hindon canal and the cut canal) is being tackled through constructed wetlands. The flows as claimed in the report are only rough estimates and require actual measurement. The South Delhi biodiversity Park spreads over more than 200 hectares in the downstream of the river from the DND flyway. These wetlands were fragmented by the marginal bund which itself happens to be a solid waste dump and extends for about 45 km from the Dhobi ghat to DND flyway. It was recognised that the first prerequisite to treat the raw sewage was through in situ biological remediation using the constructed wetland system. This has been designed to treat 1500 MLD raw sewage and one such wetland should be functional by the time this report is read. 3 to 5 more wetlands are assured to become functional by the end of December and the rest by the end of February 2021 according to the report of DDA.

In addition the constructed wetland systems for in situ remediation of 800 to 1000 MLD of polluted water of Hindon canal will be taken up but it will take at least a year more because of local resistance. The work involves the removal of water hyacinth, de-silting of connecting channels, development of grasslands, marsh communities (this is a type of wetland eco system where water covers the ground for long period of time) and floodplain forest flora and fauna. YMC has visited the Kalindi wetland under construction three times and has found the work quite inspiring. The detailed note at **Annexure C-2/10** indicates the enormous amount of work involved which required the use of labour which had to get into the river to remove the hyacinth by boat and bringing in stones, boulders and saplings of different tree species which was being executed under the supervision of Dr CR Babu of CEMDE.

Chapter - 3

Quality of River water

NGT's order dated 11.9.2019

“Monthly reports on the water quality be furnished by DPCC to the Monitoring Committee which must also contain data on Faecal coliform and till the time DPCC establishes its own laboratory network, the samples may be got analyzed either from CPCB laboratory or other accredited laboratory with respect to aforesaid parameter. Such reports must be placed on the website of DPCC and CPCB. For failure to comply with this direction, DPCC will be liable to pay environment compensation of Rs. 2lakh per month to CPCB for restoration of environment with effect from 01.10.2019. The amount can be recovered from the erring officers apart from appropriate entries in their service records.”

The Hon'ble was vide order dated 6.7.2020 pleased to accept the recommendations contained in the report dated 29.6.2020 of the YMC. The following recommendations were made:

YMC recommendations contained in its Report dated 29.6.2020:

- 1. CPCB in collaboration with DPCC should bring out a monthly report on the quality of river Yamuna and display it on the Website of CPCB for public information. The Report should be compiled after incorporating the test reports of DPCC which maintains nine stations so that there is no variance between the reports of the two organizations. At present the independent reports generated by the two regulatory bodies are difficult to reconcile and can create confusion in the mind of the public and media.*
- 2. The River Front and River Conservation Authority as a SPV which the NGT has directed to be created should be given the mandate to closely and periodically monitor the river Quality and submit periodic reports to the Tribunal and also bring out an Annual Report to be placed in the public domain.*

3. *CPCB be directed to submit the Damage Assessment Report without further loss of time. Considering the disruption caused due to the lockdown, a two-month extension to the Committee to submit their report is recommended.*

NGT's Order dated 6.7.2020:

We have carefully perused the recommendations of the YMC. We are in agreement with the same. The directions proposed are essential for compliance of orders of this Tribunal and environmental norms.

Status of Implementation as assessed by the YMC:

The YMC held review meetings with the Chairman CPCB on 21.8.2020 and with Member Secretary DPCC on 03.11.2020. Though the minutes were not drawn up the status of action taken on the directions of Hon'ble NGT is discussed below:

Monthly reports on the Water Quality in river Yamuna:

Both CPCB and DPCC undertake measurements of river water quality once in a month. While the CPCB takes sample from 5 stations at Palla, Wazirabad, Agra canal at Kalindi Kunj, Okhla (downstream) and Agra canal at Badarpur, DPCC draws samples of river water at nine stations, namely, Palla, Surghat (downstream of Wazirabad), Khajori Paltan (downstream of Najafgarh drain), Qudasia Bagh, ITO bridge, Nizamuddin bridge, Agra canal (Okhla), After Shahdara Drain meets Yamuna (downstream of Okhla) and at Agra canal (Jaitpur). Both CPCB and DPCC on a monthly basis also upload the results of test carried out on river water in their respective websites which makes the data available in public domain. The water quality assessment of river Yamuna in Delhi carried out by CPCB can be viewed at CPCB web link https://cpcb.nic.in/NGTMC/WQD_mar-sept_2020.pdf. Similarly DPCC data are available at DPCC's weblink-https://www.dpcc.delhigovt.nic.in/home/monthly_analysis-report#gsc.tab=0.

The need for bringing out a common report both for the data collected by the CPCB and DPCC was discussed with the Chairman CPCB and MS CPCB in the review meeting held on 21.8.2020. The Chairman CPCB was of the view that since both CPCB and DPCC are regulatory bodies with specific responsibilities it may be better if both continue to perform their independent monitoring of river quality. However, CPCB and DPCC can allocate stations amongst the two organizations so that there is no duplication of the tests carried out. However

both the Organizations continue to undertake testing the water Quality in the river as per the earlier practice.

YMC's Comments:

YMC recommends that the CPCB and DPCC should finalise the list of stations where each of them can monitor the water quality so as to avoid overlap. Presently, there are 14 measurements done every month of which two stations are common between the two Boards. Considering that there are 23 drains which have outfall in river Yamuna, CPCB and DPCC may consider increasing the monitoring stations to coincide with the outfall points of drains in river Yamuna so as to track the level of pollution entering through each of the drains.

Monthly Report of Water Quality in River Yamuna:

The report of water Quality results for the month of November received from DPCC is placed at **Annexure C-3/1**. The river has DO levels of 6.3 and 7.5mg/L only at two places, namely, Palla and Surghat. At all other places they DO levels are zero. BOD levels vary from 2.6 at Palla to 45 mg/L at KajuriPaltan(downstream of Najafgarh), and 35 mg/L at downstream of the point where Shahdara drain joins river Yamuna. Najafgarh and Shahdara drains both contribute highest pollution load into the river, being the most polluted with largest volumes.

YMC also asked the CPCB and the DPCC to undertake trend analysis of the water quality in the river Yamuna during the period 2105-2020 so as to understand whether numerous efforts at setting up and upgrading STPs is having any effect on the water quality in the river. The trend analysis report of CPCB has drawn the following conclusion:

“Conclusion:

Based on the data, it can be interpreted that the water quality of river Yamuna in Delhi stretch continues in poor state with respect to BOD during 2015-2020. High FC values contribute to the deteriorated water quality of river Yamuna indicating high faecal contamination.

DO in river Yamuna is found satisfactory only at Palla before entering in Delhi. Downstream Palla, the quality of water degenerates. This stretch remains non-complying with respect to the norms.

Depletion of Dissolved Oxygen level in river Yamuna till Okhla was due to the demand for DO from organic matter or discharge of untreated sewage or other effluents in to water.

Few instances of algal bloom or eutrophication are also observed indicating high organic load in river.

Sudden drop in BOD values from 57 mg/L in March to 5.6 mg/L in April at Nizamuddin are attributed to the lockdown due to COVID-19, which lead to shutdown of industrial activities.

It is observed that the period of June – August is critical during which spike was seen while November and December months recorded higher FC values.

Maximum FC was observed at Nizamuddin (11×10^7 MPN/100 mL) indicating discharge of significant quantity of untreated sewage.

Through the years 2015-2020, it is observed that there is no significant change in the water quality of river Yamuna with respect to DO, pH, BOD and FC.”

The trend analysis reports of CPCB and DPCC for all the Monitoring Stations are placed at **Annexure C-3/2 and Annexure C-3/3** respectively.

YMC’s Comments:

The analysis both by the CPCB and the DPCC clearly does not point to a trend towards improvement in the water Quality. This concern needs to be conveyed to the important stakeholders, namely, the NMCG, Govt of NCT Delhi for their information and to critically examine the issues involved and take remedial steps.

Environmental Damage Assessment in River Yamuna

NGT had vide order dated 05.03.2020 directed that a joint Committee comprising CPCB, NMCG, NEERI, IIT Roorkee and IIT Delhi may assess damage to environment in monetary terms after 13.01.2015, the date of order of this Tribunal, on account of degradation of river Yamuna by continued inaction of the authorities in Delhi, Haryana (from Hathnikund till entry in State of UP), U.P. (up-to Mathura), within three months. The order of the Tribunal dated 6.7.2020 reiterated that the CPCB should complete its task of assessment of compensation in coordination with the NMCG, NEERI, IIT Delhi and IIT Roorkee as earlier directed. The CPCB has informed the YMC that the report of the Committee is being finalised and will be filed before the Hon’ble Tribunal with a copy to the YMC.

Foam formation in river Yamuna

Social media has been reporting occurrence of toxic foam in selected stretches of river Yamuna in Delhi. Last year in the month of November 2019, the newspapers and social media reported women standing in river Yamuna surrounded by foam during Chhat Puja. Immediately, thereafter, YMC through WhatsApp messages and emails asked CPCB and DPCC to undertake site inspection and submit their reports on the causes of foam formation. Reports of CPCB and DPCC received in YMC confirmed the presence of foam. In the month of July 2020 again the newspapers (The Hindustan Times of 24th July) and social media reported of presence of foam in river Yamuna near Kalindi Kunj in Delhi. Immediately thereafter through WhatsApp messages Chairman/Member Secretaries of CPCB and DPCC on 24.07.2020 were asked to undertake site inspection and give a report. This was followed by e-mail dated 03.08.2020 asking DPCC to give a detailed report indicating the point sources of pollution, and also take enforcement action against industries/individuals causing pollution in the river Yamuna. Chief Secretary Delhi, as Chairman of Integrated Drain Management Cell was also requested to take up the matter in the meeting of IDMC at the earliest and direct the concerned Departments/ Municipal Corporations/ DSIIDC, DJB and DPCC to take urgent enforcement action to contain pollution in the river. CS was also requested to submit a report to YMC within a week as the presence of toxic fumes and high level of pollution was being highlighted in the media/social media repeatedly during that period and was giving an impression that such activities were being tolerated by the Government and regulators. The reports received from CPCB and DPCC are enclosed as **Annexure C-3/4 and C-3/5** respectively.

Summary of CPCB Report:

The CPCB submitted its report to the YMC on 13.08.2020. The report made the following observations regarding foam formation in the river Yamuna

“Reasons for Foam formation in river Yamuna

It has been observed that usually foam formation takes place at two locations on river Yamuna at downstream side of ITO and Okhla barrages.

Primary reasons for foam formation in wastewater rich containing surfactants are:

- a) *At Okhla barrage all treated and untreated wastewater of Delhi is impounded and only excess waste water released downstream.*
- b) *Release of waste water from barrage agitates surfactants present and foam formation takes place.*
- c) *Formation of foam at identified locations is a regular phenomenon and foam quantities increase with discharge quantity of waste water from the barrages.*
- d) *Surfactants are biodegradable and get treatment in sewage treatment plants. However surfactants in untreated sewage discharged into river Yamuna results in formation of foam.*

Conclusions:

Use of detergents and foaming agents has increased substantially due to awareness among public to maintain hygiene as a precautionary measure to protect from Covid19 infections.

Photographs taken on the date of monitoring i.e. 2.07.20 clearly indicate that physical formation of foam was not observed in the monitored locations between upstream Wazirabad and Nizamuddin Bridge except at downstream Okhla barrages is the breach except at downstream Okhla barrage.

Based on analysis of results it can be concluded that presence of surfactants and phosphates was observed at three monitored locations between downstream Wazirabad and downstream Okhla which indicates discharge of untreated sewage or partially treated sewage or industrial effluent containing laundry chemical. Also due to sudden fall in water discharge from Okhla barrage the surfactants and foaming agents present in the wastewater or in the sludge on the river bed get agitated and thereby forming piles of foam especially at Okhla barrage.

CPCB made the following recommendations:

1. *Entire sewage generated from the stretch of Delhi requires proper treatment. Surfactants are released from the households or commercial establishments get biodegradable in sewage treatment plants which will reduce the foam formation in river Yamuna to negligible levels.*

2. *Bureau of Indian standards also prescribed specifications for manufacture of household and industrial grade detergents. All the detergent manufacturing units in the country should be directed to manufacture detergents only as per the BIS specifications after obtaining the BIS certification.*

Summary of DPCC Report:

DPCC also submitted its report to the YMC on 14.08.2020 which concluded thus:

“Based on the observations it can be concluded that foam formation in river Yamuna at the monitored locations is observed mainly due to presence of phosphates and surfactant in river Yamuna. These Surfactants contain phosphates (Sodium tri-poly- phosphate) generally released from households was observed as 7 mg/L (natural levels of phosphate usually range from 0.005 to 0.05 mg/l).

Mechanism of foam formation

The phosphoric compounds in normal cases get settled in the sludge/ riverbed. On release of water from barrage/ reservoir at a particular height, the phosphoric compounds present in the settled sludge on the river bed get agitated and surface forming piles of foam arises. The churning leaves the Yamuna surface covered with a foamy covering. The foam formation increases during rainy days also due to agitation in water flow and low temperature”.

The DPCC also ordered sealing of two industries under the Water (Prevention and Control of Pollution) Act 1974 and issued Directions for closure of 39 industries besides issuing show cause notices to 17 units for levying EC for causing pollution in the river Yamuna.

YMCs observations:

The primary reason behind the formation of the toxic foam was high phosphate content in the detergents finding their way into the river through various drains. Phosphate containing detergents are known to be capable of creating high algal growth even in fresh water. The problem occurs because phosphorus from the detergents and nitrogen from the decaying organic matter combining together act as a good nutrient to stimulate excessive growth of algae and other aquatic vegetation causing algal bloom and severely degrading the aquatic ecosystem.

The foam formation is the result of churning and turbulence in water, rich in naturally decomposing organic matter and surfactants containing phosphates.

As regards the presence of phosphates in the detergents that are released into the river Yamuna through the drains, the DPCC report states that against a discharge standard of 5 mg/L for dissolved phosphates, the phosphates in the river Yamuna varied from 6.9 at Okhla to 13.42 mg/L at Khajoori Paltan(D/S of Najafgarh drain).

Phosphates are present in the detergents and soaps as surfactants and primarily used as 'builders' or chelating agents in laundry or dishwashing detergents. They help to soften the hardness due to presence of calcium and magnesium salts in water and thus improve cleaning.

The standards for the presence of phosphates in the detergents and soaps have been prescribed by the Bureau of Indian Standards (BIS) 4955, 4956, 8180 of 2001 and 2002. However there is no information on whether all the detergents/soaps sold in the market comply with these standards. There is no disclosure by the detergents or soap manufacturers on the levels of the product about the quantity of phosphates present in the product as such a disclosure may not be mandatory. A survey carried out in Indian Market and published in Universal Journal of Environmental Research and Technology published in 2014 observed that none of the detergent packets showed any of the characteristic listed in IS 4955-2001 viz active ingredients, total Phosphates, STPP, active alkalinity, % detergency and ash build up. It, therefore, concluded that chemical composition and quality of detergent powders manufactured in India is controlled by the manufacturers own whims and fancies and not by BIS. ([JoharSarabjeet Singh et. al. in Universal Journal of Environmental Research and Technology, 2014 Volume 4, Issue 4:199-207](#)).

YMC was able to lay its hand on the recently amended BIS standards for detergents powder, cake and detergents for woollens and silken fabrics. A comparison of the 2001 and 2002 BIS standards and those prescribed in 2020 show that Sodium Tri Poly Phosphates(STPP) percentage for the household laundry detergents bars have been decreased from 9.5(percentage by mass) to 5 for detergent bars, 2.5 for powder and to zero for household detergents for woollen and silken fabrics. The revised standards by BIS in the Preamble also state as under:

“Presence of phosphorous in excess in water body is known to cause eutrophication leading to algal growth, thereby posing risks to aquatic life. Apart from fertilizer industry, phosphorous based compounds (for example, phosphates, phosphonates etc.) used in detergent products can contribute to the above. Therefore, in pursuit of minimizing the environmental impact, the committee responsible for formulation of this standard has decided to revise it again. Hence, besides amalgamation of all amendments, the maximum limit of phosphate has been restricted in this revision. Further, the use of Zeolite, which is a non-phosphate based builder and use of co-builders enzymes (bio-based actives) for detergent has been recommended as an alternative to phosphate based builder. Tri-sodium citrate has also been incorporated in list of conventional builders and additives since it has the potential to replace phosphates and is more environment friendly than the phosphates compliance to BIS standards.”

Internationally, there has been a trend towards substituting phosphates with other less polluting surfactants. In countries like Canada phosphates have been completely replaced by Sodium Nitrilotriacetate (NTA). EU countries have also reduced the percentage of STPP and substitutes are being adopted in the interest of environment and public health.

Comments of YMC:

While it is a good development that BIS standards for detergents have been notified, it is not clear whether these standards will actually be enforced and until that is done and the manufacturers made to comply with the standards, the problem arising due to release of detergents with high phosphatic contents into rivers and water bodies will remain. The role of regulatory bodies like as CPCB, PCBs and DPCC is generally limited to implementing discharge/effluent standards. Whether they can enforce the product standards at the manufacturing and marketing stage is doubtful.

Chapter – 4

Sewage Treatment Plants (STPs)

Hon'ble NGT in its order dated 11.9.19 had inter alia directed:

DJB has to give definite milestones and timelines to bridge the gap in terms of poor capacity initialization within one month.

- b) *The DJB to prepare an Action Plan with timelines for better capacity utilization of STPs by tapping the drain as a short term measure to reduce pollution in River Yamuna within one month.*
- c) *DJB to prepare an action plan with specific timelines and implement the same in terms of bridging the capacity gap and upgradations of existing STPs that are functioning on old parameters.*
- d) *DJB to take concrete steps in terms of actions not taken so far and fix the accountability of erring officials.*
- e) *DJB to complete the task of setting up of STPs by 31.12.2020.*
- f) *The DJB needs to spell out action to be taken with specific timelines within one month.*
- g) *Bioremediation and/or phyto-remediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the Govt. of NCT of Delhi may be liable to pay compensation of Rs. 5 Lakhs per month per drain to be deposited with the CPCB. This however, is not to be taken as an excuse to delay the installation of STPs, sewerage*

PART I: Status Report on the Construction, Upgradations and Functioning of DJB STPs as reviewed by YMC:

Setting up and Upgradations/Rehabilitation of STPs:

The Hon'ble NGT vide order dated 11.9.19 had directed that all the STPs should be commissioned by 31.12.19 failing which Bio/Phyto remediation measures should start from 01.01.20 and in the alternative EC @ Rs 5 lakhs per month would be levied on the Agency

concerned. From 13.1.15 onwards, NGT has repeatedly directed the authorities to commission the projects as per the assurances given before the Tribunal.

Among all the large projects, the Yamuna Action Plan (YAP-III) projects (Rithala, Kondli, Okhla) and the STP at Coronation Pillar will have the greatest impact on containing pollution in the River Yamuna. Taken together they account for 279 MGD enhanced treatment capacity, which translates into about 30% of the total sewage generated in Delhi. Despite repeated assurances, the projects have continued to miss timelines for one reason or the other. While some delay can be attributed to the present circumstances related to the pandemic which are prevailing after March 2020, the YMC has found that the delays have been almost endemic to all the projects at all times during the last 3 to 4 years.

While reviewing the status of the STPs and other projects with the DJB, YMC has noticed that the Board does not have a strong project monitoring mechanism and no accountability is being assigned to the Project Management Consultants (PMC) i.e. the external consultants¹ paid from project funds or the Construction Agencies² (Contractors) who are bound under the terms of contract to achieve the milestones within the prescribed timelines. YMC generally went by the reasons for extension explained by the officers of DJB. Hon'ble NGT had however repeatedly emphasised that for any delay in the work, *the Chief Secretary, Govt. of NCT Delhi must identify the officers responsible and assign specific accountability. Wherever there are violations, adverse entries in the ACRs must be made in respect of such identified officers for delay in setting up of STPs, sewerage network and its connectivity by the concerned Head of the Department.*

YMC also observed that the lockdown due to Covid19 and paucity of resources were being repeatedly cited as responsible for revising the timelines. The latter was not understandable as NMCG had assigned project funds in advance. To understand the reasons in greater depth and relate those to the oversight and supervisory mechanisms, including the role of the Project Management Consultants (PMC) who were responsible for project monitoring, the internal processes for obtaining financial and technical approvals/ clearances and the

¹NJS & Consortium for both the projects.

²M/s. VA Tech. Wabag Ltd. for Rithala Ph-I WWTP Project and M/s. Trivani Engineering and Industries Ltd. JV for Kondli WWTP.

mechanism available to intercede when there were undue delays, YMC held discussions with the NMCG Executive Director and other officers. According to the information received from NMCG the delays in physical progress as on 31.08.2020 were as follows:

	Progress as per schedule	Actual Progress	Lag
Kondli:	64%	38%	26%
Rithala:	71%	28%	43%
Okhla:	27.7%	14%	14%
Coronation Pillar:	100%	75%	25%

The NMCG, as the funding agency, has also furnished data on the causes of delay in commissioning of various projects and assigned weightages to those causes. These are listed as under:

Broad Reasons for Delay of YAP III projects and their impact:

S.No.	Causes of delay	Kondli (in %)	Rithala (in %)	Okhla (in %)	Coronation Pillar(in %)	Remarks
1	Cash Flow	3	10	8	1	
2	Contractor's own Fault	1	14	2	3	
3	EPCA ban	2	2	2	2	
4	Covid19 lockdown/ Labour migration	2	2	2	2	
5	Delay in tree felling permission	18	15	NA	NA	NA: not applicable
6	Delay in handing over land	NA	NA	NA	10	
7	Delay in various permissions	NA	NA	NA	6	

From the above table it is evident that the major causes of delay relating to the YAP III projects are on account of cash flow constraints, the contractor's fault and delay in tree felling permission.

During the meeting and in writing, DJB took the stand that the percentage shortfall and reasons for delay given by NMCG, namely, cash flow, forest permission and contractor's own fault were correct, but the weightage ascribed by NMCG to different causes of delay were not correct. Even so the delays in percentage terms quantified by the NMCG were accepted by DJB with marginal improvement varying from 2-5% which had taken place during September and October 2020.

YMC therefore decided to understand the processes involved in decision making, the supervision extended at different levels, the interventions made to address and cut short the delays, whether the PMC was fulfilling the role and responsibilities assigned under the Terms of Reference of the JICA/DJB Agreement and the time taken in obtaining different clearances. Also, whether fund availability had impeded the progress so that full facts could be placed before the NGT for appropriate directions. Considering that any delay would impact on the containment of pollution in the River Yamuna, the more important reasons needed to be identified and corrective action taken to avoid cascading delays. The main reasons for delay identified by NMCG were analysed by YMC and are dealt with below:

a) Delay in Tree cutting Permissions:

In order to understand the process involved in tree cutting permission under the Delhi Tree Preservation Act of 1994, the YMC held meeting jointly with the Forest Department and the DJB officials on 13.10.20 and later with the Principal Chief Conservator of Forests (PCCF) Govt of NCT Delhi on 10.11.20 (**Annexure-C-4/1** and **Annexure-C-4/2**).

Status of tree felling/Transplantation permissions for different DJB projects

Name of the STP project	Date of Award of Work	Date on which permission for tree felling sought	No. of tree for which permission sought	Date on which permission received	Time taken by Forest Dept.	Reasons/Remarks
Rithala Ph 1	14.06.18	13.02.19	88	06.12.19	10 months	Time taken within DJB 8 months at the start
Rithala Ph II	14.06.18	16.12.19	(524) Revised to 860	Not received. Submitted to Minister(E&F) on 23.09.20 for approval	11 months	Delay by DJB initially and later by Forest Dept. due to revision in girth from 30 to 15 cm
Kondli Ph I	10.08.18	19.02.19	492	08.04.20	14 months	Delay in inspections, piece meal queries and delayed replies by DJB
Kondli	10.08.18	09.03.20	(1185)	Not yet	8	Land for

Ph II			revised to 1052 trees)	received	months	compensatory plantation not identified. Also, number of trees revised to 1052
Okhla	19.06.19	14.10.19	(442) revised to 409	Not received. File submitted to Minister on 29.9.20	13 months	Initially delayed by DJB and later by the Forest. Piecemeal queries.

DJB took the stand that Forest Department has been raising piecemeal queries and in some cases the girth criterion of the trees was reduced from 30 cm to 15 cm for seeking clearance under the Act, midway, after the proposal had been submitted.

The meeting with the Principal Chief Conservator of Forests (PCCF) brought out that there have been delays both at the level of the DJB as well as the Forest Department. The PCCF had therefore prepared a Standard Operating Procedure with timelines for each step in the process to be adhered to both by the User Agency (in this case the DJB) and for processing within the Forest Department. He has promised that in future clearances will be processed within 60 days as prescribed under the DPTA Act 1994 under Chapter V, point no. 9 (3) **(Annexure-C-4/3)**.

The Statement on the status of tree felling also brings out that the file for obtaining approval of the Minister (Env& Forest) for felling/transplanting 860 trees for the Rithala project and 409 trees for the Okhla project had been submitted to the Minister on 23.9.20 and 29.9.20 respectively but has not yet been received back even after a lapse of two months. While YMC would not like to comment on this delay in clearance of the case at the level of the Minister, however, being a matter of record told to the Committee by all officers, it is being noted. Obtaining tree cutting permissions is critical for timely completion and commissioning of STPs. Such delays will entail cost overruns and provide the Construction agency an escape route to avoid evade penalty even when it is justified. Penalties are being applied after project completion and the delay will go in the contractor's favour.

b) Cash Flow Constraints:

Cash flow constraints has been cited as the one of the prime causes of delay. NMCG had informed the YMC that as on 31.3.20 NMCG had released Rs. 398.50 crores and against this the

expenditure was only Rs. 311 crores with a balance of Rs. 87 crores lying with DJB. Further, it was assured that NMCG will continue to release funds in advance to ensure that the works are not hampered for want of funds; even if the Utilisation Certificates(UC) submitted by the DJB is for a lesser amount funds. In fact, funds were being released and at times even diversion of funds from one project to another under the YAP III umbrella has been allowed to ensure that there is no difficulty faced by the DJB owing to fund crunch.

DJB on its part clarified that though there is a separate account for YAP III projects diversion for salaries etc. has been permitted in emergent situations. It has, however, been denied that there were any delays in release of funds to the contractor hampering his work. However, both the contractors (M/S VA Tech Wabag Ltd and M/s Triveni Engineering & Industries Ltd. JV) stated that that there have been delays sometimes of as much as 60 days beyond the 56 day agreed window period prescribed for payment of bills as per the Agreement/Terms of Contract.

- c) **Miscellaneous Obstacles** The other causes of delay were attributed to the Contractor's own problems, Covid19 lockdown and EPCA ban on construction. The Contractor's attributed the delay to delayed payments though DJB maintained that under the agreement Contractors are required to maintain some reserve funds to tide over any delay in payments and further that delays had occurred only after Covid19 and not in the past.

YMC's Summation:

A. NMCG Related

- YMC has reason to believe that delay in payments to contractors could have contributed to non-achievement of project time -lines and in the contractors facing cash flow constraints affecting timely completion.
- *No diversion from Project funds should be permitted from the specific project budget head to any other heads and NMCG should exercise tighter control on maintaining separate accounts for the YAP III projects. That is critical as financial diversions leave the projects without funds and the bills are sent for clearance only when availability of funds*

is conveyed. If they have been diverted the clock is set back until the funds are available. It defeats the purpose of the flexibility given.

- *YMC held a meeting with the Director Finance of DJB when this was confirmed. The YMC also tried to understand from the Member Finance in DJB but he had handed over by the time a meeting was called.*
- *The looseness in the way project cashflow is being managed requires an audit of financial management processes and fund flows related to budgeted activity because it has a direct impact on the timeliness of project implementation.*

B. Role of Project Management Consultants (PMC):

All YAP III projects are aimed at bringing the water quality of river Yamuna within acceptable standards by providing commercially and technically viable solutions on priority and thereby helping to reduce pollution in the river Yamuna. For supervising the projects, Project Management Consultants (PMC) have been appointed by the DJB to assist the team of Engineers and local DJB staff. Under the terms of appointment, the PMC is required to review the designs, plans and programs provided by the contractors and to assist DJB until commissioning by exercising thorough supervision of each package.

PMC is a consortium of the YAP III projects comprise four companies, namely, NJS Consultants Co. Ltd., Tokyo Japan as the Lead consultant with AECOM-Asia, NJS Engineers India Pvt. Ltd., and TTI as JV partners. The PMC has a Man-month based time and expense contract with DJB with specific number of staff provided for monitoring and supervision of the project during its entire duration.

As per the DJB, PMC has advisory role on proof checking of contractor's designs and drawings and other documents prepared by the Contractor, monitoring construction works as per approved construction drawings (approved by the PMC) and apprising the "Chair" (Member/CE/SE/EE) before the Progress Review Meeting (PRM) on the availability of labour, construction material and availability of machinery at site. The issues relating to delays due to various reasons like delay in tree cutting permissions , shortage of labour and material supplies etc at site as required from the Contractor are brought to notice of DJB officials at the review meetings taken by the EE, SE, CE and Member (Drainage). A perusal of the list of inspections

carried out and review meetings held with the PMC brings out that from April 2019 as many as 14 site inspections and 27 review meetings were held at different levels of officers, namely, the EE, SE and CE. **Only one meeting was held with Member (Drainage) and none under the chairmanship of the CEO. During discussion the Chief Engineer and his SE did not exhibit the sense of ownership, or a detailed knowledge of the obstacles and clearly lacked the persuasive ability needed to garner support from senior officers.**

The review meetings held by the YMC with the PMC on 4.11.20 and 6.11.20 (**Annexure-C-4/4**) have brought out that the PMC was merely playing an advisory role and the nature of intervention was routine, non-qualitative and prepared mechanically. Efforts to highlight how much the delay would affect project completion were weak and a sentence here and there in a plethora of documents is hardly the sort of advice that a professional consultant should be providing. A sense of urgency and a concern for adherence to timelines was missing.

The PMC had had no focused, professional interface with the Member Drainage (only one meeting was held during the last one and a half years,) and no interaction with the CEO to convey that in case the milestones and timelines were missed or were likely to be missed how it would impact the overall objective of the JICA project which was to clean the river. NGT's directions were far from the orbit the PMC functioned in. The PMC's reports shown to YMC did not show any effective and clinching analysis of the problem highlighting the implications or the sort of intercession needed. That it would result in cost overruns and continuing pollution in the river was never highlighted when cleaning the river was the primary objective of the project.

The PMC did not dispute this conclusion about the quality of the analysis and intervention provided but promised to be more proactive in future. It was also suggested by the PMC that if the Project Consultants exercised decision making authority and acted on behalf of the DJB instead of merely playing an advisory role, the team could become more effective. Their TORs had a provision facilitating this arrangement as given below:

".....DJB may, however, in the case of supervision of work and/or management aspects, delegate to the Consultants more or less authority to act on its behalf, responsibility to make final decision as an independent Engineer, to that of advisor to the client with little authority to make decision".

YMC refrains from advising on this because it requires an executive application of mind. But clearly there are systemic gaps in the present system of project supervision making accountability diffused.

C. Deficiencies in the Monitoring Mechanism within DJB:

The Executive Director, NMCG in a meeting held with YMC and subsequently through a note had brought out that despite a number of review meetings held at NMCG and follow up communications including demi-official letters issued to the Senior most officers of Govt of NCT Delhi and the DJB by the Secretary MoJS and the DG NMCG, it had resulted in NIL response .The projects continued to suffer on account of recurrent delays in the grant of tree felling permissions and in releases of payments to the contractors despite sufficient funds being placed at the disposal of the DJB. A list of communications sent by the NMCG to GNCT made by the GOI showed that as many as 7 seven DO Demi-official letters and 14 Minutes of meetings held at the level of the senior most levels in the Govt of India remained unanswered.

From the discussion with the NMCG team, the DJB officers and the documents examined by YMC, there is reason to believe that the communications from NMCG have been handled in a very routine manner at the level of the Engineers of different levels and were never re-submitted for intervention on inter-departmental matters. This despite a number of issues requiring systemic intervention as issues of payment and tree felling permissions being beyond the capability of the Engineers, including the Member (Drainage). The practice of marking important communications to the Department of UD and the CEO DJB has become routine and completely ineffective. There is also no evidence to suggest that even the Urban Development Department, which is the nodal department for DJB related matters in the NCT Delhi, noted the receipt of all the communications or monitored the progress or had gone into the reasons for delay in responding to communications from the NMCG and Ministry of JS. NMCG also told the YMC that in meetings held in the Ministry all kinds of assurances were given but nothing was reported thereafter.

D. Supreme Court Orders on Monitoring of the YAP III and other projects:

To ensure the unhindered progress of all projects, related to Yamuna cleaning, the Hon'ble Supreme Court, in the matter of CW (P): 725/1994 titles as "QUIET FLOWS MAILY YAMUNA" had inter alia directed as under:

1. *CEO, DJB will hold monthly meeting to review the progress related to all Yamuna Cleaning related projects and submit minutes to the Court.*
2. *Quarterly Review meeting at the level of Chief Secretary, Delhi to review all such projects undertaken by different departments i.e. MCD, PWD, Irrigation & FCD, DPCC, CPCB etc.*
3. *Six monthly meeting by Secretary (UD), GOI.*

None of the Officers who attended the review meetings called by the YMC were able to confirm that such reviews were actually taking place. If these meetings, were being held as directed by the Apex court, the delays encountered by the flagship sewage treatment projects of sewage treatment would not have suffered as much as they have. Such delays have become endemic to all the projects under implementation and the Interceptor Sewerage project is yet another example of how the slippages and missed timelines have plagued the project over the last few years, despite assurances.

E. Provision for penalties under the Agreement not used

As per the information furnished by the DJB, from 2015 the monetary penalties/LD provisions have been specified for non- adherence to timelines as follows:

Delay damages (amount per day of delay):	0.07% of accepted Works Contract Price on per day basis, in the same currency / currencies in which the Works Contract Price is payable.
Maximum amount of delay damages (percent of final Contract Price):	10% of accepted Works Contract Price
Maximum compensation payable by Contractor:	10 % of the Contract price.
Maximum compensation payable by Employer	10% of the Contract Price.
Performance damages:	10 % of the Contract Price.

For the reasons outlined above, the project completion timelines have been reworked by the DJB. It has also been stated that penalty provision as per the agreement will be invoked on completion of the project. The timelines according to present indications will be exceeded by 10 months to 18 months but this was not accepted by the contractors who spoke of a requirement of several months more running into late 2023. YMC cannot accept the timelines given by DJB as there are several imponderables and there is no zeal to cut short delays.

F. Revised dates for commissioning of the projects as given by DJB:

Progress as on 30.10.20 and timelines for Completions:

S. No.	Name of STP	Date of start as per schedule	Date of completion as per schedule	Physical progress (in %)	Likely date of Completion (excluding 6 month of trial run & commissioning)	Status of Penalty clause and response of DJB
1.	Kondli	10.08.2018	09.02.2022	43.44	31.12.2022	As the completion date has not been elapsed, the contractor has opportunity to recover some of the delays. However, after the expiry of stipulated date of completion as per the contract agreement the department will reassess the delays and will invoke penalty clause on merit.
2	Rithala	15.06.2018	14.12.2021	28.50	31.12.2022	As the completion date has not elapsed, the contractor has

						opportunity to recover some of the delays. However, after the expiry of stipulated date of completion as per contract agreement the department will reassess the delays and will invoke penalty clause on merit.
3	Okhla	19.06.2019	18.12.2022	15.76	31.12.2022	As the completion date has not elapsed, the contractor has opportunity to recover some of the delay. However, after the expiry of stipulated date of completion as per contract agreement the department will reassess the delays and will invoke penalty clause on merit.
4.	Coronation Pillar	12.10.2016	11.04.2019	77.00	30.06.2021	As per penalty clause 10% amount for the work done after scheduled completion period, amounting to Rs.20.36 Cr. has been withheld from payments to the firm. In addition, 5% PBG and 5% Security, will not be released to the firm till successful

						commissioning of plant. Prior to Covid-19 the labour strength was more than 1200 but after covid-19 the agency could arrange about 650 labour, as on date. Due to failure of the firm to restore sufficient labour, a show cause notice has been served.
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Conclusion and Observations of YMC:

1. YMC has found the system of monitoring has been ineffective. There is no evidence that bottlenecks had been brought to the notice of the Board and of the Government or the intervention of higher authorities sought. The situation created by delays in forest clearance and hold up of fund flow called for intercession first by the CEO and if that did not achieve results, to have raised it in writing and in meetings with the Principal Secretary Department of Urban Development, the Chief Secretary and the DJB's Board under the Chairmanship of the Water Minister.
2. DJB does not seem to be maintaining a separate account for different YAP III projects and the admission that funds do get transferred for other purposes like salary under operating under different financial heads is militating against accounting principles which are applicable for such time bound externally funded projects. Oversight by the Finance officers seemed very weak as the Director Finance was a generalist DANICS officer and heavy reliance was being placed on a retired official of DJB now re-employed as Consultant. Though well-meaning, there seemed to be a competency deficit and no bandwidth to deal with financial controls.
3. During the lockdown there was almost total restriction imposed by the NCT government on the use of project funds and only salary disbursements were permitted. This added to the delay giving an opportunity to the contractor to justify his own delay.

4. The tree felling approvals were not being treated with due expedition by either DJB or the Forest Department. Too much reliance was being placed on letter writing and reminders as a sign of action, without having raised the matters with sufficient concern to the level of the PCCF, the Principal Secretary Environment & Forests and even to the Chief Secretary for intervention. Since all the officers report to the same Government prompt intercession by senior officers was needed. The letter writing syndrome is being treated as a sign of progress in all meetings the YMC has been holding. Incidentally Delhi METRO is also a JICA project but the speed with which clearances have been obtained is indicative of the fact that obstacles can be overcome where there is will and initiative.
5. Considering the repeated cases of slippages in project implementation, both in respect of YAP III and even the Interceptor Sewer Project, it calls for examination of the processes for decision making within DJB. Such delays are against the tenets of good governance and financial control. The monitoring of YAP III projects was expected to be done using modern tools of project monitoring. This needs to be instituted with a sense of urgency considering the impact on the environment due to continued presence of sewage in the River Yamuna and its drains.
6. All the above issues were brought to the notice of the Member Drainage, the Chief Engineer concerned, as well as and the PMC during a slew of the review meetings and no part of what was discussed was repudiated by the officers. The CEO did not attend most meetings called by the YMC except one and the DJB was either represented by the Member Drainage or a Chief Engineer and the responses were routine. But there was acceptance on the conclusions drawn and the findings which calls for instituting vastly different oversight systems with a sense of urgency.
7. Three former Principal Secretaries in charge of Urban Development from 2018 to 2020 evinced no ownership for DJB matters. It is only after a new Additional Chief Secretary has taken over in charge of Urban Development a couple of months ago that she organised a meeting and confirmed that all payments have since been released to the DJB contractors and that she was pursuing the tree cutting permissions. Even so she was not aware of the large number of Government of India communications relating to the

YAP III projects which had remained unanswered though DJB was showing disposal of completely unrelated subjects. The recommendations at 8, 9 and 10 below stem from the realisation that the present administrative systems in DJB are clearly in need of infusion of professional oversight capability to be effective.

8. Considering the repeated cases of slippages in project implementation, both YAP III and even the Interceptor Sewer Project, it calls for tightening the processes of decision making and monitoring within DJB because any such delays are militating against the prevention of pollution and the need for oversight and sound financial control. The monitoring of YAP III projects was expected to be done using modern tools of project monitoring. This is not being done and needs to be instituted with a sense of urgency considering the fact the huge financial outgo is assigned to the project consultants who are not pulling their weight. There is need for complete overhaul of the internal oversight systems and the present establishment does not seem to have the capability to do this effectively. Oversight of timely implementation should not be left to only engineers who lack the capacity for anticipating problems, trouble-shooting, raising levels, following up with key links in the chain to get results. The YMC has seen a report titled '**Fixing the Stink**' which was prepared under the directions of the then Chairman DJB in 2017. Among the several recommendations of the Committee, it underscored the *need for organizational restructuring and zero tolerance to delay in project implementation*. Obviously the malaise is an old one and needs to be set right.
9. YMC is of the considered view that a performance Audit by the Controller and Auditor General of India should bring out the systemic problems and corrective action needed as the containment of pollution is at stake. The last Performance Audit of DJB was done way back in 2012 (a small 2018 audit of unauthorised colonies was not relevant to YAP III projects). A comprehensive performance Audit of the YAP III projects is overdue and more importantly as challenges for sewerage planning are growing with greater urbanization. Section 69 of the *Delhi Jal Board Act of 1998* (**Annexure-C-4/5**) makes a provision for C&AGs audit and Hon'ble NGT may consider directing the Government of NCT Delhi for approaching the CAG to undertake for a performance audit.

10. The Infrastructure and Project Monitoring Division (IMPD) of the Ministry of Statistics and Program Implementation (MOSPI) is the apex monitoring institution of the Government of India. It monitors the implementation status of central sector projects costing more than Rs 150 Crores in infrastructure sectors (though sewerage has not been covered by them it appears from the website.)The YAP III projects had a financial outlay of Rs 1600 crores at their start and an apex institution can certainly suggest better systems for project oversight and NMCG as the funding agency can seek the advice of MOSPI wherever Central Government funding is involved.

Part II Functioning of Existing STPs

DJB has 35 functional STPs with DJB, of which 5 STPs are designed for TSS/BOD: 10/10, four for 10/15, five for 20/30 and the rest for 30/50 parameters as per the Table below:

Design Parameters of STPs: TSS/BOD: 30/50 mg/L		Design Parameters of STPs: TSS/BOD:20/30(mg/L)		Design Parameters of STPs: TSS/BOD:10/15 (mg/L)		Design Parameters of STPs: TSS/BOD:10/10 or less(mg/L)	
No. of STPs	Total Capacity (MGD)	No. of STPs	Total Capacity (MGD)	No. of STPs	Total Capacity (MGD)	No. of STPs	Total Capacity (MGD)
21	387	5	117	4	59.4	5	55

As per DJB's test reports, out of 35 STPs, 22 are meeting their design parameters **(Annexure-C-4/6)**. However, as per the DPCC test report for October 2020, 10 STPs out of 33 as against 7 out of 31 STPs tested DPCC in May 2020 are compliant to TSS/BOD standards of 10/10/ mg/L and T. Coliform standards as laid down by the DPCC in 2016. This indicates incremental improvement though small.

DJB's stand is that a STP designed to treat sewage at TSS/BOD 30/50 or 20/30 mg/l parameters cannot be expected to achieve 10/10 standards. DPCC being a regulatory authority, however, insists that the revised standards were fixed in 2016 and there has been little progress towards achieving these standards by DJB. In addition to 10 STPs with a total capacity of 115 MGD presently meeting prescribed standards of TSS/BOD: 10/10, four new STPs at Coronation Pillar, Rithala, Kondli and Okhla with a total capacity of 279 MGD designed to

TSS/BOD: 10/10 parameters will be commissioned by March 2021, December 2022 and June 2023. The DJB has planned worked out estimates for upgradation of 16 STPs to TSS/BOD: 10/10 mg/L standards with provision for coliform treatment subject to availability of funds. The budget requirement has been estimated at Rs 2721 crores (**Annexure-C-4/7**). There is no clarity when these STPs will be upgraded as the plan is quite vague with a lot of imponderables like the availability of land, tree cutting permissions, funds and the presence of a robust implementation and monitoring framework. Continued non-adherence to environmental standards is unacceptable and the state should mobilize resources, even by invoking the Polluter Pays Principle as directed by NGT in its order dated 13.1.15 and reiterated in order dated 26.7.18.

Statement of performance of STPs as assessed by DPCC in October 2020 is placed at **Annexures-C-4/8**.

Part III Short Term measures for Increasing Capacity utilization:

Some of the STPs have very low capacity utilization of as low as 25%. As per DJB, low capacity utilization is mainly due to absence of sewerage network in the catchment of those STPs. YMC after discussion with DJB Engineers, directed the DJB to prepare an action plan for taking short term measures for achieving better capacity utilization for certain STPs by trapping the drains flowing in the vicinity of those STPs till the sewerage network is laid in the catchment areas. The updated status of implementation of the Short-term Plan submitted for better conveyance and capacity utilization of the STPs is as given below:

Name of STP	Capacity of STP (in MGD)	Present Utilization		Date by which full capacity will be utilized
		(in MGD)	in %	
Rohini	15	05	33 %	31.03.2021. It is proposed to divert excess sewage flow from Rithala to Rohini by laying a rising main of 800 mm dia which will be completed by March, 2021 for which LOI amounting to Rs. 205 Lacs has placed to M/s. Triupati Cement Product on 31.03.2020, however the work order will be issued after clearance of hold from the Finance department due to financial

				constraints during COVID-19 epidemic The completion of work will ensure 100% utilization of Rohini STP.
Narela	10	4.75	48 %	It is proposed to construct permanent weir in DD-6 drain which will divert the complete flow to Narela STP for which work is awarded at the total cost of Rs. 89.64 Lacs to M/s. Satish Chand on 09.04.2020. The work is already awarded and is expected to be completed by March, 2021
Kapashera	05	03	60 %	Treatment at Kapashera STP is increased from 2.7 to 3 MGD by trapping nearby Kapashera drain temporary. However, permanent arrangement is being made by making provision of weir in drain which will further increase the utilization.
Nilothi Ph I	40	30	75 %	All the drains in the command area have already been trapped via ISP, however, the discharge in the command area will increase after completion of laying of internal sewer in the command areas, like Ranholla GOC and Shiv Enclave GOC along with Bakkerwalla RSC by 2023.
Najafgarh	05	4.70	94 %	Treatment at Najafgarh STP is increased to 4.5 to 4.7 MGD by trapping Dharampura drain utilising full capacity of the STP thereby ensuring 100% utilization of Najafgarh STP
Yamuna Vihar	45	45	100 %	Completed. After part commissioning of ISP Pkg 5 by March 2020, about 45 MGD is being treated as of now against the installed capacity of 45 MGD at Yamuna Vihar. Therefore the capacity utilisation of Yamuna Vihar STP is achieved even after part after commissioning of ISP.

These are short term measures for capacity utilization that had been promised to be completed by June 2020. However, completion will now spill over to 31.3.21. Such extended timelines for undertaking trapping of drains, even as short term measures defeats the very purpose of such interim measures for better capacity utilization of STPs and stoppage sewage in storm water drains.

From the statement in the Table above it is seen that in comparison to the last report submitted to the Hon'ble Tribunal, the capacity utilization has increased from 47.5% to 77.5%

i.e. against treatment of 57 MGD as per the last report submitted to the Tribunal in June 2020, the treatment now reported is 93 MGD for an installed capacity of 120 MGD. YMC will get this independently verified. The implementation of the Action Plan of DJB for further increase in capacity utilization will also require to be closely monitored.

PART IV -Long Term Measures for Better Capacity Utilization:

Long term measures for increase in capacity utilization will require timely commissioning of the YAP III and Coronation Pillar STPs.

S.No	Description	Jul-19	Dec-19	Jun-20	Dec-20	Dec-21	Dec-22	Jun 23	Remarks
1.	Sewage generated in Delhi as per water supply (mgd) i.e. 900 MGD	720	720	720	720	720	720	720	As per CPHEEO Manual, 80 % total water supply of 900 MGD.
2.	Installed Sewage treatment capacity (mgd)	597	597*	597*	637*	637	677#	707#	*The capacity reduced from 617 to 597 MGD due to shut down of 20 MGD unit at Rithala taken up for rehabilitation. **After commissioning of Coronation Pillar STP(70 MGD) - 40 MGD extra capacity will be added. #After rehabilitation of RithalaSTP(40 MGD), 20 MGD capacity will be added. After Rehab. of Kondli STP, 20 MGD capacity will be added. ##After commissioning of

									Okhla STP, 30 MGD capacity will be added.
3.	Actual Sewage treatment (mgd)	500	500	540*	592* *	607 #	647# #	707	<p>ISP will be commissioned by December 2020 but actual treatment will be possible after rehabilitation / construction of some of the STPs under its command i.e. Kondli, Rithala, Coronation Pillar.</p> <p>*After commissioning of ISP Package 5,6 & Pkg. 3 (partial)</p> <p>**After part commissioning of Package 3 & 4 of ISP</p> <p>#After full commissioning of ISP Package 3 & 4 and interconnecting Rithala STP to Rohini STP</p> <p>## After commissioning of Rithala STP, the flow of Pkg. 3 of ISP will be fully trapped.</p>
4.	Capacity utilization (%age)	83.7 5	83.7 5	90.4 5	93.0	95.3	95.5	100	<p><i>Capacity Utilization of some of the STPs like Ghitorni, Kapashera, Vasant Kunj, Mehrauli, Najafgarh, Narela is less due to fact that the development of the area has not taken place as anticipated in the DDA Master Plan. As per the</i></p>

										CPHEEO manual design period of STP is 30 yrs. The capacity of the existing STPs can be run with 5 - 10% overloading to cater to the increased discharge. However efforts are being made to increase utilization capacities wherever possible by trapping the drains flowing in the vicinity.
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PART V -Decentralized STPs

As per Sewerage Master Plan- SMP 2031, 32 STPs were to be constructed, of which 14 STPs were to be constructed in Najafgarh Drainage Zone and 18 in Narela, Okhla, Outer South Delhi, Kanjhawala, Bawana, Shahdara zone. The plan was subsequently revised and instead of 18, it was proposed to construct STPs at 42 locations. For setting up 56 DSTPs (42+14) and 02 STPs at the mouth of drain, land is required at 73 locations which includes 15 locations for Sewage Pumping Stations (SPS). Out of total 73 locations, land at 10 location is already available with DJB and for the balance 63 location, land would have to be made available by different agencies as follows:

1. Private land(acquisition) by Land and Building Department GNCTD:13 locations
2. Gaon Sabha lands: 11 locations
3. DDA: 39 locations

DJB has furnished the Status of 56 DSTPs as under: -

S. No	Name of STP	Timeline	Remark	Estimated Cost (in Crores)
1.	14 (7+7) STPs in Najafgarh Drainage Zone	18 to 30 months after approval of funding of balance STP by NMCG and allotment of	Out of 14 locations, land is available only at 08 locations and land at balance 06 locations is yet to be allotted.	Cost of 56 nos. decentralized STPs with treatment capacity of about 92 MGD is about Rs. 828 Crores.

		land		Further the land cost for these new DSTPs will be about Rs. 300 Crores. Thus, total cost for construction of new DSTPs work out to about Rs. 1128 crores.
2.	42 Decentralized STPs at various locations.	24 to 36 months after allotment of land	Land for construction of 42 DSTPs and connecting SPSs have been identified at various locations and it is still in the process of allotment by Revenue department of GNCT/ DDA Delhi. Necessary action will be taken by DJB after allotment of land.	

Out of 14 STPs, NMCG has already sanctioned 7 STPs and released funds during 2017. Land for two out of the 7 sanctioned projects is in possession of DJB. However, the construction could not commence on the ground due to one or the other reason. First, there were doubts raised about the quantum of sewage flowing through the drains in the basin and accordingly WAPCOS were asked to undertake flow measurement. Later there was problem associated with the Concessionaire due to capacity alterations of the five sanctioned STPs. Even the land for the remaining five sanctioned STPs has not yet been allotted to the DJB. There is no clarity about the future of these projects. The interest that an owner Department normally shows has been found lacking. The YMC feels that unless land to utilities is put on a fast track automatic route under some legal provision the allotting Department will continue to delay as has happened over the last 2 years.

In the absence of STPs for treatment of 158 MGD of sewage, the colonies, mostly unauthorized, lying in the catchment of these proposed STPs will continue to release their waste water directly or indirectly into the Yamuna. YMC is informed that some of these colonies and their sewage is already being trapped under ISP, however, substantial quantum of flow will continue to pollute Yamuna as even the STPs linked to the ISP will be ready only by December 2022. If this delay in commissioning of STPs is allowed to continue, without effective implementation of septage regulation in such colonies and/or phyto-remediation, there is little hope for the revival of river Yamuna.

PART VI -In- situ Bio/Phyto-remediation in drains:

Hon'ble NGT had earlier in its order of 11.9.19 directed that all the STPs should be commissioned by 31.12.19 and in the event of failure to meet the timeline, In situ bio/phyto remediation in drains should be commenced from 01.01.20.

After considering the Report of CPCB on Alternative Technologies for waste water treatment, Hon'ble NGT directed as under;

Delhi Government may set up within two weeks from today i.e. on 05.03.2020 an "Integrated Drain Management Cell" under Chief Secretary for remediation and management of all drains of Delhi with representatives of all agencies/ department/ Urban Local Departments owning such drains not below the level of Chief Engineer dealing with the management of Drains to the IDMC. CEO, DJB will be the Ex-officio Member Secretary of the IDMC. The IDMC may meet at least once in a week to start with constitution of IDMC will not affect ownership of drains. IDMC may send its reports to this Tribunal every two months by e-mail at judicial-ngt@gov.in.

Pursuant to these directions, Govt of NCT Delhi has set up an Integrated Drain Management Cell (IDMC) headed by the Chief Secretary with CEO DJB as its Member Secretary vide order dated 17.03.2020 for remediation and management of all drains of Delhi with a representative of all agencies/department/ULBs owning such drains.

In compliance of the directions of the Hon'ble NGT, the Chief Secretary Delhi has also submitted the First Status report of the IDMC to the Tribunal on implementation of alternate technologies by the various Drain owning agencies in Delhi on 28.8.20. The IDMC has so far *held seven meetings*. Since the IDMC has already submitted its Status report to the Tribunal, YMC does not wish to repeat what has already been reported but has summarized in the Table below the status of in-situ bio/phyto- remediation efforts in Delhi so far:

Agency wise status of In-situ Bio/Phyto Remediation work

S.No.	Name of drain owning agency	No. of drains with organization		Present Status of Bio-/Phyto – Remediation works	Remarks
		Nos.	Length in Km		
1	PWD	NA	2064.80	N Progress	Lack of funds due to fund

					constraints
2	IFCD	57	426.55	No progress	
3	NDMC	NA	335.29	In progress in Kushak Drain	Not required elsewhere
4	SDMC	NA	258.78	IIT /D appointed as Consultant. Action Plan submitted by IIT/D	Constraints of fund. Seeking EC funds from CPCB.
5	EDMC	NA	140.63	Action Plan prepared	Constraints of fund
6	North DMC	NA	122.46	IIT/D appointed as consultant. No Action Plan yet	
7	DDA	NA	251.30	Appointing IIT/D as consultant. Also Constructed wetlands on 9 drains is already on and 04 STPs near drains	
8	DSIIDC	NA	98.12	NEERI appointed as Consultant. Drains with Industrial clusters being taken up	
9	DCB	23	39.28	Action Plan prepared and will be implemented shortly	
10	NTPC	NA	3.11	Dry drains. No Plan required	

Chapter - 5

Interceptor Sewer Project (ISP)

Hon'ble NGT vide order dated 11.9.2019 had directed as under:

- a) *DJB to put the systems in place for project monitoring so that timelines are adhered to.*
- b) *DJB is directed to adhere to the timelines with regard to ISP and treat all the 242 MGD sewage by 31.12.2019.*
- c) *For failure to comply with the above directions compensation will be payable at the rate of Rs. 5 Lakhs per month till compliance from 01.01.2020. Entries be also made in the service records of the erring officers to fix their responsibility.*

The Interceptor Sewerage Project was conceptualized as a means to trap sewage in the drains and convey it to sewage treatment plants through a network of trunk and peripheral sewers. The project, therefore, had twin components of creating trapping infrastructure to trap and convey the sewage to the STPs and of setting up/upgrading/rehabilitating STPs. Whereas the sewerage network and trapping infrastructure is funded under the State budget, the STPs are funded either under YAP III (Viz Rithala, Kondli) or are funded by NMCG as in the case of Coronation Pillar. Delhi Jal Board entrusted the mega project of "Interceptor sewer along three major drains (Najafgarh, Supplementary & Shahdara drain) to M/s Engineers India Ltd as Project Management Consultants. The sewage collected from 108 sub-drains was proposed to be pumped to the nearest wastewater treatment plant and only after treatment the treated effluent is to be discharged into the drains.

Six (6) packages were proposed taking into account the STP command areas, geography and DDA Planning Zones. These six packages included the STP command areas of Dwarka / Najafgarh, Nilothi / Keshopur, Coronation Pillar, Rithala / Rohini, Yamuna Vihar and Kondli with approximately 56 km of Interceptor Sewers proposed to be installed along the banks of the three drains.

It was envisaged that the interception of the dry weather waste water/ septage flow if trapped as proposed in the DPR it would result in substantial reduction in the pollution discharged in the River Yamuna. However, this success is heavily dependent on the active

participation of multiple stakeholders involved in the project, without which the full benefits of the project will not be realized.

Package wise detail of sub drains and discharge:

Package	Package description	Sub-drains being trapped (in Nos)	Discharge (in MGD)
1	Dwarka	2	13.80
2	Nilothi & Keshopur	37	63.10
3	Coronation Pillar & Bharat Nagar	19	69.10
4	Rohini & Rithala	19	26.0
5	Shahdara North (Yamuna Vihar)	15	31.80
6	Shahdara South	16	37.20
	Total	108	242.00

Nos. of Sub- drains and discharge to be trapped in major Drains

1	Najafgarh	28	87.00
2	Supplementary	49	86.00
3	Shahdara	31	69.00
		108 sub drains	242.0 GD

The Agencies executing the work, scheduled dates of start and completion as under:

Table 1: The Package wise project cost, agencies & completion dates

Project Components	P1	P2	P3	P4	P5	P6
Location STPs /	Dwarka / Papankalan STP	Keshopur / Nilothi STP	Coronation Pillar STP	Rohini / Rithala STP	Yamuna Vihar STP	Komdli STP
Construction Agency	M/s Vishwa UGCCJV	M/s PratibhaMo sinzhstroi	M/s PratibhaMo sinzhstroi	M/s DSCL FengShun Wabag Consortiu	M/s DSCL FengShun Wabag Consortiu	M/s Vishwa UGCCJV

		Consortium	Consortium	m	m	
Total Cost i/c O&M:10 YRS (in Crores)	101.78	692.79	556.63	201.95	212.21	198.09
Award Date	01-Jul-11	01-Jul-11	01-Jul-11	01-Jul-11	01-Jul-11	01-Jul-11
Scheduled Completion Date	30-Jun-13	30-Jun-14	30-Jun-14	30-Jun-13	30-Jun-13	30-Jun-14

It is obvious that the timelines have been exceeded by several years. The ISP project has been reviewed with the Officers of DJB during the last two years with timelines being changed repeatedly. This has been explained in the Interim Reports and the Final Report of the YMC submitted to the Hon'ble Tribunal on 29.06.2020. The matter was further reviewed in the meeting held with the DJB officers on 19.10.2020 **(Annexure-C-5/1)**.

As per the report from DJB, out of total 242 MGD flow proposed to be intercepted through the ISP project, infrastructure for trapping 226.30 MGD has been created and the work for trapping remaining 15.70 MGD will be completed by December 2020. However only 158.70 MGD of sewage will be treated by December 2020 as the STPs at Coronation Pillar and Rithala are not likely to be ready by December 2020. Only on commissioning of Coronation Pillar which will 40 MGD capacity be added by June 2021 and the upgradation of Rithala and its rehabilitation will enhance treatment capacity from the existing 40 MGD STP to trapping and treatment of 242 MGD of sewage by December 2022 . Basically this is what the overall vision was as envisaged under the ISP. The break -up of time lines is as under:

- i. Infrastructure for trapping 242 MGD to be ready by: 31.12.2020
- ii. Trapping & Treatment of 158.70MGDby : 31.12.2020
- iii. Trapping & Treatment of 200 MGDby : 30.06.2021
- iv. Trapping & Treatment of 242 MGDby : 31.12.2022

As is evident, DJB has not complied with the orders of the Hon'ble Tribunal directing that the ISP project should be commissioned by 31.12.2019. The Board is therefore liable for payment of EC at the rate of Rs 5 lakhs per month w.e.f. 01.01.2020. Also even if the trapping infrastructure is ready by 31.12 2020 as is now claimed by the DJB, treatment of the 242 MGD of trapped sewage will be possible only by December 2022.

As regards, delay in commissioning of the STPs at Coronation Pillar, Rithala, Kondli and Okhla, the YMC has comprehensively reviewed the systemic issues that have caused the delays in commissioning of the STPs and has made its recommendations in Chapter 4-Sewage Treatment Plants.

In addition to the 108 drains that are covered under the ISP, M/S EIL, the Project management Consultants for the ISP had identified 204 drains which are in the catchment of the three drains, namely, Najafgarh, Supplementary and Shahdara drains which also carry sewage and accordingly YMC asked the DJB to prepare an Action Plan for trapping these drains. The status of action taken so far and plans for the future are as under:

Total number of drains to be trapped:	204
Drains already trapped:	40
Trapping not required;	10
Drains that pertain to Haryana and DDA:	03
Drains to be trapped by December 2020:	1
Drains to be trapped by December 2021:	89
Drains to be trapped by December 2022:	58

As per the Report submitted by the DJB the command area of these drains has 1173 unauthorized colonies, most of which are unsewered and where the sewerage system is expected to be laid and is at various stages of planning and execution. Only after sewerage system is laid and household connectivity provided, or in the alternative, all the drains trapped and sewage conveyed to STPs as planned above will the objectives of ISP achieved.

YMC's Comments:

- (i) The STPs linked to the 108 drains passing through 1173 colonies are to be commissioned in December 2022 only. As a result, the sewage from these colonies will continue to pollute the river as the availability of infrastructure by itself will not serve the purpose of preventing pollution from open sewage unless connectivity to households is completed.
- (ii) Time series data collected by the CPCB and the DPCC should help establish the impact of the ISP, both in quantitative terms by volume of waste water in the drains as well as the quality of waste water itself.
- (iii) Delhi Jal Board needs to give an assessment of improvement in river water once the present set of drains are trapped and the sewage is treated. Although the existence of sewage in the drains is related to factors beyond the control of DJB, the Jal Board needs to set a goal of achieving certain level of water quality improvement in the river once the ISP is commissioned. A tripartite arrangement with CPCB, DPCC and DJB must have a structured way of doing it.

Chapter – 6

Repair and maintenance of Drains

Hon'ble NGT's order dated 18.12.17:

The Delhi Jal Board shall ensure that all the 10 drains that have been trapped/intercepted should be totally sealed by taking appropriate measures to ensure that there is no leakage from the point of interception /tapping to river Yamuna in any case.

Hon'ble NGT's order dated 11.9.19

- a) *The DJB and NDMC to identify and plug the sources of sewage within two months positively and report compliance to Monitoring Committee.*
- b) *Tapping of Drains:*
 - i. *Qudasiabagh+ Mori Gate drain(Flow: 43.2 MLD):DJB to make an assessment of sewage coming from sewerred areas and prepare an action plan with timelines for plugging the discharge into storm water. New STPs be established only for non-sewerred areas.*
 - ii. *Barapulla Drain (Flow: 145.15 MLD): DJB to submit action taken on Action Plan which it had submitted to NGT in 2014 in terms of actions on short term, medium term and long terms measures envisaged.*
 - iii. *Maharani Bagh Drain (30.24 MLD):DJB to indicate proposal to stop the flow in the drain with specific timelines in terms of tapping or laying of sewer lines in un-authorized colonies.*
 - iv. *Najafgarh Drain (2056 MID) and Shahdara outfall drain (475 MLD): The DJB is directed to attend to the observation of Monitoring Committee so that all the intercepted sewage is treated. The States of Haryana and UP are directed to submit their Action Plan with specific timeline to attend the flow of untreated sewage into said drains.*
 - v. *Status of other storm water drains carrying sewage: The DJB is directed to submit a specific timelines with specific accountability so that no sewage finds its ways from sewerred areas into the storm water drain.*

- vi. *Status of Punctured Sewers: DJB to ensure that such instances are attended on priority with specific accountability.*
- vii. *Ameliorative measures for cleaning drains & Constructed Wetlands and In-situ Bioremediation Technology: The Irrigation and Flood Control Department to develop a mechanism of third party verification report on the ameliorative measures undertaken by it.*
- viii. *Controlled Dredging in River Yamuna: The finding of the study undertaken by NEERI to assess slug deposition on river bed of Yamuna be evaluated and appropriate decisions by undertaken by IFCB (The Irrigation and Flood Control Department).*
- c) *For failures in tapping the drains, environmental compensation at the rate of Rs. 5 lakh per drain per month will be paid by the DJB or concerned department to the CPCB for environmental restoration. Entries in the record of the erring officers also be recorded consistent with the earlier directions.*

YMC had in its report dated 29.06.202 requested Hon'ble NGT to consider issuing the following directions:

- i. *CPCB/DPCC to monitor 11 drains which have been trapped with regard to the effectiveness of trapping.*
- ii. *At some places, viz. Sweepers Colony drain, Magazine drain, Drain no. 14 and Barapulla drain some JJ clusters, jhuggies have come up which release sewage directly into the drains. DSUIB should provide amenities like community latrines in such JJ clusters which needs external evaluation. Drain owning agencies should be responsible to identify and stop such encroachments. IDMC should monitor the action taken by DSUIB, DPCC and Drain owning agencies as permitting Jhuggies to defile the drains downstream of the point of trapping defeats the whole purpose of trapping.*
- iii. *YMC recommends directions to DDA for allotment of land to DJB for setting up of the plant at the mouth of Mori Gate Drain, Mori gate drain and Barapulla Drain within next three months. Allotment of land for setting up STPs on drains has been hanging fire for the last two years if not longer. The process of allotment must be fast tracked*

considering the nature of utility services on priority and Chief Secretary and VC DDA be directed to personally oversee this and submit compliance to NGT within three months.

- iv. DJB should take a decision on the capacity of proposed STP after considering the discharge proposed to be trapped from Kushak and Sunheri Bagh Drain into sewerage system. IDMC be directed to monitor this.*
- v. NDMC/DJB should to plug all the sewage flowing into this drain from the areas under its charge within two months and take measures as recommended in the final Report and submit a compliance report before the Tribunal.*
- vi. Chief Secretary Govt of NCT Delhi should strengthen the monitoring of these projects which impact the health of public at large and fix accountability on officers responsible for the projects.*

Hon'ble NGT vide its order dated 6.7.2020 accepted the recommendations of the YMC and directed the parties to the case to furnish status report on the recommendations.

Present Status of Implementation as assessed by the YMC:

The matter was reviewed by YMC on 19.10.2020 with the DJB, represented by the Member Drainage and other Engineers. The status of implementation of the action plans for preventing and trapping sewage in the drains is discussed below:

There are in all 23 large storm water drains joining Yamuna downstream of Wazirabad which discharge sewage and industrial waste into the river. Out of 3026 MLD of flow discharged into river Yamuna through all the drains, Najafgarh and Shahdara drains **(CPCB Report of 11.11.2020 at Annexure-C-6/1)** account for about 2106 MLD and 513 MLD respectively. Keeping in view the fact that a large number of unsewered colonies continue to discharge their sewage into the storm water drains, DJB has been trapping drains at the outfall point into river Yamuna and conveying the sewage through the trunk sewers to the nearest STP. The last report of YMC submitted to the NGT on 29.06.20 had reported that the following 11 drains had been trapped and that there was no flow downstream of the point of trapping:

1. Magazine Road Drain
2. Sweeper Colony drain
3. Khyber Pass Drain

4. Metcalf House Drain
5. Moat Drain(Vijay Ghat)
6. Civil Military Drain
7. Delhi Gate drain
8. Drain No 14
9. Tughalaqabad Drain
10. Kalkaji Drain
11. Tekhand Drain(Sarita Vihar Drain)

Since CPCB had disputed these claims, CPCB was asked to once again undertake site inspection and report on the status of trapping. As per the CPCB Report of 20.11.2020, only the following drains have been fully trapped and have no flows downstream of the trapping point:

1. Magazine Road Drain
2. Khyber Pass drain
3. Metcalf Hose Drain
4. Kailash Nagar Drain
5. Drain no. 14
6. Moat Drain

The report of CPCB dated 11.11.2020 which has photographs of the drains and points of trapping clearly shows that even where weirs have been constructed to trap the drains, there is considerable flow downstream of the point from the trapping. While this may be understandable during the monsoon and immediately post monsoon, the presence of flow even during the drier months of October suggests that the trapping infrastructure is not being maintained properly by the DJB staff. This clearly shows poor supervision. In the last report of YMC it was stated that in a number of drains there are jhuggies and encroachments downstream of trapping.

Therefore unless these encroachments are stopped by drain owning agencies and Sewage/septage from the Jhuggies contained by the DUSIB, the efforts to trap sewage in the drains will get neutralized. Trapping alone will not stop sewage going into river Yamuna

through the drains unless the drain owning agencies and DUSIB also take preventive and enforcement action.

Comments of the YMC:

The YMC recommends periodic maintenance and proper watch and ward to prevent encroachments beyond the point of trappings. IDMC headed by the Chief Secretary may ask the DPCC to monitor these drains with regard to the effectiveness of trapping and submit its report to the IDMC periodically. The option of installing CCTV cameras at the point of trapping and connected to the DJB's server and DPCC servers will help in better monitoring the sewage flow at the trapping points. Even so it will be ineffective unless there is coordinated action to stop the inflow of sewage downstream. So there is a need for proper coordination which needs to be raised before IDMC so that there is accountability.

Drains Requiring Trapping/Preventing Sewage in the Drains:

The status of the remaining drains, DJB's Action Plan for trapping/preventing flow of sewage in these drains and YMC's comments and roadmap are discussed in the following paragraphs:

Tonga Stand drain (7.8 MLD): This drain carries waste water from Old Delhi Rly station area, Lothian Bridge and the adjoining area. Though partially trapped into Nigam Bodh SPS however local discharge from the Yamuna Bazaar is still flowing into this drain. DJB Board has proposed a small STP at the mouth of this drain for which DDA has been asked to allot the land to DJB for setting up the STP.

There is no progress reported by the DJB on whether land has been allotted by DDA and the efforts made. YMC recommends in situ bio/phyto remediation in the drain as a short term measure as there is no clarity on whether and when the land will be allotted for setting up STP. IDMC should deal with the matter.

Dr Sen Nursing Home drain (35 MLD): At present 10 MLD of sewage from Dr Sen Nursing Home drain is being treated at the existing STP and supplied to PPCL for the thermal power plant, and the remaining sewage is overflowing into Yamuna River. As per the advice of YMC, DJB had started constructing a weir to completely stop the overflow. However, the work was stopped and the constructed structure was demolished by SDMC in the month of July 2020 on the

ground that it was causing obstruction to the flow thereby weakening the embankment of the drain and causing backflow leading to flooding. Action is now being taken to construct a weir with gunny bags, which can be removed during the rainy season. This situation highlights the absence of coordination and IDMC should take serious note of such inter-agency confusion.

Comments of the YMC:

Since this drain is passing through both NDMC and DJB areas, both organizations were required to divert the sewage of Railway colony and Deen Dayal Upadhyaya Marg Institutional area into the sewerage system, which has not yet been done by DJB or NDMC. This will need to be monitored by the IDMC headed by Chief Secretary as it pertains to pollution caused to Yamuna due to sewage in drains. IDMC also needs to examine if sewage in this drain at its outfall point can be subjected to In situ phyto/bio remediation as an interim measure.

Mori Gate & Qudisia Bagh drain (33 MLD): Since most of the catchment area of this drain is seweraged, there should normally be no waste water in the drains. YMC had asked DJB to find out the feasibility of diverting waste water into the existing sewerage system of the walled city area so that waste water in Morigate drain is eliminated/reduced and then set up additional capacity based on the reduced flow, if any. DJB informed that this is not feasible since the sewerage system in the walled city is very old and it is not possible to divert this flow in the drain to that sewerage system. DJB therefore insists that there is no alternative but to set up STP at the mouth of Morigate drain after allotment of land by DDA.

Comments of the YMC:

Pending allotment of land and setting up STP at the outfall point of the drain as proposed by DJB, IDMC may consider in situ phyto/bio- remediation in the drain.

Maharani Bagh Drain (39MLD). This drain has been partially trapped into existing C.V.Raman Marg trunk sewer to the extent of 9-10 MLD and the remaining discharge of 39 MLD is flowing into River Yamuna. DJB has submitted that for balance flow, the work of sewer network has been awarded in Batla House GOC, Phase-II, which will trap the same and pump it to Okhla STP. The revised time lines for the same is April 2022 against original time line of Dec 2021 due to Covid19 lockdown, the Shaheen Bagh protests and the blockade during March to May 2020. No further progress has been reported by the DJB on this.

Comments of the YMC:

YMC, however, recommends squeezing the timelines for completion of this work and the IDMC monitoring this. DJB should ensure that along with laying of sewer line individual household connectivity must also be provided.

Barapulla drain (145 MLD): This drain receives 145 MLD of sewage coming from unauthorized colonies, and slums, and some even from sewerage authorized colonies due to poor maintenance of the sewer network. DJB's Action Plan submitted to NGT in 2014 had remained unimplemented and a revised Action Plan was prepared for diverting the flow of Kushak drain into the existing sewerage system and preventing sewage flowing into the drains from sewerage authorized colonies. However, even that Action Plan suffered delay, due to Covid related reasons. As reported by the DJB now, out of the 12 point action plan, 6 points have been completely implemented resulting in additional trapping of 5 MGD ((22.5 MLD) of sewage, one point is partially completed and the remaining 5 points are expected to be completed during January to June 2021 , thus trapping all the remaining sewage.

The Status of implementation of 12 point Action Plan received from DJB is tabulated below.

Status of Action Plan of trapping wastewater in Barapulla Drain

S.No.	Activity	Earlier Scheduled date as per Action Plan	Quantity of sewage trapped/to be trapped (MGD)	Present Status	Target date of completion
A1.	Trapping of unauthorized colonies at Ratia Marg (16 Colonies).	Already achieved 30.06.2019	2	Completed	-
A2.	Trapping of unauthorized colonies at Managal Bazar Road.	Already achieved 30.06.2019	1	Completed	-
A3.	Trapping of unauthorized colonies (20) of at Tigri Road, Devali and Dr. Ambedkar	May-20	1.25	Completed (refer photograph)	31.10.2020

	Nagar				
A4.	Trapping of 25 unauthorized colonies (25) IGNOU Road is to be trapped.	Jun-20	2	Work in progress/ work suffered due to Covid-19, scarcity of labour after lockdown and Monsoon	March 2021
A5.	Trapping of unauthorized colonies (11) at Deoli Road.	Dec-20	1.25		June-2021
Total			7.5		
B1.	Rehabilitation of Peripheral trunk sewer at Press Enclave Road.	Jun-20	4	Completed (refer photograph)	25.11.2020
B2.	Rehabilitation of Peripheral trunk sewer at Chirag Delhi Flyover.	Jun-20	1	Work in progress/ work suffered due to Covid-19, scarcity of labour after lockdown and Monsoon	31.03.2021
B3.	Damage 600 dia. Sewerline at Chirag Delhi Drain.	Jun-20	1	Work in progress and likely to be completed by 31.03.21 (Refer Photograph)	31.03.2021
B4.	Trapping of drain at Chirag Enclave. SPS.	Jun-20	0.5	Completed (Refer Photograph)	27.11.2020
Total			6.5		
C1.	Trapping of Nallah at Krishi Vihar (450 mm dia for trapping)	May-20	Any remaining sewage in drain	construction Completed. Commissioning in progress.	10.12.2020
C2.	Trapping of Nallah at Andrews Ganj (900 mm dia for trapping)	May-20		Work in Progress	31.01.2021
C3.	Trapping of Nallah at Pant Nagar (900 mm	May-20		Completed (Refer	

	dia for trapping)			Photograph)	
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As per the Action Taken report of DJB, all these measures are expected to be completed by 31.06.2021 which will reduce about 45.46 MLD (10 MGD) flow in the Barapulla Drain. The remaining flow is expected to be around 68.91 to 90.92 MLD (15 to 20 MGD) for which a STP of 90.1 MLD (20 MGD) will be constructed before the outfall into the Yamuna. The 20 Acre land for the STP is to be allocated by DDA for which the joint inspection with DDA for allotment of land was conducted on 03.11.2020, land identified and DDA assured for allotment of land expeditiously. The STP will be completed in 3 years after allotment of land by DDA.

Comments of the YMC:

As per the Action Plan submitted to YMC in June 2020, however, the total flow to be trapped was about 28 MGD. Delhi Jal Board's plan to set up STP on the Barapulla drain therefore needs to be considered and a decision on its capacity taken after the plans for trapping the discharge from Kushak and Sunheri Bagh Drains into sewerage system fructifies.

Though some progress has been achieved to control sewage in the drains, this will require to be monitored closely in view of the past experience of slippages in implementing the Action Plan. Also, the claims of the DJB will have to be independently verified. Success of achieving zero discharge of sewage will be able to substantially address the grievance of RWAs of Greater Kailash, Nizamuddin West and Defense Colony who had approached the Hon'ble Supreme Court of India/Delhi High Court raising grievance against the presence of toxic fumes and foul smell emanating from the polluted Kushak drain.

Sunheri Bagh drain: This is a major tributary of Barapulla drain and joins the Barapulla drain near Nizamuddin West before its outfall into the Yamuna. It carries a huge quantity of waste water which comes from New Delhi Municipal Council and DJB areas. Accordingly, both DJB and NDMC were required to divert the waste water of Sunheri Bagh drain into their respective sewerage systems. After conducting intensive surveys entrusted by YMC to Shri Tyagi (former DJB Member Drainage) in March 20, it was found that sewage from CGO complex under the jurisdiction of DJB is still being discharged into the Sunheri Bagh drain.

DJB has submitted the following Status report:

1. **Nizamuddin West**, *As per the direction of the YMC to take action against errant house owner discharging sewer in Sunehri Pull Nallah, the survey was conducted and defaulters were prosecuted as per DJB law.*

However, all the house connections which were directly discharging sewage have been trapped in sewer line and now there is no overflow at this site. De-silting work of the out fall sewer line of 600mm dia has also been completed.

Further survey of all storm water drains is being carried out as there are hundreds of locations where storm water channels have been is connected with sewers in Nizamuddin West. Thereafter, the storm water drain will be disconnected before 30th June 2021 to avoid back flow in Nizamuddin West.

2. **Jangpura Extn.** *Survey has been conducted and no encroachment was found on DJB sewer line. Further, the work has been awarded for trapping the sewer discharge coming from the jhuggies and Strom Water drain. Work is likely to be completed 31-03-2021.*

Comments of the YMC:

No report of action taken has been received from the NDMC. This needs to be pursued further both with DJB and NDMC so as to trap and stop all the flow in this drain as it passes only through sewer areas and there can be no justification for the presence of sewage in the storm water drains. IDMC also needs to monitor this as it pertains to flow of sewage in storm water drains and the entire sewage can be stopped if all the agencies responsible take action in their respective jurisdictions.

Najafgarh(2106 MLD) and Shahdara(513 MLD) drains: As per ATR submitted by DJB 108 drains in the catchment areas of Najafgarh and Shahdara drains are being trapped by the Interceptor sewer. It is estimated that 242 MGD (1100 MLD) will be trapped out of which 148.25 MGD has already been trapped and being treated. The progress of trapping of drains under ISP has been discussed in Chapter 5 Interceptor Sewer Project. The discharge coming from UP and Haryana has not been accounted for by DJB. Haryana is discharging around 105 MGD sewage and Industrial waste through Drains at L1, L2, Badshahpur and drain no.6 which meet Najafgarh and

Supplementary drains. Supplementary drain also meets Najafgarh drains before the latter joins Yamuna.

Similarly, out of 106MGD (513 MLD) of waste water in Shahdara drains about 50 MGD(227 MLD) is discharged by Drain no. 1 of UP State and Ghazipur drain through Sahibabad, Indirapuri and Noida drains. The action plan from these two states has been discussed in Chapter 12 and Chapter13.

YMC had raised these and related issues with the Chief Secretaries of Haryana and UP on 8.9.2020 and 28.9.2020 respectively but the state reports and comments thereon do not present a picture of tangible progress – certainly not sufficient to have an impact on the Najafgarh and Shahdara drains which account for maximum pollution going into the Yamuna. IDMC needs to collate the data and have this addressed by the CM Delhi with the CMs of Haryana and UP. The Yamuna and the capital belongs to the whole country and the progress made in the last 20 months inspite of commitments made to YMC at the Chief Secretary's level, falls far short of expectations. Unless these two states treat the cleaning of the Yamuna and its feeder drains as a national problem incremental improvements will achieve but little. The Chapters on Haryana and Uttar Pradesh give all details.

After commissioning of the Interceptor Sewer Project by December 2020 and notification of various sewerage schemes in unauthorized colonies, Yamuna Vihar STP is expected to trap around 18% sewage of which 9% is already being treated through the Chilla STP.

After commissioning of Kondli Phase-I, II & III STPs, untreated flow of 25 MGD (23%) will also be treated by December, 2022. The balance untreated flow that will remain is projected as being only about 6 MGD. i.e. 5%. To take care of unsewered areas, Delhi Govt. has already notified Septage Regulations in November, 2018 which will reduce further pollution in Shahdara drain/river Yamuna.

Comments of the YMC:

There are vague assurances about completion of ISP, STPs and providing sewerage network in unsewered areas. These will have to be monitored with greater degree of specificity. **IDMC needs to monitor these two drains by going into detail as together they contribute two**

third of pollution in Yamuna. IDMC headed by the CS Delhi will also have to coordinate with the States of UP and Haryana, and even escalate it to the level of political executive, if required, as the river Yamuna belongs to all and will require coordinated action by all the state governments if some tangible progress on its revival is to be achieved.

Sonia Vihar Drain(25.50 MLD):Delhi Jal Board has decided to treat the sewage through the use of Bio-Enzymes in the pond for reduction of BOD. The tender was invited and the work was likely to start by the end of February 2020, however, in response to the tender, only a single bid was received. It was therefore decided to re-invite the tender with relaxation in eligibility criteria to attract more participants and get most competitive rates. The tender has been invited and the technical bid was to be opened in June 2020. However, it has now been decided to treat the sewage through a different process for which a pilot project has been completed successfully and new process will be implemented within 30 days.

The block estimate for setting up an STP and laying of sewer network have already been approved by Delhi Jal Board. Tenders for laying internal system in its command have already been invited where land is available and tenders are in the process of award. Moreover, tenders for consultancy for Sonia Vihar STP have also been invited. Tenders for laying of internal sewerage system in the balance command area shall be taken up after allotment of land for construction of SPS.

Abu Fazal Drain (35 MLD) There is no sewerage system in the area. The work of providing and laying an internal sewer system has been awarded and the flow will be trapped by April 2022.

Jaitpur Drain (23.3 MLD): This drain receives sewage from the unauthorized colonies of Badarpur area and some discharge from Faridabad. Jaitpur drain is joining the river Yamuna downstream of Okhla barrage. There is no sewerage system in Badarpur area. DJB proposes to provide sewerage network in Badarpur area along with the construction of a decentralized STP of 45.46MLD (10MGD) capacity for which DJB has sought allotment of land.

The sewer network along with STP will be completed in 3 years' time after allotment of land for the STP.

Comments of the YMC:

Since there is uncertainty about when the land will be allotted, IDMC needs to examine the feasibility of taking up this drain under the Phyto/Bio remediation technology. CS Delhi who is the Chairman of IDMC, may also hold a meeting and resolve all land related issues which are delaying setting up decentralized STPs as none of the 56 proposed by DJB have made any headway otherwise the avowed plan of decentralized STPs will remain an aspiration only.

Agra Canal near Okhla and Old Agra canal Okhla:

Both are canals and do not require setting up STPs.

Drains claimed to be trapped but carrying sewage:

There are some drains which are claimed to have been trapped but were actually found having sewage downstream of the trapping point. These drains are:

1. Delhi Gate drain (56.16 MLD)
2. Sweepers Colony drain (4.32 MLD)
3. Civil Military Drain (4.32 MLD)
4. Tekhand Drain (32.83 MLD)
5. Tuglaqabad drain (26.78 MLD)
6. Kalkaji drain (26.90 MLD)
7. Shastri Park Drain (5.18 MLD)

Comments of the YMC:

These drains need to be inspected and remedial action taken to prevent flow of sewage downstream of the trapping point. IDMC should consider strengthening the local monitoring mechanism including installation of CCTV cameras to monitor flow and fix accountability of the officers for maintenance and supervision.

Drains requiring land for setting up STPs:

From the above discussion it is observed that DJB plans to set up STPs for varying capacities at five places, namely, Tonga Stand drain, Morigate drain, Barapulla drain, Sonia Vihar Drain and the Jaitpur drain. There is no clarity, whether and when, the land will be allotted. Till that happens, more than 155 MLD of sewage will continue to flow into river Yamuna through these seven drains. Some of the drains have very high BOD levels.

On the issue of land allotment for STPs, NGT had in order dated 6.7.2020 had specifically directed as under;

“Having regards to the priority to be given to the treatment of sewage disposal in the drains joining river Yamuna, the land available on the flood plains may be utilized for the purpose, if there is no other alternative or till other land becomes available. Needless to say, such safeguards sites for such purpose may be approved by the Principal Committee.”

Comments of the YMC:

Besides the land allotment issue, a combination of measures, namely, repairing of sewer network and plug leakages, de-silting sewer network, laying of sewer network in colonies which do not have sewer network and better maintenance of trapping points where trapping infrastructure has been provided have all to be used by location to deal with the problem of sewage in storm water drains. Considering the large volume of sewage going through these seven drains IDMC needs to take up work of allotment of land and other connected works on priority and draw up action plan with milestones and timelines and responsibilities assigned to identified officers. DJB has not responded to the NGT’s direction to even utilize flood plain land for this purpose and needs to respond to it after identifying locations and taking the approval of NGT on a case by case basis.

Status of Punctured Sewers joining Storm Water Drains at 79 places.

YMC had asked DJB to submit an Action Plan to plug 79 points in their sewer network where the sewer lines had been punctured and have been connected to storm water drains. As per DJB's Action taken Report, 50 points out of 79 points where sewage was flowing into storm water drains by puncturing sewer lines have been plugged , two points pertain to DUSIB and one point to DDA. In the remaining points except 2 places, the work was to be completed by 31.12.20, but the work for only three points will be completed by December 20 and for 13 points during March-June 2021 and remaining 8 only by December 2021.

The delay in plugging the sewer system will result in untreated sewage continuing to be discharged into storm water drains even as there is underutilisation of the capacity of STPs where this sewage could have otherwise been conveyed.

The constant shifting of timelines again points to absence of effective institutional control and lack of accountability of the Officers who after giving timelines to the YMC and the NGT blithely shift the goal posts despite commitments. The YMC had got an independent assessment of the points where punctured sewers were claimed to have been repaired. The report of the Committee of experts from DTU and Shri Tyagi is placed at **Annexure-C-6/2**. The updated status of these 79 locations is as under:

S.N	Description	As per Status Report given by DJB in June 2020		As per Status Report given by DJB in October 2020	
		Locations	Target Date	Locations	Target Date
1	Work Completed by DJB	47	Completed	50	Completed
2	Work to be completed by DJB	2	30.06.2020	3	31.12.20
		2	30.09.2020	6	31.03.21
		4	31.10.2020	3	30.04.21
		17	31.12.2020	2	31.05.21
		2	31.03.2021	2	30.06.20
				8	31.12.21
3	Works pertaining to other departments	2	DUSIB	2	DUSIB
		1	DDA	1	DDA
		1	Permission from RAILWAY is awaited.	1	Permission from Railway awaited
		1	CPWD	1	CPWD
	Total	79		79	

In the last report of the YMC it was recommended that the matter should be taken up by the IDMC with the other agencies like the Railways, DDA, DUSIB and CPWD to ensure that the punctured sewer lines within their areas are plugged. This does not appear to have been

done by the concerned agencies. This needs to be attended to in order to keep the storm water drains free of sewage particularly in sewerred areas.

YMC's Comments:

IDMC may also have independent random checks done as puncturing is resorted to as a short cut to respond to public entreaties. Unless this is overseen, the engineers at the field level will again resort to short cuts.

Controlled dredging in the River Yamuna:

The NEERI report on dredging had been submitted to the IFCD. The study was commissioned in pursuance of Hon'ble NGT's direction to undertake controlled dredging in the Yamuna to remove the historical sludge from the river bed. Only after the findings of the study become available would a decision be taken whether or not to undertake controlled dredging.

YMC's Comments;

YMC had recommended that IFCD, who had commissioned the study, should in consultation with NMCG, CPCB and DPCC take a view based on the findings of the report. YMC has received no report from IFCD. This needs to be gone into and a view taken.

Chapter – 7

Industrial Pollution and CETPs

NGT's order dated 02.03.15:

- I. *All the industries in 17 clusters should be connected to CETPs. Industries not connected should be asked to connect through conduit pipes to CETPs and in event of failure such industries should be ordered to be closed by DPCC.*
- II. *Eleven clusters which do not have CETPs are stated to be dry industries and do not consume water in the process. Such Industrial clusters will be subjected to joint inspection by CPCB, DPCC and DSIIDC and MCDs verify the claim and also assess the manner in which hazardous waste like used oil, lubricants and grease if any used in the process it is disposed of.*
- III. *No drains should carry industrial effluent and if found in the drains CETPs should be set upto treat the effluent before being taken to STPs as the STPs are not capable of treating industrial effluent.*
- IV. *Hazardous waste generated at the CETPs should be disposed of at the designated hazardous waste sites*
- V. *NGT vide order dated 19th may 2017 and later through an order dated 23-08-2018 in OA no. 601 of 2018 has directed the MC to monitor functioning of the industries located in non-conforming / residential areas.*

NGT's order dated 11.9 19:

- a) ***DPCC is directed to continue with the survey and monitoring of industries both in confirming and non-confirming areas and take action in accordance with law against polluting units and file report of action three months besides recovery of EC. In case of non-compliance Delhi Govt will be liable to pay Rs. 5 lakh per month from 01.01.2020***

In compliance of the orders of NGT cited above, YMC has been monitoring functioning of the industries located in the 17 Industrial clusters which have water polluting industries and are serviced by 13 CETPs. For this a survey of industries located in the 17 Industrial clusters was

got done jointly through a team of DSIIDC/Industries and DPCC, enforcement action taken against the defaulting industries and the functioning of CETPs monitored. In addition the survey of 11 industrial clusters which had mostly non- water polluting/dry industries was done. As many as 31985 industries in 17 industrial clusters and 4443 in the 11 clusters were got surveyed and enforcement action taken.

Despite the extensive enforcement action taken both by the Industries Deptt/DSIIDC and the DPCC, it has been found that the drains and the river Yamuna continue to carry a high degree of pollution load, particularly high COD and even heavy metals as has been shown though periodic measurement undertaken by CPCB and DPCC. The COD levels vary from 80 mg/L to 184 mg/L and heavy metals like Cr and Ni even prior to Idol immersion during the year 2018 as reported by CPCB, showed concentrations in excess of BIS standards of .05 mg/L and .02 mg/L respectively.

In two review meetings with the YMC on 7.8.20 and 3.11.20 Commissioner Industries/MD DSIIDC gave a detailed account of industries in Delhi and explained why DSIIDC, though assigned the function to establish, operate, maintain and manage Industrial Estates in Delhi under the Delhi Industrial Development Operation and Maintenance Act, 2010 (DIDOM Act) is not able to exercise effective control on industrial pollution emanating from industries operating in Delhi.

As per the Report of Industries Deptt/DSIIDC, industries in Delhi can be categorized in the following three categories:

1. Industries located in notified Industrial Clusters.
2. Industrial clusters notified for redevelopment under DDA's Master Plan of 2021.
3. Industries operating from non-conforming/Residential Areas

Industries Located in notified Industrial Clusters:

Presently, there are 33 approved Planned Industrial Areas in Delhi (**Annexure C-7/1**). There are in all about 36000 industries within these 33 clusters. Out of these 33 Industrial Areas, only 25 industrial areas/estates have been handed over to DSIIDC for which DSIIDC is

responsible for maintenance & upgradations of development activities. Out of 25 Industrial areas, lease administration of only 12 areas is with DSIIDC and for the rest, the authority lies with DDA. Besides, in these 12 industrial areas, authority to collect revenue and levy various types of penalties/charges vests either with DDA or concerned DMC. There are 9 industrial clusters which have not been transferred to DSIIDC for purpose of maintenance of drains and roads. These are:

S. No.	Name of Industrial Area	Lease Administration	Maintenance of Roads & Drains
1	S.M.A Industrial Area	DDA	Private Societies
2	S.S.I Industrial Area	DDA	Private Societies
3	Mohan Cooperative Industrial Area	DDA	Private Societies
4	Shahzada Bagh Industrial area	DDA	North MCD
5	Rani Jhansi Road	DDA	
6	(a) Okhla Industrial Area, Ph-I (b) Okhla Industrial Area, Ph-II	DDA	South MCD
7	Tilak Nagar Industrial Area	DDA	
8	Friends colony Industrial area, Shahdara	DDA	East MCD
9	Shahdara Industrial Area	DDA	

The 17 industrial cluster having water polluting industries connected to 13 CETPs fall within this category, though complete control as prescribed under the under the DIDOM act does not vest with the DSIIDC. The 11 industrial clusters having dry industries are also within this category. The remaining industries are flatted factories causing no water pollution.

Industrial Clusters notified for redevelopment under DDA's Master plan of 2021

There are 25 Industrial Clusters which have been notified for redevelopment under the provisions of the Master Plan for Delhi as per the list given below:

S.No.	Name of Industrial Area	Date of Notification in MPD (Master Plan of Delhi)	Agency Responsible for Cleaning/ Sweeping/ SWM, Maintenance of Roads/ Drains & other Pollution Mitigation Activities
1	Anand Parbat	01.08.1990	North MCD
2	Shahdra	01.08.1990	EDMC
3	SamaiPurBadli	01.08.1990	North MCD
4	Jawahar Nagar	30.06.2016	North MCD
5	SultanpurMazra	02.12.2005	North MCD
6	Hastsal Pocket- A	02.12.2005	SDMC
7	Naresh Park Extension	02.12.2005	SDMC
8	Libaspur	02.12.2005	North MCD
9	Peeragarhi Village	02.12.2005	SDMC
10	Khyala	02.12.2005	SDMC
11	Hastsal Pocket- D	02.12.2005	SDMC
12	Shalimar Village	02.12.2005	North MCD
13	New Mandoli	02.12.2005	EDMC
14	Nawada	02.12.2005	SDMC
15	Rithala	02.12.2005	North MCD
16	Swarn Park Mundka	02.12.2005	North MCD
17	HaiderPur	02.12.2005	North MCD
18	Karawal Nagar	02.12.2005	EDMC
19	Dabri	02.12.2005	SDMC
20	BasaiDarapur*	28.04.2006	SDMC
21	MundkaPhirni Road	17.09.2007	SDMC
22	MundkaUdyog Nagar (South)	17.09.2007	SDMC
23	Prahladpur Banger	11.09.2007	SDMC

24	Ranhola	27.08.2019	SDMC
25	NangliSakrawati	17.08.2020	SDMC

These areas are non-industrial areas where industrial activity mushroomed illegally and later these clusters were notified for redevelopment. There is no infrastructure such as a CETP or a separate conveyance system for industrial wastewater/effluents. The DSIIDC and the Industries Department have no control or supervision over the industrial units in these areas till they are not redeveloped.

The notified areas are required to be redeveloped by the concerned Society of Industrial Units which had applied for declaring the area as notified for redevelopment. The said redevelopment is required to be carried out within 3 years of the approval of the layout plan (as provided in the MPD). However, while issuing the regulations for redevelopment of these clusters, no timeline has been fixed by DDA either for applying for the approval of a Layout Plan or for approval of the same thereafter. The Industries Department has informed that they have taken up with DDA for taking up redevelopment of the these industrial areas in a time bound manner, or else de-notified, however, matter is hanging fire.

There is no credible data available as to the total number of units presently operating in these clusters though it is roughly estimated that there may be over 30,000 units operating in these industrial clusters. The DPCC has reported that Consent to Operate has been given to 1752 units in these clusters in the period 01.01.2020 to 31.10.2020. DPCC has also reported that it has issued challans to 9 number of units for causing water pollution and has so far collected Rs. 8, 15,625/- as EC in the period from 01.01.2020 to 31.10.2020. The DSIIDC has therefore suggested that:

- a) a firm timeline for submission of layout plan, its approval and redevelopment should be notified, and
- b) regular inspections and enforcement actions by the concerned civic/regulatory agencies i.e. DMCs, DPCC, DJB etc. against units releasing pollutants into the drains.

Comments of the YMC:

The Govt of NCT Delhi/DDA should take a final decision on the issue of industries operating in industrial areas which have been notified for re-development. Layout plans should be given in

not more than 3 months as the matter has remained unresolved for years. The nature of industries that may be permitted in such areas should be notified first and if they do not qualify they must be asked to relocate or should be removed if there is non-compliance

INDUSTRIES IN NON-CONFORMING/RESIDENTIAL AREAS

In addition to the industries under the above two categories, there are 51837 industries reported to be functioning from residential/non-conforming area although there is no definitive information on the actual numbers.

Under the directions of Hon'ble Supreme Court, the Commissioner of Industries, Govt. of Delhi had formulated the scheme of "Relocation of Industries" in the year 1996. The rationale of the scheme is to relocate and manage the operation and maintenance of industrial units working in the non-conforming/residential areas of Delhi to conforming areas in NCT of Delhi. 51837 applicants had applied for alternate plots under the relocation scheme. Out of that, 21960 applicant declared as successful allottees who got the alternate plots.

The Govt. of NCT of Delhi, in coordination with the Municipal authorities, has taken the action to close down industries in non-conforming areas in three steps namely: Step-I, Step-II and Step-III.

Step-I: The Municipal Corporations had been directed by GNCTD that the industrial units under their respective jurisdiction out of the list of 21960 industrial units whom industrial plot were allotted under the Relocation Scheme of 1996 should be closed. Municipal Corporations had reported that these have indeed been closed. Further, sealing of premises, disconnection of electricity & water supply, wherever required in respect of those industries which were found operating had also been done by the respective Municipal Corporations.

Step-II: Municipal Corporations were further directed to ensure that the premises of applicants numbering 29877 (i.e. 51837 applicants less 21960 successful allottees who had applied for alternate plots under the Relocation Scheme) should not be permitted to carry on impermissible industrial activity. Further, sealing of premises, disconnection of electricity & water supply, wherever impermissible activity was going on had been reported to be carried out by the concerned Municipal agencies.

Step-III: In pursuance of the directions issued by the Hon. Supreme Court, Hon'ble Tribunal and the Monitoring Committee under the chairpersonship of the Chief Secretary, Delhi, Industries Department is coordinating with concerned Municipal Corporations for closure of the impermissible industries in the residential and non-conforming areas. In the Step-III, concerned Municipal Corporations/DDA have been carrying out the comprehensive mapping/survey to ascertain the details of industries functioning without obtaining proper Municipal license in respect of their respective jurisdiction and to seal them along with disconnection of electricity and water supply.

Action Taken Report as on 17.08.2020 received from the three Municipal Corporations regarding Step-III is furnished in the table given below:

Municipal Corporation	Total No of Units surveyed	No. of Units applied for Household licence	No. of Units Closed on their own after 48 hrs notice	No of Units sealed in Step-3
EDMC	3832	731	2607	494
SDMC	5822	1837	3610	360
NDMC	5757	531	4640	617
TOTAL	15411	3099	10857	1471

The YMC is not specifically monitoring this as there is a separate committee under Chairmanship of CS Delhi reporting to the Hon'ble Apex Court and another Committee under Justice Pratibha Singh reporting to the Hon'ble NGT.

In the review meeting taken by YMC on 3.11.20 the Commissioner Industries/MD DSIIDC explained that with industries operating in Industrial clusters some of which do not come under his direct control, those in unplanned areas notified for redevelopment and the industries in residential areas, the quantum of pollution caused by industries in clusters outside his control would be much bigger than from those located in Clusters that are serviced by CETPS. Also there is no reliable estimate of the industries in unplanned areas and residential areas and the nature of activities carried out. DPCC has issued Consent to Operate to 1752 industries most of which as claimed by DPCC are in white and green categories. However as estimated by the DSIIDC the number of industries could be as high as 30000. The last survey was done way back in 2004 and

the number could have increased manifold. Therefore to be able to make a dent on pollution going into drains and eventually the river Yamuna from industries which are in unplanned and residential areas will have to be regulated. Minutes of meeting with MD DSIIDC placed at **Annexure C-7/2.**

Enforcement Action:

a. BY DSIIDC/Industries Department:

The units in these areas are regularly checked by DSIIDC for causing effluents in storm water drains and challans are issued. The details of Environmental Damage Compensation (EDC) imposed and realized are given below (for the period 01.8.2018 to 31.10.2020):

S.No	No. of units on which EDC imposed and amount levied.	EDC realized (in Rs.)
1.	1965 (amounting to Rs. 9.825 crore)	5.89 crore
2.	Rs. 1.10 crore of EC was imposed on the concessionaire of Bawana	1.10 crore

The required action as may be necessary is being taken by respective estate Manager/Executive Engineer posted in respective Industrial Areas with regard to enforcement action against the non-compliant industries, including realization of the EDC and/or their closure.

b. By DPCC:

Action was taken against 980 Water Polluting Industries / Units in Delhi (both in Conforming & Non-Conforming Areas) during the period 01.01.2020 to 31.10.2020 is at **Annexure C-7/3.**

Show Cause Notices were issued by DPCC u/s 33(A) of Water Act to 260 Water Polluting Industries / Units and Directions for Closure u/s 33(A) of Water Act were issued to 720 Water Polluting Industries / Units in the period of 01.01.2020 to 31.10.2020.

Environmental Compensation of Rs. 25.28 Crores was imposed and Rs. 2.69 Crores was realised in the period of 01.01.2020 to 31.10.2020.

Action taken against the Water Polluting Industries/ Units in Redevelopment Areas:

DPCC grants Consent under the Air & Water Acts to the following types of Industries / Units

- i. **Green Category Industries / Units** (Permissible under MPD - 2021) (Consent to Establish / Consent to Operate / Renewal are given irrespective of their date of establishment /existence).
- ii. **Hi-Tech Industries** (As mentioned at clause 7.7 (b) in MPD-2021) (Consent to Establish / Consent to Operate / Renewal are given irrespective of their date of establishment /existence).
- iii. **Permissible Orange Category Industries/ Units** [Consent is granted to the Industries / Units which are already existing and operating in Redevelopment Areas prior to 07.02.2007 (i.e. date of notification of MPD-2021). No new Industry /Unit is granted Consent to Establish / Operate which has established / came into existence on or after 07.02.2007].

Action was taken against 25 Water Polluting Industries / Units in the period of 01.01.2020 to 18.11.2020.

Show Cause Notices were issued by DPCC u/s 33(A) of Water Act to two Water Polluting Industries / Units and Directions for Closure u/s 33(A) of Water Act were issued to 24 Water Polluting Industries / Units in the period of 01.01.2020 to 18.11.2020.

Environmental Compensation of Rs. 22.90Lakh was imposed and Rs. 8.15 Lakh was realised in the period of 01.01.2020 to 18.11.2020.(**Annexure C-7/4**).

Comments of the YMC:

High pendency of the EC levied on the industries is a matter of concern. DSIIIDC/Commissioner Industries and DPCC need to evolve strategy to realise the EC levied on the industries within a time bound action Plan.

Functioning of CETPs and NEERI Study:

The DPCC report on the functioning of 13 CETPs is attached at **Annexure C-7/5**.

As per the DPCC report, out of 13 CETPs only three CETPs are meeting environmental standards. NEERI which has been commissioned to suggest upgradations of CETPs was asked if NEERI can suggest some short term measures so that the CETPs start meeting standards. Dr.

Goyal informed that as an interim short term measure the CETPs can be cleaned and de-sludged as this does not appear to have been done for a long time. This step by itself will improve the functioning of most, if not all the CETPs. Industry Department informed that they have issued notices to the industries associations managing 13 CETPs on 28.10.20 directing them to get the CETPs de-sludged and in the event of their failure to do so the industry department will undertake the job and recover the cost from the industries. This will be monitored by the YMC.

NEERI, which had been entrusted with the job of diagnosing the problem of each CETP, suggesting technology for their upgradations and also looking at the possibility some of the existing CETPs being also used for the treatment of sewage as only about 60-70 MLD of sewage is actually received at the CETPs against an installed capacity of 212.30 MLD. There has been some disruption due to Covid19 and also requires interaction with the DJB.

Comments of the YMC:

DSI IDC as the organization which has commissioned the study needs to take it up proactively keeping in view the projections for industrial effluent that these CETPs are likely to receive in future and whether some of them can actually be dedicated completely to sewage treatment. Industries Department/DSI IDC will have to coordinate with DJB and DSI IDC to furnish the data to NEERI.

NEERI should complete its study of CETPs up-gradations within the next three months and also monitor implementation of short term measures recommended for improving the functioning of CETPs

Industrial Effluent in Storm Water drains Passing through Industrial Clusters:

Dr Goyal of NEERI informed the YMC that their survey has found that in Industrial clusters like the Wazirpur, the amount of industrial effluent found in the drains within an Industrial cluster serviced by CETP, the drains carried almost twice the industrial effluent reaching the CETP. It was ascertained after testing that the characteristics of the effluent in the drains showed the presence of industrial pollutants in the effluent. **This clearly points to industries either not conveying all the effluent to the CETPs or resorting to the use of bypass**

or water polluting activities functioning from Juggis within such clusters. This was a matter of concern as industrial effluent was being allowed to pollute the water with no oversight.

Comments of the YMC:

The YMC had raised this concern repeatedly and wanted this to be deliberated by the Industries Deptt/DSI IDC and the DPCC and a coordinated action taken. YMC also asked the officers concerned, MS, DPCC and Executive Director, DSI IDC to jointly prepare a paper with suggestive strategies which can have an impact. YMC is yet to receive strategy paper on this which will be submitted to the Hon'ble Tribunal for appropriate orders.

Setting up of Hazardous Waste Management Facility:

Establishment of the Hazardous waste management Facility was directed to be set up by GNCTD by June 2020, however, due to Covid19 lockdown and the delay in grant of Environment Clearance the work of establishing the Hazardous waste site has been delayed. Considering that Delhi does not have any Hazardous waste Treatment facility, the matter needs to be pursued by the Industries Department with the MoEF&CC.

Matters relating to DPCC:

During the review, on a query by the YMC, MS DPCC informed that out of 343-sanctioned posts in DPCC only 117 posts are filled as of today with 226 vacant posts. While some posts are promotional, a large number of posts are direct recruitment posts. YMC had raised this issue with the DPCC in 2018 and even asked the MS DPCC to explore the possibility of filling up the posts through contractual appointments till the time regular appointments were made. The YMC asked for a report on the steps taken in the last 2 years to fill up the sanctioned posts of all categories in the DSI IDC and where difficulty was encountered the special efforts made. Also, YMC was apprised of the difficulties in complying with the pollution-related directions of the NGT in the absence of Scientist/Engineers as well as Enforcement Staff. If this was not taken up apropos the Tribunal's orders compliance of the orders would be deficient and therefore the situation called for proactive handling by the Principal Secretary Environment and Chairman DPCC. The status of Action taken to fill up the vacant posts as furnished by the DPCC is placed at **Annexure C-7/6**.

Comments of the YMC:

Providing technical manpower to the DPCC is critical to its ability to discharge its statutory functions. Filling up all the vacant posts needs to be accorded priority and in interregnum contractual appointments particularly to the technical [posts considered, Chief Secretary needs to monitor this in a time bound manner.

Chapter: 8**Sewage and Faecal Sludge Management****NGT's order dated 11.9.19**

- a) *"An incremental progress of collecting 2 MGD of septage in 120 days needs to be quantified by DJB in terms of the number of households with pit latrines, map the SPS' where the collected septage has to be deposited colony wise and sub-district wise and monitor licenses issued at a disaggregated level. DJB to assign responsibility to an organization which can collect and furnish incremental progress.*
- b) *DJB may prepare an Action Plan for providing unauthorized colonies with sewerage systems.*
- c) *Govt. of NCT Delhi, DJB, DMCs and DDA to collectively undertake advance planning for location of STPs, SPS', peripheral and trunk lines before new populations settle in.*
- d) *Chief Secretary, Govt. of NCT Delhi make it mandatory for those provided with piped water supply and those having a sewage conveyance system in the vicinity to take sewer connections.*
- e) *Chief Secretary, Govt. of NCT Delhi, DJB and DMCs to introduce the regime of levy sewerage charges as presently no such charges are being levied within two months including areas where network has been laid (whole of East Delhi).*
- f) *Considering that tens of thousands of households spew their garbage into the storm water drains and pay nothing for the environmental damage caused, the CEO, DJB and DMCs to ensure sewer connectivity where sewer network has been laid before 31.12.2019 failing which both these agencies shall be saddled with environment compensation to the tune of Rs. 10 lakh per month and disciplinary action against the Zonal Officer responsible for his zone.*
- g) *The Chief Secretary, GNCT Delhi, DJB and DMCs to ensure that a mechanism is evolved where by raw sewage from unauthorized colonies gets collected and taken to some central STP facility for treatment till the time sewer line network is laid in unauthorized*

colonies within three months and six months thereafter ensure implementation of laying of sewer line network failing which Environmental Compensation of Rs. 10 lacs per month shall be levied on each of them.

- h) An institutional mechanism be established by the Chief Secretaries, GNCT Delhi, DJB and DMCs whereby the collection, transportation and disposal of septic tank waste is monitored.*
- i) Accountability of the officers may be determined in the manner mentioned earlier. The Committee may monitor this aspect.”*

YMC’s recommendations in report dated 29.06.2020:

The YMC had made the following recommendations to the Hon’ble NGT in its report dated 29.06.2020:

- 1. “Regardless of when the individual household gets connected to the sewer network, Govt of NCT Delhi should start levying sewerage charges on all the households, whether located in sewerred/unsewered unauthorized colonies or even slums. DUSIB can subsidise the poor but all others must be made to pay for the pollution created by whatever name the levy may be called.*
- 2. The Delhi Slum Improvement Board (DSUIB) has claimed before YMC that the Board has installed community toilets and no sewage goes into drains. This statement can only be checked by an external agency which does a random check. Judging from the complaints of people residing around Chirag Delhi and Nizamuddin West the sewage from the jhuggis is flowing into the drains causing an intolerable stench.*
- 3. Out of the 626 U/A colonies, which are not covered by the ISP, while some are proposed to be brought under sewerage network, there is no clarity about 502 colonies. NGT may direct the IDMC to have a three-pronged approach and while in-situ phyto/bio-remediation and septage management must continue there is also need for oversight of the implementation of an SOP which casts responsibility for sewage in drains on the local bodies. NGT’s direction is needed to clinch need for all 3 strategies to be used -the bottom line being the stoppage of sewage in storm water drains.*

4. *NGT may direct the IDMC to mount a survey of colonies and households which are having pit latrines/collection services and those who have no sewerage system and are discharging into the drains. Without linking strategies to populations in the colonies people will continue to pollute and the filth will continue.*
5. *Applying the polluter pays principle, every individual household causing pollution by release of sewage into the open environment or in the sewer network has been already made liable for payment for its treatment irrespective of whether the sewage is conveyed through a sewer network or by way interception under the Interceptor project or through septage management. NGT may direct that a response be given to the Tribunal's order to revisit the policy of subsidizing polluters as there is no response. Orders of the Tribunal starting 2015 and last reiterated in September 2019 have been ignored."*

NGT's order dated 6.7.2020:

Upon hearing the matter the Hon'ble Tribunal was pleased to pass the following directions:

"19. We have carefully perused the recommendations of the YMC. We are in agreement with the same. The directions proposed are essential for compliance of orders of this Tribunal and environmental norms.

21(e)The Delhi Government may forthwith comply with the order of the Hon'ble Supreme Court dated 24.10.2019 on the subject of levy and recovery of the sewage charges.

23. If inspite of direction of this Tribunal and orders of Hon'ble Supreme Court, direction for levy of sewage charges is not complied with, it is open to either party to move the Hon'ble Supreme Court for such action as may be necessary for enforcement of the direction. of the said Hon'ble Court."

Status Report as assessed by YMC:

1. **Levying Sewerage Charges on all households whether situated in sewerred or unsewered colonies under polluter pays principle**

In compliance of the order dated 08.5.2015 and subsequent orders of 26.7.18. 11.9.19 and 6.7.2020 of NGT, the Delhi Jal Board has informed that the Board has approved levy of sewerage charges on all households irrespective of whether living in sewerage area or unsewered colonies in the Board meeting held on 24.09.2020. This was reviewed with the DJB in meeting held on 19.10.2020 and 28.10.2020 and the DJB officers informed the YMC that the draft cabinet note has been sent to the Additional Chief Secretary Urban Development, the Nodal Department for DJB related matters, on 12.10.2020 for placing it before the cabinet. YMC in the review meeting held with the Additional Chief secretary on 23.11.2020 was informed that the draft cabinet note is under preparation and will be placed before the cabinet as per the rules.

The proposal for levy of sewerage charges vide its Resolution No.1000 dated 24-09-2020 provides for levying Annual **Sewage Pollution Charge on Polluter's Pay Principle** on all households whether located in sewerage/un-sewerage areas as per directions of Hon'ble Supreme Court and NGT. The Charges are to be collected from Domestic and Non-Domestic consumers at the following rates :-

Category of Class	Annual Charges for Domestic Households	Annual Charges in case of Non-Domestic Categories (on the basis of sanctioned Electricity Load in KW)
A, B	Rs.5000/-	Rs.5000/- + Rs.200/KW
C	Rs.2000/-	Rs.2000/- + Rs.100/KW
D	Rs.1000/-	Rs.1000/- + Rs.50/KW
E, F	Rs. 200/-	Rs. 200/- + Rs.50/KW
G, H	Rs. 100/-	Rs.100/- + Rs.50/KW

The Annual Sewage Pollution Charges are proposed to be added to the Electricity Bill in the First Month of Financial Year i.e. April. DISCOMS will recover this amount as an outsourced service to comply the directions of Hon'ble Supreme Court and NGT.

YMC's Comments:

Though the fact that DJB has at the Board level approved levy of sewerage charges on all households, is a positive development by itself, unless this is approved by the Cabinet, not

much may be read into this at this stage, as in 2015 also, sewerage charges were levied following a Cabinet decision, but the order could not be implemented as one of the Power Distribution Companies had approached the Hon'ble Supreme Court and got the order stayed. There is no clarity if the decision now taken and the mechanism of recovery through the power distribution companies will fructify unless there are collection charges payable to the power distribution Companies and the government has had prior consultations with the DISCOMs on this. The progress on this will require to be monitored are reported to the Hon'ble Tribunal.

2. Household Sewer Connections to all the Households in notified sewerred colonies;

It is estimated that 12 lakh households with a population of 56 lakhs (@4.5 persons per household) (based on 2015 data) are living in 1799 unauthorized colonies as per the data provided by M/s GSDL. The present population of these colonies is estimated to be about 70 lakhs.

Out of 1799, the status of sewerage network is as follows;

- | | | |
|------|--|-----|
| i. | Colonies where sewerage network is completed and notified; | 561 |
| ii. | Colonies where sewerage network is under execution: | 481 |
| iii. | Colonies where work is at the stage of tendering: | 757 |
| iv. | Colonies where NOC from Forest, Archaeology Dept.
and under "O: zone" restriction under the DDA Act is pending: | 131 |

Total no. of U/A colonies, households and U/A that have been sewerred district wise:

S.No.	Districts	Total U/A colonies and Households		U/A Colonies sewerred and households	
		Colonies	Households	Colonies	Households
1	Central	71	77,579	6	657
2	East	86	42,045	85	41404
3	New Delhi	27	13,252	1	56
4	North	180	1,07,749	28	9580
5	North East	123	1,59,566	66	74464
6	North West	196	1,92,572	16	8636
7	Shahdara	51	33,387	34	21991
8	South	178	1,01,530	11	6509
9	South East	154	1,28,618	12	8486

10	South West	416	1,70,184	134	56690
11	West	317	2,21,038	168	118995
	Total	1799	1243520	561	347468

As per the Action taken report of DJB, out of 1799 U/a colonies, sewer network has been provided in 561 colonies though 75 out of these have not yet been formally notified to as sewerer colonies due to some administrative delays). In another 481 colonies the work of laying sewer network is in various stages of execution and is expected to be completed only by December 2022. Out of the remaining 757 colonies the work of laying sewer network has been approved for award by the Board in its meeting held on 08.10.2020. The work of 512 colonies is at the stage of preparation of estimates and for the remaining 131 colonies NOC from Forest/ASI and DDA is awaited before further action can be taken. The details are tabulated below:

Plans for providing sewer network with timelines. Time line for providing sewer in remaining unsewered colonies

S.No.	Nos. of sewer colonies to be sewerer	Nos. colonies	Time line	Nos. of household#	Population #
1.	Colonies where work in progress	481	Up to Dec-2022 in phased manner	4,12,519	18,56,336
2	Work of sewer network of Kirari GOC awarded in 154 th board meeting held on 08.10.2020	114	March 2023	1,31,065	5,89,793
3	Colonies where works are in estimate stage (sewerage network is to be laid along with decentralized STP)	512	Dec 2023, For laying sewerage network in these colonies 3 years time will be required after availability of land for DSTPs and committed fund.	2,45,516	11,04,822
4	Colonies where NOC is awaited Forest/ASI/O	131	Dec 2024 About 03 years	1,10,952	4,99,285

	zone		after receipt of NOC/clearance from concerned department		
	Total	1238		9,00,052	40,50,236

The household and population is estimated based on GSDL data

As per the report now received, there are about 241 colonies including Unauthorised/regularized colonies where survey has been done to identify household which have not taken Sewer connections.

Out of 1.14 lakh consumers /properties in these colonies 241 colonies,96413 households/ sewer connections were found installed by consumers themselves illegally leaving 17,659 households/ sewer connections to be installed by DJB.No action had been taken by the DJB against such illegal acts under the DJB act. The Officers even pleaded helplessness. However only after the YMC took note of this and brought it before the NGT that some seriousness was shown to this. In the meantime Govt of NCT Delhi has also launched a new scheme called the Mukhya Mantri Free Sewer Yojna. Following the launch of this scheme, all the households were to be connected to the DJB's sewer network by 31.3.2020. However, this timeline has been missed and the matter was brought to the notice of the NGT in the last report of YMC. The timelines has now been pushed to 31.3.20 21.

So far the DJB, as a policy, used to notify a colony as sewerred once the sewer network has been laid regardless of whether individual households have taken connections or not. This had led to a large number of colonies, which got notified as sewerred but most of the households had either taken household connection illegally or not taken any connection. It is for this reason that though entire East Delhi had 100 percent sewerage network, only about 30% of the individual households had taken connections to the sewerage network. YMC also learnt that one of the colonies, namely, West Jyoti nagar only 12% of the households had taken connections to the sewer network.

YMC has now been informed that DJB in its Board meeting held on 12.06.2020 has decided that in future a colony will be notified as sewerer colony only after all the households have been connected to the sewer network.

Comments of YMC:

There are 561 colonies where sewer network has been completed though 75 out of these are yet to be notified as sewerer colonies. As per the ATR furnished by DJB only 241 colonies have been surveyed where 1.14.lakh households had not taken household sewer connection. It needs to be clarified whether the 1.14 lakh households with illegal sewer connections/ no sewer connection is the total of such households or whether more such households are expected from the remaining 320 (561-241) colonies not yet surveyed.If so, what are timelines for completing the survey and providing household sewer connections?

3. Unauthorized colonies in the catchment of Najafgarh and Shahdara basin:

The DJB in its Action Taken Report has informed that sewage from 1173 unauthorized colonies (sewered and unsewered), lie in the catchment of Najafgarh and Shahdara. The sewage from the unsewered colonies out of 1173 is expected to be trapped and treated once ISP is fully commissioned. However, till all the STPs linked to these 108 drains passing through these 1173 colonies are commissioned in December 2022, the sewage from these colonies will continue to pollute the river.

YMC's Comments:

It is necessary that U/A colonies in the catchment of Najafgarh and Shahdara areas, that are not covered by ISP and where there is no possibility of sewer network being laid, are identified, surveyed and alternative ways of management of the sewage flowing through drains in these colonies explore besides focusing on Septage management in these colonies if pollution in river Yamuna is to be controlled.

4. Septage Collection, Transportation and Treatment:

Septage Management Regulations of 2018 notified by the GNCT Delhi provide for collection, transportation and treatment of septage (Faecal Sludge) generated in unsewered unauthorized colonies which rely on onsite sanitation services. Under the Regulations registrations of vehicles used for collection and transportation and providing infrastructure for receiving and treatment of septage at the Sewage Pumping stations are the responsibilities of DJB. Enforcement for noncompliance, employing non licensed Emptiers and depositing septage at non designated places are the responsibilities of the District Magistrates. DJB has so far registered 206 licensed vendors (Emptiers) for collection and transportation and has identified 86 SPS points for receiving Septage. On average 6 to 7 lakh liters of septage is being collected and treated at the STPs of DJB. DJB also plans to engage 200 more septage machines NIT for which is proposed to be issued in December 20 and finalized by March 2021.

Month wise Septage Collection and treatment during June-September 2020.

District	Jan-20	Jun-20	Jul-20	Aug-20	Sep-20	Total from April 19 to Sept 20
West	4500	0	0	0	0	539500
South West	6533300	27,28,200	30,23,500	20,20,500	16,49,300	48567000
North East	132000	75,000	1,56,000	1,65,000	2,51,000	1618000
East	0	0	0	0	0	48000
South	0	0	49,60,000	56,70,000	63,75,000	17005000
Centre	0	0	0	0	0	3000
Shahdara	0	0	0	0	0	0
North	0	0	0	0	0	0
South East	7292000	52,76,000	50,95,000	44,59,000	55,81,000	70455000
North West	13983000	63,51,000	86,04,000	79,34,000	1,13,25,000	1540406000
New Delhi	0	0	0	0	0	0
Total	27944800	1,44,30,200	2,18,38,500	2,02,48,500	2,51,81,300	292276100

Perusal of the data in the above Table would reveal that during the last four months from June to September 2020, the six out of 11 districts in Delhi, namely, West, East, Centre, Shahdara, North and New Delhi have shown Zero septage collection. Leaving aside New Delhi which has no unauthorized unsewered colony, the other five districts collectively have 705 with 4,81,798 households unauthorized colonies of which 232 are unsewered colonies with as many as 1,91,002 households (Reference: page 82 of YMC's report dated 29.06.2020).

District	Colonies	Total Households	Sewered Colonies	Households	Unsewered Colonies	Households
Centre	71	77579	6	657	65	76922
East	86	42045	85	41404	1	641
Shahdara	51	33387	34	21991	17	11396
North	317	221038	168	118995	149	102043
Total	705	481798	293	183047	232	191002

Not only are almost 2 lakh unsewered colonies are showing zero septage collection even those districts which have reported septage collection, the quantity collected is low in comparison to the U/A unsewered colonies in districts like the South West districts and the South East districts which have more than 400 unsewered colonies. Obviously Septage Regulations are not being implemented in these districts. There has been no enforcement action by the District Magistrates. The reasons assigned is that DMs have been busy with Covid 19 related duties. However the fact that even prior March 2020, these districts have shown zero collections goes to show that there is no ownership of the regulation brought out by the Government and each Department is passing on the responsibility to other departments. While DJB limits itself to only registration and providing infrastructure for receiving and treating septage, the Local bodies, namely the three Municipal corporations have been taking the plea that septage and sewage is not their responsibility but that of the DJB.

The data of septage collection furnished in the table above also shows that in comparison to septage collection of about 2.80 crores litres in January 2020, the septage collection in September 2020 has gone down to 2.51 crores litres. Clearly there is diminishing emphasis and interest in enlarging the scope and extent of septage collection.

After constant dithering over the responsibility for septage between those tasked with sewage and sanitation, Govt of NCT Delhi has brought out Standard Operating Procedure for collection, transportation and treatment of Septage from Unauthorized unsewered Colonies on 31.3.2020. Though the SOPs were issued on 31st march 2020, **(Annexure-C-8/1)** a review held by YMC with the three Municipal Commissioner on 17.11.2020 with Commissioner East DMC, on 18.11.2020 with Commissioner South DMC and on 19.11.2020 with Commissioner North DMC has brought out that there has been no action taken by the DMCs on the SOPs finalized and ordered by the government. This being extremely serious matter was brought before the review meeting held with the Additional Chief Secretary Urban Development, the nodal department, for coordinating with the DMCs and the DJB on 23.11.2020.

YMC's Comments:

There is no ownership of the Septage collection and treatment from unauthorized colonies at present as has been brought out in the above analysis. Urban Development Department which is the nodal Department for all matters relating to DMCs and the DJB will have to be held accountable for its effective implementation through the DMC, DJB and the enforcement which has been completely missing thus far. The subject of septage collection and treatment and bulk of it going into drains and the river Yamuna through drains also needs to be taken up by the IDMC as without its effective implementation abatement of pollution in drains, which is the key function of IDMC cannot be realized.

1. Levy of Environmental Compensation under PPP for Pollution in drains;

NGT's order dated 13.1.2015 and subsequent orders had directed levying of Environmental compensation of Rs 5000 for dumping C&D or other waste in drains/floodplains and Rs 5000 on individuals throwing solid waste, plastic waste in drains. Dumping of solid or C&D waste in

drains not only obstructs the flow in the drains but Solid waste dumped in the drain also reduces the water holding capacity of the drains causing flooding during storms. The dumping of solid waste in drains impedes the flow there by causing stagnation of waste water which in turn releases toxic fumes creating unhygienic conditions for residents living in proximity of the drains.

YMC has been monitoring enforcement of NGT's directions for action against violators. The matter was also brought up in the meeting taken by the Chief Secretary on 9.1.19, 8.2.19 and Principal Secretary UDD's letter dated 15.9.2019. Despite clear directions on enforcement and the responsibility of Concerned Executive/Asst Engineers of the drain owning agencies, the enforcement has been weak and ineffective. Even the Urban development Department has not been monitoring this despite clear responsibility assigned to the Department. The statement of EC levied and realized as received from the Urban Development Department is tabulated below:

EDMC: Executive Engineer (Maint.) are responsible for preventing dumping of C&D waste/garbage into the storm water drains and are also empowered to Challans against defaulters. Month wise status of the challans issued and amount realised is given below. These challans are being issued under the order of NGT as such its realization are effected through two member committee of Commissioners appointed by CPCB on the order of Hon'ble NGT. Earlier this committee used to meet once in a month in each zone. Due to Corona Pandemic the said committee is not holding physical hearing as such realization appears to be minimal. This is also reviewed periodically at various higher levels.

Period	Total Nos. Of Challans	Total Amount	No. of Challans Realised	Amount	No. of Pending Challans	Amount Pending
02/2019 to 10/2020	487	58,18,000/-	28	1,90,000/-	459	5628,000/-

SDMC: The status of EC levied and realized is tabulated below:

S.No.	Drain	Period	Nos. of Challans	EC imposed	EC recovered
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			issued	(in Rs. Lacs)	(in Rs. Lacs)
1	Drain above 4' depth	March 2019 to October 2020	81	40.50	1.00
2	Drain below 4' depth These penalties Includes fines/penalties under DMC Act & EP Act	March 2019 to October 2020	6280	---	113.24
3	During March 2020 to October 2020, no action regarding challaning on big drains has been taken due to COVID-19. Whereas, some action has been taken in respect of small drains below 4' by DEMO staff. Letters vide No. Dir (DEMS)2020/D-817 dated 30.06.2020 &- SE (DEMS) HQ /SDMC/2020-2 UD- 115 dated 26. 10.2020 have been sent to the concerned zonal officers to issue challans against the violators and take necessary action.				

North DMC

The challans are issued by concerned Sanitary Supervisors of the zone for which regularly instructions are issued during various meeting. Challans issued and amount realised are given below:

S.No.	March 2019 to December, 2019 (A)			January, 2020 to 10 November 2020 (B)			March, 2019 to November, 2020 (A+B)		
	No. of cases	Imposed (in lakh)	Realised (in lakh)	No. of cases	Imposed (in lakh)	Realised (in lakh)	No. of cases	Imposed (in lakh)	Realised (in lakh)
1	1192	57.74	33.34	2276	90.76	8.09	3468	148.5	41.43

DDA

DDA has issued 222 Challans for illegal dumping of C & D Waste in Yamuna Flood Plains. An amount of Rs. 21 Lakh has been recovered from offenders.

YMC's Comments:

The agency wise, status of EC levied and realized is extremely poor. YMC had asked the UDD and DMCs to evolve a credible mechanism for improving realization of EC levied on the offenders. The response, however, is ambivalent except in case of North DMC. South DMC has also come up with some mechanism for recovery of EC stating that recovery will now be done under Section 455 of the DMC act as the experience with recoveries through SDMs as arrears of land revenue has been highly unsatisfactory. However unless this is monitored by the Urban Development Department, not much headway is expected. YMC is of the opinion that

accountabilities need to be fixed on officers for their lackadaisical implementation of the Polluter Pays Principle so far as pollution in the drains is concerned.

Chapter - 9

Online Monitoring of STPs, CETPs and Yamuna

NGT's order dated 13.1.15:

"It shall be ensured that the functional data of all the STPs is on line and is connected to the Delhi Pollution Control Committee as well as the Central Pollution Control Board particularly in respect of COD, TDS, TSS and pH and shall be ensured that they are operational even during the power failures."

NGT's order dated 8.5.15.

The directions relating to OLMS were reiterated as follows:

"14. The Delhi Jal Board and DSIDC through DPCC or otherwise shall introduce Online Monitoring System (OLMS) particularly at the specified observation points or locations where the STP's and CETP's are located. This information shall be put in the public domain informing the public at large in regard to the performance of the STP's."

NGT's order dated 11.9.19

After considering the 2nd Interim Report of YMC dated 27.5.19, the Hon'ble Tribunal in an order dated 11.9.19 directed as under:

"Regular calibration of OLMS in Sewage Treatment Plants and CETPs to validate sensor results with lab results to be overseen by DPCC and DJB and report submitted to the Chief Secretary Delhi and Monitoring Committee on Quarterly basis."

Status as per the Review by the YMC

The YMC in its last report submitted to the Tribunal on 29.06.2020 had made the following recommendations:

1. *To provide statutory backing to the SOPs, CPCB be directed to issue directions under Environmental Protection Act 1986 to DJB, DSIIIDC, and Commissioner Industries for*

comply with the SOPs in letter and spirit and also fix accountability for any dereliction. In the absence of such statutory backing, it is doubtful whether the SOPs will get implemented effectively.

2. *To DJB, DSIIIDC/Industries Department to fix accountability on the supervisory officers for failing to ensure periodic calibration and for not imparting training to those in charge of using the OLMS.*

Information Provided by DJB on STPs:

There are 35 functional STPs under the DJB. All 35 STPs have now installed OLMS and are connected to the servers of CPCB and DPCC. The STP data, as directed by the NGT, is also in public domain. DJB has also provided a system of generating alerts whenever parameters exceed the prescribed standards.

Out of 33 STPs monitored in the month of October, 2020 DPCC laboratory 10 STPs were meeting the prescribed standards and the DJB asked to rectify the defects.

Besides calibration by the DJB, calibration of OLMS is also being carried out by the DPCC Laboratory on Quarterly basis and the Report is sent to Chief Secretary and Yamuna Monitoring Committee regularly.

At the following STPs of DJB there is functional Laboratory for analysis of the quality of waste water at the inlet and outlet of the STP:

1. Rohini
2. Keshopur
3. Pappankalan
4. Kondli
5. Coronation Pillar
6. Okhla
7. Nilothi
8. Rithala
9. Yamuna Vihar

YMC's Observations

Though the system of alerts and Whatsapp messages has been developed and used whenever plants exceed parameters, internal systemic improvements do not appear to have been made to respond to emergent situations to rectify defects and shorten the response time

to rectify defects or breakdowns. The difference pre and post calibration of OLMS as per the DJB's report at **Annexure-C-9/1** appears to be within the limits of 15 to 20% for the OLMS results vis a vis the lab Results. DJB in their Status report have also stated as follows:

“The Online Monitoring System is working at almost all of the STPs and staff is monitoring real time parameters through it. All concerned officers have been sensitized to monitor real time parameters through OLMS by imparting training.

OLMS effectiveness as a tool for better performance of STPs is elaborated as under:

- a) Improved & reliable Real time monitoring of parameters of STP at individual officer level starting from JE onwards without actual presence at site.*
- b) System generated alerts whenever parameters exceed the prescribed standards and the SMS is received by the concerned JE/AE and senior officers. SOPs has been developed for handling alerts so as to address problems at the earliest so as to maintain parameters within design limits.*
- c) Timely availability of operating parameters resulting into immediate action as required in case of parameters beyond design limits.*
- d) Enable better decision making providing real time data and a technological platform for effective integration with concerned regulating agencies like DPCC, CBCP wherein links have been provided for continuous real time of monitoring of parameter.*
- e) Cost optimization on data collection, data mining and computation real time data.*
- f) Bring in accountability into the system. “*

However, from the report of calibration done in September 2020 by DPCC (**Annexure-C-9/2**), there is large difference between the lab results for BOD, and COD for STPs at Delhi Gate (Phase I and II), Sen Nursing Home, Najafgarh and Yamuna Vihar. The difference between the lab results and the OLMS results in some cases is as high as 500% apart. This raises serious questions about the credibility of OLMS as a tool to improve efficiency. When the matter was raised with the representative of M/S Aaxix Nano, the service provider for OLMS within the DJB, he questioned the lab results of DPCC particularly the very low results of COD as low as 4mg/L. In the light of aforesaid, YMC recommends that the issue of testing and calibration needs to be

gone into by CPCB and a fresh technical audit of the OLMS carried out. DPCC also needs to critically look at the test results it has recorded for some of the STPs like the Delhi Gate, Sen Nursing Home and Pappan Kalan for validation of its testing protocols to ensure that no questions are raised about the technical expertise of its technicians and the testing procedures followed. DJB also should also have its testing infrastructure revamped and technicians imparted training so that OLMS as a tool is used to improve efficiency and the ability of the management to respond to breakdowns expeditiously.

CETPs:

There are 13 CETPs for 17 Industrial clusters and all the CETPs have functional OLMS. Though DSIIDC has confirmed that they have prepared SOPs for addressing alerts received whenever parameters exceed the prescribed standards, the actual performance of the CETPs is not satisfactory. However, as in the case of DJB, here too DSIIDC Officers were not able to show any improvement in efficiency of decision making and most of the CETPs which show the four parameters which OLMS monitors, namely, pH, TSS, BOD and COD, within prescribed parameters are actually non-compliant on several other parameters like TDS, metals and heavy metals.

OLMS is functional at all the 13 CETPs and the periodical calibration of the OLMS has been taken up by DSIIDC. The details of sampling and calibration taken are given below:

S. No	Indl. Area	Sampling Date	Calibration Date	Remarks
1.	G.T.K	10.10.2020	29.10.2020	Calibration done
2.	Wazirpur	10.10.2020	14.10.2020	Calibration done
3.	Lawrence Road	10.10.2020	16.10.2020	Calibration done
4.	Narela	12.10.2020	17.10.2020	Calibration done
5.	SMA	12.10.2020	29.10.2020	Calibration done
6.	Okhla	15.10.2020	26.10.2020	Calibration done
7.	Bawana	15.10.2020	21.10.2020	Calibration done

8.	Naraina	16.10.2020	23.10.2020	Calibration done
9.	Mayapuri	16.10.2020	23.10.2020	Calibration done
10.	Jhilmil	19.10.2020	24.10.2020	Calibration done
11.	Badli	19.10.2020	24.10.2020	Calibration done
12.	Nangloi	-	-	Under maintenance
13.	MangolPuri	22.10.2020	28.10.2020	Calibration done

Calibration of OLMS installed at CETPs is being carried out by DPCC Laboratory on Quarterly basis and Report is sent to Chief Secretary and Yamuna Monitoring Committee regularly.

Observation of the YMC:

Calibration of CETPs though being done through NABL laboratory, however it is observed that in some of the CETPs like the Mangolpuri, Nangloi, Mayapuri and Jhilmil CETPs, the BOD and COD values are at variance with the lab results from as much as 43% in Mayapuri to 140 % in Mangolpuri. Such wide variance raises the questions about the OLMS as a tool for improving efficiency. NEERI which has been assigned the study to suggest up gradation of CETPs should be asked to critically look at the OLMS system installed and what improvement can be suggested for its use as tool to improve testing protocols and efficiency of management.

The Statement of calibration of CETPs done and their comparison with lab results are tabulated at **Annexure-C-9/3**.

Issue of directions by CPCB:

Hon'ble NGT had directed that accountability should be fixed for not undertaking periodic calibration of STPs and CETPs. On the advice of the YMC CPCB evolved SOPs for Calibration and circulated to all SPCBs and other agencies manning ETPs/CETPs and STPs. In order to give statutory backing to the SOPs CPCP was also asked to issue directions to all the

agencies. The CPCB has since issued directions to Haryana and UP for compliance of Calibration guidelines. A copy of the Directions issued by the CPCB is attached at **Annexure-C-9/4 and Annexure C-9/5.**

Real Time Monitoring of Industries/STPs in Haryana and UP:

River Yamuna receives waste water from the cities/townships in Haryana and UP in the Delhi stretch of the river. This has been a major source of pollution in the river and monitoring the industries and STPs in Haryana on a real time basis is critical to identifying point sources of pollution for timely intervention with the State Pollution Control Boards. There have been also instances when due to excessive sewage flowing into river Yamuna resulting in high levels of Ammonical Nitrogen the Water treatment Plants in Delhi had to be closed. Real time monitoring by the CPCB therefore should be able to pin point such source of pollution well in time for remedial action besides taking enforcement action by the CPCB. YMC had asked the CPCB for Real Time Online Monitoring of Industries and STPs in Haryana and UP and their connectivity to the servers of CPCB and to take enforcement action for violation of Environmental Standards for STPs/ETPs/CETPs in the basin of river Yamuna.

CPCB has informed that it has issued directions on 07.08.2020 to Haryana & Uttar Pradesh SPCB under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 for installation of Online Continuous Effluent Monitoring System (OCEMS) for self-surveillance of Sewage Treatment Plants within timelines and connectivity to SPCB/PCC & CPCB Servers, undertaking regular operation & maintenance, the issue of Guidelines of OCEMS and SOPs for Installation & Calibration as stipulated by CPCB have to be followed by the STP operators. Copy of directions issued to the States of Haryana and UP are enclosed as **Annexure-C-9/4 and C-9/5.**

Chapter - 10

Use of treated Waste water

NGT's Order dated 11.9.2019:

DJB and park owning societies like DDA, DMCs, PWD to mandatorily use the treated water from STPs for all parks within 5 km radius of STPs and pending laying of pipelines, such treated water to be transported through tankers. Compliance be reported by 31.12.2019 failing which DJB, DDA, DMCs, PWD and others shall each be charged Environmental Compensation at the rate of Rs. 5 lakhs per month till compliance is reported. This shall be overseen by the Chief Secretary, Govt. of NCT, Delhi and the Monitoring Committee as this colossal waste of treated water cannot be allowed.

YMC in its last report dated 29.06.2020 had made the following recommendations to the Hon'ble NGT:

1. *The directions issued by Lt Governor's notification dated 12.7.2010 and reiterated by the Chief Secretary vide his letter dated 09.03.19 to be strictly enforced. Presently there is shifting of blame between the District Magistrates and the DJB on the enforcing this important provision of law.*
2. *Bulk users like the Railways, DMRC and Transport Department be also directed to use treated water for washings and construction, which will reduce use of ground water which is reported to be used. **This will need to be monitored. An NGT direction is needed as these bodies have not generally shown any enthusiasm to attend meetings called on this subject.***
3. *Construction and installation of de-centralized modular STPs of Kilolitre capacity range to be installed adjacent to parks and gardens for using sewage flowing in the drains or to be erected along the sewer lines. This has been done by the SDMC in Vasant Kunj Park and few other areas.*
4. *Creating root zone treatment system in the parks and gardens by diverting sewage in the drains from the man- holes. This will also have a demonstration effect. DDA proposes to*

undertake phyto-bioremediation in parks/gardens where the treated waste water received from DJB is not of good quality.

After perusing the Report of the YMC, the Hon'ble Tribunal passed the following orders:

"We have carefully perused the recommendations of the YMC. We are in agreement with the same. The directions proposed are essential for compliance of orders of this Tribunal and environmental norms"

Status as assessed by the YMC:

The alarming decline in the water table in Delhi on the one hand and low utilization of treated waste water by DJB(Less than 20%) led YMC to recommend to the NGT that as a short term measure all the parks within 5 KM radius of STPs be directed to use treated waste water.

Out of 34 blocks in Delhi, 22 are already categorized as "over-exploited", 8 are "critical/semi-critical" and only 4 blocks are categorized as "safe" by the Central Ground Water Board (CGWB) in its report of 2017. At the macro level the CGWB report of 2017 also brings out that against a recharge of 0.32 bcm, withdrawal is 0.36 bcm and ground water extraction has been pegged at 120%. In other words, the excess withdrawal of ground water per year is of the order of 0.04 bcm (about 24 MGD).

YMC also drew attention of Chief Secretary GNCT Delhi to the notification issued by the Lt Governor Delhi under Section 5 of the EPA 1986 on 18.5.2010 for regulation and management of ground water which *inter alia* mandated use of recycled water both at the time of granting permission for new bore wells as well as for the continued use of existing bore wells water for commercial and industrial uses. Pursuant to the suggestion of the YMC, Chief Secretary issued directions on 09.3.19 to all the Departmental Secretaries/heads to ensure increasing use of treated waste water **Annexure C-10/1**.

Review meeting with the Stakeholders:

The YMC held review meeting with all important the VC DDA on 06.10.2020 and held separate meetings with Commissioner East DMC on 17.10.2020, with Commissioner South DMC on 18.10.2020, with Commissioner North DMC on 19.11.2020 and with DJB on 28.10.20 to specifically review the use of treated waste water.

Thereafter another review meeting was held with the Ms Renu Sharma, Addl. Chief Secretary, Urban Development, Govt of NCT Delhi on 23.11.2020 as it is the responsibility of the Urban Development Department to oversee and coordinate matters impinging on urban development.

The YMC emphasised the importance of utilising treated waste water for other than potable uses and drew attention to NGT's orders thereon. It was pointed out that presently, as informed by the DJB, only about 89-90 MGD of treated waste water out of about 550 MGD of waste water generated is being utilised. This is less than 20%. In fact some of the treated waste water is of very good quality (BOD less than 10 mg/l) and is being treated at a very high cost and letting such good water go into the drains is not only a waste of a valuable resource but also from the point of view of addressing ground water depletion which is taking place at an alarming rate.

The overall report from the Agencies shows considerable progress and the NGT's orders have been given effect to though it will take time for 100 % coverage by the urban local bodies and DDA. But the indications are positive.

Agency wise status:

Delhi Development Authority (DDA)

1. Laying of water lines from STP of DJB to utilize treated water.

DDA has reported that :-

- a. Pipelines have been laid from STPs of DJB to 78 parks covering an area of 1882 Acres (17% of total park area) to meet the irrigation requirements totaling approximately 6000 KL/day.
- b. Work for laying pipelines to 41 parks in Rohini zone is under award stage, and is expected to be completed by November 2021. The project will cover a green area of 406 Acre (3.7% of total park area) and will meet the irrigation requirement of 1250 KLD.
- c. A proposal to connect 83 parks (including 4 biodiversity Parks) with DJB's STPs has been submitted to DJB to supply treated water for irrigation. Completion of the project is expected to take 2 years' time. Total area coverage through the project will be 1215 acres (11%) under park and 1467 acres in four Biodiversity parks.

2. Setting up of Standalone Decentralized STPs

A large number of parks are located in the vicinity of sewer/drainage lines and a good number of sites are suitable for establishing decentralized STPs. Details are as under:

- a. Process for the setting up of 99 decentralized STPs of capacity 10 KLD to 1000 KLD have already been initiated for establishment during the year 2020-21. AA and ES for 75 decentralized STPs have been accorded and estimate for others are under process. 99 STPs will cover 101 parks spread over an area of 2264 Acres (21% of the area under parks). Twenty five of these STPs are expected to be functional by 31st December 2020.
- b. The bioremediation method of treatment has been taken up at Sanjay lake and also in-situ treatment has been taken up of the water body at Mehrauli Archeological Park using floating treatment wetlands. Work at both these two places is under progress and is likely to be completed by 30th November. The phyto-remediation alternative is also planned to be used to treat the water body at Vasant Kunj.
- c. Approximately, 60-80 parks shall be taken up for installation of decentralized STPs in the next financial year.

3. Water Tankers.

- a. 299 parks are primarily woodlands /green area, where no irrigation is done through borewells and where irrigation requirement is low and met by water tankers as per requirement.
- b. Irrigation of roadside plantations and newly developed green areas in various Divisions are being done through water tankers using treated water. At present 117 number of Tankers (5000 lt) are engaged to supply treated water to roadside plantations (215 km length road) of DDA and isolated parks.
- c. Water requirement for irrigation in 50 small parks of less than 3 acres are now being met using treated water through water tankers covering an area of 99 Acres. This will be a temporary measure till some alternative is provided for water supply in parks.

East Delhi Municipal Corporation.

The Corporation has reported that :-

EDMC is utilizing treated effluent/ treated waste water from the existing Delhi Jal Board STPs at Kondli and Yamuna Vihar for watering/irrigation of 1338 EDMC parks using its own water tankers. EDMC also has its own ETPs, having a capacity of 0.6 MLD located at Swami Dayanand Hospital and 3.0 MLD at Shahdara Jheel which are functional. 473 nos. tube-wells have been closed and in 444 nos. parks EDMC is utilizing treated water from these ETPs presently. This waste treated water from STPs and ETPs is also being utilized for sanitization related to COVID-19 control in the area, sprinkling on roads, and at selected Hotspots for mitigation of air pollution.

Treated waste water amounting to 3459 KLD was utilized by EDMC for irrigation of parks of Shahdara South & North in last three months. Use of treated effluent was badly affected due to COVID-19 pandemic and thereafter the rains. Presently EDMC is utilizing treated effluent for sanitization for COVID-19 control in its area, sprinkling on roads to curb the air pollution and for horticulture purposes. EDMC has deployed 40 tankers in 998 shifts 8 hours per day for sanitization in areas under its jurisdiction using 8982 KL (appx.) of treated water for COVID-19 related sanitation.

In addition treated water is being used at Waste to Energy Plant Ghazipur and the C&D plant at Shastri Park. C&D Waste Plant uses about 15000 ltrs. per day and Waste to Energy Plant 100 to 150 KL per day. With the laying of pipeline by DJB use of treated waste water will increase manifold.

South Delhi Municipal Corporation:

The Corporation has reported that :

At present SDMC is maintaining 6822 parks with a total area of 2202 acre. At present 132 parks having an area of 69 acres are utilising treated wastewater and 56 tube wells have been closed, Another 134 parks are being irrigated using treated waiter from DJB's STPs. A total of 8.132 Million litres has been utilised during the period-01.09.20 to 24.11.20.

An order for 15 new modular STPs has been placed for being installed at the Parks. With the installation of these STPs, 28more wells will be closed.

A DPR has been prepared by M/s WAPCOS Ltd. (Consultant appointed by DJB) for laying pipelines for the conveyance of treated waste water to the parks within a 5 Km radius of STPs.

The share of outlay assigned to SDMC comes to Rs. 74.39 crores. Since SDMC does not have funds it has approached Ministry of Urban Development and Urban Affairs for financial Assistance.

- 4672 parks with an area of 1495 acres will be irrigated through the aforesaid STP's.
- 3.02 MGD treated water will be utilised for this purpose.
- Dependency on ground water will be reduced as 996 tube wells will be closed upon utilization of treated water from STP.

North Delhi Municipal Corporation

The North DMC has reported that

It is proposing to irrigate 640 parks covering a total of 362 acres of park area. At present STP water is being utilised in 401 parks and in all 99 tube wells have been closed

New Delhi Municipal Council has reported that:

All major parks of NDMC are having decentralised STPs and STP treated water is being used for horticultural purposes. All the Borewells have been sealed.

Delhi Cantonment Board has reported that:

From June 2020 almost the total requirement of water needed for watering the roadside green belts/green strips is being met from MES' STPs(Kabul Line and Baird Place), DSIIIDC's CETPs at Naraina and DJB's STP at the Keshopur. It has been proposed to lay effluent water pipelines for watering the Cantonment parks for which a financial proposal is under preparation.

Delhi Jal Board (DJB)

Overall observations of YMC.

YMC held a review meeting with the CEO, DJB and other officers on 28.10.20 (Minutes of meeting are at **Annecure-C-10/2**) to inter alia discuss the measures taken to supply treated waste water from its STPs and to seal/close the bore wells installed in the Parks through the District Magistrates.

The statement of treated waste water supplied to different Departments/Agencies during the month of October 2020 as furnished by the DJB, shows that a total of 2486 MG of waste water(82 MG per day) was supplied to different agencies from the STPs of DJB.

(Annexure-C-10/3). This is considerably less than the earlier data furnished by the DJB which pointed to a figure of 89 MGD being utilized. DJB needs to critically review the present level of usage of treated waste water and assess the reasons for the decline in the usage of treated water, particularly in view of the fact that the Board has now decided to supply treated water free of cost as against the earlier policy of charging Rs. 7 per KL and there is clear evidence of DDA and the Corporations lifting much larger quantities of treated waste water. Since the quantity mentioned earlier differs from the quantity now mentioned in DJB's response, an independent assessment of the quantity actually supplied appears necessary. DJB also needs to explain the reasons for decline in the usage of treated waste water

Status of Implementation of YMC's Recommendation made in its Report dated 29.06.2020 and accepted by NGT.

Closure of bore wells.

Committees headed by the District Magistrates are empowered to close/seal bore-wells that are operating without valid authorisation. As per the report submitted by DJB, their officers have been pursuing the matter regarding closure of borewells in Parks within 5 Km radius of the STPs; however the absence of effective action to provide alternative sources of water supply, for irrigating the parks and the preoccupation of District Magistrates with the Covid 19 pandemic have decelerated the pace. YMC brought this to the attention of the Addl. Chief Secretary in YMC's review meeting held on 23.11.202 and she promised to take the matter up with the Divisional Commissioner and the District Magistrates. The Divisional Commissioner has said he would make this a review item in his meeting with the District Magistrates.

By way of its own explanation of steps taken, DJB states that it has continuously pursued various agencies like Municipal corporations, NDMC, DDA, ASI & CPWD etc. about various parks maintained by them along with latitude & longitude of the parks.

- i. The data/ locations of parks received from various agencies were plotted on the Map and the number of parks which are falling within a radius of 5 KM of the DJB STPs had been identified .

- ii. DJB had also written to the stakeholders/ park owning agencies vide letters dated 23/5/2019 & subsequent reminders dated 11/6/2019, 17/6/2019, 21/6/2019, 16/7/2019, 19/7/2019 & 01/08/2019 requesting them to start lifting treated effluent from DJB STPs for use in parks falling within a radius of 5 KM of a DJB STP, using tankers as an interim arrangement as desired by the monitoring committee
- iii. DJB has installed filling points at its all major STPs for filling the tankers.
- iv. Notices were issued to DDA, NDMC, Municipal Corporations, CPWD, DMRC, PWD, DUSIB to submit ATRs to the Monitoring Committee on the progress made in the utilisation of treated effluent in parks which are within 5 km radius of STPs filling points, failing which advisory Committee(headed by the Deputy Commissioner of the Revenue District) under the Notification of 2010 issued by the Lt Governor shall be asked to seal the bore wells.
- v. On non-receipt of Action Plan sent by the stakeholders DJB has asked the District Magistrates to seal the bore wells located in parks within 5 Km of STPs vide letter dated 05.09.2019. Subsequently letters dated 7/10/2019, 11/11/2019 & 25/11/2019 had been sent by Member (Dr.) to the District Magistrates to seal the bore wells which were being used for horticulture purposes in the parks. The list of parks pertaining to respective Districts were emailed on 5th Sep. 2019 separately followed by written communication through email and hard copy as well.
- vi. **DJB has reported that no information is being received from respective District Magistrates.**

Comment of YMC :

The lack of response from the District Magistrates ought to have been reported by CEO DJB to the Divisional Commissioner and to the Additional Chief Secretary in charge of Urban Development. When there was inadequate response after issue of so many letters and it was experienced month after month in 2019 long before the COVID related responsibilities surfaced it was insufficient to simply write letters from Member Drainage and not even the CEO. Sealing bore wells is a duly notified function entrusted to the DMs and the directions of NGT required more than routine follow up. DJB's letters are all of 2019 when there was no

COVID. YMC has brought the lax response to the notice of the Additional CS Urban Development and she has been asked to see that the indifference shown by the DMs is taken up effectively. She has undertaken to see that the DMs are given a direction through the Divisional Commissioner. DJB must share data on the quantum of treated water lifted/ drawn by different agencies by district and request for commensurate sealing of bore wells based on an analysis of the data.

- vii. **Treated Waste Water to other bulk Users like DMRC, Railways etc:** According to DJB, DMRC & Railways are not lifting treated effluent from DJB. However DTC is taking treated effluent through tankers as well as through pipelines also.

Comment of YMC:

DJB has not indicated the efforts mounted to take up the matter up at higher levels in the Central Government organisations and bringing it to the notice of the Chief Secretary seeking his intervention. DJB as a bulk supplier has to see that all big users are persuaded and then given ultimatums through the Heads of such organisations.

YMC feels the efforts made to secure the attention and compliance from the Central Government agencies and other large institutional water users has been ineffective considering NGT's specific directions. The CS having written to some Central Government authorities in January 2019 needs to consider taking it up at the level of the Cabinet Secretary if the organisations do not pay heed.

- viii. **Installing Decentralised STPs near on Parks for Waste water Treatment:** Delhi Jal Board a informed YMC of its policy on Decentralized STPs for utilization of treated waste water for horticulture purposes to reduce the ground water extraction. This refers to the year 2018. The policy has supposedly been in operation for a long time but the implementation shows too many gaps for it to be viewed as having made a difference to the use of treated waste water. Merely drawing attention to the existence of a policy does not cut much ice when the implementation has been routine. Much more proactive interest is required if the NGT's directions are to lead to speedy and effective action.

- ix. **Improving Quality of Treated water - removal of odour et.** DJB has reported that it has plants with different outlet parameters like BOD =30 TSS-50 , BOD=20, TSS =30, BOD=10, TSS=15, BOD=10, TSS-10 etc. Only some of the plants are having Fecal Coliform treatment through chlorination / UV. Normally complaints are not received about odour from the RWA or park owning agencies. In case any complaints received the same is addressed and it is ensured that the STP meets its design parameters on regular basis. DJB is also in the process of upgrading its STPs to the latest effluent standards as laid down by CPCB/DPCC i.e. BOD =10, TSS=10, COD= 50, Fecal Coliform <230 etc including Coliform treatment which will take care of quality parameters and odour issues. DJB is also planning to start chemical dosing with PAC / ALLUM/Ferric Chloride on trial basis to improve outlet parameter and reduce odour at its STPs.

Comments of YMC:

It is good that such investment has been made. But instead of treating the non-receipt of complaints as a sign of success DJB should use the positive outcomes to inform the general public by holding workshops and exposing school children to the need to use treated waste water and how DJB is encouraging it and monitoring parameters like odour etc.

- x. **Long Term Plan for use of Treated waste water:** In addition to the Water supplied to different agencies, the DJB also the long term plan to for the utilization of treated waste water: The details of the various proposals outlined in the table above are described at **Annexure-C-10/4.**

S.No.	Proposal	Quantity (MGD)	Present Status	Remarks
1	Coronation Pillar STP to Palla after micro filtration	70	Matter pending with UYRB/Govt of Haryana	No timelines
2	Exchange with Haryana in lieu of Fresh Water at Auchandi and Jaunti Regulator	20	--do--	Treated water to be exchanged with Haryana in lieu of fresh water for Delhi

3	Exchange with UP in lieu of fresh water	140	Feasibility report received in DJB. The proposal found feasible. Matter to be discussed further. Board has given in principle approval	Estimated cost of the proposal is 6931 crores including setting up WTP, pipeline from Murad nagar, pipeline for conveying treated water to UP and upgradations of existing pipelines.
4	Return Flow into Yamuna as per Water sharing agreement	267		
	TOTAL	497		

Comments of YMC:

The strategies enunciated above are futuristic but their success lies in acceptance by the concerned states and the UYRB. That requires to be pursued and the cost-effectiveness and the existence of minimal risks and feasibility pursued. However this being outside YMC's direct mandate as given by NGT, the response will be only taken on record and shared with NGT as given.

Chapter - 11

Industry Interface

Exploring Partnerships with Industry Associations for River/Drain Cleaning.

Background:

In an order dated 4 September 2020 the Hon'ble NGT had clarified that the orders of the Tribunal in matter relating to 351 polluted river stretches(which also include the river Yamuna)related to OA 200/2014, MC Mehta versus Union of India and others, in relation to the river Ganga, also refers to river Yamuna and to that extent those orders would be applicable and within the purview of the Yamuna Monitoring Committee. One of those orders referred to the use of Corporate Social Responsibility avenues for furthering CSR supported initiatives for reducing pollution in the rivers.

Since there was no such interface taking place in respect of the river Yamuna at Delhi and it was ascertained from DDA and the Department of Environment and Forests, GNCTD that there were no ongoing projects under implementation and in order to take it forward in an exploratory effort, YMC organised two separate meetings with the Confederation of Indian industry (CII) and the Federation of Indian Chambers of Commerce and Industry (FICCI) to examine whether these Apex level organisations could identify industries located in Delhi which would be having the domain knowledge and interest in partnering projects aimed at reducing water pollution in the river Yamuna and the drains discharging into the river.

Two meetings were held with CII and FICCI on 5.10.20 and 20.10.20 respectively after the YMC had spoken to the Director General and Secretary General of CII and FICCI respectively to ascertain the interest and willingness of the members. YMC also requested the Vice-Chairman DDA and the Principal Secretary Environment & Forests in GNCT to consider whether they would have an interest in promoting such partnerships with industry groups particularly as NGT was of the view that anything done in the city of Delhi being the capital, would stand a chance of being replicated in other places connected with 351 highly polluted river stretches

matter; and if so to send representatives to attend the meetings being organised by YMC only by way of kick starting the process and introducing the industry representatives to the key functionaries connected with abatement of water pollution and the rejuvenation of the river.

The Vice-Chairman DDA had said that it might be possible to work in partnership with industry to see that DDA's rejuvenation projects are given an impetus using modern methods of supervision and execution. He requested that the first meeting may be taken by YMC to gauge the interest of industry and DDA would participate. The Principal Secretary & Environment and Forests, GNCT agreed to send the Member Secretary DPCC as a first step who would have knowledge about the points of pollution amenable to be tackled in project mode.

Outcome of Meeting with CII

From the side of CII, the Chairman of Delhi State, the past Chair of Delhi State, and the co-chair of the Regional Committee on CSR besides the Deputy Director-General of CII among others attended. The minutes are at **Annexure C-11/1**.

List of Participants from CII

S. No.	Name
1.	Mr Aditya Berlia Chairman, CII Delhi State, and Co-Promoter, ApeejayStya&Svarn Group.
2.	Mr Ankur Bhatia Past Chair, CII Delhi State: Chairman, CII NR Tourism Committee & Managing Director, Bird Group
3.	Mr Puneet Kaura Chairman, CII-NRcommittee on NCR Pollution &MD, Samtel Avionics Group
4.	Ms. Soraya Rebello Co-Chair, CII-NR Regional Committee on CSR & AA & Vice President-CSR & Corporate Communications, Jakson Group
5.	Ms Seema Arora Deputy Director General, CII
6.	Ms Vaishali Srivastava Deputy Director & Head-CII Delhi State Office

YMC explained that the purpose was not necessarily to employ CSR funds but to use the opportunity for innovative thinking leading to worthwhile initiatives to deal with at least one of the larger natural drains, preferably near the Shahdara drain or the Signature Bridge to prevent admixture of clean and dirty water using technologically sound but rapidly executable strategies. It was explained that CII as an industry group would get high visibility for undertaking such a project and it was not necessary to use CSR funds which in their very nature are limited. Without holding out any commitment, YMC did explain that if the proposals were found to be innovative and are untried in the Delhi scene and have been found to be time and cost-effective, based upon examples already executed in other parts of the country, YMC would bring it to the notice of NGT and urge that the funding aspect could be considered to be partially derived from funds available for environmental protection, subject to government procedures and approvals as needed. The expectation from industry was to suggest strategies which in the knowledge of those proficient in this area which were in use internationally, or even nationally and had been found successful in treating industrial effluent and domestic sewage. The idea was to explore every avenue possible to find multiple solutions including in situ bioremediation, creating constructed wetlands on the main drains or the tributary drains.

The second proposal was to explore how CII can motivate industry to start using treated wastewater instead of relying on borewell water in Delhi and to be able to minimise industrial discharge through proper treatment.

In response the participants from CII headed by the Chairman of the concerned Chapter of CII informed the YMC that CII had a Centre of Excellence called the CII Water Institute which aids industry members in water audits. CII can explore bringing international expertise in providing solutions/ideas to deal with industrial waste in the Delhi corridors.

The meeting was attended by the Member Secretary of DPCC, the DDA officer dealing with landscape, restoration and rejuvenation projects along the river Yamuna, an expert/consultant from the office of the Water Minister of Delhi dealing with water bodies rejuvenation/aeration/ground water recharge projects. The officers indicated the kind of

support they needed. It was decided that the visits to specific locations would be facilitated by these officers and they would keep their organisational heads informed.

Outcome of the meeting with FICCI.

The meeting was held on 20.10.20 and was attended among others by the Secretary General of FICCI, and several representatives indicated below:

1. Mr Dilip Chenoy Secretary General, FICCI.
2. Ms Rita Roy Choudhury Assistant Secretary General, FICCI.
3. Ms Uma Seth Senior Director and Head, CSR, Diversity & Inclusion, FICCI.
4. Ms Kirtika Arora Senior Assistant Director.

CPCB, DPCC, DDA and the Consultant Water Bodies in GNCT were represented at the meeting. The minutes of the meeting are at **Annexure C-11/2**.

The purpose of the meeting was explained as was done with CII. NGT's orders on the cleaning and rejuvenation of river Yamuna and the possibilities for using the experience of the industrial groups to introduce innovative ways of dealing with heavy water pollution were discussed. The members of FICCI were encouraged to propose different technologies and activities which could be implemented both for the abatement of pollution but also for the reuse of treated water and achieving zero liquid discharge in the CETPs. Also to take up projects for creating public awareness. Several suggestions were made but at the end it was decided to set up three working groups as follows:-

1. For Sewage treatment,
2. For using recycling technology, usage of treated wastewater and pricing of treated wastewater.
3. Facilitation of CSR projects.

Both CII and FICCI were asked for an update before this chapter was compiled but both organisations indicated that the process is still going on.

Ultimately it is for the organisations which have an interface with the river, its floodplains and drains to look to building partnerships and encouraging industry to contribute in ways which are promising given successful examples in operation elsewhere known to them.

The possibility of working together with CII and FICCI were also mentioned to the CEO DJB who was requested to invite the organisations and facilitate visits to project sites which hold some promise within the overall scope of projects being considered by IDMC or by DJB itself. It is not the size of the project which is important but should try and partner with industry to derive technological advantage if it is forthcoming.

The process of bringing CII and FICCI on board has started. Through this Chapter which would be brought to the notice of the officers mentioned above, YMC expects that VC DDA, the Secretary Environment and Forests, GNCT and the CEO, DJB would organise bilateral meetings to encourage the representatives of the two Industry Associations to visit specific sites and give their suggestions which can be then be taken up directly by the organisations.

Chapter -12

State of Haryana and Pollution of the Yamuna

River Yamuna is receiving 1164 MLD domestic effluent and 245 MLD industrial effluents from 34 towns through 11 drains. Yamuna Nagar, Karnal, Panipat, Sonapat, Rohtak, Bahadurgarh, Gurugram, Faridabad and Palwal towns are contributing significant quantum of pollution load to the River Yamuna. At present, 506 MLD partially treated/ untreated domestic effluent is reaching to River Yamuna. The Hon'ble NGT after considering the reports submitted by YMC directed the state to take corrective measures for abatement of pollution in River Yamuna through various orders.

Progress achieved in abatement of pollution since 01.10.2018.

- At the time of constitution of the YMC/HYMC, 55 STPs of capacity 1139.4 MLD in 34 towns in the catchment year of River Yamuna were maintained & operated by the line departments i.e. Public Health Engineering Department (PHED), Urban Local Bodies (ULB), Haryana State VikasParishad (HSVP) and Gurugram Metro Development Agency (GMDA). The HYMC visited all the STPs and found that only 34 STPs were fully functional, 7 STPs were under upgradations, 4 STPS were dysfunctional and 10 STPs were abandoned. Since then, 5 new STPs of capacity 102.8 MLD have been added, 4 dysfunctional STPs have been converted to functional, 7 STPS have been upgraded & 4 abandoned STPs have been replaced by new STPS hereby totaling 54 working STPs of capacity 1040.7 MLD.
- As per action plan, work of construction of 18 new STPs of capacity 310 MLD (inclusive of 6 existing STPs) was in progress and work of additional 11 STPs was taken in hand to cover the gaps. So, at present there are 29 new STPs of capacity 557 MLD are under construction and 2 existing STPs are under process of upgradations. After the construction of these STPs, there will be no gap between the sewage generated except in Yamuna Nagar where 40 MLD untreated effluent is being discharged in Rive Yamuna

through Yamuna Nagar – Jagadhri drains and none of the line departments are taking responsibility for treatment of the same.

- All the 54 STPs have been visited by the HYMC and the operational deficiencies found in these STPS have been communicated to the line departments. The efficacy study by third party has been done and the SOP for operation and maintenance has been formulated.
- Construction work of Sewage Conveyance Network in 34 towns was started at the time of constitution of the YMC and HYMC. Now due to constant monitoring, laying of sewer line is completed in 15 out of 34 towns. 1059 KM sewer line has been laid out of 1738 KM. Laying of 679 km sewer line is in progress. The work of replacement of settle trunk sewer carrying sewage to STPs in Sonipat stand allotted but progress is very slow.
- The work of diversion of sewage from unapproved areas was taken by the ULB department. Out of 83 MLD required to be tapped/diverted from 155 locations, 38 MLD effluents have been diverted from 69 locations.
- The Septage management policy has been framed in all the corporations/municipalities but only small quantity of septage is getting treated through the Septage management.
- The industrial effluent was being treated through 12 CETPs of capacity 128 MLD and since then 2 CETPs (Panipat – 21 MLD, Bahadurgarh – 10 MLD) have been commissioned. Presently 14 CETPs (161.5 MLD Capacity) are being operated and maintained by the HSIIDC, HSVP, GMDA and Private agencies. All these existing CETPs were inspected by HYMC to assess the efficacy. 12 CETPs were found non-complying. Due to constant monitoring by HYMC, work of construction of 2 New CETPs (Bahadurgarh – 10 MLD, Kundli – 6 MLD) has been initiated by the departments. This will reduce the pollution load in Drain No. 6 and KBC - Mungeshpur Drain. Further, the Municipal Corporation Faridabad (MCF - ULB) proposed to construct 2 new CETPs (65 MLD, 15 MLD) for which administrative approval has been received. The Municipal Corporation Gurugram (MCG – ULB/GMDA) proposed to install 4 CETPs (20 MLD, 9 MLD, 1.5 MLD, 0.75 MLD) but projects are yet to be started. The HSIIDC principally agreed to install 2 CETPs at Yamuna Nagar to treat the untreated industrial waste generated from

non-conforming industrial areas. Work assigned to IIT Roorkee for feasibility study, report yet to be received.

- The HSIIDC is taking the work of upgrading and capacity enhancement from 46.2 MLD to 69.2 MLD of all the 4 existing CETPs at Sonipat and HSVP is in process of modification/upgradations of existing 21 MLD, old CETP at Panipat. This will reduce the pollution load in Drain No. 1 and 6.

Incompliance to the direction of Hon'ble NGT dated 06.07.2020 YMC had review meeting with Chief Secretary, Haryana for assessing the progress made by the State of Haryana on dated 08.09.2020 via Video Conferencing. Minutes of meeting along with power point presentation at **Annexure-C-12/1**.

YMC flagged the following critical concerns which need immediate attention by the Chief Secretary, Haryana:-

- The quantity of sewage falling into drains in Haryana and reaching River Yamuna was 1164 MLD as on 10.01.2020.
- The quantity of sewage which has been reduced by being channelized for treatment is 15 MLD (1.2 %) in September 2020.
- Presently, 506 MLD untreated effluent is being discharged into River Yamuna from different towns. This is HUGE and there is no reduction over the last 2 years since YMC and HYMC started monitoring.

a. Important CPCB Findings on Drain & River Pollution given to YMC

- Despite Haryana having availability of 90% sewage treatment and 83% of this capacity reported to be getting utilized, the BOD of water flowing through drains into the Yamuna is reported to be very high.
- The quantity and quality of treatment is unsatisfactory and substantial quantity of untreated sewage is flowing in the drains. Immediate action is required through:
 - Interception of drains to ensure that untreated sewage is prevented from flowing into drains and subsequently into River Yamuna.

- In May 2020, flow in Yamuna River before Dhanura Escape was indicated 367.5 MLD. However, the e-flow at this point (as per Hon'ble Supreme Court Order) should be minimum 10 Cumecs (864 MLD).

- The flow in river needs to be got inspected and the situation improved.

b. Treatment of Domestic Sewerage

- It is reported by the line departments that operational deficiencies which affected 46 STPs have been rectified and confirmed by HSPCB. This will be checked randomly by HYMC.
- Within the catchment area of River Yamuna 29 new STPs of capacity 557 MLD are under construction/upgradations and 2 existing STPs are under process of upgradations. The progress of work is very slow and may not be completed by 31.12.2020.
- Among the projects in the pipeline, STPs (257.5 MLD capacity) at Faridabad will exceed the NGT mandated timelines. This is a critical area as Faridabad has no functional STP. Further, 3 New STPs at Yamuna Nagar, 2 STPs at Karnal and 3 STPs at Gurugram are under Construction.
- Financial Approval received for laying an additional sewer line (117 KM) to divert sewage and also to construct 2 New STPs at Panipat.
- Replacement of settled trunk sewer carrying effluent to STPs at Rathdana and Kakroi Road, Sonipat.
- Construction of Sewer Conveyance Network (645 KM) in 08 Major Cities e.g. Yamuna Nagar, Panipat, Karnal, Sonipat, Bahadurgarh, Faridabad, Rohtak and Palwal.
- It was observed that SOP prepared for operation and maintenance of STPs are not being followed. Ignoring checklist and SOPs should be a black mark against the project-in-charge

c. Treatment of Industrial Effluent

- HSIIDC has decided to install 2 CETPs (20 MLD at Jagadhri & 10 MLD at Yamuna Nagar) to treat the untreated industrial waste generated from non-conforming industrial areas. Land and executing agency has to be decided quickly as effluent from Jagadhri Yamuna

Nagar Town is being discharged into River Yamuna through the Ditch Drain. This is against the directions of NGT.

- The MCF and HSIIDC are constructing 3 new CETPs at Faridabad (50 MLD at Pratapgarh, 25 MLD at Mirzapur and 15 MLD at Badshahpur) along with laying a separate sewer line for carrying industrial waste. The land needed for the CETPs has been identified and timelines for the major milestones firmed up. YMC will be reporting action taken and Chief Secretary is requested to give firm directions to the concerned officers.
- The HSVP and HSIIDC are upgrading 1 CETP at Panipat and 4 existing CETPs at Sonipat respectively. Target date for completion is 31.12.2022 which is far beyond NGT's orders. This needs to be compressed.
- The HSVP has allotted work for construction of new 6 MLD CETP for treating industrial effluent generated from industries operating in Kundli Area of Sonipat Town after obtaining CLU from Competent Authority.
- The GMDA has decided to install 4 CETPs (20 MLD at Sector 34, 9 MLD at Sector 37, 1.5 MLD at Sector 18 and 0.75 MLD at IDC Sector 14 Gurugram) but no action plan is available. This shows that a lot of action has still to be taken and a direction is needed to expedite it.
- Constructions of New CETPs at Kundli, Sonipat, Faridabad, Bahadurgarh and Gurugram have not yet started. Partially treated/untreated industrial effluent is entering the sewage system which is holding back the treatment of domestic sewage.

d. Septage Management

- The YMC emphasized that due to delay in the construction of new STPs and Sewer Network the State should immediately adopt a parallel plan for implementing Septage Management Policy in those areas, as being followed in the State of Tamil Nadu, Telangana and Delhi.

e. Pollution in Diversion Drain No. 8

- Increasing pollution load in River Yamuna is regularly being reported due to mixing of discharge from drain No. 6 and Channel carrying effluent from Kundli CETP into

Diversion Drain No. 8 at Sonipat. The Drinking Water Treatment Plant at Wazirpur has been affected due to Higher BOD and Ammonical Nitrogen concentration. This is continuing negligence which must be stopped and fast track approvals are needed for the conduit carriage.

Progress achieved by the state after meeting with Chief Secretary on 08.09.2020

- HYMC randomly inspected 24 Nos. of large STPs (763.5 MLD Capacity) in Yamuna Nagar, Panipat, Sonipat, Rohtak, Bahadurgarh, Gurugram, Faridabad and Palwal to verify the complying status indicated by the Line Departments. The operational deficiencies were still observed in 16 Nos. of STPs (452.5 MLD Capacity) and were found not complying the standards. The SOP prepared for operation and maintenance of STPS are not being followed. Ignoring checklist and SOPs should be a black mark against the project-in-charge.
- The Municipal Corporation Faridabad (MCF – ULB) proposed to construct 2 CETPs (65 MLD at Badshahpur, 50 MLD at Mirzapur Village, Faridabad) instead of 3 CETPs. The administrative approval for both CETPs has been received.
- The irrigation department of Haryana informed that the proposal due to install closed conduit pipelines to avoid mixing of effluents from drain no. 6 with discharge of Diversion Drain no. 8 has been sent to Government of Haryana for arrangement of funds.
- The line departments have not taken any visible action to squeeze the timelines for construction of STPs/ CETPs/ Sewer Conveyance Network. The request for extension of timelines beyond 31.12.2020 has not yet received.
- No substantial action has been reported on the treatment of se ptage through Septage Management.
- Administrative Secretaries of line departments emphasized that Haryana state should make efforts to formulate policy on crop diversification and use of treated waste water, hoping that the same will be very useful for conservation of ground water in the state. In this regard, it is informed that the action plan has been submitted to CPCB to reutilize of 80% treated sewage by 2024-25.

Comments of HYMC and YMC:

A. Urgent and Critical

- Jagadhri-Yamuna Nagar: - Presently 66 MLD Untreated Industrial and Domestic effluent being discharged from Jagadhri-Yamuna Nagar Township to Ditch Drain. Neither the Municipal Corporation Yamuna Nagar nor the Public Health Engineering Department is taking responsibility to treat the effluent.
- Sonipat: - None of the 4 CETPs and 3 STPs are functioning properly and partially treated/untreated effluent being discharged through Drain No. 6.
- Faridabad – There is no functional STP in Faridabad Town. 210 MLD of untreated domestic effluent being discharged to River Yamuna through BudiaNalaha and Gouchi Drain.
- The timeline for construction/ upgradation work of 15 Nos. of Sewage Treatment Plant in 07 major towns is needed to be firmed up to prevent discharging untreated sewage to River Yamuna. Urgent upgradation/replacement is required in 02 Nos. of existing STPs at Rohtak (40 MLD) and Bahadurgarh (18 MLD) to reduce pollution load in drain No. 6 and KBC-Mungeshpur drain respectively.
- The construction work of 07 New CETPs at Faridabad (2 Nos.), Gurugram (3 Nos.) and Yamuna Nagar (2 Nos.) not yet started. These CETPs will be discharging 131.25 MLD of Industrial Effluent to River Yamuna.
- HYMC randomly inspected 24 STPs (763.5 MLD Capacity) in Yamuna Nagar, Panipat, Sonipat, Rohtak, Bahadurgarh, Gurugram, Faridabad and Palwal to verify the complying status indicated by the Line Departments. The operational deficiencies were still observed in 16 Nos. of STPs (452.5 MLD Capacity) and were found not complying the standards thus the complying status given by the line departments were incorrect and the officers of HSPCB being the regulatory authority are not performing their duty assigned under the Provision of Water Act, 1974/EPA 1986.
- Similarly, HYMC randomly inspected 12 Nos. of CETPs. Contrary to the claims of complying status by the Line Department, all these 12 Nos. of CETPs is found non-

complying. The HSIIDC is constructing the CETPs without considering the effluent characteristics of the industries operating in the Industrial Estate. This is the only reason for poor efficacy of the existing CETPs.

- Progress of construction and operationalisation of Sewer Conveyance Network (645 KM) is very slow and in the absence of the sewage conveyance systems the capacity of the existing Sewage Treatment Plants is unutilized mostly in Panipat and Sonipat towns. Impact on pollution containment is poor and untreated effluent is being discharged to River Yamuna through Drain no. 1 & 6.
- Septage Management in all major townships is not being followed, adding significant amount pollutants to River Yamuna through 11 major drains. There is a huge gap between quantum of untreated effluent and the effluent treated through Septage Management.
- The online monitoring devices are not calibrated regularly, thus do not reflect the actual status of treatment and Haryana State Pollution Control Board does not have any mechanism to verify the authenticity of data generated from these OLMs. Further, HSPCB has no mechanism to take cognizance of any reported violation.
- Discharge from drain No. 6 and Channel carrying effluent from Kundli CETP into Diversion Drain No. 8 at Sonipat is regularly affecting the Drinking Water Treatment Plant at Wazirpur due to Higher BOD and Ammonical Nitrogen concentration. This is continuing negligence which must be stopped and fast track approvals are needed for the conduit carriage.
- 75 to 100 MLD untreated effluents are still flowing in storm water drains named Leg-I, Leg-II, Leg-III (Badshahpur drain) due to slow progress in diversion of effluents to the STPs. The timeline for completion of diversion is being extended time to time.

B. Critical

- Maintaining Environmental flow of 10 Cumecs (352 cusecs) in River Yamuna and compliance of the Provisions of report submitted by National Institute of Hydrology (NIH).

- Construction work of 14 Nos. of new small STPs is very slow and may not be completed by 31.12.2020.
- Diversion of sewage from non-conforming areas cannot be completed until the construction of Sewerage Conveyance System of conforming area is complete and operationalised. Action need to be expedited for construction of Sewerage Conveyance System of conforming areas.
- Water Quality and flow of 11 major drains discharging directly into River Yamuna are being monitored the Haryana State Pollution Control Board (HSPCB). Monthly Water Quality Data are not indicating the presence of untreated effluent (506 MLD). Regional Officers of the HSPCB are not effectively monitoring the Water Quality of these drains.
- 277 Nos. of Villages in the catchment area of River Yamuna generating 90 MLD Domestic Sewage. The work of diversion and treatment in 24 villages out of 277 villages has been completed. The work is held up due to non-availability of funds.

C. Important

- The quarterly progress report for monitoring the stand alone ETPs installed in 800 industries operating in the catchment area of River Yamuna have not been received regularly from HSPCB department which indicates lack of proper monitoring and reporting.
- The Haryana State Pollution Control Board informed that there are 214 Private residential Colonial Condominiums in the catchment of River Yamuna generating 82.1 MLD of sewage. The cumulative installed capacities of these 214 STPs are 241 MLD. These Residential colony condominiums are required to achieve ZLD (zero Liquid Discharge). Out of these 314 STPs, only 13 STPs are found non-complying which seems to be unrealistic. The HSPCB are not enforcing the ZLD and the effluents from these condominiums are being discharged either into the adjoining sewer or drains.
- HYMC emphasized that the State of Haryana should formulate the policy on crop diversification and use of treated waste water for agriculture purpose. This will be useful for conservation of ground water in the State. Except Gurugram, no significant process

has been achieved for reutilization of treated domestic sewage. The incremental progress in this regards need to be monitored as it has impact on flow of water in Yamuna and dependence on river water for irrigation.

- There is no significant work for Bioremediation/ Phyto remediation of pollutants in 11 major Drains.
- The Government of Haryana has not submitted any details of the Environmental Compensation imposed and fixing accountability of the officers of the line departments for not complying to the directions/Order of Hon'ble NGT dated 11.09.2019.

Chapter - 13

State of Uttar Pradesh and Pollution of the Yamuna

1. Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

i. **Sewage Management. (In respect of Uttar Pradesh)**

- a) *The Principal Secretaries, Environment and Forest and Urban Developments are required to prepare short and long term plans to control flow of sewage from UP into the river Yamuna at Ghaziabad with time lines for execution. U.P. Chief Secretary to monitor it.*
- b) *Chief Secretary U.P to ensure that clarity in terms of execution of time lines are given and action taken on ground with regard to interception and diversion of Banthala and Indira Canal drains.*
- c) *Chief Secretary, U.P to review the matter with regard to sewerage area, un-sewered areas and leakages in the sewer networks etc. and fix timelines for execution of same.*
- d) *Chief Secretary U.P to review the matter with regard to upgradations of STPs which are not meeting the norms and ensure coordination amongst departments.*

ii. **Industrial Pollution:**

- a) *State PCB to evolve a mechanism to recover the EC from those refusing to pay.*
- b) *Complete inventory of industries both in conforming and non- conforming areas be prepared by State PCB within one month.*
- c) *Report be submitted on performance of CETPs and ETPs of industries by UPSIDC and PCB.*

iii. **Demarcation, Protection and Rejuvenation of Floodplains**

The floodplain should be demarcated and developed through wetlands and biodiversity parks. Vice Chairman DDA and Principal Secretary, Irrigation, U.P to give specific timelines for setting up of same. The Chief Secretary UP shall supervise and monitor the same.

iv. **Compensation and Accountability:**

Directions on the subject in respect of NCT Delhi and Haryana will apply to the State of Uttar Pradesh also. Bioremediation and/or phyto-remediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the State of

Uttar Pradesh may be liable to pay compensation of Rs. 5 Lakhs per month per drain to be deposited with the CPCB. This however, is not to be taken as an excuse to delay the installation of STPs, sewerage network and its connectivity. For delay of the work, the Chief Secretary, State of Uttar Pradesh must identify the officers responsible and assign specific accountability. Wherever there are violations, adverse entries in the ACRs must be made in respect of such identified officers for delay in setting up of STPs, sewerage network and its connectivity by the concerned head of the department.

- i. *The State of Uttar Pradesh will be liable to pay Environment Compensation if defaults take place as under:*
 - a) *The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.*
 - b) *With regard to works under construction, after 01.07.2020, direction for payment of environmental compensation of Rs. 10 lakhs per month to CPCB for discharging untreated sewage in any drain connected to river Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.*
 - c) *With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the State of Uttar Pradesh has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to State of Uttar Pradesh to recover the said amount from erring officers/contractors.*
 - d) *The State of UP is not shown to have to furnished performance guarantee in terms of order dated 29.01.2019. The same may now be furnished with additional sum of Rs. 1 crore for the delay within one month failing which coercive method have to be adopted for enforcement of the order.*
 - e) *The State of UP may cooperate and coordinate with the committee constituted by this Tribunal in absence of any satisfactory mechanism constituted by the State.*

The Monitoring Committee may continue to monitor compliance of directions of this Tribunal and furnish its next status report as on 31.12.2019 by 31.01.2020 with comments on the affidavits of the concerned authorities. The same may also be uploaded on its website. We further direct the NCT Delhi, the States of Haryana and UP, DDA to file affidavits of compliance of the directions of this Tribunal as on 31.12.2019 before the Committee as well as this Tribunal on or before 15.01.2020. The registry may upload them on website as soon as received so that all concerned can access the same before the hearing to avoid the situation which arose on 12.7.2019 as noted in para 7 above.

2. NGT's order dated 5.3.2020:

It will also be open to the Chief Secretaries of U.P. and Haryana to have their own appropriate mechanism for monitoring. The Chief Secretaries of Delhi, U.P. and Haryana may place the mechanism so evolved before this Tribunal before the next date”

NGT order dated 6.07.2020:

The YMC in its Report dated 29.06.2020 had made certain recommendations for control of sewage and industrial effluent in the drains originating in Ghaziabad, Sahibabad and Loni in UP to the Hon'ble NGT. The Hon'ble Tribunal after considering the Report passed the following order:

“We have carefully perused the recommendations of the YMC. We are in agreement with the same. The directions proposed are essential for compliance of orders of this Tribunal and environmental norms.

21. Accordingly, we direct that:

- b. Let the concerned authorities in Delhi, Haryana and UP to take further action in terms of the recommendations of the Committee as well as earlier directions of this Tribunal dated 13.01.2015, as updated vide earlier orders dated 11.09.2019 and 05.03.2020. The compliance may be overseen by the Chief Secretaries concerned.”*

Status of Implementation as assessed by the YMC:

The main sources of pollution in the Delhi stretch of river Yamuna from UP are the towns of Ghaziabad, Sahibabad and Loni and Noida. The cities of Sahibabad and Loni generate 575 MLD of sewage and there are 7 STPs of a total capacity of 427 MLD to treat the sewage.

This leaves 148 MLD of untreated sewage which gets released into Sahibabad drain where it gets mixed with industrial effluent. Though earlier reports based on a WAPCOS study had estimated that out of 166 MLD, 74 MLD was being treated at Indirapuram STP and the balance 92 MLD was being released into the Shahibabad drain. For Indirapuri drain it was reported that it had a flow of 78 MLD out of which 30 MLD was being treated and the balance was released in the Indirapuri drain. Both the drains merge with Shahdara drain which meets river Yamuna at Okhla.

Holding review meetings with the UP Government officers has been a challenge right from the time the YMC was constituted by the Hon'ble NGT. The state first set up a monitoring committee of serving Chief Engineers of Irrigation Department/Jal Nigam who were not able to do any monitoring or provide any meaningful assistance to the YMC. This Committee was later wound up and as a result YMC has been greatly handicapped in being able to organize effective monitoring in compliance of NGT's directions. UP State was generally represented by the UP PCB or the local engineers who constantly took the position that without funds and administrative approvals they could not take any action.

Even meetings at the level of Principal Secretaries could be held only after a series of letters and phone calls as meetings with relatively junior officers were unproductive. The first review meeting with Principal Secretary (UD), Principal Secretary (E&F), GM, Jal kal Nagar Nigam, CE, UP Jal Nigam, Chief Engineer (Irrigation), UP, Executive Director, UPSIDA and Municipal Commissioner, Ghaziabad took place only on 30.12.19- fifteen months after NGT's order. Although several commitments were made in December 2019, no meetings could be held thereafter.

The matter was raised telephonically with the Chief Secretary to chair a meeting with all concerned officers present as the shifting of responsibility had to be overcome. YMC in its letter dated 11.09.2020 had specifically requested the Chief Secretary to hold the meeting under his chairmanship with various departments responsible to reduce pollution in river Yamuna; on the issues covered in the report of YMC dated 29.6.2020 and the order dated 6.7.2020 of NGT.

A meeting through video conference was finally held on 28.9 2020.

As a follow up of the directions of Hon'ble NGT in its order dated 6.7.2020, the list of communications sent to Government of UP by the YMC is as follows

- i. **YMC/2020/484 Dated: 11.09.2020 to Sh. R.K.Tiwari Chief Secretary U.P., (Annexure C-13/1) requesting him to hold a meeting on various issues raised in NGT orders and as a follow up of the meetings held with Principal Secretaries (UD), (E&F) & (Industries) U.P. on 31.12. 2019 (Annexures C-13/2).**
- ii. **YMC/2020/491 Dated: 21.09.2020 to the Principal Secretary, U.P. Irrigation & Flood Control reg. issues related to rejuvenation of Yamuna Flood Plain (Annexure C-13/3).**
- iii. **YMC/2020/494 Dated: 01.10.2020 to Sh. R.K. Tiwari Chief Secretary U.P. (Annexure C-13/4).**

Main Issues highlighted by the YMC in Chief Secretary's meeting:

In the meeting held through videoconferencing with the Chief Secretary UP on 28.09.2020. YMC made a power point presentation highlighting the issues emanating directly from the Hon'ble NGT's orders. The Power Point Presentation is attached as **Annexure C-13/5**.

The Presentation specifically referred to the following points on which state government's responses and status report was sought:

- i. Progress of short and long term measures for control of pollution in the drains in Sahibabad, Indirapuri, Loni and Noida and compliance to timelines promised by the State.
- ii. Independent assessment of waste water in Sahibabad through a third party to confirm the actual flow in the drain considering that Shahdara drain which receives waste water from Sahibabad and Indirapuri drains is the most polluted of drains joining river Yamuna in the Delhi stretch of the river.
- iii. Status of functioning of STPs in Indirapuri, Sahibabad, Ghaziabad and Noida, their capacity utilization and whether they are meeting standards.
- iv. Status of One- city-one operator scheme in the cities of Ghaziabad, Sahibabad and Loni. The Principal Secretary Urban Development had assured the YMC on 31. 12. 19 that the one city one operator scheme had been handed over to M/s VA TECH WABAG LTD. company and in 6 months the completion, trapping and treating of Sahibabad and Loni

drains would stop sewage related pollution going into the Delhi drain. The Company was also present and confirmed this.

- v. Status of setting up new STPs and upgrading the STPs not meeting standards.
- vi. Status of implementation of septage management policy in the towns of Sahibabad, Loni and Ghaziabad. The Principal Secretary had told the YMC that the Septage Management Policy had been approved for Sahibabad and Loni and the collection and treatment should happen by November 2020. YMC had asked for this to be compressed. Status of in-situ bio/phyto remediation in drains.
- vii. Installation of OEMS/OLMS in STPs and ETPs/CETPs and their connectivity to UPPCB and CPCB servers.
- viii. Stoppage of untreated industrial from industries in conforming areas of Loni and Sahibabad and present status of enforcement action against the defaulting industries.
- ix. Status of enforcement action against industries in non-conforming areas in Loni and Sahibabad. Whether the industries ordered to be closed have actually been closed.
- x. Report on functioning of stand- alone ETPs of industries and the CETPs.
- xi. Status of administrative measures to protect and safeguard floodplains against encroachment, illegal dumping of C&D waste and unauthorized cultivation.
- xii. Status of the pending litigation in respect of the 3835 big has (about 700 acres) of floodplain land between UP, DDA and 221 others which was brought to your notice. YMC cannot go into the merits of the matter but the fact that a matter involving a vast tract of floodplain land has been under litigation since 1972 needs to be looked into at a high level.
- xiii. Status of rejuvenation of 167 hectares of UP portion of floodplains through DDA and whether the funds for the purpose have been transferred.

Follow up of Chief Secretary's meeting:

As a follow up of the meeting with the Chief Secretary, U.P. Govt. submitted the status report on various points related to reduction of pollution in River Yamuna. Independently YMC commissioned Mr. R.S. Tyagi, Former Member (Dr), Delhi Jal Board assisting YMC as Technical Expert to undertake a field visit, hold discussion with the UP officers and give a report to the

YMC. The report submitted by Shri Tyagi is attached as **Annexure C-13/6**. Separately a report from CPCB was also called about the status of sewage in the drains as well as on the functioning of STPs and CETPs. The CPCB report is placed at **Annexure C-13/7**.

Action Taken Report submitted by U.P. Govt. with reference to the meeting of YMC with the Chief Secretary and directions of Hon'ble NGT:

The Action Taken Report in respect of various issues raised by the YMC was submitted by the U.P. Jal Nigam and Irrigation & Flood Control Department of U.P. Govt. The report is attached at **Annexure C-13/8**.

1. Functioning of STPS in Ghaziabad and Loni

- **Progress report** The Status report from Jal Nigam states that in Ghaziabad, 9 STPs have been constructed, out of which 4 STPs are maintained by Ghaziabad Development Authority, remaining five STPs are maintained by UP Jal Nigam. A contract has been given by state Govt. to M/s VA- TECH WABAG LTD under "one city one operator Scheme" to maintain these STPs along with sewerage network in Ghaziabad and Loni. M/s VA- TECH WABAG LTD has started maintenance work in Ghaziabad with effect from 6-12-2019 and is responsible for repairing maintenance of all shortcomings in the STPs, collection of the entire sewage and its treatment. Due to lockdown, the work has been delayed.

Comments of YMC:

It is one year since assurances were given. This is no acceptable as there is no clarity about the timelines by which time all the STPs will become fully functional and also meet environmental standards. The UP PCB should be asked to undertake an inspection of all the STPs and submit its report to YMC in the next 15 days.

Long Term Action Plan

Sahibabad Drain -The average discharge of this drain as measured by the Jal Nigam is 90 MLD. The treatment of this drain is divided in two parts:

a) Treatment of 74 MLD discharge:

74 MLD discharge is to be treated through 74 MLD STP at Indirapuram. Presently, this STP is not being operated at its full capacity because the capacity of the outfall drain for the

treated water is inadequate. This channel does not have sufficient capacity to carry combined effluent of 186 MLD from 3 STPs (56+56+74) at Indirapuram. In order to solve this problem, a DPR for laying of treated effluent pipeline from 74 MLD STP Indirapuram to storm water drain situated along NH24 in 2500 m length, for disposing combined effluent of all the three STPs has been approved. The work of laying of pipeline has been started from 01-02-2020. Laying of 2100 m pipeline against 2500 m has been completed. The pipeline work has been delayed due to Covid -19, monsoon and public utilities such as Electricity cables, IGL gas pipelines, sewer lines and water supply lines etc falling in the pipeline alignment. The balance work was expected to be completed by Nov, 2020.

Comments of YMC

This will be got inspected in the next few days to see the outcome.

Treatment of 16 M LD discharge:

Due to insufficient pumping capacity of the Sahibabad Drain catchment area, the sewage is being pumped temporarily into Sahibabad Drain. To address the remaining 16 MLD discharge (90-74) an additional Intermediate Pumping Station of 17 MLD capacity is under construction at Vijay Park in Shalimar Garden (Main) under AMRUT. Sewage from Shalimar Garden, DLF Colony, Vikram enclave, Jawahar Park and Shaheed Nagar area will reach 17 MLD IPS. The overall progress of IPS is 80%. After completion of IPS this 17 MLD sewage shall be treated at 56 M LD STP at Indirapuram. Once completed, together with work at (a) above, the Sahibabad drain will not carry any sewage by end of, by December, 2020.

Comments of YMC

This will be got inspected in January 2021 to see the outcome.

- c) **Indirapuri and Banthla canal drain:** It has been planned to intercept and divert both Indrapuri drain and Banthla canal drain and treat the untreated waste water of the drain at a newly proposed STP of 60 MLD capacity. The land for Sewage Treatment Plant and Sewage pumping station has been identified and made available by Nagar Palika Parishad, Loni. Letter has been written to UP Irrigation Department to allow the construction of interception and diversion work on Banthla Canal Drain, permission for which is yet to be granted; The work of DPR preparation has been completed and has

been sent to National Mission for Clean Ganga, New Delhi by Project Director, State Mission for Clean Ganga. Lucknow vide letter No. IIS9/0557/SMCG/OI dated 20.09.2019. NMCG by Letter dated 10-12-19 raised some observations in the DPR. After removal of deficiencies in the proposal, the revised DPR has been submitted to SMCG vide letter No.251/0220272/2020 dated 22.05.2020. SMCG forwarded the DPR vide letter No. 501/0032/SMCG-UP/06 dated 02.06.2020 to NMCG Delhi for approval & allotment of funds. **After approval of DPR from NMCG, its construction period will be 2 years.**

Comments of YMC

This will be followed up with NMCG and outcome reported to NGT in the action taken report due to be submitted to NGT in early January.

- **Short Term Action Plan:** It is proposed to treat the untreated waste water of Sahibabad drain, Bantla Canal drain and Indrapuri Drain by in-situ Bioremediation based treatment method for the time being as a short term measure until long term treatment facilities are commissioned. Bio-remediation work is to be carried out by respective Nagar Nigam / Nagar Palika Parishad.

Overall Comments of YMC

Although the timelines as promised by Principal Secretary UDD in December 2019 have been exceeded hugely, there is some progress in laying pipelines and Intermediate Pumping stations for better capacity utilization of STP at Indrapuram and making sure that Shahibabad drain does not carry any sewage.

2. Independent assessment of waste water in Sahibabad through a third party to confirm the actual flow in the drain considering that Shahdara drain which receives waste water from Sahibabad and Indrapuri drains is the most polluted of drains joining river Yamuna in the Delhi stretch of the river:

There has been a dispute over the quantum of flow in Shahibabad drain. In WAPCOS study the flow assessed was 166 MLD, out of which 74 MLD was to be treated but not actually being treated due to limitation of capacity of the outfall drain at Shahibabad, as discussed at para(a) above, and the balance 92 being released into the drain. The Govt of UP however maintained that the drain has flow only of 90 MLD of which 74 MLD is being treated at

Indirapurm STP. The YMC also has separate reports from the CPCB. The CPCB, who undertake measurement of sewage in the drains and the flow, have reported in November 2020 that flow in Shahibabad and Indirapuri drains is as under:

S.No.	Name of the drain	Discharge	BOD mg/L	COD mg/L	TSS mg/m
1	Sahibabad Drain	36.5 MLD	195	580	271
2	Indrapuri Drain	26 MLD	237	930	644

A formal request for making an independent assessment of flow in the drain, as suggested in the YMC report of 29.6.2020, has been made to the Shri Ram Institute of Industrial Research, New Delhi Institute by U.P. Jal Nigam, Ghaziabad on 02.11.2020 to settle the dispute once and for all. Once the correct flow is known it will help the state government to decide on the capacity of the STP that needs to be set up for treatment for sewage in the Shahibabad drain.

Comments of YMC:

Status report based on the study by Shri Ram Institute be furnished in the next 15 days. Even if the final report is not received by that time an interim report be submitted to YMC.

3. Status of functioning of STPs in Indirapuri, Sahibabad and Ghaziabad, their capacity utilization and whether they are meeting standards:

None of the STPs except 74 MLD at Indirapuram and 30 MLD STPs at Loni are meeting standards and as they are more than 20 years old and are at present not complying with the standard norms because of damaged civil structure as well as electrical mechanical equipment. The One City One operator is expected to remove deficiencies **by February 2021**.

Comments of YMC:

There is no satisfactory progress towards improving functional efficiency of the STPs not complying with the Standards except some assurances of paper work having been completed. The status of all the activities is almost similar as provided in June 2020.

4. Status of One- city-one operator scheme in the cities of Ghaziabad, Sahibabad and Loni: The Principal Secretary Urban Development had assured the YMC on 31.12.2019 that the one city one operator scheme had been handed over to M/s VA TECH WABAG LTD. and in 6

months the completion, trapping and treating of Sahibabad and Loni drains would stop sewage related pollution going into the Delhi drain. The Company representative also was present and confirmed this. It appears now that there is a conditionality which needs that the STPs are rectified and made functional before they're handed over to the operator and that work itself will take 6 months. As per the latest report submitted by U.P. Govt deficiencies in 74 MLD STP Indirapuram have been removed and renovation works of 70 MLD STP Dundahera, 56 MLD STP Indirapuram and 30 MLD STP Loni will be completed by end of Feb, 2021.

Comments of YMC

These timelines must be adhered to and need oversight. The State Government in its reply must give an updated progress report to YMC.

5. **Status of setting up new STPs and upgrading the STPs not meeting standards:** As per the Status report of UP Jal Nigam, the 70 MLD STP (UASB) Dundahera and 56 MLD STP (UASB) Indirapuram which are more than 20not complying the standards norms; have been taken up for renovation. The work is likely to be completed by February 2021. These timelines are promised to be adhered to.

6. **Status of implementation of septage management policy in the towns of Sahibabad, Loni and Ghaziabad:** Septage management policy was to be implemented by November 2020. It has been informed that the Septage Management Policy has been approved. The work of setting up of 32 KLD capacity FSTP in Loni will be completed by December 2020 and in Ghaziabad, setting up of 50 KLD Capacity FSTP will be completed after six months, No specific date has been mentioned.

Comments of YMC:

The State Government in its reply must give an updated progress report to YMC.

7. **Status of in-situ bio/phyto remediation in drains:** A Pilot Project for in-situ bio/phyto remediation in drains has been started at Arthla Drain Ghaziabad and same is planned to be adopted in other drains, if successful. The monthly test results of the treated water in this drain and outcome of the pilot project will be shared with YMC.

8. **Installation of OEMS/OLMS in STPs and ETPs/CETPs and their connectivity to UPPCB and CPCB servers:** As reported that the bids for Design, Supply, Installation, Testing &

Commissioning of Online Continuous Effluent Monitoring System (O.C.E.M.S.) of STP's, including five years Operation and Maintenance have been received. Evaluation of technical bids is under process. After completion of tender process, the work will be completed within 12 months. These timelines need to be further squeezed. The State Government in its reply must give an updated progress report to YMC.

9. Stoppage of untreated industrial from industries in conforming areas of Loni and Sahibabad and present status of enforcement action against the defaulting industries:

- Show cause notices were issued against 25 defaulters units in Sahibabad area under Water Act of 1974.
- Closure orders issued against 05 defaulting unit in Sahibabad area under Water Act.
- Disconnection of electricity and sealing of two defaulting units in Aryanagar and Loni industrial area by the Joint Team.
- Recommendation for electricity disconnection to Executive Engineer UPPCL against 01 defaulter unit in Sahibabad area
- EC of Rs. 248.75 Lakhs has been imposed against defaulters.

Comments of YMC

UPPCB/ District Level Committee must ensure having regular vigilance on the defaulting industries polluting water and taking action accordingly. Monthly report in this regard may be uploaded on their website. Mere levying of EC may not prove to be a deterrence. What is important is that a mechanism for recovery of EC needs to be worked out. The State Government in its reply must give an updated progress report to YMC.

10. Status of enforcement action against industries in non-conforming areas in Loni and Sahibabad. Whether the industries ordered to be closed have actually been closed:

- Total 435 no. of illegal units were demolished and 10 no. of illegal units were sealed with Joint Team in Krishna Vihar, Phase-II, Amit Vihar, Behta Hazipur & Farukh nagar, Loni in Ghaziabad.
- Recommendation for electricity disconnection to Executive Engineer UPPCL against 01 illegal unit in Bhopura Sahibabad area.
- EC of Rs. 1.35 Lakhs has been imposed against defaulters.

Comments of YMC.

Levying EC alone will not provide enough deterrence and mechanism for recovery of EC needs to be worked out. Also the effort at stopping such activity has to be of continuing nature else such illegal activities have a tendency to resurface once enforcement effort slackens.

Monthly report in this regard should be uploaded on the website of UPPCB.

11. **Report on functioning of stand- alone ETPs of industries and the CETPs:** It has been confirmed that regular sampling is being done by UPPCB, Ghaziabad and report is being uploaded on Ganga Portal.

Comments of YMC

This report be furnished to CPCB and YMC.

12. **Status of administrative measures to protect and safeguard floodplains against encroachment, illegal dumping of C&D waste and unauthorized cultivation:**

As earlier decided that flood plain maps for river Yamuna in NCT area were to be prepared by I.I.T Delhi in consultation with DDA. The DDA has already submitted the flood plain map before the Hon'ble court of NGT. UP Irrigation Deptt. says it is keeping continuous watch-and-ward to protect the flood plain from any pucca constructions and the flood plain has been verified physically and demarcated and found free from pucca constructions.

Irrigation & Water Resources Department of the State of UP has defined what constitutes flood plain zone, in 2015 as the extreme boundary of flood plains is the bunds existing on the banks of the river Yamuna on the eastern side (on the land of U.P.Irrigation Department) upstream of Okhla Barrage in the area of NCT Delhi / UP. It has also demarcated by fixing bollards at the extreme edges of flood plain.

Irrigation Deptt.is also keeping continuous watch-and-ward over illegal encroachments and dumping . Presently there is no solid waste / debris existing on the UP Irrigation land. In future violation of directions relating to dumping of debris and resulting compensation will be implemented as per directions given by Hon'ble NGT. Govt. of U.P. has also given permission to DDA for installing of CCTV cameras in U.P portion.

Comments of YMC:

SANDRP- a Delhi civil society organization had pointed out about dumping of C&D waste near NOIDA, presence of heavy earth moving machinery on the floodplain and disappearance of water bodies. Their report was sent to Irrigation Department on 21.09.202 (vide letter at Annexure C-13/3). The pictures attached to their report showed impermissible activities allowed in violation of NGT's order. YMC has received no response to that letter. A status report be furnished to YMC within a fortnight.

13. Status of the pending litigation in respect of the 3835 big has (about 700 acres) of floodplain land between UP, DDA and 221 others:

Execution no.45449/2016 state of UP vs DDA & 221others is pending in Karkarduma court, Delhi is pending for taking repossession of the land which is to be used for the development of wetland development on the eastern bank of River Yamuna and is being pursued by the Department.

Since the vast tract of floodplain land has been under litigation since 1972 effective steps needs to be taken by the State to arrive at early closure else the floodplain will continue to be used for non-permissible activities.

14. Status of rejuvenation of 167 hectares of UP portion of floodplains through DDA and whether the funds for the purpose have been transferred: U.P Irrigation was to release Rs 35 Crore to DDA by U.P Irrigation deptt. For rejuvenation of 167 Hectare of flood plain of U.P. U.P has released Rs 1049 Lacs for development of 86 hectare in phase-I. The balance amount has not yet been released and it is not known what are the terms and conditions of further releases are by the UP Government.

Comments of YMC

DDA has stated in its response which is contained in the Chapter 2 of this Report that the money is yet to be received. Further that they have sought additional funds from UP State Irrigation for the rejuvenation of the flood plains. The State Government must see that a joint meeting with VC DDA is held to decide on the matter. There is no mention of this in DDA's letter.

Overall Comments of YMC on progress report of U.P. Govt.:

With reference to the progress report submitted by U.P. Govt. the comments of YMC are summarised below:

- I. In-situ Bioremediation based treatment method as a short term measure for cleaning of wastewater in Banthla Canal drain and Indirapuri Drain has been initiated on a pilot scale however the timelines and further plan of action is quite vague.
- II. Shri Ram Institute of Industrial Research, New Delhi has been requested by U.P. Jal Nigam, Ghaziabad to measure the-flow in Shahabad Drain. This needs to be completed in a fortnight and a report made available to CPCB, UP PCB and the YMC to enable the YMC to furnish its response to NGT on further action to be taken on the capacity of the STP that will be required to be set up at Shahabad so that the drain does not carry any sewage.
- III. There is some progress in taking the work of renovation of STPs by M/s VA Tech Wabag. Chennai. These STPs are 74 MLD STP Indirapuram,. The firm is doing renovation of 70 MLD STP Dundahera, 56 MLD STP Indirapuram and 30 MLD STP Loni and it will be completed by end of Feb, 2021. Further progress on the upgradation of STPs and removal of their functional deficiency should be reported by the UP Jal Nigam and the UP PCB. The Board in particular give its independent report on functioning of each STP, their capacity utilization and whether the STPs are meeting Environmental standards laid down by the NGT. This report should be submitted within the next 15 days by the UP PCB.
- IV. As per the status report certain work of pipeline and ISP in the catchment of Shahabad drain have been promised to be completed by November 2020 and February 2021. Present status of the works be informed to the YMC for submitting compliance status to the NGT.
- V. UP PCB should also furnish report on functioning of CETPs, the status of industrial pollution from Loni and Shahabad industrial areas.

- VI. Mechanism needs to be worked out for recovery of EC levied on industries/defaulting units otherwise the purpose of levying EC will get defeated. Data on Enforcement action taken should be uploaded on the website of the UPPCB
- VII. Regarding Septage management, the work of setting up of 32 KLD capacity Faecal Sludge Treatment Plant(FSTP) in Loni will be completed by December 2020 and in Ghaziabad, setting up of 50 KLD Capacity FSTP will be completed after six months. The State Government is required to submit in response to the YMC.
- VIII. U.P has released only Rs 1049 Lacs for development of 86 hectare in phase-I against total Rs 35 crore for development of 167 hectare. DDA has informed the YMC that a demand for a total of Rs 98 crores has been placed with the Government of UP for floodplain restoration work in UP portion of floodplain in Delhi. UP Government may furnish its stand on the request of DDA.

Annexures

to the

Fifth Report of the Yamuna Monitoring Committee

Appointed by the
Hon'ble National Green Tribunal
Vide order Dated 26th July 2018

Dated 7th December, 2020.

Volume 2

LIST OF ANNEXURES

Chapter 2: DDA and Demarcation of the Flood Plains and Conservation Activities

<i>Annexure C-2/1: Draft from DDA for formation of Committee.....</i>	<i>1</i>
<i>Annexure C-2/2: Communication with DDA from YMC for formation of committee.....</i>	<i>6</i>
<i>Annexure C-2/3: Comments of YMC on DDA proposal.....</i>	<i>11</i>
<i>Annexure C-2/4: Comments of YMC on DDA proposal.....</i>	<i>16</i>
<i>Annexure C-2/5: Minutes of the review meeting with DDA on 23.09.2020.....</i>	<i>18</i>
<i>Annexure C-2/6: Minutes of the second review meeting with DDA on 30.09.2020.....</i>	<i>22</i>
<i>Annexure C-2/7: Removal of encroachments and demolition programmers on the floodplains.....</i>	<i>29</i>
<i>Annexure C-2/8: ATR of MOM on 23-9-2020 by YMC with DDA.....</i>	<i>30</i>
<i>Annexure C-2/9: Status of 'Restoration and Rejuvenation of River Yamuna floodplains' as of November'20.....</i>	<i>36</i>
<i>Annexure C-2/10: A report on DDA South Delhi Biodiversity Park.....</i>	<i>38</i>

Chapter 3: Quality of River water

<i>Annexure C-3/1: Water quality status of river Yamuna</i>	<i>62</i>
<i>Annexure C-3/2: Trend analysis by CPCP.....</i>	<i>63</i>
<i>Annexure C-3/3: Trend analysis by DPCC.....</i>	<i>69</i>
<i>Annexure C-3/4: Foam formation report by CPCB.....</i>	<i>78</i>
<i>Annexure C-3/5: Foam formation report by DPCC.....</i>	<i>84</i>

Chapter 4: Sewage Treatment Plants

<i>Annexure C-4/1: Minutes of review meeting with DJB held on 13.10.20.....</i>	<i>106</i>
<i>Annexure C-4/2: Minutes of meeting of YMC with PCCF and HoD of Forest on 10.11.20.....</i>	<i>117</i>
<i>Annexure C-4/3: The Delhi preservation of trees act 1994.....</i>	<i>122</i>
<i>Annexure C-4/4: Minutes of meeting with PMC of Rithala & Kondli.....</i>	<i>130</i>
<i>Annexure C-4/5: Section 69 of DJB act of 1998.....</i>	<i>145</i>
<i>Annexure C-4/6: Report of STPs & their design parameters.....</i>	<i>146</i>
<i>Annexure C-4/7: Upgradations plan of 16 STPs of DJB& estimated cost of upgradations Rs. 2127 crores.....</i>	<i>147</i>
<i>Annexure C-4/8: Analysis report of DPCC in respect of STPS for October 2020.....</i>	<i>149</i>

Chapter 5: Interceptor Sewer Project (ISP)

Annexure C-5/1: Minutes of second review meeting with DJB on 19.10.20.....152

Chapter 6: Repair and maintenance of Drains

Annexure C-6/1: Status report on drains in Delhi.....162

Annexure C-6/2: Report by DTU of plugged sewer lines of DJB.....165

Chapter 7: Industrial Pollution and CETPs

Annexure C-7/1: List of Industrial Areas.....171

Annexure C-7/2: Minutes of Meeting regarding Industrial pollution in Yamuna and functioning of CETPS.....173

Annexure C-7/3: ATR of Consent Mgmt. Cell of DPCC against water polluting industries/units.....182

Annexure C-7/4: Realization of Environmental Compensation.....183

Annexure C-7/5: Analysis report of DPCC laboratory of CETPs in Delhi for October 2020.....184

Annexure C-7/6: Efforts being made for filling of the vacant posts & strengthening of DPCC.....186

Chapter 8: Sewage and Fecal Sludge Management

Annexure C-8/1: SOP for collection, transportation & disposal of septage from households of unauthorized/unsewered colonies.....188

Chapter 9: Online Monitoring of STPs, CETPs and Yamuna

Annexure C-9/1: Report on OLMS calibration of STPs received from DJB.....194

Annexure C-9/2: Analysis report of STPs by DPCC.....196

Annexure C-9/3: OLMS status of CETPs in the month of September 2020.....198

Annexure C-9/4: CPCB Directions under Section 18(1) (b) of Water (Prevention & Control of Pollution) Act 1974 to Haryana.....199

Annexure C-9/5: CPCB Directions under Section 18(1) (b) of Water (Prevention & Control of Pollution) Act 1974 to UP.....202

Chapter 10: Use of treated Waste Water

Annexure C-10/1: Letter of CS, Delhi to Commissioner North DMC for use of treated waste water.....205

Annexure C-10/2: Minutes of review meeting taken by YMC with CEO DJB.....207

Annexure C-10/3: Details of treated effluent taken by various agencies from DJB STPs from May-20 to Sept-20.....213

Annexure C-10/4: ATR of DJB of 3rd meeting held on 28.10.20..... 215

Chapter 11: Industry interface

Annexure C-11/1: Minutes of meeting held with CII on 5.10.20 for CSR activities.....221

Annexure C-11/2: Minutes of meeting held with FICCI on 20.10.2020.....227

Chapter 12: State of Haryana and pollution of the River Yamuna

Annexure C-12/1: Minutes of meeting held with Haryana on 06.07.2020230

Chapter 13: State of Uttar Pradesh and Pollution of the Yamuna

Annexure C-13/1: Letter to Chief Secretary (UP) regarding NGT directions on drains.....241

Annexure C-13/2: Minutes of meeting dt. 7.1.20 with Principal Secretary (UD) and Principal Secretary (E&F) of U.P.....244

Annexure C-13/3: Letter dt. 21.9.20 to PS (I&FC) regarding violation of NGT order.....249

Annexure C-13/4: Letter dt. 1.10.20 to Chief Secretary (UP) for status of projects to control pollution in Yamuna.....252

Annexure C-13/5: PPT of meeting with Chief Secretary (UP) on 28.9.20.....255

Annexure C-13/6: Field inspection report on STPs/CETPs/ETPS by Technical Expert Advisor of YMC.....263

Annexure C-13/7: Report of CPCB on UP issue of Yamuna pollution.....267

Annexure C-13/8: Compliance report of the directions issued by YMC in the meeting on 28.9.20.....268

DELHI DEVELOPMENT AUTHORITY

In exercise of the powers conferred by the Section 57 of the Delhi Development Act, 1957 (61 of 1957), the Delhi Development Authority hereby makes the following regulations, for constitution of "River Yamuna Management Committee".

RIVER YAMUNA MANAGEMENT COMMITTEE

The River Yamuna along with its floodplain is a crucial natural resource of Delhi together with the ridge and plays a vital role in determining Delhi's history. Traces of the earliest civilization in Delhi were found along the river. Other than various ecological functions, this area is significant for the socio-cultural sentiments of the people of the city.

However, the river at present is in a state of plight because of various anthropogenic activities. Effluents from 22 major drains are being discharged into the river and untreated sewage through storm water outfalls and dumping of industrial waste poses a major health and environmental hazard. In order to ensure the restoration and management of floodplains of River Yamuna in Delhi, and undertaking other activities, Delhi Development Authority (DDA), in exercise of powers conferred under Section 5A of the Delhi Development Act does hereby set up "**River Yamuna Management Committee**".

Definitions

In these regulations unless there is anything inconsistent with the context or meaning:

- 'Act' means the Delhi Development Act 1957 (61 of 1957).
- 'Authority' means the Delhi Development Authority constituted under Section 3 of the Act.
- 'DJB' means Delhi Jal Board
- 'GNCTD' means Government of National Capital Territory of Delhi
- 'Governing Board' means Governing Board of the Committee
- 'Government' means Government of India
- 'MCD' means Municipal Corporation of Delhi
- 'Member' means Member of the Committee
- 'Member Secretary' means Member Secretary of the Committee
- 'NGO' means Non-Governmental Organisation
- 'Rules' means Rules of the Committee

01. Name

The name of the Committee shall be "**River Yamuna Management Committee**"- RYMC

02. Aims and Objectives

The aim is to ensure conservation, protection, restoration and rejuvenation of the flood plains of River Yamuna and to promote and secure the requisite activities in/on/along the river, its floodplains, and its watershed, within the National Capital Territory, Delhi. The objectives of the Committee shall be:

- i. To formulate such policies, norms, guidelines on the floodplains and its watershed which aims:
 - a. To restore, protect and conserve the riverine ecosystem and its functions such as flood control, habitat protection, ground water recharge, etc.
 - b. To develop and rejuvenate floodplains with mosaic of wetlands, preserving aquatic life and aquatic resources besides protection of siltation of reservoirs, recharging ground water, water purification etc.
 - c. To provide recreational and cultural facilities while making the river physically and visually accessible to the people.
 - d. To protect the floodplain ecosystem from adverse impact of development.
 - e. To promote eco-tourism.
 - f. To ensure protection from encroachments/illegal activities etc. and oversee reclamation of land on the floodplains of River Yamuna.
 - g. To devise strategies for phytoremediation of drains at the river mouth locations.
- ii. To coordinate for the evaluation of impacts on the health of the floodplains due to various projects planned across them.
- iii. To promote education on environmental awareness and nature conservation in coordination with other stake holders for citizens and nature enthusiasts through various departments and NGOs.
- iv. To promote and complement practices of augmentation of water and cleaning of water of the river as well as feeder drains through various departments and NGOs.
- v. To make the Yamuna floodplains encroachment free and to develop and manage it through various departments, land owning agencies, NGOs in ecologically sustainable manner.

Draft

03. Constitution of the River Yamuna Management Committee (RYMC)

The Hon'ble Lieutenant Governor of Delhi shall be the Chairman of the River Yamuna Management Committee. RYMC shall comprise of the following members:-

Chief Secretary, Delhi	Member
Vice Chairman, DDA	Member
Principal Secretary(Irrigation) , Uttar Pradesh Government	Member
Commissioner, Delhi Police	Member
Commissioner, North Municipal Corporation of Delhi	Member
Commissioner, East Municipal Corporation of Delhi	Member
Commissioner, South Municipal Corporation of Delhi	Member
Chief Executive Officer, Delhi Jal Board	Member
Secretary/Additional Chief Secretary/ Principal Secretary , Environment Department, GNCTD	Member
Secretary/Additional Chief Secretary/ Principal Secretary, Irrigation & Flood Control, GNCTD	Member
Representative of Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India	Member
Representative of Central Ground Water Board	Member
Engineer Member, DDA	Member
Finance Member, DDA	Member
Principal Commissioner (Horticulture & Landscape), DDA	Member Secretary

The Committee can co-opt experts in the field of Water Management, Solid Waste Management/ Environmental Engineering, Environmental Planning, Environmental Impact Assessment, Ecology, Botany, Biodiversity, Hydrology, Landscape Architecture or any such field relevant to the ecology of the floodplains.

04. Functions

- A.** To achieve the aims and objectives of the Committee as defined in clause (02), the Committee shall perform following functions:-

a. Coordination

The Committee will coordinate with DDA, DJB, MCDs, GNCTD, Delhi Police, U.P. Irrigation Department, NGOs, interest groups, experts in the respected field and other stakeholders to achieve its aims and objectives. It will coordinate so as to ensure that various departments and land owning agencies on the River Yamuna's floodplains work in harmonious manner to develop and maintain the river and its floodplains. It will also coordinate to ensure that there is periodical monitoring of quality of drains and river water.

b. Advisory

The Committee shall advise various organizations and stakeholders:-

- i. For undertaking scientific studies in respect of impact on environment, hydrology and ecology of the floodplains.
- ii. For steps to be taken on an overall level to safeguard the riverine ecosystems and the entire floodplain ecology.
- iii. To ensure management and maintenance of the wetlands created along with the floodplain vegetation to reduce sedimentation.
- iv. To prepare Standing Operating Procedure (SOP) including safety measures for maintenance and management of floodplains.
- v. The committee will also advise the land owning agencies for the management and upkeep of the Yamuna floodplains including Ghats and surrounding areas through public participation, outsourcing, Public Private Partnership (PPP mode) and similar other models.
- vi. For organizing paid public events in the greenway areas to generate revenues for the substance of management and maintenance of the floodplains.

c. Supervisory

The Committee shall supervise the functioning of all departments which affect river and its floodplains. It will develop mechanisms for monitoring of activities of departments for maintenance of all spaces and facilities created like tracks, shelters, boardwalks, decks as a connect to the river, management and cleanliness of Ghats besides River Yamuna floodplains. The Committee will supervise setting up, upgradation and functioning of STPs/ETPs by various departments to ensure that public spaces, drains are clean.

- B.** The Committee may constitute various sub-committees to coordinate and

supervise the various specific aspects of management and maintenance of floodplains, comprising of representative of various stake holding departments and experts from the relevant fields.

05. Meetings of the Committee

The meetings shall be held every six month or as and when directed by the Chairman. The Member Secretary shall keep the records of the meetings and take the required follow up actions.

06. Powers of the Chairman

The Chairman shall have all the powers to take necessary steps as he may deem fit within the framework of these regulations. If at any time, the Chairman is satisfied that circumstances exist which render it necessary for him to take immediate action, he may pass such order/directions as the circumstances appear to him to require.

07. Honorarium

The non –official members will be given an honorarium as may be decided from time to time for attending the meeting of the Committee. Experts co-opted to assist the Committee or a subcommittee constituted by it, will also be given an honorarium.

08. Power to Incur Expenses& Operation of Accounts

The Committee shall have the power to sanction expenses from time to time and the operational activities, account and balance sheet shall be operated by an officer so authorized by the Committee.

09. Disputes

The decisions of the Lt. Governor, Delhi who is the Chairman of the Committee on any dispute shall be final.

10. Legal Proceedings

No legal action against the Committee shall lie in any Court outside the jurisdiction of Courts/ Tribunals situated in Delhi.

11. Applicability of Delhi Development Act, 1957

The provisions of the Delhi Development Authority Act, 1957 as amended from time to time will apply.

Annexure C-2/2

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/497

Dated: 8.10.2020

The Vice Chairman,
Delhi Development Authority,
Vikas Sadan, INA, Delhi:

Subject: Setting Up of a Standing Committee under the DDA Act 1957 to provide a focus for all activities that impact on the Rejuvenation, Restoration and Abatement of Pollution in the River Yamuna, at Delhi.

The Yamuna monitoring committee (YMC) is thankful for sharing the draft proposal to set up the River Yamuna Management committee (RYMC). It largely meets the objectives which the NGT had been alluding to and it is hoped that such a body would be able to give the kind of visionary direction that is needed to restore the River Yamuna into what was once a clean flowing river. It is necessary to recapitulate in brief how the need for a focal point came into focus under the National Green Tribunal and why over and above everything else, unless the river itself comes into focus, no amount of back end work on cleaning the drains would result in the level of impact needed. We are therefore putting things into context although everything in much greater detail is available on the YMC's website which we once again request you to visit.

<https://yamuna-revival.nic.in>,

We are providing two attachments which contain comments from both the members of YMC which may kindly be considered in the spirit in which they have been made. Unless the RYMC has a larger vision which goes to the root of several different kinds of pollution defiling the river, it may not be able to achieve the objective of restoring and rejuvenating the river. In the following paragraphs some of the major issues are referred to to show that the cleaning of the river would require enormous executive action; the floodplain and the body of river water cannot be separated from the drains that discharge effluents into the river. Today these are among the filthiest viewed from the standards of river water quality prescribed by the Central Pollution Control Board.

The National Green Tribunal (NGT) had in a series of orders directed that the DDA may set up a special purpose vehicle or a society or any other high-level body which can give sustained direction to the protection, restoration, rejuvenation of the river and its floodplains and cut down unacceptable pollution in the river Yamuna at Delhi. In a journey of over 1270 km from Yamnotri to Prayagraj the river passes through Delhi which though the distance is only 54 km, (4% of the river) accounts for more than 75% of the pollution in the river Yamuna.

The chief reasons for the pollution are because of vast quantities of untreated sewage which are discharged from colonies and dwelling houses which have no connection to a sewerage system and allow the sewage to go into storm water drains whether directly or indirectly. The second reason is the discharge of industrial effluent from industries in conforming and nonconforming areas – many of which are household industries, within Delhi. The third factor is on account of huge quantities of polluted wastewater entering the river from the Shahdara drain which is fed by three drains from Uttar Pradesh and the Najafgarh drain which receives effluent from different townships of Haryana.

The construction of STPs, conveyance systems and septage management in different townships in both the adjoining states is being monitored by the Yamuna Monitoring Committee (YMC) and while there is progress, it is incremental much too slow to have an impact on the quality of water reaching the major drains.

Within Delhi, 22 drains and behind them hundreds of smaller drains carry large quantities of effluent when in fact storm water drains should not be carrying anything except rainwater. Interception of the sewage and its treatment is the responsibility of the Delhi Jal Board but for one reason or the other the progress has not been commensurate with the time and resources spent on building sewage treatment plants, the interceptor project and ensuring that all households have a collective sewerage system. Truncating the jurisdiction of drains of different sizes with shared responsibility between the municipal corporations, the PWD, the Irrigation and Flood control Department of GNCT besides some other drain- owning agencies in Delhi (Cantonment Board, NDMC, DSIIDC, NTPC, DDA) has provided a perfect alibi for making the storm water drains into no man's land and to make them into conduits for carrying sewage and prohibited industrial discharge into the Yamuna.

One of the biggest problems of managing the river is the absence of environmental flow for a major portion of the year. The National Institute of Hydrology under the Ministry of Jal Shakti has at the instance of the YMC and fully supported by the National Green Tribunal, finally produced an exhaustive report which shows that without environmental flow being maintained no amount of cleaning is going to enable the river to perform its ecological functions. To remedy this situation, more water would need to be provided from upstream and there is enough data to show that the Supreme Court order directing release of 10 cumecs at Hathanikund barrage was probably not based upon any scientific principle. In the opinion of the NIH that quantum of water is entirely insufficient to maintain the environmental flow and has instead suggested a minimum of 23 cumecs during the lean season. This needs to be addressed by the Ministry of JS and requires a direction which emanates from the principle that the river flowing through the capital city which belongs to the whole of India must maintain an environmental flow to be able to recharge and rejuvenate itself. But because the states zealously guard their share of Yamuna water, it has not been possible to even start a dialogue which requires a political understanding. The subject of environmental flow is perhaps the most important from the point of view of rejuvenating the river and therefore should find place in the terms of reference of the proposed committee- RYMC.

The DDA is the custodian of the floodplains but these are integral to the river and the two portions must be seen together. The river can never be cleaned or kept free of daily pollution unless there is ownership for the quality of river water. In other words while different arms of the Government of Delhi, the local bodies have responsibilities, unless there is a stake in keeping the river clean and flowing, whatever efforts are made will never coalesce. The proposal to have an RYMC is therefore important as it will provide a focus for whatever activities are undertaken keeping the River Yamuna at the forefront.

The attached comments of the YMC have been given in the interest of the proposal moving ahead quickly. The issues that have been raised may please be taken on board as we feel there is a need for the RYMC and its organs to exercise executive authority promptly and not have to wait for bi- annual meetings of the committee.

First, there is need to involve the citizens of Delhi by involving the public representatives and civil society. How the voice of the public would be heard needs to be thought through. This is being stated based on numerous representations made by different R.W.A.'s before the YMC whenever they are directly affected.

Second, there is a need to have three different subcommittees which have a cross-section of government and non-government experts who have the ability to not just give advice but to raise issues and seek intervention. Unless the subcommittees are serviced properly they will quickly degenerate into talk-shops.

Third, there is a need to have a Governing Board or Board of Management chaired by the Vice-chairman DDA to meet once every two months when the inputs from the subcommittees can be listened to and given a direction. The Board of Management to be headed by the Vice-Chairman needs to be supported by a permanent dedicated secretariat which can work with the subcommittees, collect their recommendations and see that these are taken forward without necessarily requiring the approval of the main RYMC. In effect we are suggesting a three tier structure which is necessary as the requirements are multifarious cut across policy, and executive action and inputs from the sub-committees.

We have also recommended that the Board of Management/Governing Body should bring out a comprehensive paper on all matters that impact on the quality of river water, besides the progress made and challenges that have to be overcome before each meeting of the RYMC. Such a paper should be placed in public domain with an opportunity for feedback. If that is done the RYMC will be able to focus on what really matters to citizens. Otherwise it may become dysfunctional as has happened to earlier high powered committees for the River Yamuna.

To flesh out our views, which are being made based on YMC's experience, the following three sub-committees may be needed for areas which matter the most for river restoration and rejuvenation: –

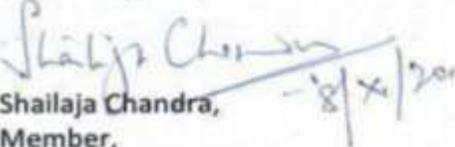
1. Restoration and rejuvenation committee to take care of all matters connected with biodiversity parks, wetlands, public footfalls in areas where this is permissible, regulation of entry, encouragement to birding activity, involvement of students,

building public awareness. Representatives of Universities, apex level educational institutions, the Education Department of NCT of Delhi, CII, and FICCI should be represented here.

2. Committee to oversee enforcement and prevention of dumping of solid waste, discharge of effluent at the mouth of the river, prevention of prohibited activity, undertaking surveillance. The police department, the MCDs and the Delhi Pollution Control Committee (DPCC) should be represented here. Oversight of the removal of encroachment and regulation of cultivation activity on the floodplain should be entrusted to this Committee. The Government of Uttar Pradesh, Irrigation department needs also to be represented along with the law officer of DDA as vast tracts of land are still under litigation. Ideally the floodplain should not be having any temporary or permanent activities which are detrimental to the river.
3. Committee on Pollution Abatement: This committee should have representatives from DJB, IFCD, Municipal corporations and Industries to monitor the volume and quality of waste water entering the river Yamuna through 22 drains and the progress of various projects under implementation and those that need to be undertaken including resolving issues of land allotment for STPs. This sub- committee can suggest measures for phyto/bio-remediation through constructed wetlands to be established, at the mouth of the drains before they join the Yamuna.

Kindly see the two attachments for specific comments on the draft proposal and keep us apprised of developments. These views have not been put forth before the National Green Tribunal and are based on the YMC's experience. Decisions will no doubt be taken in public interest keeping in view the NGT's comprehensive directions. The progress made will be reported in the forthcoming report of the YMC to be placed before the NGT in November 2020.

Regards,


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

DELHI DEVELOPMENT AUTHORITY

In exercise of the powers conferred by the Section 57 of the Delhi Development Act, 1957 (61 of 1957), the Delhi Development Authority hereby makes the following regulations, for constitution of "River Yamuna Management Committee".

RIVER YAMUNA MANAGEMENT COMMITTEE

The River Yamuna along with its floodplain is a crucial natural resource of Delhi together with the ridge and plays a vital role in determining Delhi's history. Traces of the earliest civilization in Delhi were found along the river. Other than various ecological functions, this area is significant for the socio-cultural sentiments of the people of the city.

However, the river at present is in a state of plight because of various anthropogenic activities. Effluents from 22 major drains are being discharged into the river and untreated sewage through storm water outfalls and dumping of industrial waste poses a major health and environmental hazard. In order to ensure the restoration and management of floodplains of River Yamuna in Delhi, and undertaking other activities, Delhi Development Authority (DDA), in exercise of powers conferred under Section 5A of the Delhi Development Act does hereby set up "**River Yamuna Management Committee**".

Definitions

In these regulations unless there is anything inconsistent with the context or meaning:

- 'Act' means the Delhi Development Act 1957 (61 of 1957).
- 'Authority' means the Delhi Development Authority constituted under Section 3 of the Act.
- 'DJB' means Delhi Jal Board
- 'GNCTD' means Government of National Capital Territory of Delhi
- 'Governing Board' means Governing Board of the Committee
- 'Government' means Government of India
- 'MCD' means Municipal Corporation of Delhi
- 'Member' means Member of the Committee
- 'Member Secretary' means Member Secretary of the Committee
- 'NGO' means Non-Governmental Organisation
- 'Rules' means Rules of the Committee

01. Name

The name of the Committee shall be “**River Yamuna Management Committee**”- RYMC

02. Aims and Objectives

The aim is to ensure conservation, protection, restoration and rejuvenation of the flood plains of River Yamuna and to promote and secure the requisite activities in/on/along the river, its floodplains, and its watershed, within the National Capital Territory, Delhi. The objectives of the Committee shall be:

- i. To formulate such policies, norms, guidelines on the floodplains and its watershed which aims:
 - a. To restore, protect and conserve the riverine ecosystem and its functions such as flood control, habitat protection, ground water recharge, etc.
 - b. To develop and rejuvenate floodplains with mosaic of wetlands, preserving aquatic life and aquatic resources besides protection of siltation of reservoirs, recharging ground water, water purification etc.
 - c. To provide recreational and cultural facilities while making the river physically and visually accessible to the people.
 - d. To protect the floodplain ecosystem from adverse impact of development.
 - e. To promote eco-tourism.
 - f. To ensure protection from encroachments/illegal activities etc. and oversee reclamation of land on the floodplains of River Yamuna.
 - g. To devise strategies for phytoremediation of drains at the river mouth locations.
- ii. To coordinate for the evaluation of impacts on the health of the floodplains due to various projects planned across them.
- iii. To promote education on environmental awareness and nature conservation in coordination with other stake holders for citizens and nature enthusiasts through various departments and NGOs.
- iv. To promote and complement practices of augmentation of water and cleaning of water of the river as well as feeder drains through various departments and NGOs.
- v. To make the Yamuna floodplains encroachment free and to develop and manage it through various departments, land owning agencies, NGOs in ecologically sustainable manner.

Draft

03. Constitution of the River Yamuna Management Committee (RYMC)

The Hon'ble Lieutenant Governor of Delhi shall be the Chairman of the River Yamuna Management Committee. RYMC shall comprise of the following members:-

Chief Secretary, Delhi	Member
Vice Chairman, DDA	Member
Principal Secretary(Irrigation) , Uttar Pradesh Government	Member
Commissioner, Delhi Police	Member
Commissioner, North Municipal Corporation of Delhi	Member
Commissioner, East Municipal Corporation of Delhi	Member
Commissioner, South Municipal Corporation of Delhi	Member
Chief Executive Officer, Delhi Jal Board	Member
Secretary/Additional Chief Secretary/ Principal Secretary , Environment Department, GNCTD	Member
Secretary/Additional Chief Secretary/ Principal Secretary, Irrigation & Flood Control, GNCTD	Member
Representative of Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India (Now Ministry of Jal Shakti)	Member
Representative of Central Ground Water Board	Member
Engineer Member, DDA	Member
Finance Member, DDA	Member
Principal Commissioner (Horticulture & Landscape), DDA	Member Secretary

The Committee can co-opt experts in the field of Water Management, Solid Waste Management/ Environmental Engineering, Environmental Planning, Environmental Impact Assessment, Ecology, Botany, Biodiversity, Hydrology, Landscape Architecture or any such field relevant to the ecology of the floodplains.

04. Functions

A. To achieve the aims and objectives of the Committee as defined in clause (02), the Committee shall perform following functions:-

a. Coordination

The Committee will coordinate with DDA, DJB, MCDs, GNCTD, Delhi Police, U.P. Irrigation Department, NGOs, interest groups, experts in the respected field and other stakeholders to achieve its aims and objectives. It will coordinate so as to ensure that various departments and land owning agencies on the River Yamuna's floodplains work in harmonious manner to develop and maintain the river and its floodplains. It will also coordinate to ensure that there is periodical monitoring of quality of drains and river water.

b. Advisory

The Committee shall advise various organizations and stakeholders:-

- i. For undertaking scientific studies in respect of impact on environment, hydrology and ecology of the floodplains.
- ii. For steps to be taken on an overall level to safeguard the riverine ecosystems and the entire floodplain ecology.
- iii. To ensure management and maintenance of the wetlands created along with the floodplain vegetation to reduce sedimentation.
- iv. To prepare Standing Operating Procedure (SOP) including safety measures for maintenance and management of floodplains.
- v. The committee will also advise the land owning agencies for the management and upkeep of the Yamuna floodplains including Ghats and surrounding areas through public participation, outsourcing, Public Private Partnership (PPP mode) and similar other models.
- vi. For organizing paid public events in the greenway areas to generate revenues for the substance of management and maintenance of the floodplains.

c. Supervisory

The Committee shall supervise the functioning of all departments which affect river and its floodplains. It will develop mechanisms for monitoring of activities of departments for maintenance of all spaces and facilities created like tracks, shelters, boardwalks, decks as a connect to the river, management and cleanliness of Ghats besides River Yamuna floodplains. The Committee will supervise setting up, upgradation and functioning of STPs/ETPs by various departments to ensure that public spaces, drains are clean.

B. The Committee may constitute various sub-committees to coordinate and

supervise the various specific aspects of management and maintenance of floodplains, comprising of representative of various stake holding departments and experts from the relevant fields.

05. Meetings of the Committee

The meetings shall be held every six month or as and when directed by the Chairman. The Member Secretary shall keep the records of the meetings and take the required follow up actions.

06. Powers of the Chairman

The Chairman shall have all the powers to take necessary steps as he may deem fit within the framework of these regulations. If at any time, the Chairman is satisfied that circumstances exist which render it necessary for him to take immediate action, he may pass such order/directions as the circumstances appear to him to require.

07. Honorarium

The non –official members will be given an honorarium as may be decided from time to time for attending the meeting of the Committee. Experts co-opted to assist the Committee or a subcommittee constituted by it, will also be given an honorarium.

08. Power to Incur Expenses& Operation of Accounts

The Committee shall have the power to sanction expenses from time to time and the operational activities, account and balance sheet shall be operated by an officer so authorized by the Committee.

09. Disputes

The decisions of the Lt. Governor, Delhi who is the Chairman of the Committee on any dispute shall be final.

10. Legal Proceedings

No legal action against the Committee shall lie in any Court outside the jurisdiction of Courts/ Tribunals situated in Delhi.

11. Applicability of Delhi Development Act, 1957

The provisions of the Delhi Development Authority Act, 1957 as amended from time to time will apply.

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

Comments on DDA's proposal to set up RYMC

At the outset the DDA deserves to be complimented for coming up with a draft of the Committee proposed under section 5A of the DDA Act 1957 for river rejuvenation. The terms of reference are quite comprehensive and the Committee constituted under the Chairmanship of the Lt Governor gives the Committee, the statutory backing and administrative authority to be able to plan and undertake the onerous task of river rejuvenation. I have, however, the following comments to make for consideration of the DDA:

1. As the name suggests, the proposed committee to be headed by the Lt Governor, is for the river management which includes its rejuvenation and regulating all the activities that impact the river today. However, in 9th line under the heading "River Yamuna Management Committee", the objective of the Committee is "*restoration and management of the floodplains*". Though it is quite understandable for the DDA to limit itself to the floodplains protection and management, with Lt Governor being the head of the Committee, the objective should be restoration/rejuvenation of the river.
2. There are no non-officials in the Committee and the Committee only has senior functionaries of DDA, NCT Delhi and Govt of India (MoJS). Also the Committee does not have any representation from Institutions like IIT Delhi, NIH Roorkee and NEERI. It is suggested that the DDA may consider having institutional representations from some of these institutes and even eminent scientists, Wetlands experts, Hydrologists on the Committee.
3. There are 17 industrial clusters which have water polluting industries. In addition there are 11 clusters which are claimed to be having non-water Polluting industries but may also be contributing to a smaller degree to the pollution in the drains. Besides, there are more than 51,000 industries in residential/non-conforming areas which release industrial effluent, some of which can be highly toxic into the drains which eventually meet Yamuna. It is, therefore, essential that Secretary/Commissioner industries is represented on the RYMC.

4. At present there is no unified approach to river Yamuna rejuvenation. While the DJB is concerned with trapping of sewage, its conveyance to the STPs and setting up STPs, IFCD limits itself to flood control measures and dredging/de-silting of drains that it controls. DDA on the other hand has responsibility for control and regulation of activities on the floodplain of the river. Municipal corporations are responsible only for sanitation and dredging/de-silting the drains under their control. Different departments, therefore, are working in silos. There is no agency/department which is responsible for monitoring the health of the river and to see whether the activities/projects that different departments are implementing will have a cumulative impact on bringing about improvement in the quality of water in the river. It is, therefore, suggested that RYMC may take the responsibility for monitoring the health of the river and for this purpose bring about a six monthly report to be put in public domain, on the issues that confront river rejuvenation and improvement, if any, that may have taken place due to the efforts of different departments/authorities. This report should be available in public domain.

B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

Annexure C-2/5

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8 INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/499

Dated: 15.10.2020

Subject: Minutes of the review meeting held by YMC with DDA to review the Progress of various projects and flood plain related activities. Date of meeting 23.09.2020.

The Yamuna Monitoring Committee (YMC) held a meeting through Video Conferencing with the officers of DDA on 23rd September 2020 to review the progress of various projects and flood plain related activities undertaken by DDA. Following officers attended the meeting:

1. Vice Chairman, DDA.
2. Principal Commissioner (Hort., Personnel, Landscape), DDA.
3. Commissioner (LM), DDA.
4. Chief Engineer (EZ), DDA.

This meeting was the first meeting in a series of three meetings suggested by YMC to enable the reviews to focus on specific activities which are being monitored from October 2018. The review focused on:

- i. Issue of demarcation, surveillance/ fixing bollards/ CCTV cameras, placement of security guards and pursuing cases of transgression with the state transport authorities of GNCT and neighbouring states.
- ii. Repossession of land occupied by agriculturists or status of disputes with U.P. Government prevailing since 1972 and payment of Rs 35 Crores for rejuvenation activities.

At the outset of meeting, VC DDA outlined several activities undertaken on the Yamuna Flood Plains and steps taken for the protection of Flood Plains. Following issues were discussed and a detail briefing was given to the YMC.

1. Demarcation of Floodplains
 - a. The demarcation of one in 25 years flood plains of River Yamuna from Wazirabad to Jaitpur on both the banks has been done by installation of bollards duly marked with

GPS co-ordinates. On both banks of the River 591 nos. of bollards have been installed.

- b. For easy identification of the floodplain area from a distance, the work of installation of 180 nos. of flags posts is under progress. In addition, 100 nos. of RCC posts for flags have been constructed all along the flood plains. The work is likely to be completed by 31.10.2020.

2. Protection of Floodplains

- a. The work of installation of signage boards notifying the Yamuna flood plain area, No Malba Zone, No Dumping Zone etc. is under progress. These boards are being installed at prominent locations at the entry points contiguous to the entry points to the flood plains and adjacent to the main roads. At the moment, the work of installation of 30 nos. of signage boards is in progress and is likely to be completed by 15.10.2020.

- b. The work of installation of 81 nos. of CCTV cameras at 27 nos. of locations from Wazirabad to Jaitpur to check the illegal dumping of malba into the Yamuna Flood is under progress. Out of total 81 cameras, 48 nos. of cameras at 16 locations have been installed. YMC was also apprised that BSES Ltd. has refused power connection to provide power for CCTV cameras at a number of locations. Therefore, it has since been decided to make arrangement for solar energy to operate the CCTV cameras in such locations. The work is likely to be completed by 15.10.2020.

- c. At present, 120 nos. of Security Guards have been deployed to keep round the clock vigil and surveillance in three shifts along with 4 nos. of patrolling vehicles to check illegal dumping of malba and to prevent any encroachments.

- d. Till date, 213 nos. of challans have been issued and a sum of Rs. 15,15,000/- has been realized from violators who were dumping malba on flood plain areas. A large number of reminders were issued to State Transport Authorities to cancel the registration of vehicle owners who refused to deposit the fine. YMC suggested that the matter may be taken up at Government level with the State Transport authorities for cancellation of registration of vehicles for non-compliance with orders to deposit the fine. VC DDA assured YMC that DDA will take up the matter with the respective Governments. YMC requested the VC DDA to furnish the list of the cases pending with State Transport Authorities so the Committee could also

simultaneously write to the state authorities as such measures will deter future miscreants.

- e. YMC was informed that there is reduction in cases of illegal dumping of malba etc. after various steps like the installation of CCTV and deployment of Security Guards etc. Had been instituted by DDA. The YMC appreciated this and requested DDA that an analysis of year-wise incremental progress made may be provided.

3. Eviction of Encroachment

- a. It was intimated that some encroachments have taken place at Khizrabad area and steps have been taken by DDA to evict the encroachers. VC DDA had taken up the matter with the Commissioner Delhi Police for police backup for the eviction process. Accordingly, three demolition programmes have been fixed.
 - b. A note on Khizrabad may be sent with all plans for containment of the spread of human habitation and activity. What is meant by boundary wall may be described in a separate note on "plans to restore the flood plain area at Khizrabad, present status of removal of encroachment and protection of the area."
 - c. On the issue of eviction of encroachment in floodplains for the area used for agriculture purpose, YMC was briefed that 378.36 ha. of land has been cleared of encroachments. Total land to be reclaimed from the encroachment due to agricultural use in Yamuna Flood plain is 933.3 ha., which shall be got vacated to synchronise with the execution of various rejuvenation projects under execution in a phased manner. Approximately 100 ha. of land is proposed to be cleared of the encroachments in the next three months.
- ### 4. The process of retrieving/re-possessing the land back from various Departments viz. DMRC, NHAI, PWD etc. to whom DDA allotted the land in Flood Plain area on temporary basis has already started. Two plots of land measuring 12.11 Ha have been taken from DMRC. VC DDA informed the YMC that many development projects taken up by agencies like DMRC, NCRTC etc require land on temporary basis for the purpose of projects where suitable land is not available elsewhere. However, it is now being ensured that all the agencies restore the floodplains area in the form as it existed when the possession was given to the agencies before handing it over back to DDA. YMC asked that a list of such areas given to various agencies may be made available to it.

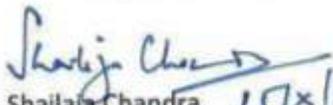
5. YMC was briefed about the status of release of fund by UP Irrigation Deptt. VC DDA briefed about the communication made with the UP Govt. for release amount. A part of total amount of 35 crores is expected to be released by the UP Government.

6. Court Cases:

Yamuna Monitoring Committee asked that the Court case between UP and DDA needs to be followed on priority as the case has been dragging in the Court for almost 50 years now and cultivation goes on contrary to NGT orders.

At the end of meeting, the Yamuna Monitoring Committee expressed satisfaction at the progress/efforts made by DDA on the above issues but it asked that the tempo of floodplain protection and removal of encroachments may not be allowed to slacken.

A status report on the progress achieved on the different activities listed above and other related activities impacting on the flood plain may be submitted to the YMC by 15.11.20 for incorporation in the forthcoming report of the YMC due to be submitted to the NGT by 30.11.20.


Shailaja Chandra, 15/11/20.
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. VC, DDA.
2. Pr. Commissioner (Personnel, Horticulture & Landscape).

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Annexure C-2/6

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/ 502

Dated: 15.10.2020

Minutes of the second review meeting held by YMC with DDA post May 2020 to review the Progress of 10 Rejuvenation Projects undertaken by DDA. Date of meeting 30.09.2020.

Subject: Restoration of the Yamuna Flood plains through wetlands and biodiversity development.

A review meeting was held via video conferencing between Yamuna Monitoring Committee (YMC) and the officers of DDA to discuss the progress of ten projects of biodiversity and wetland development on the floodplains of river Yamuna. This was the second meeting in the series of the meetings suggested by YMC after the last orders of NGT dated 6.7.20.

The following attended the Video Conference

1. Vice Chairman, DDA
2. Principal Commissioner (Hort. and LS)
3. Chief Engineer (East Zone)
4. Additional Commissioner (LS)
5. Advisor

At the outset VC DDA briefed about the progress of the projects, which are at different stages of execution and completion. Yamuna Monitoring Committee expressed satisfaction over the progress of ongoing work and noted the timelines for completion of other projects where work was still to commence. A detailed briefing for each project was given by PC (Hort. & LS) and the Chief Engineer (EZ) in the following order:

01: Area 1 & Area 2 Old Railway Bridge to ITO Barrage (Eastern Bank) and NH24 to DND Flyway (Western Bank)

- i. It was informed that the works in the area are in full swing. The site works were delayed for a considerable period due to the pandemic and later due to monsoon floods but have since resumed.
- ii. In Area 1, the civil works that include creation/ revival of wetlands, formation of landforms (mounds), circulation (walkways, cycle tracks and trails), parking area, greenway area development with the seating areas etc. will be completed by 15.10.2020. Horticulture works which include plantation of riverine grasses will be

completed by 31.10.2020 as the work was delayed due to encroachments which have since been removed on 09.09.2020 and 10.09.2020.

- iii. In Area 2, the civil works including creation/ revival of 4 number of wetlands (3 completed, one under progress), circulation (walkways, cycle tracks and trails), parking area, greenway area development and horticulture works which include plantation of riverine grasses and trees including public interaction areas shall be completed by the end of Oct'20.

02: Area3: DND to proposed Kalindi By-Pass (Western Bank)-Khijrabad.

- i. Prof. Babu explained to the Committee that the civil works of one constructed wetland has been completed. It can treat 20-30MLD of waste and would start functioning by the end of this month.
- ii. The second wetland designed to treat 80 MLD of waste water is under construction and would be ready in the next two to three months.
- iii. Encroachments have been removed by DDA near Dhobi Ghat and land measuring approximately 8 acres has been repossessed by the DDA. It would be restored and treated in the next three months.
- iv. Other than the constructed wetlands, 25,000 number of trees; 6 feet high of 35 different tree species have been planted in the area recently in coordination with the Times of India Group and through public participation.
- v. Yamuna Monitoring Committee wanted to know whether it is proposed to complete the civil work of the constructed wetlands within next 2-3 months so that the treatment of waste water through functioning of wetlands commences. Prof Babu clarified that in the next 2-3 months the constructed wetlands will actually start functioning and treating about 1500 MLD of waste water received through various drains. He will, however, get the flow data validated before submitting the next status report to YMC. The flow however will get measured YMC agreed to visit the site in early November to view the progress achieved. YMC also desired that a note on the progress achieved be submitted by 15.11.20 for incorporation in the next report of the YMC.

03:Area 4:Old Railway Bridge to ITO Barrage (Western Bank)

It was informed that the project will be tendered on 1st of October for the civil works which includes creation/ revival of wetlands, circulation (walkways, cycle tracks and trails), amphitheatre, parking area, and treatment of water by phyto-remediation method in respect of the Shantivan drain. Horticulture works which would include plantation of riverine grasses and trees and developing greenways with areas set aside for public would also start and would take 09 months to be completed.

04: Area 5:Wazirabad barrage to ISBT Bridge (Eastern Bank) near Garhi Mandu and Usmanpur villages.

- i. The proposal was explained by Prin. Comm. (Hort. & LS),DDA and it was informed that the project has been approved in the Screening Committee and that the tendering of works will be done in the last week of October 2020.
- ii. It was intimated that the area has a number of wetlands being developed as treatment wetlands, retention basins along with the development of a greenway to enhance public interface.

05. Area 6: ITO Barrage to NH24 (Eastern Bank)

- i. It was informed that the project has been approved in the Screening Committee. The components of the project were discussed. The site was proposed with the creating a system of wetlands by deepening existing depressions for the augmentation of rain and flood water during the monsoon season. The high level areas on the site are designed for public interface with the connect to the river via elevated board walks in eco-friendly material for connect to the river as the site inundated during most of the period of time. But the extent of the boardwalks has been reduced to rationalise the project cost. The revised estimates have been prepared accordingly and the tendering of works will be called in last week of October 2020.

06. Area 7: Wazirabad barrage to Old Railway Bridge (Western Bank)

- i. It was informed that the plan for the area has been approved in the Screening Committee and DDA is taking up 5 Hectares out of a total of 16 Hectares of Qudsia Ghat area comprising of all the design features of the proposal as a pilot project due to the financial constraints. The restoration of this area is being planned by INTACH.
- ii. Monitoring Committee impressed upon the DDA officers that the project of this character requires management regime and regulatory framework in place to regulate access considering the area receives a large number of footfalls and there is

regular ingress of people. INTACH as a cultural and heritage organisation would not be capable of handling the maintenance aspects and the regulation and management needed focused attention. It was for this and related areas that the SPV strategy had been suggested to manage the maintenance and footfall regulation of in this area being next to the river.

- iii. Monitoring Committee expressed its concern on the extent of the area being taken up in Phase I (5 hectares) in respect of the total site area of 66 hectares to be completed. The Committee advised DDA to prepare a complete action plan of development of this stretch and have it discussed as the need for truncating the project would need to be incorporated in the YMC's next report.

07. Area 8: NH24 to DND Flyway (Eastern Bank)

- i. MC was briefed that the estimates of the area for the civil and horticulture works under the jurisdiction of DDA measuring approximately 235 Hectares are under preparation.
- ii. Civil works includes creation/ revival of wetlands, circulation (walkways, cycle tracks and trails), amphitheatres, parking area, and the Cultural *gully* under the *Barapullah* flyover Phase –IV. Horticulture works includes planting riverine grasses & trees and developing greenway for public interaction.

The main milestones before execution starts relate to (i) Design development and issue of drawings for Preliminary Estimates (ii) Preparation of Preliminary Estimates (iii) Budget approval in 'Estimate Approval Committee' (iv) Tendering process (v) Work award and this pre-physical work commencement will need 04 months to get clearances within DDA.

08. Area 9: Hindon Cut Wetlands 1 & II

- i. Prof. Babu explained to the Committee that the planning of the area was already complete at their end. However, the works at the site could not be initiated due to the hindrance caused by the local communities on the issue of land ownership.
- ii. He also mentioned that the tender and award of work for the project has already been completed by DDA, to which the Committee asked to amend the percentage of progress shown in the timelines submitted by DDA.

09: Area 10: Eco-tourism *bundh*.

- i. It was brought to the notice of the Monitoring Committee that majority of the land under this project is currently not in the possession of DDA. The land was leased to DESU (now IGPCL) in the year 1995 which has expired and DDA has been sending reminders to DESU (now IGPCL) for the retrieval of the land and the unpaid license fee.
- ii. However, it was informed that DDA has been analysing the report by the wetland expert for this area and the toxicity of the soil has been tested. The survey has been re-conducted and the planning of the area is under progress.
- iii. Monitoring Committee strongly recommended that the matter be taken up urgently at a higher level and VC, DDA to expedite the process. If needed so as to understand whether there is a case to report the matter to NGT, YMC can hold a meeting with the key parties.

10. Miscellaneous

- i. The Monitoring Committee advised that since the floodplains have now begun to shape into what was intended from the start. **It was time that a strategy was prepared to create public awareness and promote public involvement as very few people even knew about the plans and current progress.**
- ii. The Monitoring Committee enquired about the design of water bodies. It raised the concern about the depth of water bodies. Depth needs to be decided in such a manner that subsoil flow to the Yamuna is not intercepted by the water body. It also needs to be ensured that water bodies don't receive the polluted water from the river during the lean season. If that happens there is danger of aquifer being contaminated with polluted water which can cause pollution of water being drawn through bore wells near the floodplains. YMC was told that that the design of water bodies is being done in consultation with Prof. Gauhar Mahmood of Jamia Millia Islamia University. The concerns of the YMC have been noted and the same shall be discussed with the Consultant.
- iii. Monitoring Committee enquired about the status of the pilot project being executed by DBT for cleaning of waste water of *Barapullah Drain* and also requested that a status report be submitted to the YMC. Prof Babu, who is associated with the project, was requested to give a detailed presentation on this as there are a number of RWAs who have represented before the YMC about the high level of pollution in

Barapulla and Kushak drains and even the DJB has some plans to control and treat the waste water in these drains. So it be helpful to understand as to what plans are afoot besides those planned by DJB and Department of Biotechnology and the Principal Scientific Adviser to the PM all of whom have been engaged in plans to treat sewage in the Barapulla and Kushak drains.

11. Land under UP Irrigation Department

- i. Monitoring Committee was briefed about the involvement of land of UP Irrigation Department in three projects. DDA informed that the detailed estimates for *Asita East* amounting to Rs 35 crores were shared with the UP Govt. and all the paper work and tender and award of work formalities have been completed at their end as advised by the Monitoring Committee on earlier occasions. The rough estimates of the other two areas amounting to Rs 53 crores and 10 crores were already forwarded to the UP Govt. by DDA in its past communications with them.
- ii. YMC expressed its surprise about the three areas mentioned by the DDA and stated that YMC is aware about only one area of 167 ha for which 35 crores have been demanded from the UP Government. However, DDA informed of mentioning the details of the areas in question in each of the status reports to the Committee. The Committee also observed that it has taken one whole year to get 10 crores from the UP Govt. and with three areas falling under their jurisdiction it would be a tedious task to get funds from them. This would result in further delay of the project.
- iii. VC, DDA requested Addl. Comm. (Landscape) and CE(EZ) to meet the Committee members and apprise them of the details of the area under UP Irrigation Department at the earliest.

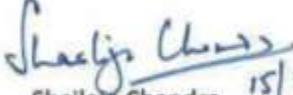
12. India Garden Festival

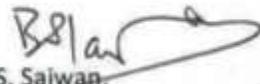
- i. It was informed that the Government of India in collaboration with CPWD, is taking up a proposal of connecting the Central Vista to the Yamuna River.
- ii. Though Monitoring Committee agreed that this proposal would bring a new perspective to DDA's Yamuna restoration flood plain restoration project site expressed the hope that the project will ensure that the floodplains is protected and only permissible activities would be undertaken on the floodplains.

- iii. The Monitoring Committee also requested the DDA, being the custodian of the floodplains, to keep the Committee informed of further developments so that if required the matter may be brought to the notice of the Hon'ble NGT before public concerns and apprehensions start being expressed in isolation as had happened recently.

The Yamuna Monitoring Committee expressed its satisfaction on the progress/efforts made by DDA on the above projects. The Committee appreciated the DDA's initiative to execute the works on Yamuna Flood Plains and requested that due publicity be given to build public awareness and get citizen's involvement which will enhance a sense of ownership. The Committee also expressed concern over some projects which were lagging behind and needed to be expedited.

A status report on the progress achieved may be submitted to the YMC by 15.11.20 for incorporating in the next report of the YMC. More specificity may be provided to the main steps that have to be covered both in terms of land area and costs involved in respect of the 10 projects where physical work has not started.


Shailaja Chandra, 15/11/20
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

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Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

yamuna. Removal of encroachments and demolition programmes on the floodplains

- As per orders of Hon'ble NGT, **no agricultural activity be allowed on floodplains of River Yamuna** as fertilizers and chemicals used pollute the groundwater.
- All illegal and unauthorized encroachments are also removed with the regular "demolition" and "Eviction of encroachment" drives to start Restoration and Rejuvenation of River Yamuna's floodplains works at 10 earmarked sites by DDA. Till date, all the demolitions have been taken up successfully.

S.NO	Yamuna's floodplain areas	Date of demolition programme	Area repossessed/ to be repossessed (in Acres)
1.	From Geeta Colony Bridge to ITO Barrage, Eastern Bank	06.10.20	3.0
2..	Wazirabad Barrage to Old Railway Bridge, Eastern Bank	07.10.20	3.88
3.	From NH-24 to DND Flyway, Western Bank	13.10.20	2.0.
4.	Old Railway Bridge to Geeta Colony Bridge , Western Bank	15.10.20	7.0
5.	CWG Area (from ITO Barrage to NH-24), Eastern Bank	27.10.20	98.8
6.	Geeta Colony Bridge to Shanti van Drain , Western Bank	09.11.20	60.0
7.	Geeta Colony Bridge to Shanti van Drain , Western Bank	18.11.20	10.0
8.	Yamuna Khadar Chilla Village From NH-24 to DND Flyway, Eastern Bank	19.11.20	30.0

yamuna. Removal of encroachments and demolition programmes on the floodplains

S.NO	Yamuna's floodplain areas	Date of demolition programme	Area repossessed/ to be repossessed (in Acres)
9.	Yamuna Khadar Chilla Village From NH-24 to DND Flyway, Eastern Bank	25.11.20	30.0
10.	Wazirabad Barrage to Shastri Park Red light , Eastern Bank	08.12.20	10.0
11.	Yamuna Khadar Chilla Village From NH-24 to DND Flyway, Eastern Bank	10.12.20	30.0
12.	CWG Area (from ITO Barrage to NH-24), Eastern Bank	16.12.20	10.0
13.	Wazirabad Barrage to Shastri Park Red light , Eastern Bank	22.12.20	15.0
14.	CWG Area (from ITO Barrage to NH-24), Eastern Bank	29.12.20	10.0
TOTAL AREA TO BE REPOSSESSED IN THE YAMUNA FLOODPLAINS IN THE PERIOD OF OCTOBER TO DECEMBER'20			319.68 Acres

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

Subject: - Action Taken Report(ATR) on minutes of the meeting held by YMC with DDA on 23.09.2020.

A meeting was held with Yamuna Monitoring Committee with DDA officers on 23.09.2020. Minutes of the meeting have been circulated by the Member, Monitoring Committee for Yamuna vide No.YPMC/2020/499 dated 16.10.2020.

The following points pertain to DDA were discussed and action taken report is submitted as under:-

S.No.	Agenda Items of YMC	Status Report/Comments of DDA.
1(a).	Demarcation of flood plains by installation of bollards.	The demarcation of 1 in 25 years' flood plains of river Yamuna from Wazirbad to Jaitpur on both banks has been done by installation of bollards duly marked with GPS coordinates. The flood plains stretches from Wazirabad to Hazrat Nizamuddin and from sun-dial to Dhobi Ghat Jaitpur stands demarcated by providing 349 nos. and 242 no. of bollards(250mm dia, 1m high with 1x1x1 footing) (total 591 nos.).
1(b)	Demarcation of flood plains by installation of flag post.	310 flag posts have already been installed. Rest of the flag posts i.e. 90 will be installed by 30.11.2020. The work relating to installation of flag posts has been delayed due to various factors viz. materials stolen by anti-social elements and change in location due to cable etc. already laid at that location.
2.	Protection of flood Plain.	
2(a)	Installation of signage boards.	24 nos. of sign boards have been installed out of 29 and rest will be installed/completed by 30.11.2020. (Delayed due to public resistance and theft prone area).
2(b)	Installation of CCTV cameras.	78 nos. of CCTV cameras at 26 locations have been installed from Waziirbad to Jaitpur to check illegal dumping of malba into flood plains area. The remaining 3 cameras at 1 locations of Usmanpur will be installed by 20.12.2020 as power

		supply connection from BSES is still pending at this location. The necessary payment was made to BSES but road cutting permission to BSES from PWD for laying of power cable is still awaited. Solar panel for electrical supply also installed at six locations where BSES power supply connections are not feasible. Now Prof. C.R. Babu identified new five locations at Khizrabad for installation of 15 cameras. This work is being taken up and will be completed by 31.12.2020 subject to electrical connection from BSES.														
2(c)	Deployment of security guards.	At present, 120 nos. of security guards have been deployed round the clock in three shifts at vulnerable points along with 4 nos. patrolling vehicles in the entire Yamuna Flood Plain area to check illegal dumping of malba and to prevent encroachment.														
2(d)	Challans on malba dumping	Till date 222 nos. challans were already issued. As desired by YMC that year wise details of challans issued are as per below: Challan Details:														
		<table border="1"> <thead> <tr> <th>Year</th> <th>No. of challans</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>01</td> </tr> <tr> <td>2019</td> <td>186</td> </tr> <tr> <td>2020</td> <td>35</td> </tr> <tr> <td>TOTAL</td> <td>222</td> </tr> </tbody> </table>	Year	No. of challans	2018	01	2019	186	2020	35	TOTAL	222				
Year	No. of challans															
2018	01															
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		Total Recovery made as on date for Rs. 20,15,000/-. The no. of reminders were issued to the Transport Authorities for cancellation of their registration if they do not deposit the challan amount. The details of pending challans in respect of state Transport Authority are as below. List of pending Challans:														
		<table border="1"> <thead> <tr> <th>State Transport Authority</th> <th>Nos. of pending Challans.</th> </tr> </thead> <tbody> <tr> <td>Delhi</td> <td>65</td> </tr> <tr> <td>Haryana</td> <td>76</td> </tr> <tr> <td>U.P.</td> <td>31</td> </tr> <tr> <td>Rajasthan</td> <td>05</td> </tr> <tr> <td>Punjab</td> <td>03</td> </tr> <tr> <td>TOTAL NOS. OF PENDING CHALLANS</td> <td>180</td> </tr> </tbody> </table>	State Transport Authority	Nos. of pending Challans.	Delhi	65	Haryana	76	U.P.	31	Rajasthan	05	Punjab	03	TOTAL NOS. OF PENDING CHALLANS	180
State Transport Authority	Nos. of pending Challans.															
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Haryana	76															
U.P.	31															
Rajasthan	05															
Punjab	03															
TOTAL NOS. OF PENDING CHALLANS	180															
3.	Eviction of encroachment															
3(a)	Present status of encroachment	Most of the encroachments have taken place at O'														

	removal.	Zone area in Khizrabad. The further removal of encroachment will be done after Khasra marking on the TSS plan.
3(b)	Details of human habitation & activity at Khizrabad.	Khizrabad Encroachment: Please refer page number 04.
3(c)	Eviction of encroachment on area used for agriculture.	Please refer Annexure 'B'
3(d)	Malba Dumping/removal from Yamuna Flood Plains.	Please refer page number 05.
4.	Re-possessing of land back from various Departments i.e. DMRC, NHAI, CPWD.	The matter pertains to IL Department.
5.	Release of fund by UP Irrigation Department.	<p>Land belongs to UP Irrigation Department.</p> <p>Three parts under U.P. Govt. jurisdiction includes:</p> <p>(i) Old Railway Bridge to ITO Barrage (Eastern Bank) having an area of 107 Ha. costing Rs. 35 Cr. Approx.</p> <p>(ii) NH-24 to DND Flyway (Eastern Bank) having an area of 162.75 Ha. Costing Rs. 53 Cr. Approx.</p> <p>(iii) Hindon cut wetland having an area of 30 Ha. Costing Rs. 10 Cr. Approx.</p> <p>The total 299.75 Ha. of land falls under U.P. Irrigation Department, estimated cost for the Restoration and Rejuvenation works is Rs. 98 Cr. Approximately.</p> <p>No fund has been released by UP Govt. till date in spite of sanction of Rs. 10 Cr. to UP irrigation department by UP Govt.</p>
6.	Court case between UP & DDA.	Matter is being examined by the Legal Department.

Note on plan to restore the flood plain at Khizrabad

1. Most of the encroachments taken place at O'Zone area in Khizrabad not in Flood Plain area.
2. Yamuna Flood Plains demarcated by fixing bollards and providing RBT fencing to protect Flood Plains.
3. 34 nos. security guards deployed round the clock.
4. 9 nos. CCTV camera's at 3 locations are already installed to prevent dumping & encroachments.
5. Prof. C.R. Babu suggested 5 nos. locations to prevent encroachment on DDA Land in O'Zone area. This work is being taken up and will be completed by 31.12.2020 subject to electricity connection from BSES.
6. 34 nos. demolition programmes were fixed but only 7 nos. were carried out. Initially there are not much support from the local police but after intervention of VC,DDA the local police starts cooperating for removing encroachments. 2.5 acre land repossessed, approx. 200 new Jhuggis, Rickshaw yard and Tabela have been removed from the site. Now the demolition programmes could not be done due to lack of identification of khasra no. at site.
7. Accordingly, a joint inspection was carried out to identify the encroachments on DDA land. It has been observed that exact identification of land from Khasra no./min could not be ascertained at the site during eviction programme. Then it has been decided that TSS plan of this area has to be prepared and Khasra plan to be superimposed on this TSSS plan by CLM. The TSS plan has been given to CLM branch on 6.11.2020 for doing the needful. Further demolition programme will be done only after superimposition of sajra with khasra no. plan on TSS plan.
8. Boundary wall 3.5 Km. is being constructed for Dhobi Ghat to Taimoor Nagar Extension in 'O' Zone area to protect DDA land and to prevent further encroachment.
9. A TSS plan of Khizrabad area showing encroachments is enclosed as desired.

Malba Dumping/removal from Yamuna Flood Plains

1. **Adjacent to Mayur Vihar near Nizamuddin Bridge:**

a. **NHAI:**

i. Approx. 115 nos. concrete cubes of 3 × 3 sq. feet in size scattered all over site have been removed in August- September 2020.

ii. 6,480 MT. C & D waste/malba have been removed in August-September 2020.

b. **DDA:**

i. 4,458 MT. C & D waste/malba have been removed till date.

2. **Khizrabad:**

a. **DDA:**

i. 5,000 MT. C & D waste/malba have been removed till date.

ii. 16,500 MT. C & D waste/malba have been excavated from Yamuna Flood Plain and used in South Biodiversity Park.

3. **Asita East:**

a. **DDA:**

i. 10,000 MT. C & D waste/malba have been excavated from Yamuna Flood Plain and used for making mounds and ramps.

4. **Western Bank near Sarai Kale Khan:**

a. **PWD:**

i. 55 MT. C & D waste/malba have been removed from site by PWD.

5. **Signature Bridge:**

a. **DTTDC:**

i. 150 MT. C & D waste/malba have been removed from site by DTTDC.

b. **DDA:**

250 MT. C & D waste/malba have been removed from site by DDA.

6. **DMRC**

- i. 1200 MT. Of cement concrete after demolition removed from various sites of Yamuna Flood Plain.
7. DMRC removed 1200 MT. of cement concrete from various sites of Yamuna flood plain. As a matter of fact, the exercise regarding removal of malba undertaken by DMRC appeared to be cosmetic in nature and lots of C&D waste, concrete blocks are still lying at different sites of Yamuna Flood Plain.
8. DTTDC was requested a number of times for removing the dumped malba near Signature Bridge and wind up the construction yard prepared at site during the construction of Signature Bridge but no appropriate action taken till date in spite of DPCC issued show cause notice for the same.

Annexure C-2/9

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

Status of 'Restoration and Rejuvenation of River Yamuna floodplains' as of November'20

S.No	Project Area	DDA Area	Phase-I status
1.	Old Railway Bridge to ITO Barrage (Eastern Bank) – Asita East	90 Ha	95% completed (Timeline revised to 30.11.20 from 31.10.20)
2.	NH24 to DND Flyway (Western Bank)	100 Ha	95% completed (Timeline revised to 30.11.20 from 31.10.20)
3.	Old Railway Bridge to ITO Barrage (Western Bank)- Asita West	200 Ha (93Ha already completed)	Timeline (30.06.21- for the balance 107 Ha area) The works are yet to start at site.
4.	DND to proposed Kalindi By-Pass (Western Bank)-Khijrabad (Entrusted to CEMDE)	115 Ha	50% completed Timeline- 31.01.21 only for construction of wetlands.
5.	Wazirabad Barrage to ISBT Bridge (Eastern Bank) around Garhi Mandu Village & Usmanpur Village	236.5 Ha	Timeline -30.09.21
6.	ITO to NH-24 (Eastern Bank)- Area South of CWG Village Area	90 Ha	Timeline -31.08.21 The work is yet to start at site.
7.	NH-24 to DND Flyway (Eastern Bank) Part Area-I	235 Ha	-----
8.	NH-24 to DND Flyway (Eastern Bank) Part Area-II- Hindon Cut Wetlands I&II (Entrusted to CEMDE)	15 Ha	
9.	Wazirabad to old Railway Bridge (Western Bank) Qudisia Ghat	66 Ha (Sur Ghat-13.6Ha, Eco-trail-33 Ha, Qudisia Ghat-	Timeline (30.06.21)

	(Entrusted to INTACH)	16 Ha, Yamuna Bazaar Area- 3.4 Ha	
10.	Geeta Colony Bridge to ITO Barrage (Western Bank) Eco- Tourism Bundh	30 Ha (14 Ha land is with DESU (IPGCL) Land department has been requested to take back the land)	Planning is being re-worked.

Annexure C-2/10

Related to Chapter 2: DDA and the Demarcation of the Flood Plain and Rejuvenation Activities

DDA South Delhi Biodiversity Park (SDBP) of Yamuna Riverscape: A Model for Rejuvenation of Rivers and Fast Coming Up Paradise for Nature Lovers in the Capital: A Report on the work done, being done and will be done

History and Background

The downstream of the river Yamuna from DND flyway upto Okhla Barrage (about 7-8 km linear stretch) is unique riverscape which varies in width from 5 km (at DND flyway) to 8 km (at Okhla Barrage). The riverscape includes multiple channels separated by sand islands, floodplain with a network of grasslands, marshes and wetlands, the upper end of pondage of the reservoir (Okhla Bird Sanctuary), a marginal bund stretching from DND flyway upto Batla House), Boat Club, U.P. Irrigation Department Guest House, solid waste dumps of varying sizes and heights all along the marginal bund, dumps of excavated soils from DND flyway construction and other construction activities, disconnected wetlands from the floodplain wetlands, several Dhobi Ghats within wetlands, dairies, rickshaw stands, illegal encroachments on solid waste dumps, parking of trucks and cars on solid waste dumps, **20-25 drains carrying raw sewage and canals that carry polluted water** (Figures 1-7).

The disconnected wetlands (originated due to fragmentation by the marginal bund) located outside the marginal bund not only filled with sewage but also covered with water hyacinth. These wetlands have become a health hazard to the residential colonies due to mosquito menace and bad odours. Due to weedy growth on solid dumps, the area has become den for criminal activities and nearby residents have been living in fear. In fact, the RWA of Kalindi Colony has filed a case at Hon'ble NGT on the health hazards due to polluted water and water hyacinth infested wetlands and criminal activities in the area. The Hon'ble NGT asked the concerned authorities, DDA, DJB and Irrigation and Flood Control Department, to address the issues and the Yamuna Monitoring Committee (YMC) has been continuously monitoring the works that are being carried out at SDBP.

The Reports submitted by Expert Committee to Hon'ble NGT in the case of Manoj Misra Vs Union of India and others (O.A. No. 06/2012) relating to rejuvenation of river Yamuna,

mentioned that the area should be developed into a Biodiversity Park. Accordingly the DDA has declared the area to be developed as South Delhi Biodiversity Park (SDBP).

The South Delhi Biodiversity Park spreads over 200 hectares and encompasses the floodplains of the river on its western bank and also includes its eastern bank floodplains (which belongs to U.P.) located both in upstream and downstream of DND flyway (Figure 8).

Development of South Delhi Biodiversity Park: Action taken and time schedules for completion of work

There are many challenges in the development of SDBP. The Report gives how the challenges are met and where SDBP stands today after one year of completion.

1. Treatment of sewage and restoration of wetlands 1, 2, 3 and 4

The first challenge is how to access the disconnected wetlands located on the western side of marginal bund and close to Kalindi Colony and source of health hazard. There are 4 such wetlands (Wetlands 1, 2, 3 and 4). Wetland 1 receives untreated sewage of 20-30 mld from Kilkori drain and also 10-15 mld from storm drain of Kalindi Colony and then enters into wetland 3. The wetland 2 was originally connected to wetland 1 through which sewage was discharged into Maharani Bagh drain. Wetland 3 receives sewage from wetland 1 and also from Maharani Bagh drain and from wetland 4. There was no discharge from these wetlands into floodplain wetlands as marginal bund disconnected these wetlands from floodplains.

(i) Wetlands 1, 2 and 3 and Constructed Wetland system of Kilkori drain

- (a) Kaccha paths were laid using the malba dumped near wetland 1 and the elevated dump has been suitably landscaped and set up a make shift office.
- (b) Water hyacinth was removed from wetlands 1 and 2 and made weed-free and wetland 1 was desilted upto 1.5 m depth and the desilted sediment was used to make embankment of wetland 1 and wetland 4. The embankment was planted with bamboos and *Phoenix* and grasses (Figure 9). The restored wetland 1 has species of fish that predate on mosquitoes (Figure 9a).

- (c) Constructed Wetland (CW) system was designed for in-situ remediation of raw sewage of Kilkori drain and another storm drain, both of which discharge about 30-45 mld sewage into wetland 1. The CW design consists of two oxidation ponds with two screens having different mesh sizes for removal of solid materials, a filtration zone and Constructed Wetland having ridges made of stones and furrows containing 20 aquatic plants. These zones are separated by stone pitched earthen bunds and the water flows through channels from one zone to another by gradient (Figure 10). The sewage from the storm drain of Kalindi Colony is first passed through settling tank and then allowed into filtration zone. This free circulation of water is need to maintain healthy ecosystems.
- (d) Two culverts – one (lower level) to take treated water into wetland 3A and another culvert (higher level) to get flood water into wetland were laid across the trail.
- (e) The embankments of wetland 2 are smoothened and a part of embankments were made out of desilted material. The wetland will be extended by excavating dumped material which will be used for bunds of oxidation and filtration zone of Maharani Bagh drain within the wetland 4. **This wetland will be restored by the end of December 2020, as it is linked to the development of Maharani Bagh Constructed Wetland system.**
- (f) To restore the wetland 3 and to have a proper drainage of treated water into floodplain wetlands, the wetland of about 10-15 acres was made into two wetlands (wetland 3A and 3B) by an earthen bund. The wetland 3A receives treated water from wetland 1 and 3B receives from wetland 4. A total of 4 culverts were made across the marginal bund. These culverts of drainage pipes already discharging partially cleaned water into Yamuna floodplain wetlands because of bioremediation by water hyacinth and other aquatic plants (Figure 11). The quality of water of inlets and outlets is yet to be assessed.

Since a part of the wetland is filled up by solid waste, the dump was excavated and the area under wetland increased in linear way (Figure 12a&b) and facilitated the drainage. The excavated material was used for making embankments and bund.

(ii) **Wetland 4, Maharani Bagh drain and Constructed Wetland system**

The wetland 4 spreads over an area of more than 10 acres but it might be more than 20 acres before encroachments and illegal construction activities, and Maharani Bagh drain passes parallel to it; originally the Maharani Bagh drain is storm drain and the wetland 4 used to receive the catchment and is a part of the floodplain wetland. Over a period of time it was encroached, filled with solid waste dumps and was highly fragmented with service lines (water pipelines) passing through the wetland and dairies are located along the service lines. In fact, Maharani Bagh drain merged with the wetland 4 and the sewage flows into the wetland from the site where the wetland gradient is almost similar to the sedimented drain. Unauthorized Jhuggi cluster and the solid waste dump occupied 1/5th of the wetland.

(a) **Securing the left out wetland 4**

The challenge to the development of constructed wetland system for the treatment of Maharani Bagh drain sewage is to secure wetland 4 from encroachment, trespassing of criminals through the fragmented wetland and preventing cattle entering into the wetland.

DDA has already awarded the contract to construct RCC wall along 370 m boundary of the wetland. The work will start at any time.

(b) **Development of Constructed Wetland system**

The upper portion of wetland (1/2 of the wetland) from the inner service pipelines that pass across the drain receives raw sewage and faecal matter from a large Jhuggi cluster, and an embankment was made all around to prevent encroaching and dumping. This portion is

used as oxidation pond and filtration zone (Figure 13). The other half of the wetland space located between two sets of pipelines used for the Constructed Wetland. **This Constructed Wetland treats approximately 300-400 mld raw sewage and 50-70 mld of sewage from the drain originating Jhuggi clusters and it will be ready by February 2021.**

In fact partially treated water from this wetland system enters into floodplain wetlands through wetland 3B culvert.

- (c) A Constructed Wetland system will be developed to treat the spill over of Maharani Bagh drain, two Khizrabad underground drains that enters into the mouth of the Maharani Bagh drain outfall (at the confluence with river Yamuna floodplain wetlands).

This Constructed Wetland system will be located at the mouth of Maharani Bagh drain at the confluence with floodplain wetlands and treats atleast 80-100 mld raw sewage coming from two underground drains of Khizrabad and the spill over sewage from Maharani Bagh drain.

The Constructed Wetland system will be ready by February 2021.

2. **Restoration of four elevated dumps (mounds) located on the floodplain wetlands next to DND flyway and Ashram Road and silted remnant peripheral portion of floodplain wetlands.**

The total area is about 40 acres, of which 10 acres of wetlands around 30 acres of 4 solid waste (soil dumped from construction activities) dumps. These dumps were weed infested and the weeds were removed and about 20,000 saplings of native floodplain forest species (34 species) were planted and the saplings attained 3 to 6 feet within 8-10 months (Figure 14).

The silted peripheral ring of wetlands of 5-6 acres were desilted and brought back to natural floodplain wetlands (Figures 15 & 16). The desilted material was used for embankment and levelling of eroded areas of the mound.

The restoration work will be completed by May-June 2021.

3. **Constructed Wetland systems to treat the raw sewage from two underground drains from Khizrabad that enters into floodplain wetlands via marginal bund.**

The raw sewage of about 2-5 mld passes through two open drain channels along the service pipelines of the marginal bund.

The Constructed Wetland system for both the drains is partially completed and will be ready by December 2020.

4. **The Constructed Wetland system for the third underground drain from Khizrabad.**

This drain discharges about 5-10 mld raw sewage directly into floodplain wetlands through underground drainage pipes across the marginal bund.

The Constructed Wetland system designed would be ready by February 2021. The work has not yet started.

5. **Constructed Wetland systems for drains that discharge raw sewage into floodplain wetlands all along marginal bund from Dhobi Ghat (Batla House – Boat Club) upto Zakhir Nagar (Moti Masjid).**

This stretch of marginal bund of about 1.7-2.5 km is highly abused ecologically and the water in the wetlands is highly polluted not only due to discharge of raw sewage, faecal matter and washing of variety of garments, mattresses and carpets. **The marginal bund itself is solid waste dump and fragmented the floodplain wetlands.** The fragmented portions of wetlands on the western side of the marginal bund are filled up with solid waste sumps of varying extent and encroached to varying extent. Only small patches of wetlands are seen and filled with sewage. The floodplain wetlands on the eastern side of the marginal bund are partially filled up with solid waste dumps and the filled up portions vary from 15 m to 50 m or more wide from the middle of marginal bund and **receive sewage from 6 major drains.** Within the floodplain wetlands located close to the dumps, there are several Dhobi Ghats.

- (i) **Development of Constructed Wetland system from Dhobi Ghat drain**

About 5 to 6 drains discharge raw sewage of 20-30 mld into a 10 acre wetland located on the western side of the marginal bund. This is used as oxidation pond (2 in number) and filtration zone; the Constructed Wetland is located on the eastern side of the marginal bund.

The Constructed Wetland system is almost ready and will start functioning by December 2020 (Figure 17).

- (ii) There are 3 to 5 small drains that discharges 2 to 5 mld raw sewage into another wetland which is contiguous with Dhobi Ghat wetland and is separated from it by earthen bund. This will be the oxidation pond and the filtration zone will be made by desilting filled up wetland on the western side of the marginal bund. The Constructed Wetland is located on the eastern side of the marginal bund at Noorjahan Masjid (Figure 18).

This Constructed Wetland will start functioning by December 2020.

- (iii) There is a 500 m long drain that carries nearly 70-100 mld raw sewage and passes through patches of highly silted wetlands along encroached solid waste dumps and parallel to marginal bund. These wetlands will be desilted and used as oxidation and filtration zone. The Constructed Wetland is ready on the eastern side of marginal bund at Noorjahan Masjid.

The Constructed Wetland system will start functioning by February 2021.

- (iv) There are 5-7 drains that discharge raw sewage of 100 to 150 mld into encroached and highly silted wetland of 2 acres on the western side near New Way Public School. After desilting, the wetland will be used as oxidation pond and the filtration zone; and the Constructed Wetland is ready on the eastern side of the marginal bund (Figure 22).

This Constructed Wetland system would start functioning by February 2021.

- (v) There are another 5-7 drains that discharge 50-100 mld raw sewage into a wetland of 3-5 acres which is encroached and highly filled up with solid waste dumps. This is located on the western side of the marginal bund. This wetland,

after desilting, will be used as oxidation pond. The filtration zone and Constructed Wetland are located on the eastern side and are ready at Moti Masjid (Figure 23).

This wetland system will start functioning by February 2021.

- (vi) There are 2 to 3 sewage carrying drains and one drain carrying dairy effluent at Moti Masjid. These drains discharge about 2-3 mld waste water into partially filled up wetland on the western side of the marginal bund. After desiltation, the wetland will be used as oxidation pond. The filtration zone and the Constructed Wetland are on the eastern side of marginal bund and will be ready soon.

This wetland system will be functional by February 2021.

Landscaping of marginal bund and recovery of wetlands from Dhobi Ghat to Moti Masjid

- (a) Leaving a trail of 5-6 m wide in the middle portion of the existing marginal bund (except at 6 places), the solid waste dumps from the eastern side was excavated and the excavated material was used for embankment of 3 m wide and 2-3 m high on the eastern side (Figure 19) and in small stretches on the western side of the bund. The excavated material was so large that 5 mounds of different sizes and heights were created in the form of riverine islands. These riverine islands will be planted with floodplain forest tree species and will serve recreational sites (Figure 17). The embankment will be smoothed and floodplain forest tree species will be planted.
- (b) The recovery of floodplain wetlands due to excavation of solid waste sumps on the eastern side of marginal bund is about 10 acres (Figure 19).

These recovered wetlands will be restored by February 2021.

- (c) The encroached and filled up wetlands on the western side of marginal bunds will be excavated and recover the wetlands as much as possible.
 - (i) A wetland of nearly 1 acre was recovered after demolition of a Jhuggi cluster on a solid waste dump, and the dump was excavated after

demolition of Jhuggi cluster and become a part of wetland (Figure 20). The excavated material was used for making embankment on the western side of marginal bund.

- (ii) A similar strategy will be followed for all other wetlands encroached and filled up wetlands located on the western side of the marginal bund.

The area is a sensitive and it is a human conflict zone, and as such it may take some time to complete the work.

- (iii) **Some of the wetlands filled up with solid waste but not encroached, would be excavated by December – February 2021 and will be used for oxidation ponds/ filtration zones of Constructed Wetland systems.** The excess of excavated material will be used for making embankments on the western side of the trail. These will also be planted with floodplain forest tree species.
- (iv) Some of the riverine islands have already been attracting large number of visitors to have glimpse of river and its floodplain wetlands (Figures 17a & 21).

7. **The removal of water hyacinth and restoration of floodplain wetlands and their inter-connections.**

This work will be initiated from January 2021 and will be completed within 12-15 months.

8. **Construction of wetland system for the treatment of 800-1000 mld of polluted Hindon Canal and its Cut Canal that enter into wetlands and the restoration of floodplain wetlands of both upstream and downstream of DND flyway on the eastern bank of river Yamuna.**

The two wetlands spread over an area of 20 hectares and are located outside the floodplain on other side of outfall of Hindon Canal will be restored. The Constructed Wetland will be developed to treat polluted water before restoration. There are

floodplain wetlands through which polluted enters into river Yamuna. These wetlands will also be restored.

The work has not yet started and it may take 6 to 15 months to develop functional Constructed Wetland systems due to land disputes.

9. **Cleaning of river water**

Channelization of river water will be made and allow the river water, through a series of natural wetlands that already exist by gradient over a length of 100 to 500 m, and the clean water will be released in the downstream. This will reduce the pollution load and the river water gets cleaned over the stretch of South Delhi Biodiversity Park.

This work will start after restoration of floodplain wetlands.

10. **RCC boundary wall all along the human settlements from Dhobi Ghat to Khizrabad.**

To secure the South Delhi Biodiversity Park from encroachments and preventing other human mediated activities such as dumping of solid wastes, washing of cloths and keeping diaries and parking of cars, trucks and e-rickshaws, a RCC wall is being constructed.

Work has already started.

XI. **Major Constraint**

To manage the Constructed Wetland systems developed, there is an urgent need of 8 MTS (Multi-tasking Staff) in addition to the existing 8 MTS. This request was already made earlier. In the absence of additional 8 MTS, it is not possible to manage CWs.

Summary

A total of 22-25 drains discharges raw sewage of about 1200-1500 mld (excluding 800-1000 mld of polluted water of Hindon Canal and its Cut Canal) into floodplain wetlands of South Delhi Biodiversity Park (SDBP). The SDBP spreads over more than 200 hectares in the downstream of river from DND flyway. These wetlands were fragmented by the marginal

bund which itself is a solid waste dump and extends linearly about 4 to 5 km long from Dhobi Ghat to DND flyway.

For the restoration of these highly polluted floodplain wetlands and the river, the first prerequisite is to treat the raw sewage through in-situ biological remediation using Constructed Wetland systems. The Constructed Wetland systems were designed to treat 1500 mld raw sewage. One wetland will become functional by the end of this month; 3-5 wetlands will become functional by end of December; and the rest will become functional by the end of February 2021.

The Constructed Wetland systems for in-situ remediation of 800-1000 mld of polluted water of Hindon Canal and its Cut Canal will take atleast 1 year as the work has not yet started due to objection from locals.

The excavation of solid waste dumps and removal of encroachment along the eastern side of marginal bund and also in some stretches on the western side led to the recovery of more than 10 acres of wetlands. The excavated material was used for making embankments and riverine islands. Six riverine islands of different shapes, sizes and heights were made; embankment of 3 m high and 3 m wide over a stretch of 1.5-2.0 m stretch from Dhobi Ghat to Moti Masjid were developed on the eastern side. These will be planted with native floodplain forest tree species. The riverine islands have already attracting the public to have glimpse of river and its floodplain wetlands.

A similar system of embankment with 2-3 riverine islands will be developed on the western side of marginal bund. The marginal bund, which itself is a solid waste dump, will become a trail of 5 m wide bounded on either side by embankments and riverine islands harbouring floodplain forest tree species. These works will be completed within 1 to 2 years.

A RCC wall is being constructed along the human settlements from Dhobi Ghat (Batla House/ Batla) to Khizrabad to secure the South Delhi Biodiversity Park from encroachment and other human mediated activities including dumping.

The restoration of floodplain wetlands over more than 160 hectares will take a minimum of 1-2 years. This involves removal of water hyacinth, desilting of connecting channels, development of grasslands, marsh communities and floodplain forest flora and fauna.

The cleaning of river water through channelization and passing through natural existing wetlands will be done. It will take about 6 months after treatment sewage that enters into floodplain wetlands.



Figure 1: A portion of marginal bund showing encroachments on the solid waste dumps located on western side of the bund and MCD solid waste dumps located on the eastern side.



Figure 2: Dairy located close to the floodplain wetlands on the eastern side of the bund at Dhobi Ghat.



Figure 3: Washing of cloths in the floodplain wetlands at Dhobi Ghat.



Figure 4: Solid waste dump on the floodplain wetlands along the eastern side of the marginal bund.



Figure 5: Raw sewage entering into floodplain wetlands from Maharani Bagh drain.



Figure 6: Polluted water in the floodplain wetland after washing of cloths.



Figure 7: Solid waste dumps on wetlands used for parking vehicles.

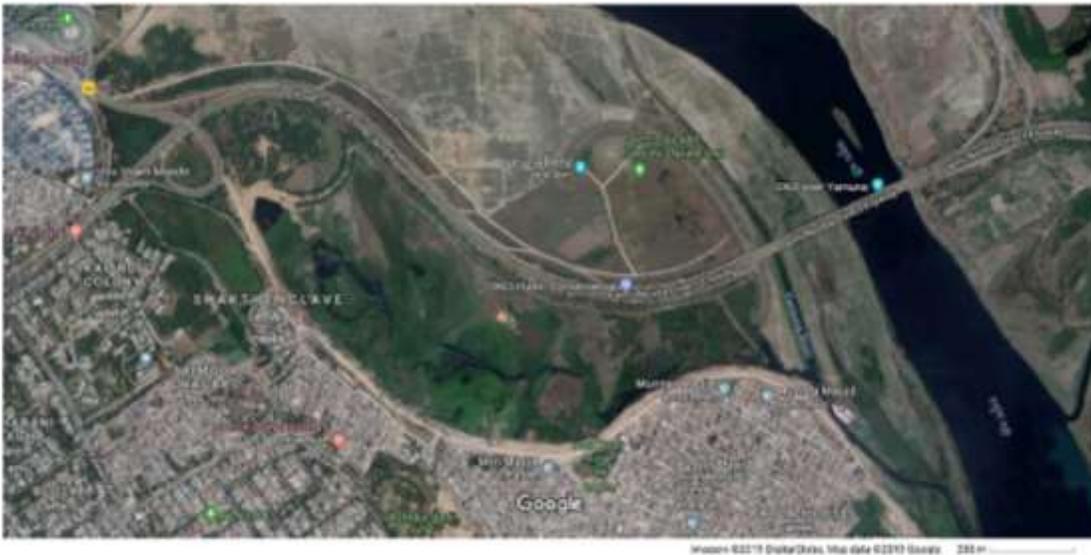


Figure 8: Google map showing South Delhi Biodiversity Park area (portion in the downstream of DND flyway on the western side).



Figure 9: Restored wetland 1 near Kalindi colony.



Figure 9a: One species of fish (*Colisa fasciata*) which predate on mosquitoes, introduced into wetland 1 for control of mosquito menace.



Figure 10: Wetland 1 showing the Constructed Wetland system developed in the mouth of Kilkori drain near Kalindi Colony.



Figure 11: Clean water entering into Yamuna floodplain wetlands after passing through the Kilkori drain sewage through wetland 3.



Figure 12a&b: New wetlands created along wetland 3 after excavation of solid waste dumps on the western side of marginal bund.



Figure 13: Wetland 4 used for oxidation pond and filtration zone for the Constructed Wetland system of Maharani Bagh drain.



Figure 14: Plantation carried out on the elevated solid waste dumps next to DND flyway.



Figure 15: Desilting of silted wetlands along the 4 soil dumps near DND flyway.



Figure 16: Restored wetland at DND flyway.



Figure 17: Constructed Wetland system that is being developed at Dhobi Ghat showing wetland that serves as oxidation ponds, filtration zone and a constructed wetland. *Note: The reverine island and the aerial view of floodplain wetlands and the river.*



Figure 17a: Riverine Island created with excavated material of solid waste dumps. *Note: Aerial view of the floodplain wetlands and the river Yamuna on the eastern side of marginal bund.*



Figure 18: Constructed Wetland developed on the eastern side of the marginal bund close to the floodplain wetlands for the treatment of sewage that enters into wetland on the western side at Noorjahan Masjid.



Figure 19: Recovered wetland on the eastern side of the marginal bund after excavation of the solid waste dumps and embankment made out of the excavated material.



Figure 20: Recovered wetland after demolition of Jhuggi clusters and subsequent excavation of solid waste dumps at Dhobi Ghat.



Figure 21: A flock of Painted Stork at one of the floodplain wetlands.



Figure 22: Constructed Wetland system showing development of filtration zone and Constructed Wetland on the eastern side of the marginal bund near the floodplain wetlands for the treatment of sewage that enters into wetland located on the western side at New Way Public School.



Figure 23: Constructed Wetland on the eastern side of the marginal bund close to the floodplain wetland for the treatment of sewage that enters into wetland on the western side at Moti Masjid.

Related to Chapter 3 - Quality of River water

Annexure-C-3/1

	DELHI POLLUTION CONTROL COMMITTEE 4thFLOOR, ISBT BUILDING, KASHMERE GATE, DELHI-06 visit us at : http://dpcc.delhigovt.nic.in WATER QUALITY STATUS OF RIVER YAMUNA
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REPORT NO: DPCC/W/Y/20-21/166-174

/ 2695

DATE OF SAMPLING: 02/11/20

11-11-20

S. No	Locations	pH	COD (mg/l)	BOD (mg/l)	DO (mg/l)	Fecal Coliform MPN/100ml
Water Quality Criteria ('C' Class)		6.5-8.5	-	3mg/l or less	5mg/l or more	500(desirable) 2500 (max permissible)
1	Palla	7.9	4	2.6	7.5	11x10 ¹
2	Surghat (Down-stream of Wazirabad Barrage)	7.8	20	4.4	6.3	13x10 ¹
3	Khajori Paltoon Pool (Downstream Najafgarh Drain)	7.7	128	45	Nil	31x10 ⁴
4	Kudesia Ghat	7.4	52	16	Nil	17x10 ⁴
5	GTO Bridge	7.4	28	10	Nil	6.8x10 ⁴
6	Nizamudin Bridge	7.2	72	21	Nil	34x10 ³
7	Agra Canal (Okhla)	7.5	32	12	Nil	41x10 ³
8	After meeting Shahdara Drain (Downstream Okhla Barrage)	7.6	96	35	Nil	40x10 ³
9	Agra Canal (Jaitpur)	7.5	48	19	Nil	33x10 ³

09/W/MC-II
11/11/2020

N. Mitra

SR. SCIENTIST

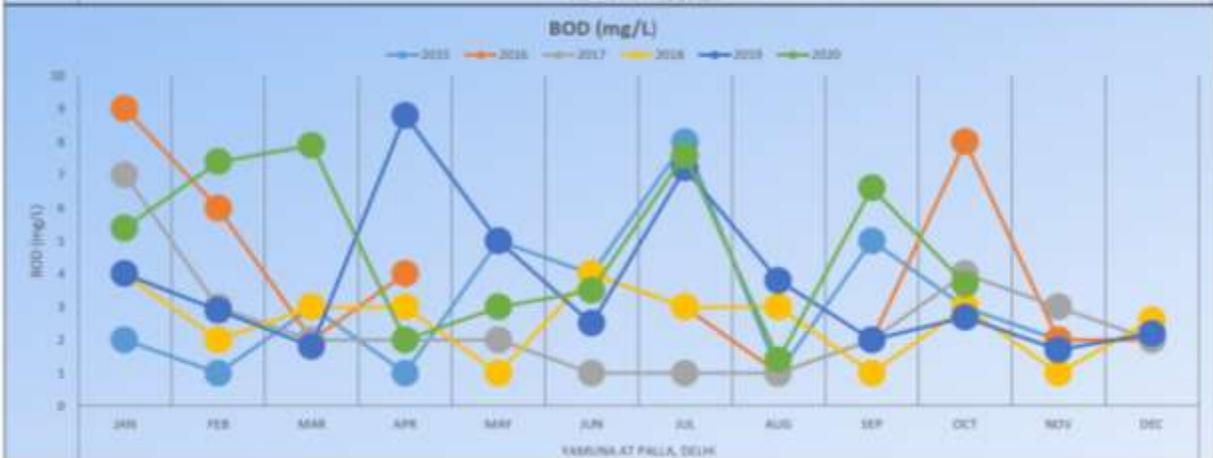
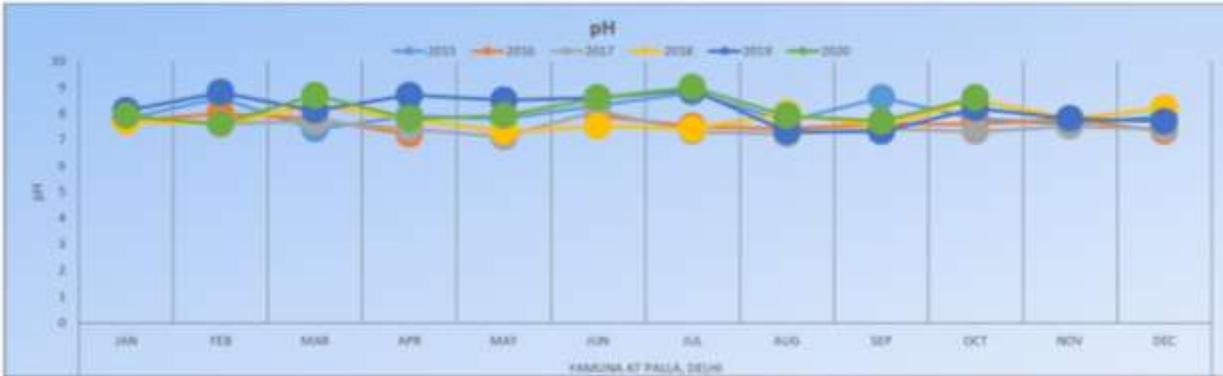
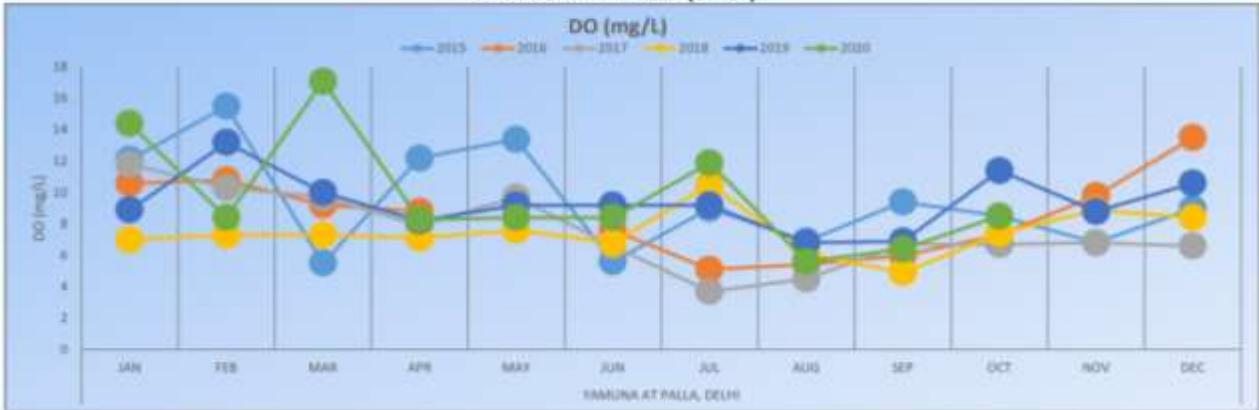
Dr. NANDITA MOITRA
Scientist 'C'

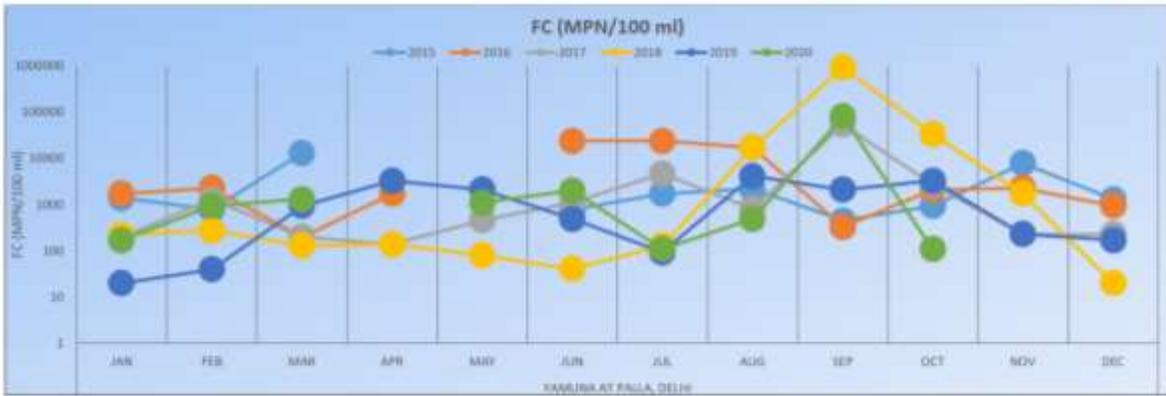

SR. SCIENTIFIC ASSISTANT

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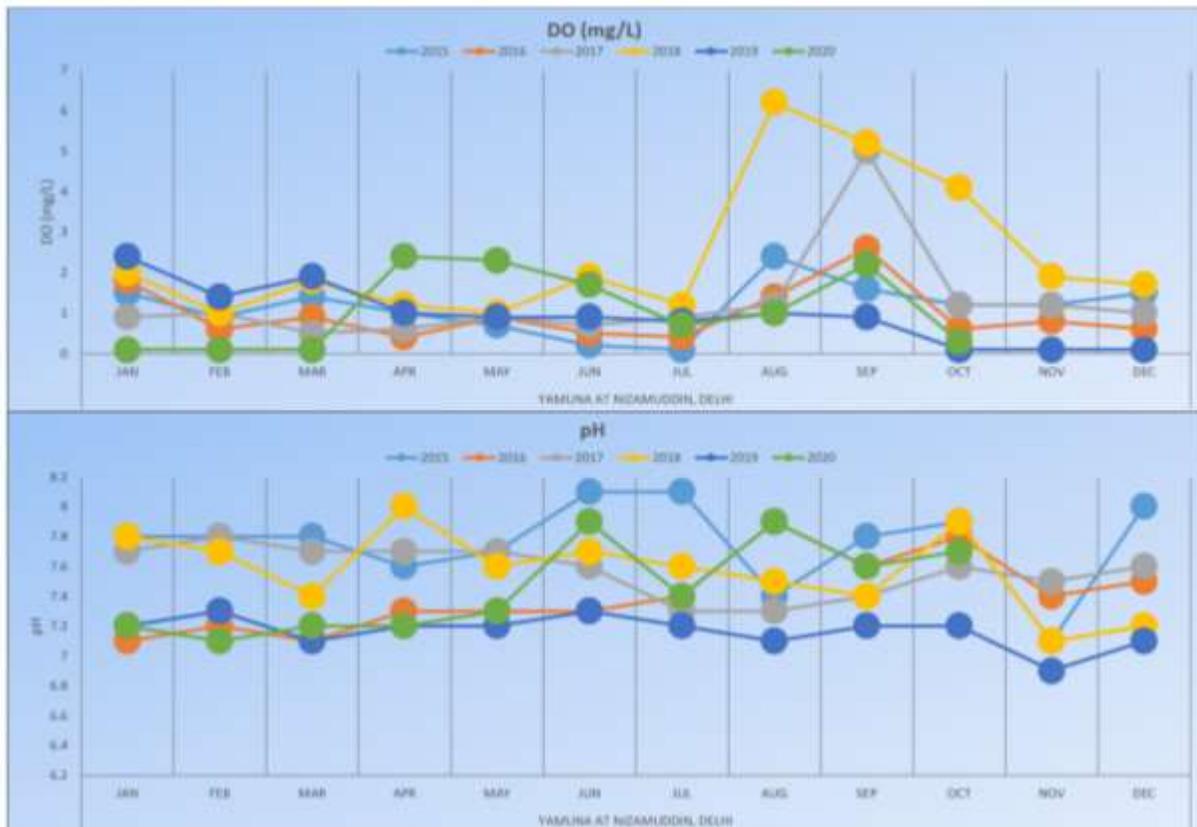
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Trend analysis graphs of water quality of river Yamuna (2015-2020)

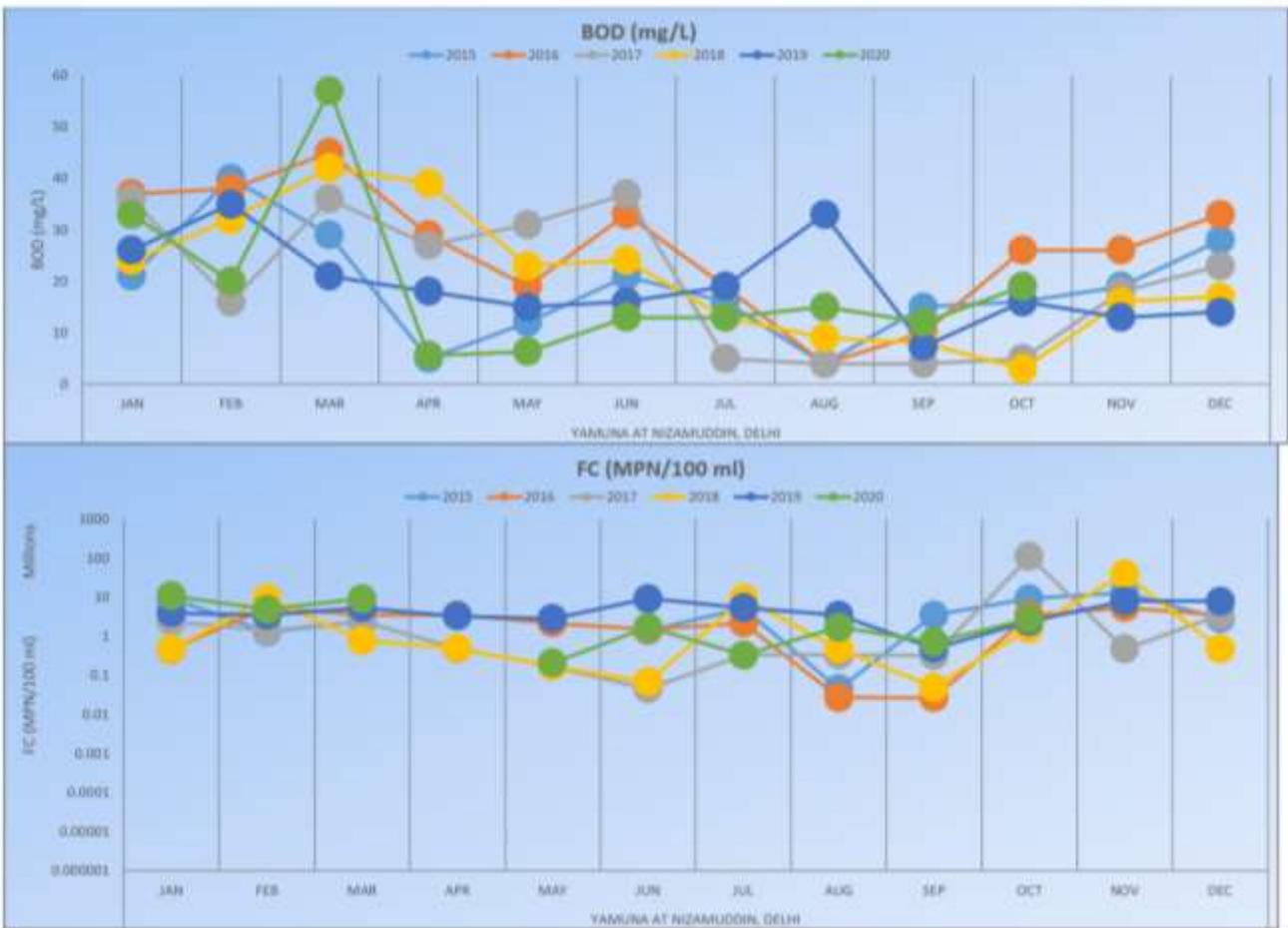
1. YAMUNA AT PALLA (DELHI)



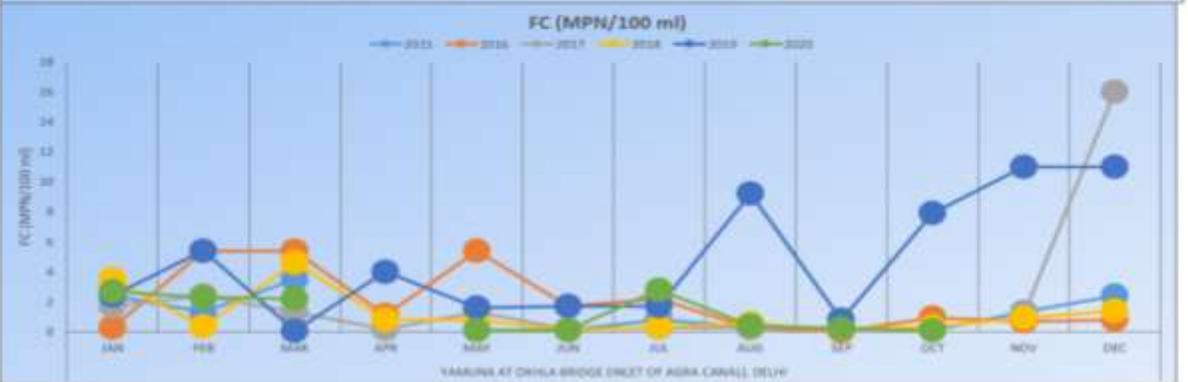
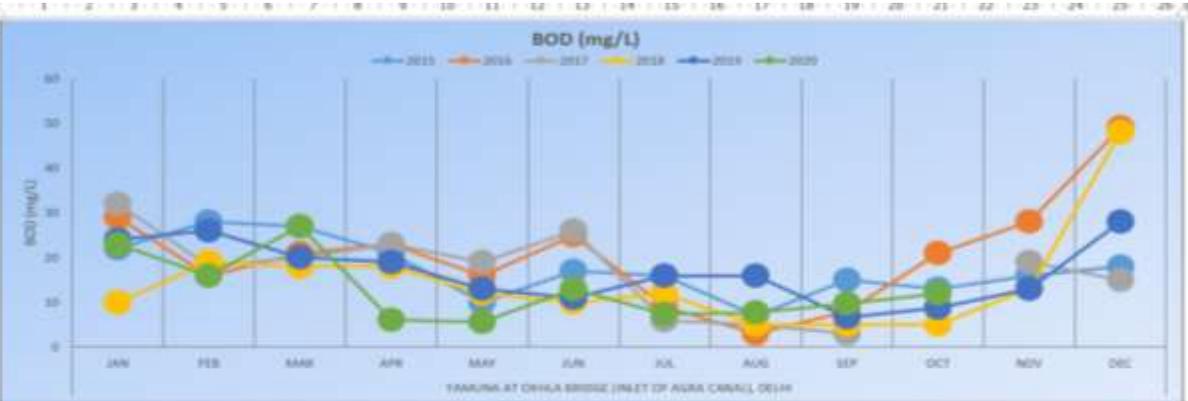
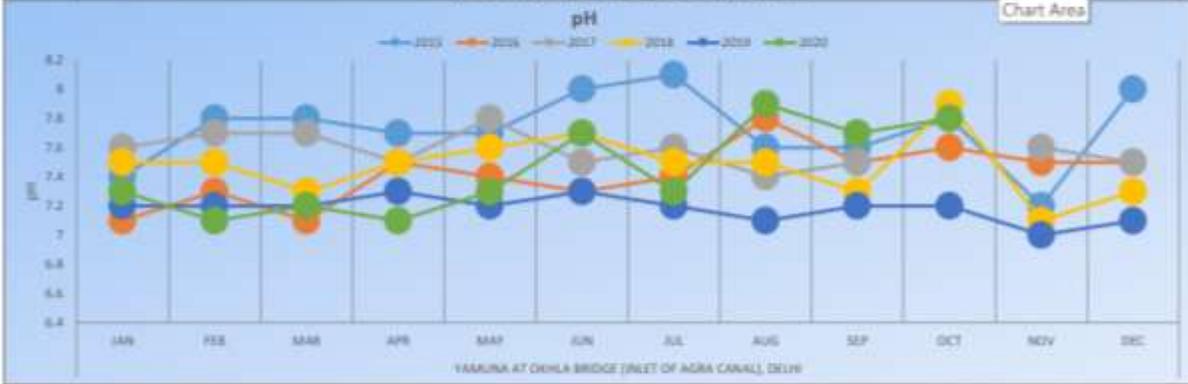
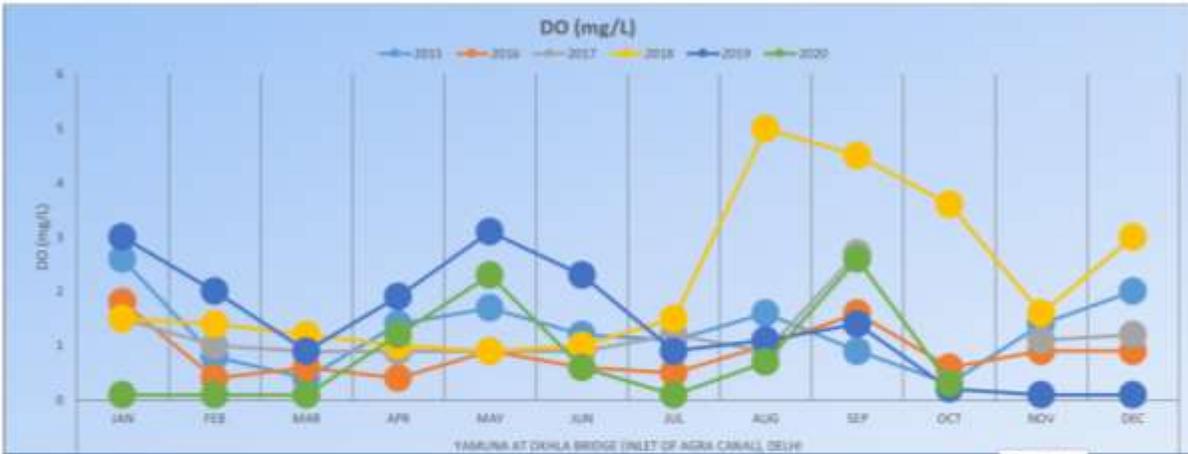


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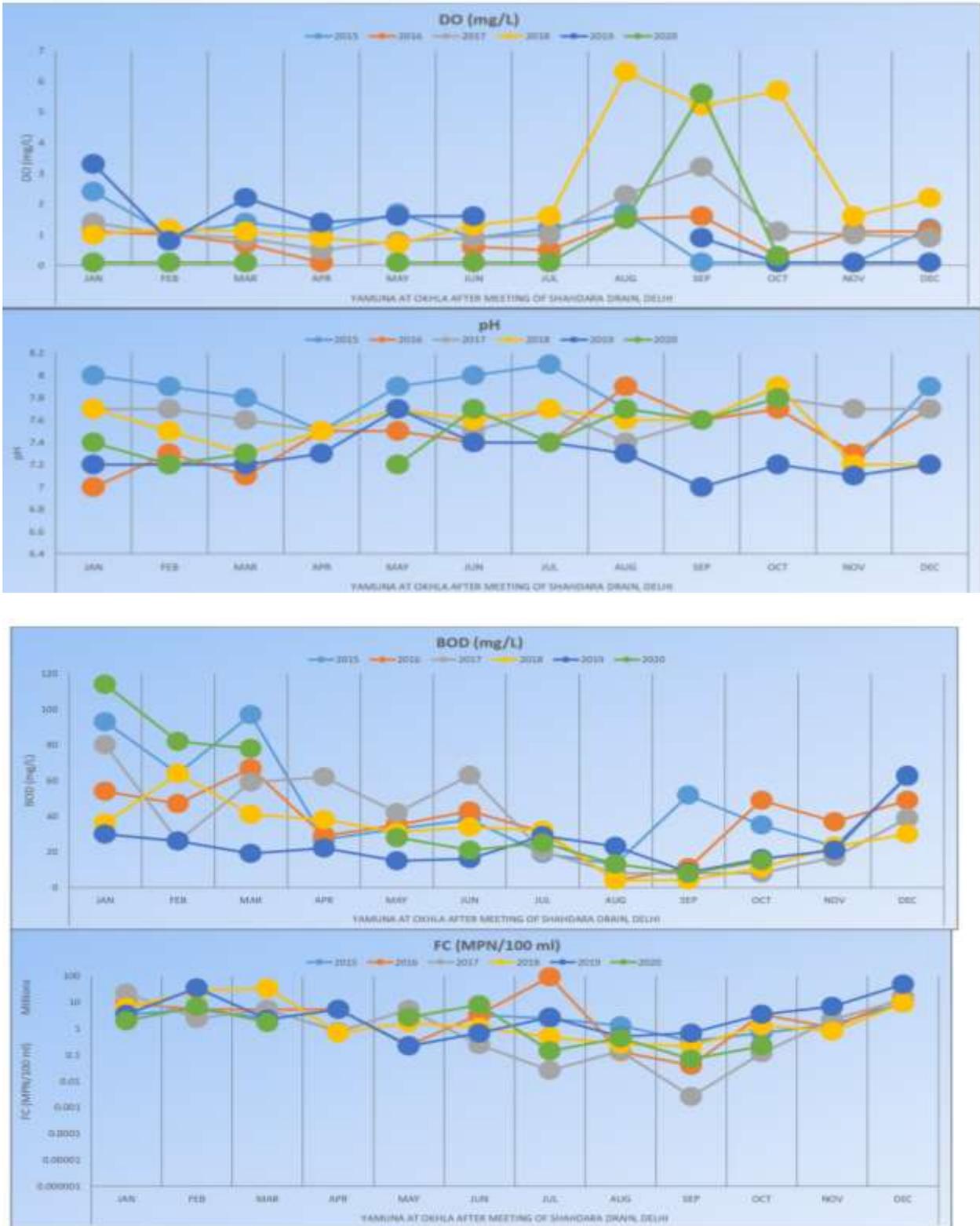




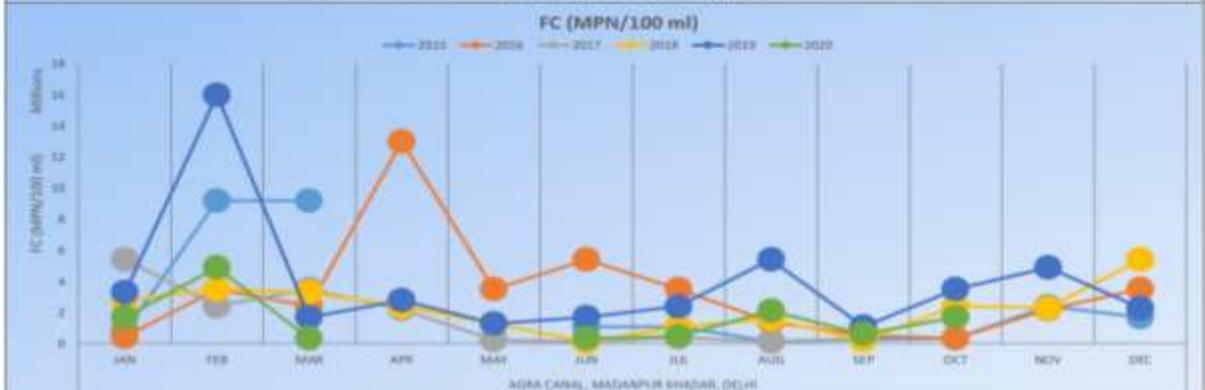
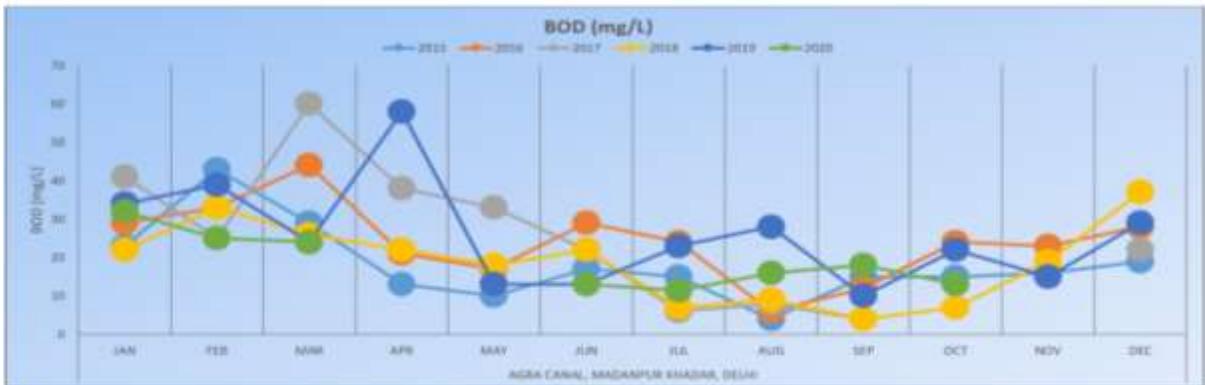
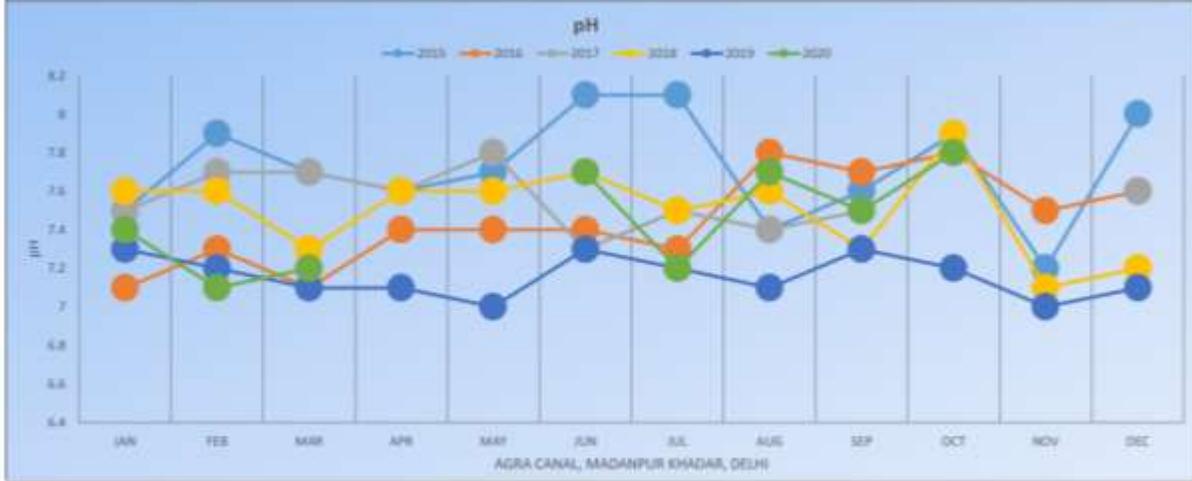
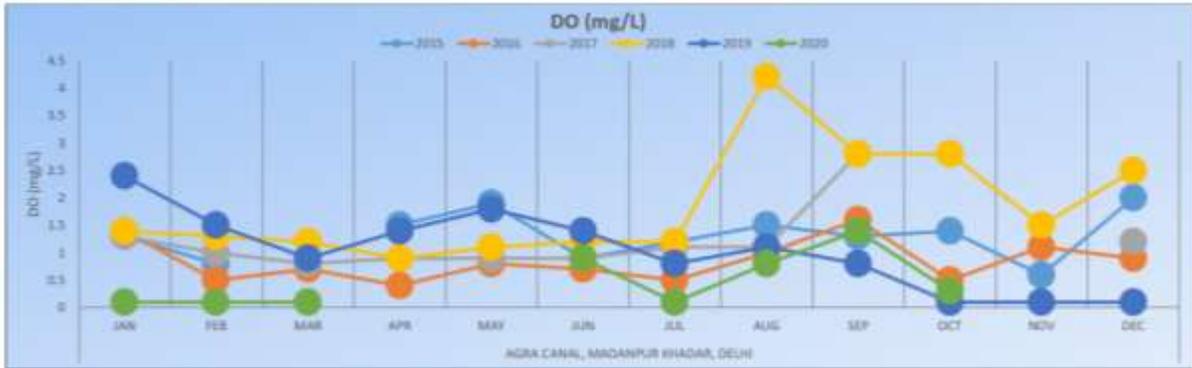
3. YAMUNA AT OKHLA BRIDGE (INLET OF AGRA CANAL), DELHI



4. YAMUNA AT OKHLA AFTER MEETING SHAHDARA DRAIN, DELHI



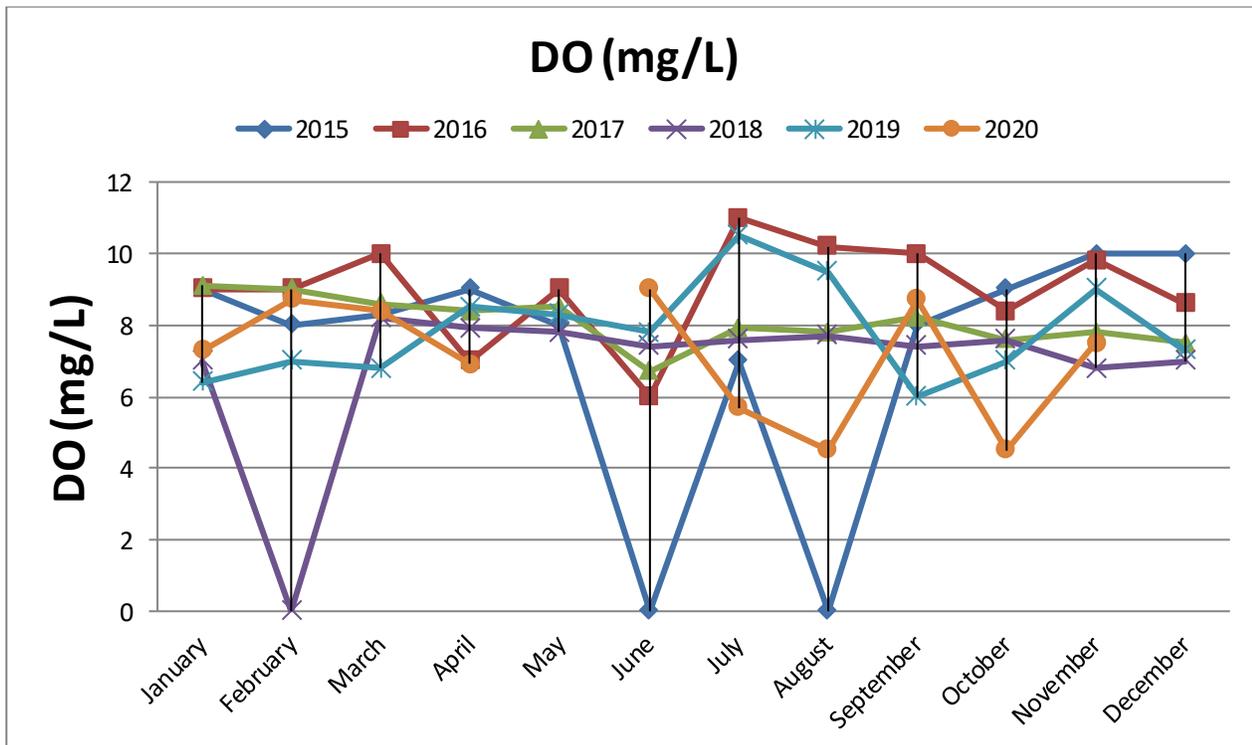
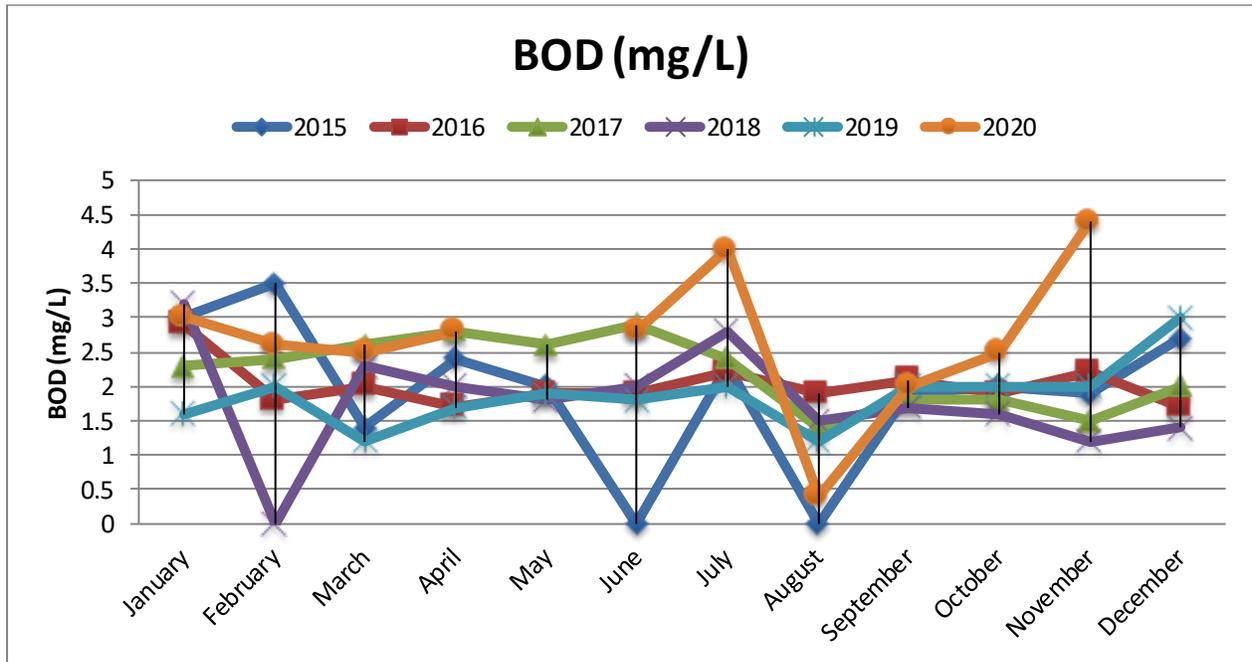
5. AGRA CANAL, MADANPUR KHADAR, DELHI



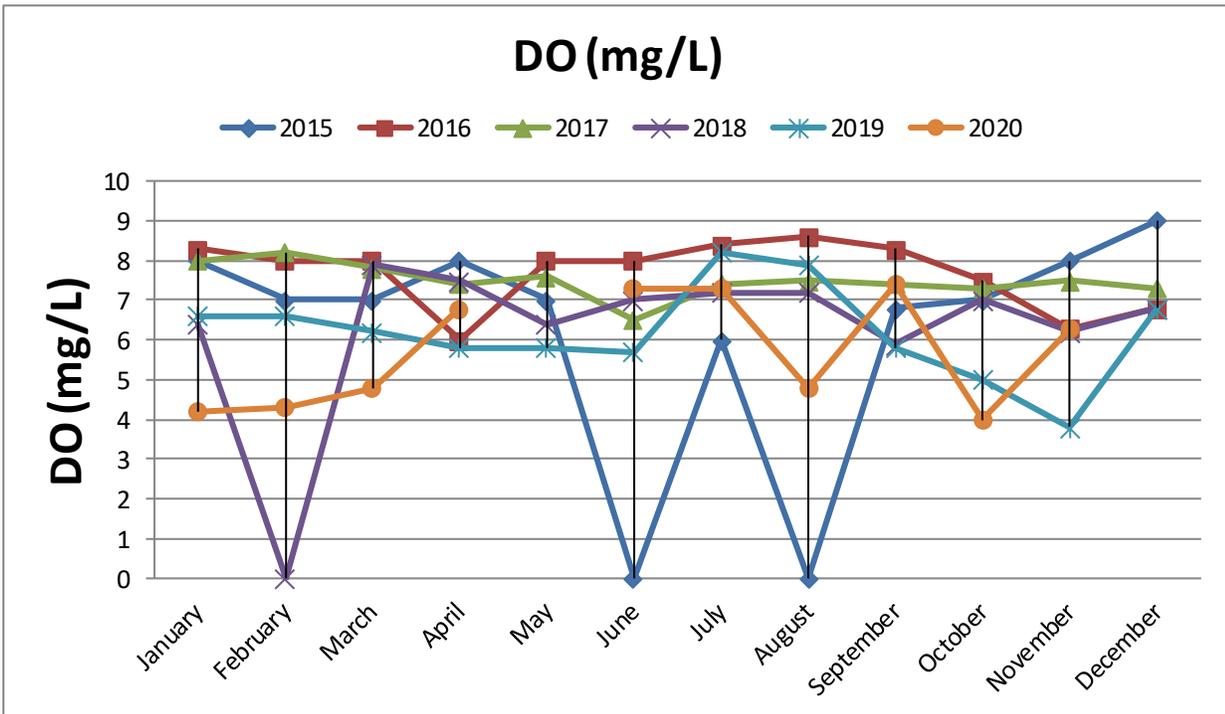
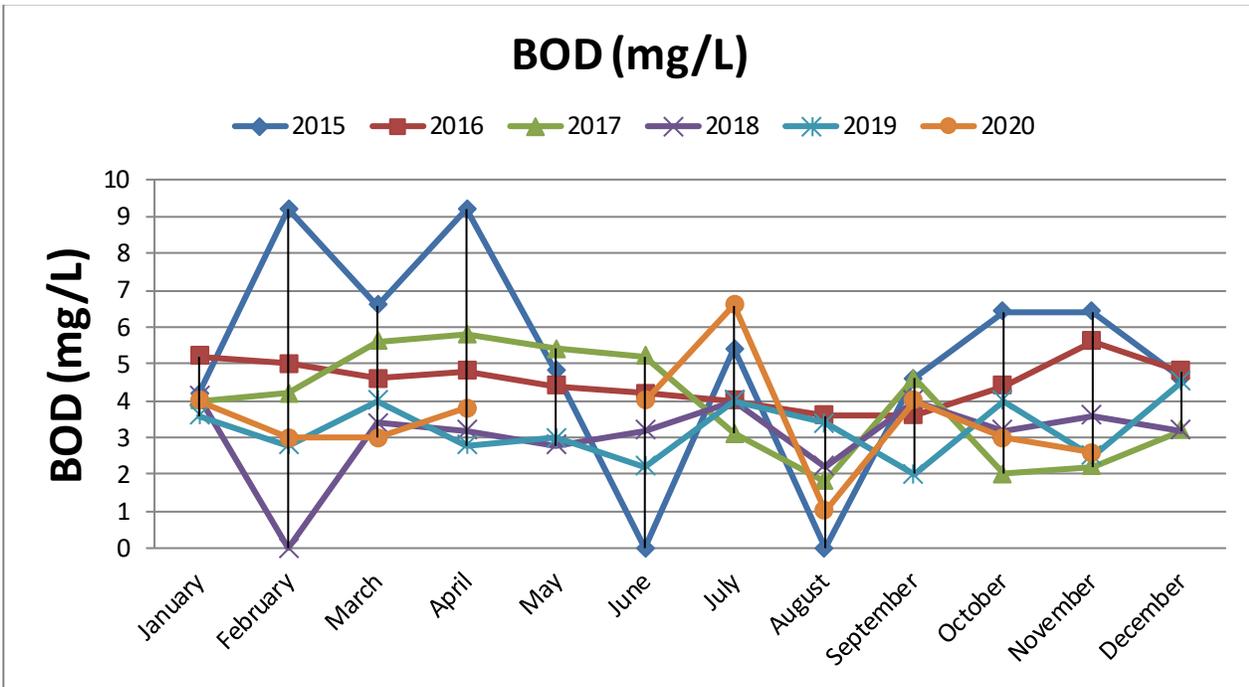
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Water quality of river Yamuna (2015-2020)

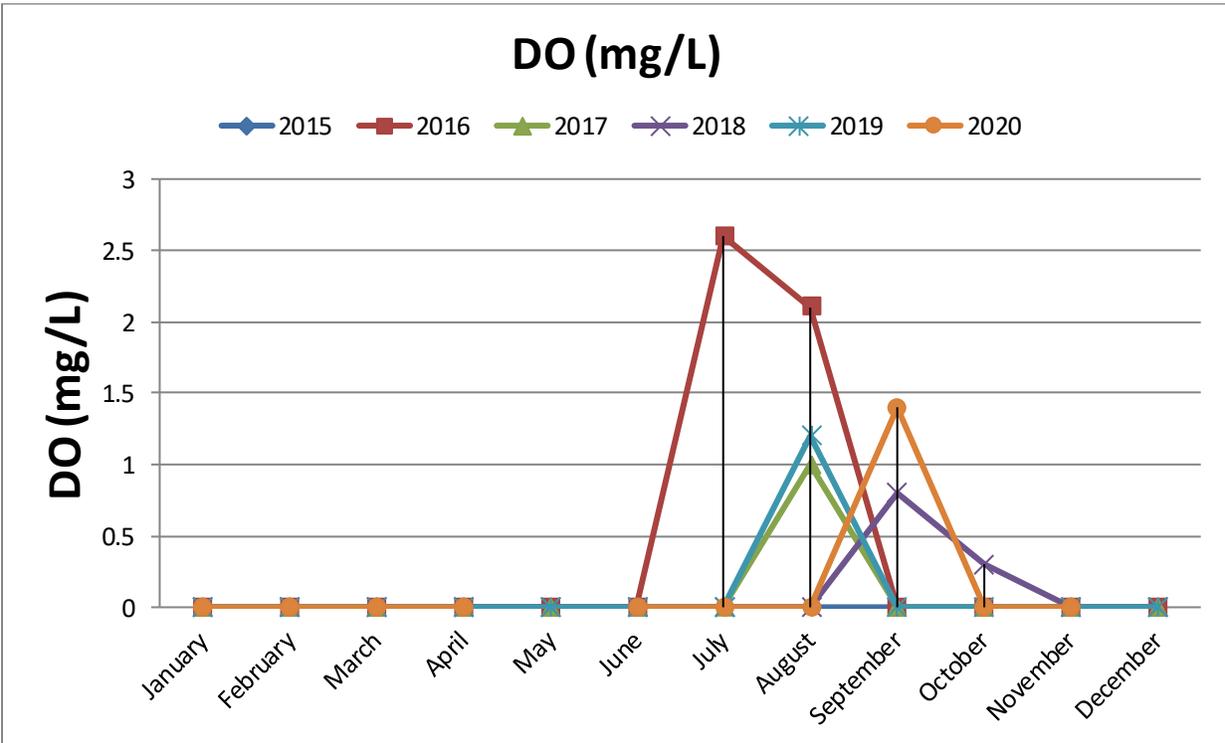
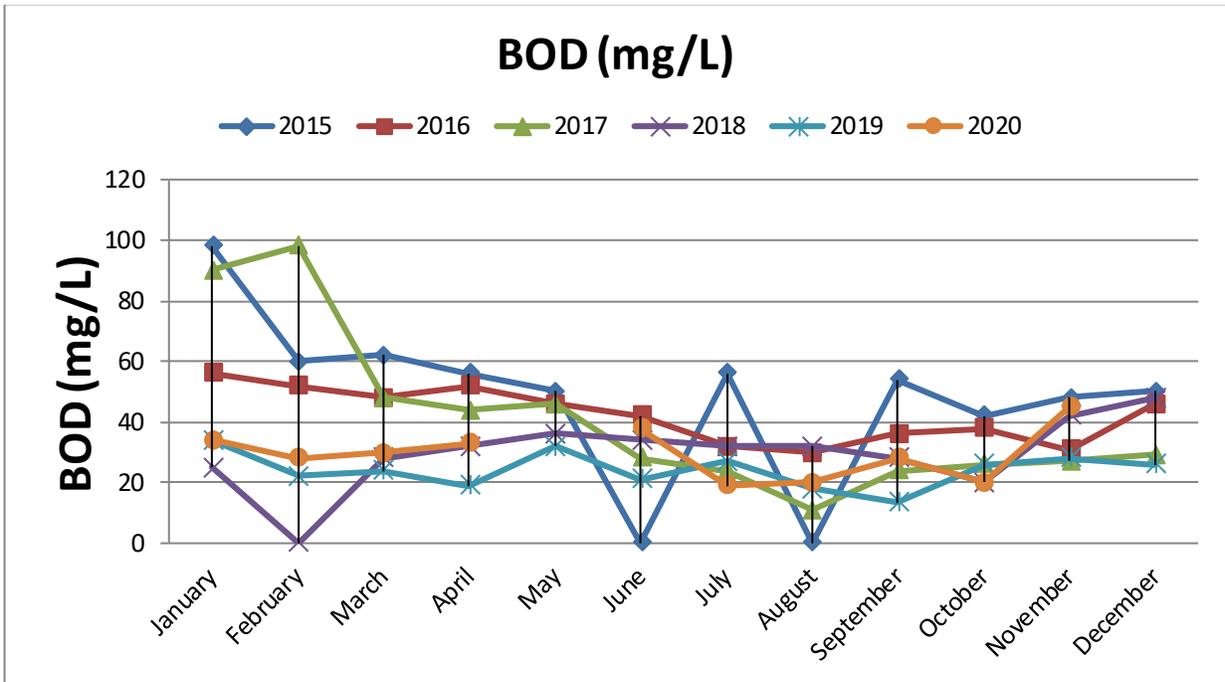
PALLA



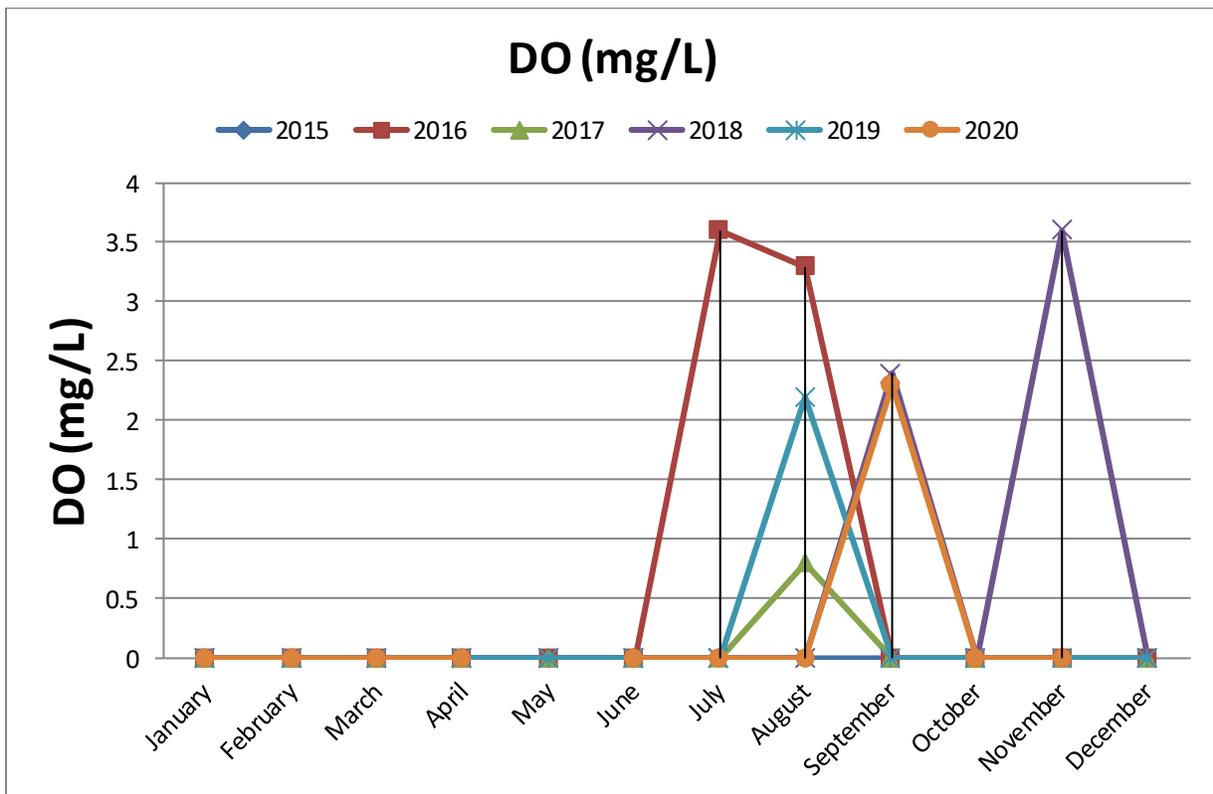
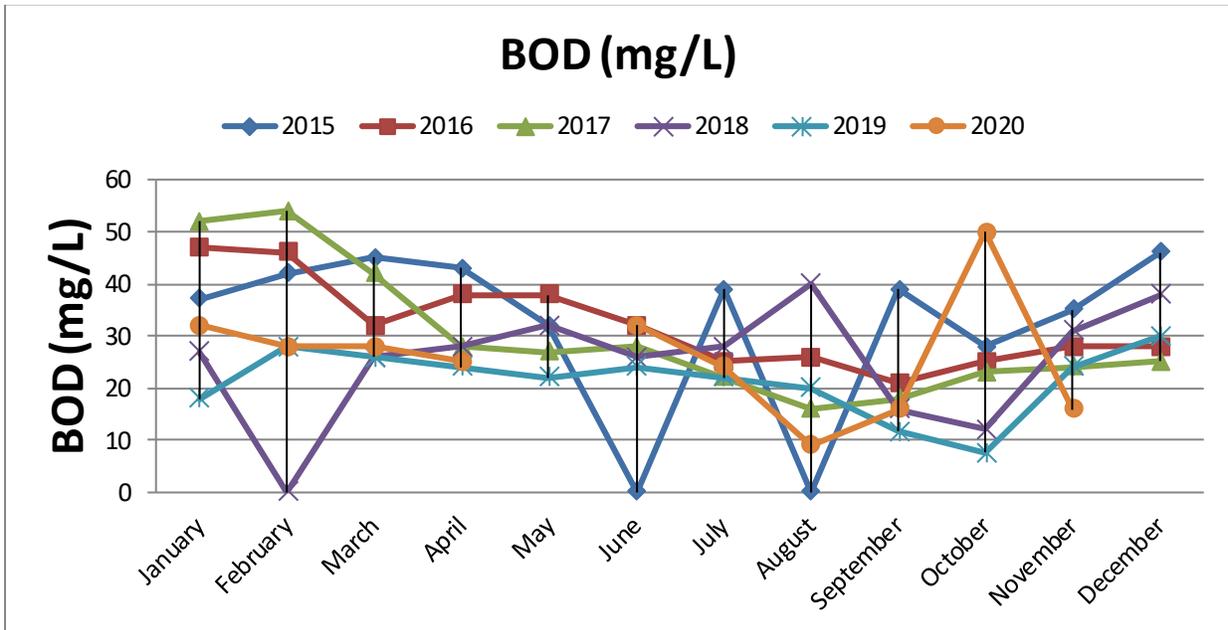
SURGHAT



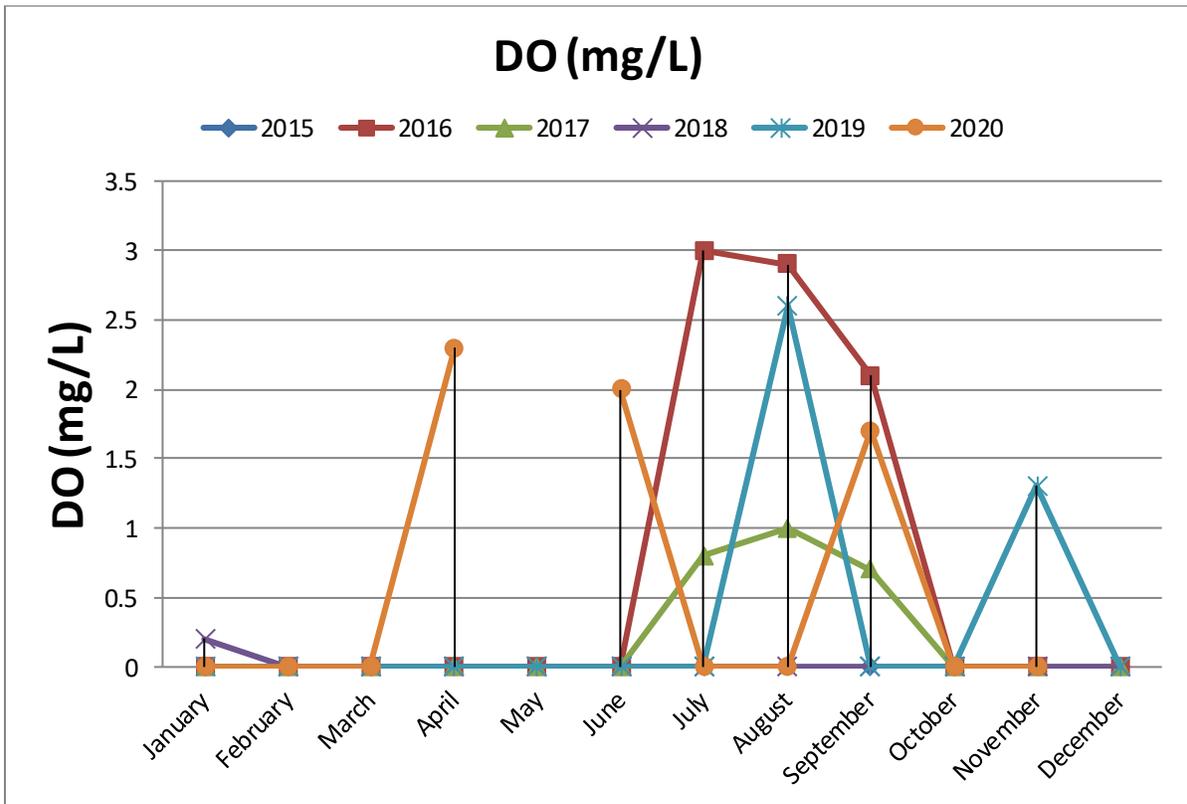
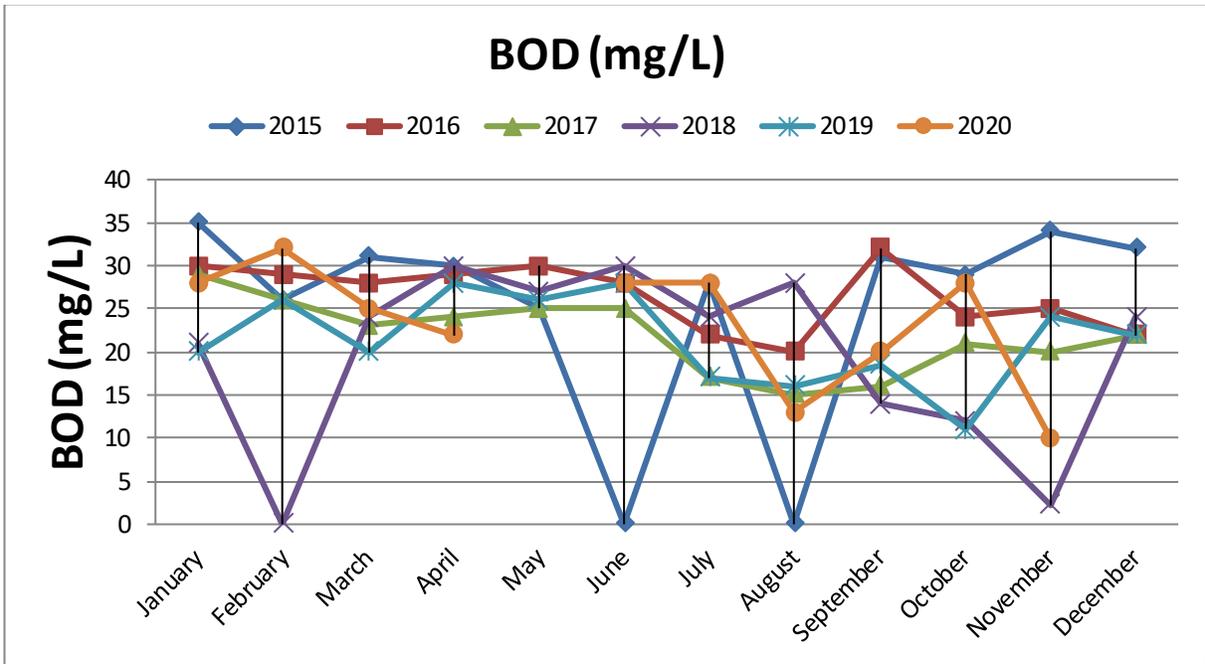
KHAJURI PALTOON POOL



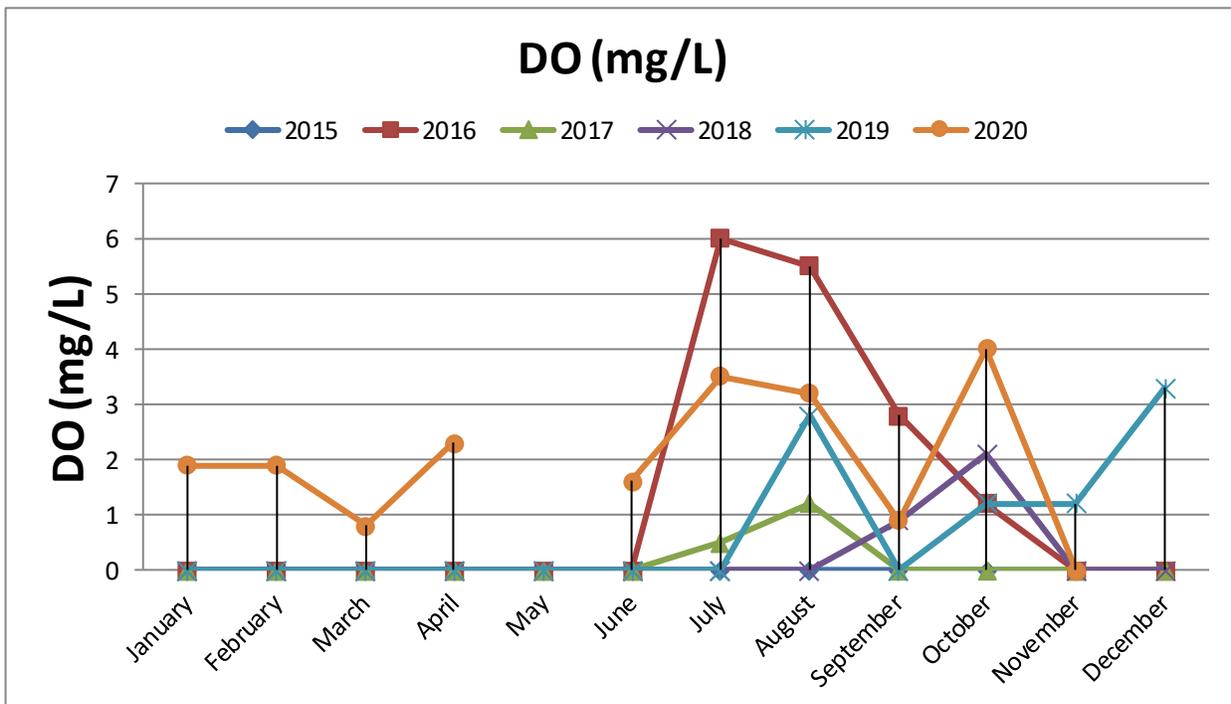
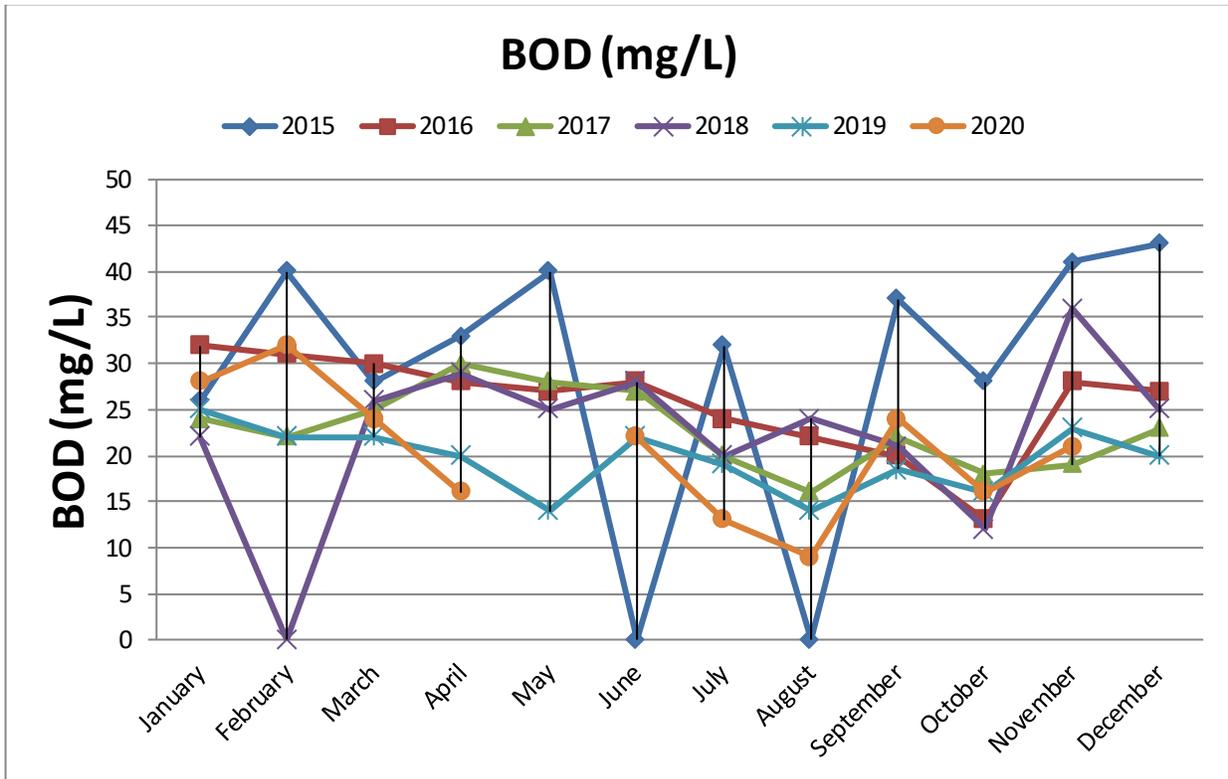
KUDESIA GHAT



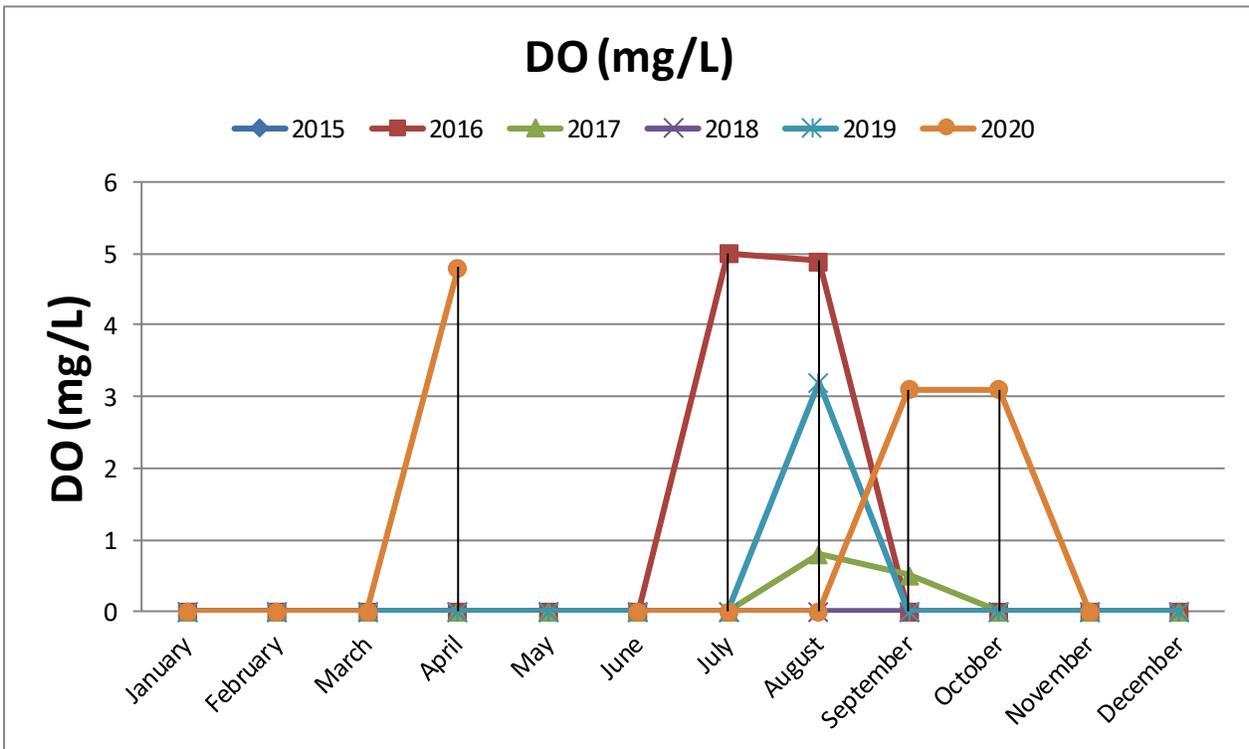
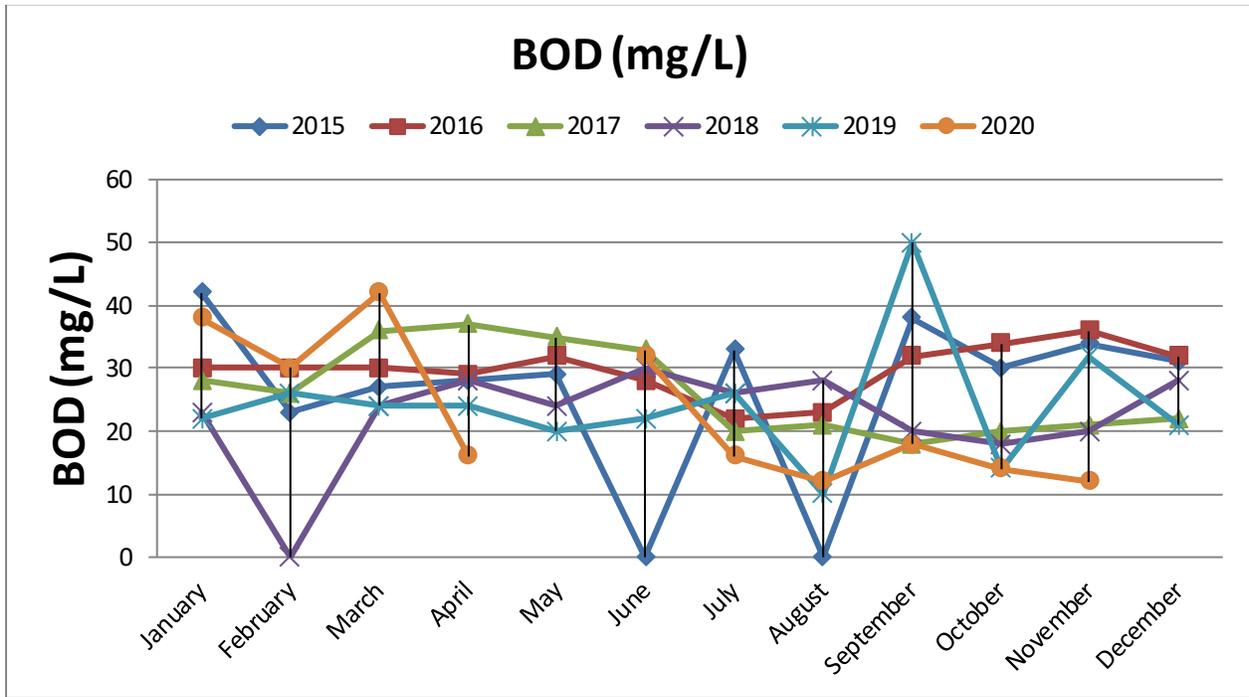
ITO BRIDGE



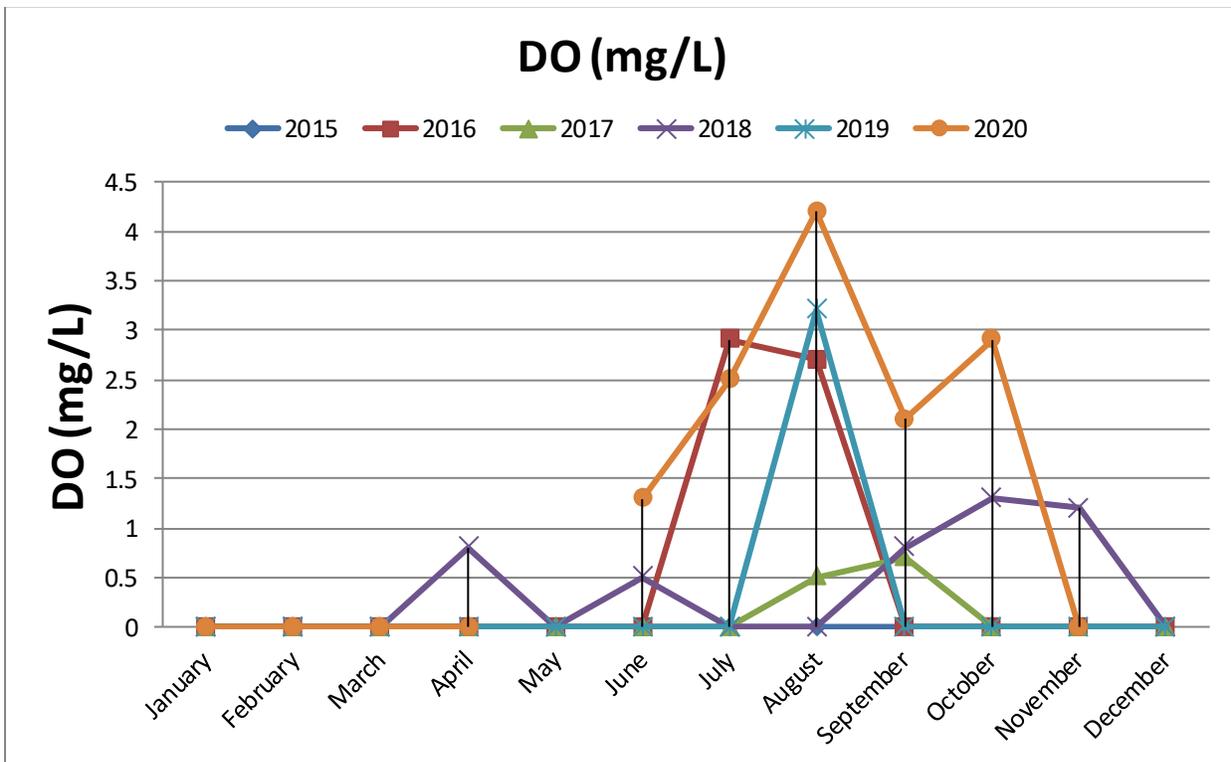
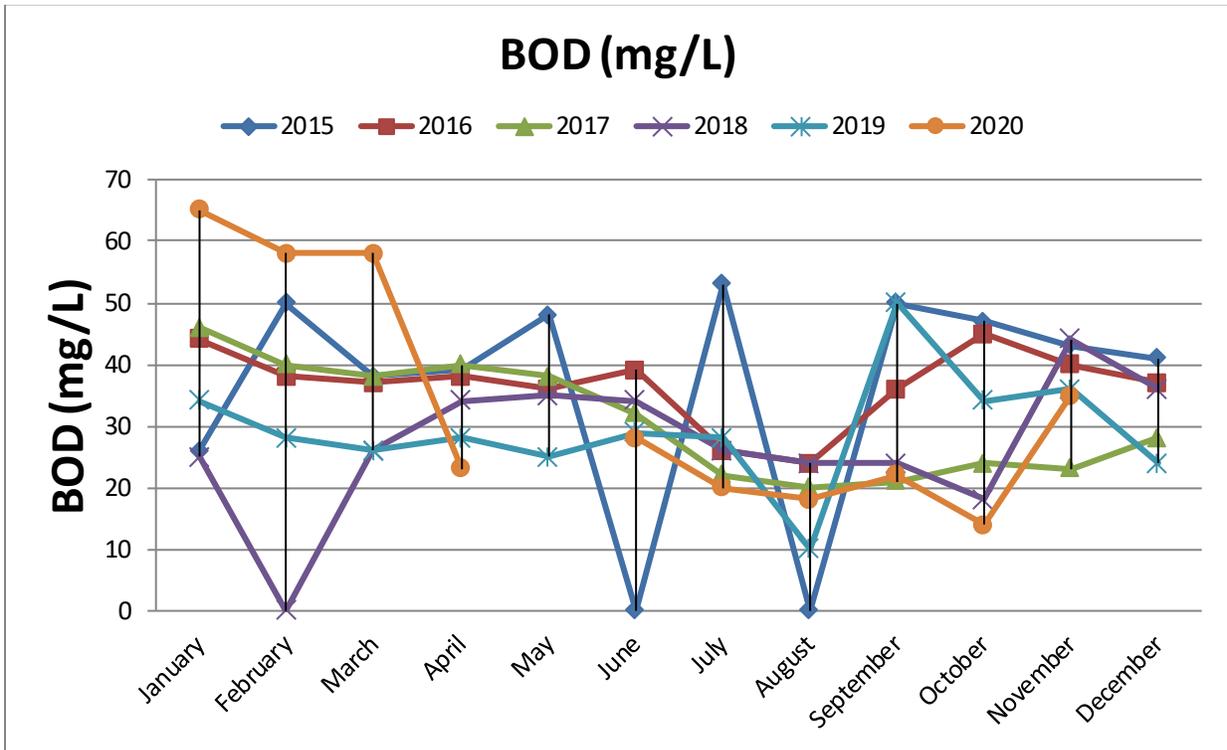
NIZAMUDDIN BRIDGE



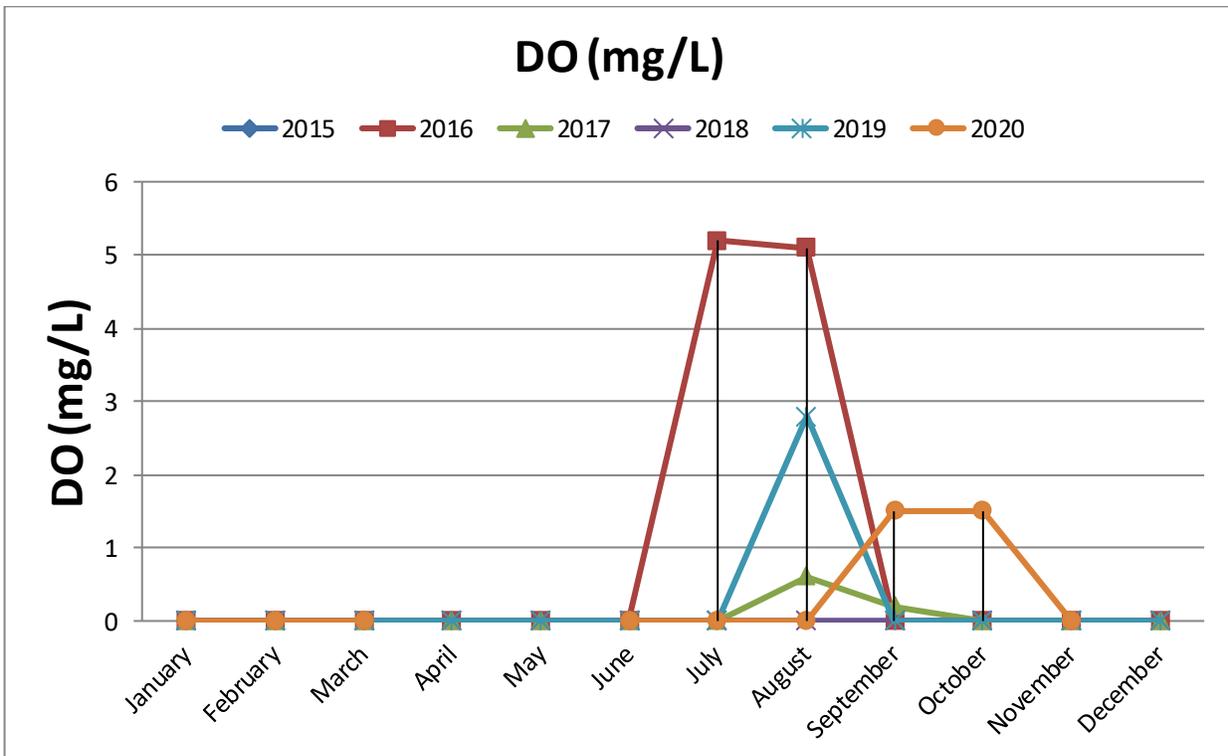
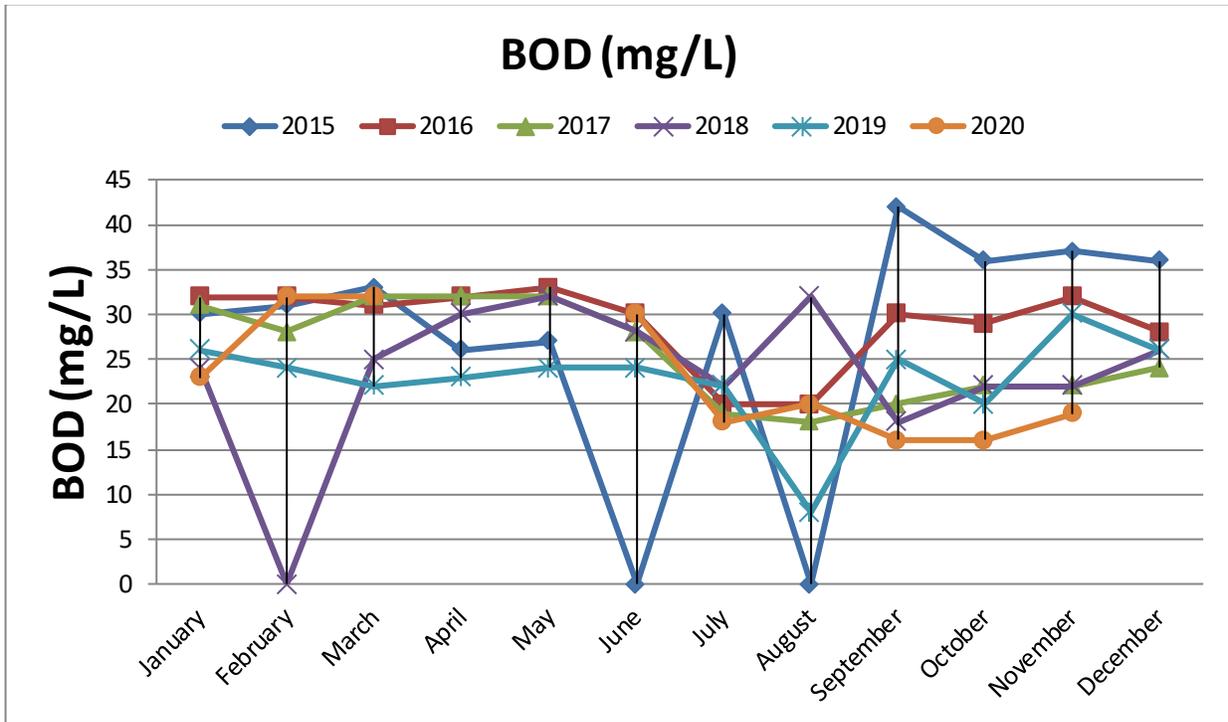
AGRA CANAL OKHLA



SHAHDRA(DOWN STREAM)



AGRA CANAL JAIPUR



Related to Chapter 3 - Quality of River water

**Report on Forming of Layer of Foam
Observed in River Yamuna at Okhla Barrage**
(24th July 2020)



Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change, Govt. of India)
Parivesh Bhawan, East Arjun Nagar
Delhi - 110032

August 10, 2020

Report on Layer of Foam Observed in River Yamuna at Okhla Barrage (24th July 2020)

Introduction

River Yamuna is monitored at five selected locations in Delhi on monthly basis by Central Pollution Control Board (CPCB) under National Water Quality Monitoring Programme (NWMP) and findings are also submitted to Hon'ble Supreme Court, Hon'ble National Green Tribunal (NGT) as well as various Committees constituted by Hon'ble Courts, as and when required.

Phenomena of foam formation in river Yamuna is observed occasionally due to discharge of improperly treated or untreated sewage or industrial effluents containing detergents or surfactants such as laundry chemicals & cleaning or washing agents. Generally, detergents contain phosphates (Sodium tri-poly-phosphate) released from households or dry cleaning or other industrial operations. The phosphoric compounds get settled in the form of sludge on the river bed. During Monsoon or when there is a sudden change in gradient of a water body, due to agitation and turbulence, the phosphoric compounds present in the water body get agitated and surface forming piles of foam arises.

During last year, in November 2019, foam formation was observed in River Yamuna and assessment report was submitted to Yamuna Monitoring Committee (YMC) by CPCB. Similar foam formation was reported in media on 24.07.2020. Further, a mail has also been received from Yamuna Monitoring Committee (YMC) on 24.07.2020 informing that toxic foam was seen floating in river Yamuna at Okhla barrage, which was reported in media. A team was deputed by CPCB on 25.07.2020 for collection of samples to assess the water quality of river Yamuna to analyse the causes for toxic foam floating on river Yamuna.

Details of Monitoring and the Collected Samples

CPCB team carried out sampling of river Yamuna on 25.07.2020 at four locations viz., Wazirabad Barrage (U/s), ITO Bridge, Nizamuddin Bridge and Okhla Barrage (D/s) to ascertain the causes for formation of foam in the river Yamuna. Photographs showing the physical status of river Yamuna on the date of sampling i.e., 25.07.2020 are annexed (**Annexure-I**). The collected samples were analysed in CPCB laboratories and the results are given below.

Analysis Results

The river samples were analysed for the physico-chemical parameters viz., pH, DO, Conductivity, COD, BOD, Chloride, PO₄-P, Anionic Surfactant- Methelene Blue Active Substances (MBAS) and Ammonical Nitrogen and Bacteriological parameters such as Total and Faecal Coliform. The analysis results as available are detailed in the **Table 1**.

Table 1. Analysis results of river water of river Yamuna (25.07.2020)

Location Parameters	Wazirabad (U/s)	ITO	Nizamuddin Bridge	Okhla Barrage (D/s)
pH	7.7	7.2	7.2	7.4
DO (in mg/l)	8.0	Nil	Nil	5.6
Conductivity (in $\mu\text{mho/cm}$)	483	1070	1069	967
COD (in mg/l)	27	45	52	37
BOD (in mg/l)	4.9	12	15	11
Chloride (in mg/l)	53	155	157	132
PO ₄ -P (in mg/l)	BDL	0.4	0.4	0.8
Anionic Surfactant- MBAS (in mg/l)	BDL	1.28	1.23	1.37
Ammonical Nitrogen-N (in mg/l)	2.6	4.6	9.7	9.8
Total Coliform (MPN/100 ml)	13 X10 ²	54X10 ⁵	24 X10 ⁵	14 X10 ⁵
Faecal Coliform (MPN/100 ml)	45	33X10 ⁴	41 X10 ⁴	26 X10 ⁴

Observations

Physical status of river Yamuna at monitored locations as observed on the day of monitoring (25.07.2020) are provided below:

- Lean flow was observed in river Yamuna specially at the monitored locations on the downstream side of Wazirabad barrage. There was no discharge of fresh water from Wazirabad barrage.
- On the day of monitoring i.e., 25.07.2020, surface floating foam on river Yamuna was observed only at downstream side of Okhla Barrage, which could be due to accumulation of phosphate levels or detergents or use of sanitisers by the public in view of COVID-19 pandemic. Moreover, there was inadequate dilution after the drains joined river Yamuna, as no fresh water discharged from Wazirabad barrage.

Analysis results of the collected samples from river Yamuna reveal that

- At the four monitored locations, the analysed parameters were in the order of pH (7.2 to 7.4), DO (Nil - 8 mg/l), Conductivity (483 to 1070 $\mu\text{mho/cm}$), COD (27 to 52 mg/l), BOD (4.9 to 15 mg/l), Chloride (53-157 mg/l), PO₄-P (BDL-0.8 mg/l), Anionic Surfactant-MBAS (BDL -1.37 mg/l) and Ammonical Nitrogen (2.6 to 9.8 mg/l)
- Maximum concentration of BOD (15 mg/l), COD 52 mg/l) and Chloride (157 mg/l) were observed at Nizamuddin Bridge.

- The Dissolved Oxygen (DO) was observed as 8 mg/l on upstream side of Wazirabad Barrage and 5.6 mg/l on downstream side of Okhla Barrage. At other two locations, ITO and Nizamuddin bridges, dissolved oxygen in river Yamuna was not detected.
- There was depletion of dissolved oxygen level in river Yamuna till Okhla barrage due to demand for DO from organic matter or discharge of untreated sewage or other effluents in to the Yamuna waters. However, improvement in DO level was observed at D/s Okhla Barrage and this location was complying to parameter DO prescribed under bathing criteria notified under Environment (Protection) Rules, 1986.
- Anionic Surfactant- MBAS concentration was observed as 'BDL' at U/s Wazirabad, 1.28 mg/l at ITO, 1.23 mg/l at Nizamuddin Bridge and 1.37 mg/l at Okhla Barrage (D/s). Phosphates and Anionic Surfactant (such as a detergent or foaming agent) were not detected on upstream side of Wazirabad, indicating no presence of detergents or foaming agents. However, presence of phosphates and Anionic Surfactants were observed in the order of 0.4 to 0.8 mg/l and 1.23 to 1.37 mg/l, respectively between ITO and downstream side of Okhla Barrage. Detergents contain phosphates in the form of Sodium tri-poly-phosphate generally released from households and laundry chemicals from commercial/industrial operations.
- Water quality for biological parameter i.e., FC was observed as 45 MPN/100ml at Wazirabad U/s, 33×10^4 MPN/100ml at ITO, 41×10^4 MPN/100ml at Nizamuddin and 26×10^4 MPN/100ml at Okhla D/s. Only U/s Wazirabad location was complying to the bathing water quality criteria w.r.t Faecal Coliform (FC). Maximum FC was observed at Nizamuddin Bridge which clearly indicates discharge of untreated sewage, within Delhi stretch of river Yamuna.
- All the four monitored locations are not complying to the Primary Water Quality Criteria for Outdoor Bathing criteria parameters viz., BOD and FC whereas DO was complying to the criteria at Wazirabad U/s and Okhla Barrage D/s which clearly indicates discharge of untreated or partially treated effluents into river Yamuna within Delhi stretch.

Reasons for formation of foam in river Yamuna

It has been observed that usually foam formation takes place at two locations on river Yamuna at downstream side of ITO and Okhla barrages.

Primary reasons of formation of foam is presence of surfactants in wastewater are

- a) At Okhla barrage, all treated and untreated wastewater of Delhi is impounded and only excess wastewater released downstream;

- b) Release of wastewater from barrage agitate surfactants present and foam formation takes place;
- c) Formation of foam at identified locations is a regular phenomenon and foam quantities increase with discharge quantity of wastewater from the barrages.
- d) Surfactants are bio-degradable and get treatment in sewage treatment plants. However, surfactants in untreated sewage discharged into river Yamuna result in formation of foam.

Conclusion

Use of detergents or foaming agents has increased substantially due to awareness among public to maintain hygiene as a precautionary measure to protect from COVID-19 infection.

Photographs taken on the date of monitoring (i.e., 25.07.2020) clearly indicate that physical formation of foam was not observed at the monitored locations between U/s Wazirabad and Nizamuddin bridge, except at D/s Okhla Barrage.

Based on the analysis results, it can be concluded that presence of surfactants and phosphates was observed at three monitored locations between D/s Wazirabad and D/s Okhla Barrage which indicates discharge of untreated sewage or partially treated sewage or industrial effluent containing laundry chemicals. Also, due to sudden fall in water discharge from Okhla barrage, the surfactants and foaming agents present in the wastewater or in the sludge on the river bed get agitated and thereby forming piles of foam, specially at Okhla Barrage.

Recommendations

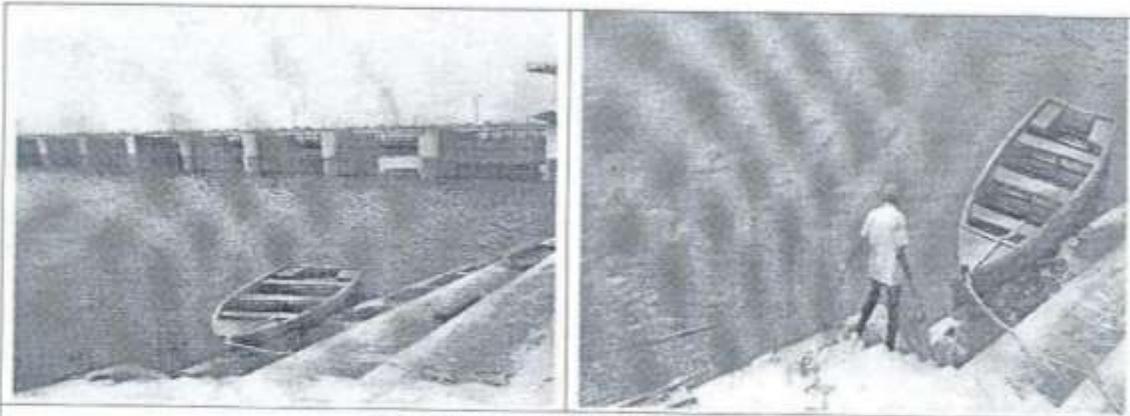
Following recommendations are suggested

- (i) Entire sewage generated from the stretch of Delhi requires proper treatment. Surfactants released from households or commercial establishments get biodegraded in sewage treatment plants, which will reduce the foam formation in river Yamuna to negligible levels.
- (ii) Bureau of Indian Standards (BIS) also prescribed specifications for manufacture of household & industrial grade detergents. All detergent manufacturing units in the country should be directed to produce detergents only as per BIS specification, after obtaining BIS Certification.

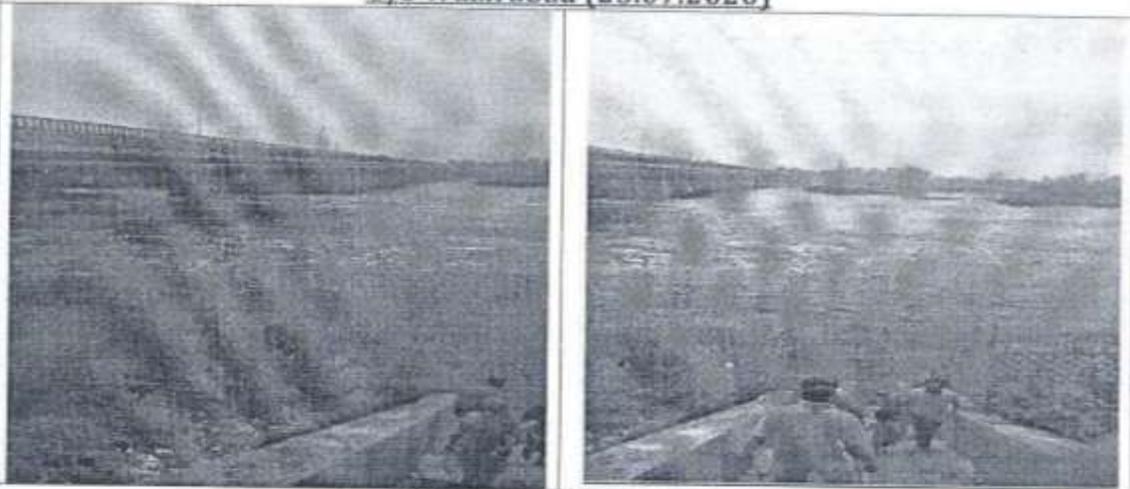
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Annexure - I

Physical status of river Yamuna on 25.07.2020



U/s Wazirabad (25.07.2020)



ITO Bridge (25.07.2020)



D/S Okhla Barrage (25.07.2020)

Related to Chapter 3 - Quality of River water

REPORT ON FOAM FORMATION IN YAMUNA RIVER



DELHI POLLUTION CONTROL COMMITTEE
4TH FLOOR, ISBT BUILDING, KASHMERE GATE, DELHI-6
(visit us at : <http://dpcc.delhigovt.nic.in>)
(14th August, 2020)

CONTENT



No.	Particular	Page No.
1.0	Background	3-4
2.0	Objectives	5
3.0	Sample collection	6
4.0	Analysis Results	6
4.1	River water quality assessment <u>w.r.t.</u> phosphate and Surfactant	7-9
4.2	Drains <u>waste water</u> quality assessment <u>w.r.t.</u> phosphate and Surfactant	10-12
4.3	Najafgarh Drain <u>waste water</u> quality assessment at various locations <u>w.r.t.</u> phosphate and Surfactant	13-15
4.4	Supplementary Drain <u>waste water</u> quality assessment at various locations <u>w.r.t.</u> phosphate and Surfactant	16-17
4.5	Barapulla Drain <u>waste water</u> quality assessment at various locations <u>w.r.t.</u> phosphate and Surfactant	17-18
4.6	Assessment of STPs treated <u>waste water</u> <u>w.r.t.</u> phosphate and surfactant	18-21
5.0	Conclusion	22-24
	Annexure-I- Sample locations depicting Phosphate and Surfactant values of river Yamuna	25
	Annexure-II-Sample locations depicting Phosphate and Surfactant values of Najafgarh Drain Basin and major drains falling into river Yamuna	26
	Annexure-III-Action taken by DPCC against the Water Polluting Industries/ Units in Delhi	27-29

REPORT ON FOAM FORMATION IN YAMUNA RIVER

1.0 Background

Foam formation was observed in river Yamuna at Okhla through news item published in HT dated 24th July 2020. Yamuna Monitoring Committee asked DPCC for site inspection, taking samples of river water for analysis and initiating detergent and punitive action in the matter.

River water Sample was collected by DPCC on 25th July, 2020 from down-stream Okhla Barrage along with DSIDC team. Sample was collected to ascertain the cause of foaming in river Yamuna. An interim report was submitted to YPMC on 31st July. Further, on direction of YPMC detailed study was conducted to identify the sources from various major drains meeting into river Yamuna.

There are 24 drains joining the river in Delhi stretch of the river, they carry treated and untreated sewage and industrial effluent. DPCC is regularly monitoring the Yamuna river water quality at nine locations and 24 drains falling into river Yamuna.

Phosphate (sources/occurrence and significance)

Phosphorus occurs in natural waters and in wastewaters almost solely as phosphates. Phosphates are used extensively in the treatment of boiler waters. Orthophosphates applied to agricultural or residential cultivated land as fertilizers are carried into surface water with storm runoff. Organic phosphates are found primarily by biological processes. They are contributed to sewage by body wastes and food residues and also may be formed from orthophosphates in biological treatment processes. Phosphates also occur in bottom sediments and in biological sludges.

As per Schedule VI, (General Standards for Discharge of Environmental Pollutant: Inlet Surface Water) the Prescribed Standard for dissolved phosphate is 5.0 mg/l, max.

Surfactant (sources/occurrence and significance)

Surfactants are compounds that lower the surface tension between two liquids, between a gas and a liquid, or between a liquid and a solid. Surfactants may act as detergents, wetting agents, emulsifiers, foaming agents, or dispersants.

Surfactants play an important role as cleaning, wetting dispersing, emulsifying, foaming and anti-foaming agents in many practical applications and products, including detergents, fabric softeners, motor oils, emulsions, soaps, paints, adhesives, inks, anti-fogs, ski waxes, snowboard wax, deinking of recycled papers, in flotation, washing and enzymatic processes, and laxatives. Also agrochemical formulations such as herbicides (some), insecticides, biocides (sanitizers), and spermicides (nonoxynol-9). Personal care products such as cosmetics, shampoos, shower gel, hair conditioners, and toothpastes. Surfactants are used in firefighting and pipelines (liquid drag reducing agents.)

Most commonly used surfactants include alkylbenzenesulfonates (detergents), (fatty acid) soaps, lauryl sulfate (foaming agent), di-alkyl sulfosuccinate (wetting agent), lignosulfonates (dispersants) etc.

Surfactants enter waters and wastewaters mainly by discharge of aqueous wastes from household and industrial laundering and other cleansing operations. A surfactant combines in a single molecule a strongly hydrophobic group with a strongly hydrophilic one. Such molecules tend to congregate at the interfaces between the aqueous medium and the other phases of the system such as air, oily liquids, and particles, thus imparting properties such as foaming emulsification, and particlesuspension.

The surfactant content of raw domestic waste water is generally in the range of about 1 to 20 mg/l. As per IS: 2296 Surface Water Quality Standards, for “Class A” (drinking water without conventional treatment but after disinfection) anionic detergent is 0.2mg/l.

Natural surfactant or bio surfactants are amphiphilic biological compounds, usually extra cellular, produced by a variety of microorganism from various substantial's including waste material.

2.0 Objectives

Objective of the study is to identify the hotspots/sources of chemicals/pollutants that are being released into river Yamuna, which is causing foam at downstream Okhla Barrage.

A detailed analysis linking the pollution to the quality of waste water in different drains and quality parameters at nine different locations were assessed to identify the major hotspots of pollution along the length of the river so that attention could thereafter be focused on those drains/spots and the catchment areas responsible for causing increased pollution.

Objective was also to assess the waste water quality of sewage treatment plants with respect to phosphates and Surfactant other than Prescribed Standards as these may be the sources of foamformation.

Najafgarh drain, Supplementary drains&Barapulla Drain carry huge amount of treated and untreated sewage/industrial wastewater so samples were collected from various stretches of these drains.

Delhi Pollution Control Committee has taken actions against various water polluting industries Action taken by DPCC against the Water Polluting Industries/ Units in Delhi (01.06.2020 to 31.07.2020) is given in Annexure-III.

3.0 Sample collection

- **Collection of Samples from all major drains:** Samples were collected from all the major drains (20 drains as 4 drains were found to be dried) on 3/8/2020 and analysed for the parameters i.e. pH, TSS, COD, BOD, Phosphates & Surfactants.
- **Collection of Samples from River Yamuna:** River water samples were collected from 9 locations on 3/8/2020 and analysed for the parameters i.e. pH, DO, BOD, Coliform, Phosphates & Surfactants.
- **Collection of Samples from various points of Najafgarh, Supplementary and Barapulla drains:** 9 no of samples from Najafgarh drain, 4 from Supplementary drain, and 3 samples from Barapulla drain were collected. Samples from Maharani Bagh drain was covered hence it was not possible to collect sample.
- Samples were collected from all STPs outlets in the month of July, 2020 and analysed for all Prescribed Parameters including phosphate and surfactant.
- One river water sample was collected from D/s Okhla Barrage on 25.07.2020 and analysed for phosphate and surfactant/detergent.

Sampling locations of Najafgarh drain, major drains and river Yamuna is given in **Annexure- I & II.**

4.0 Analysis Results

All the samples was analysed for the parameters mentioned above. The analysis results are given below:

The analysis of result of Okhla Barrage is given in following **Table-1:-**

Location	Concentration of Phosphate (PO ₄ -P) (mg/L)	Anionic detergent (mg/l as MBAS)
D/s Okhla Barrage	7.0	0.33

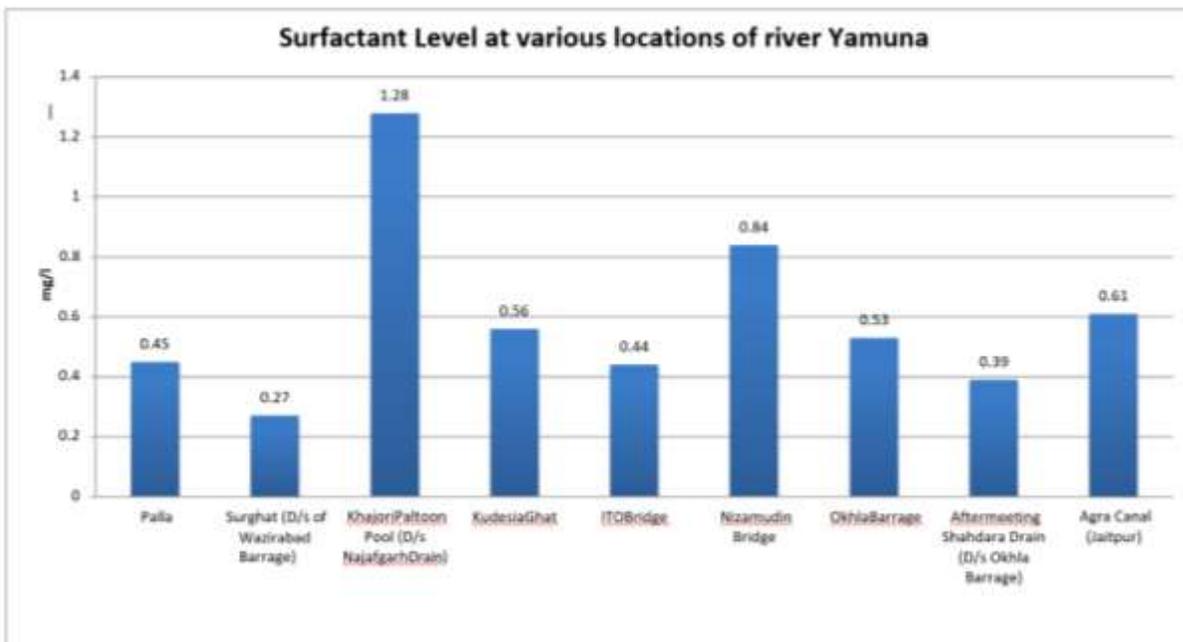
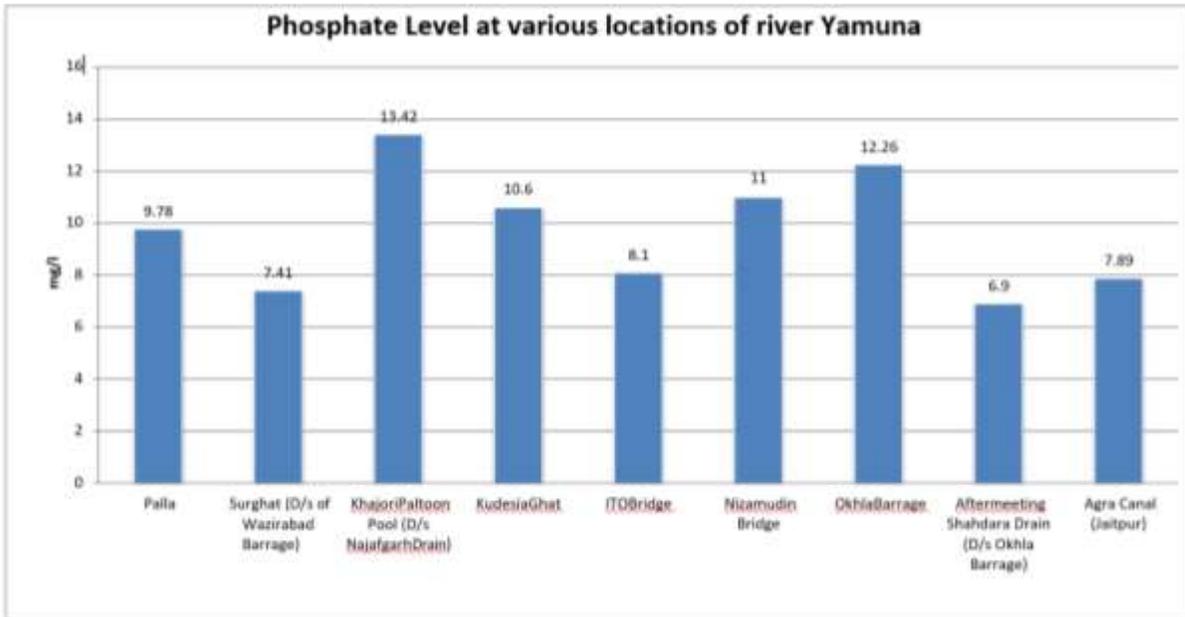
4.1 River water quality assessment w.r.t. Phosphate and Surfactant

Phosphate concentration: Phosphate level in river Yamuna ranged 6.9 mg/l to 13.42 mg/l. At Palla phosphate level was found to be 9.78 mg/l. Highest phosphate level of 13.42 mg/l was found at Khajoori Paltoon Pool (D/s Najafgarh drain). At Okhla Barrage phosphate level was found to be 12.26 mg/l.

Surfactant concentration: Surfactant level in river Yamuna ranged 0.27 mg/l to 1.28 mg/l. At Palla Surfactant level was found to be 0.45 mg/l. Highest Surfactant level 1.28 mg/l was found at Khajoori Paltoon Pool D/s Najafgarh drain. At Okhla Barrage Surfactant level was found to be 0.53 mg/l.

The analysis data of various locations of river Yamuna is given in the following **Table-2**

S.No.	Locations	pH	COD (mg/l)	BOD (mg/l)	DO (mg/l)	Fecal Coliform /100ml	Phosphate	Surfactant
	Water Quality Criteria ('C' Class)	6.0- 9.0	-	3(max)	4(min)	-	-	-
1	Palla	7.6	4	0.4	4.5	7.8x10 ²	9.78	0.45
2	Surghat (D/s of Wazirabad Barrage)	7.4	4	1	4.8	2.0x10 ²	7.41	0.27
3	Khajoori Paltoon Pool (D/s Najafgarh Drain)	7.4	76	20	Nil	47x10 ⁴	13.42	1.28
4	Kudesia Ghat	7.3	28	9	Nil	4.5x10 ⁴	10.6	0.56
5	ITO Bridge	7.3	64	13	Nil	4.5x10 ⁴	8.1	0.44
6	Nizamuddin Bridge	7.3	44	9	3.2	17x10 ³	11	0.84
7	Okhla Barrage	7.5	36	12	Nil	23x10 ³	12.26	0.53
8	After meeting Shahdara Drain (D/s Okhla Barrage)	7.6	44	18	4.2	7.8x10 ³	6.9	0.39
9	Agra Canal (Jaitpur)	7.5	84	20	Nil	11x10 ³	7.89	0.61



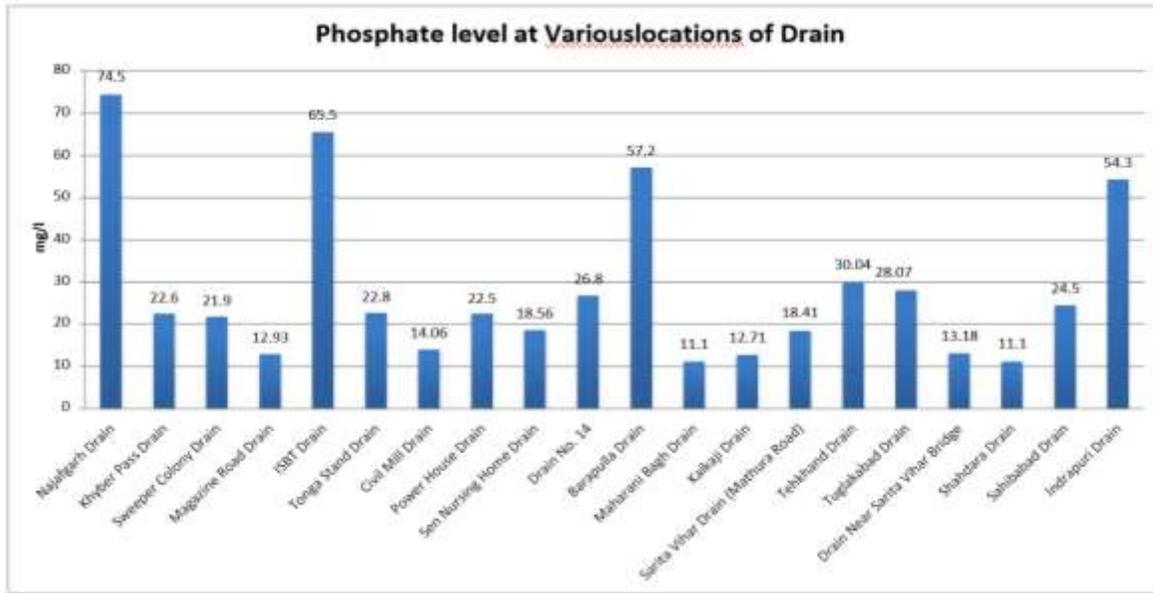
4.2 Drains waste water quality assessment w.r.t. Phosphate and Surfactant

Phosphate concentration: Phosphate level in major drains ranged 11 mg/l to 74.5 mg/l. Highest phosphate level was found at Najafgarh drain i.e. 74.5 mg/l followed by ISBT drain (65.5 mg/l), Barapulla drain (57.2 mg/l) and Indrapuri drain (54.2 mg/l).

Surfactant concentration: Surfactant level in major drains ranged 0.44 mg/l to 4.11 mg/l. Highest Surfactant level of 4.11 mg/l was found in Indrapuri drain followed by 3.33 mg/l in Tehkhand drain, 2.38 mg/l in Maharani Bagh and 2.17 mg/l in Najafgarh drain.

The analysis data of Major drain is given in the following **Table-3**

S. No.	Name of Sample	pH	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	Phosphate	Surfactant
	Standards	5.5- 9.0	100	250	30	-	-
1	Najafgarh Drain	7.2	156	180	95	74.5	2.17
2	Metcalf House Drain	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
3	Khyber Pass Drain	7.4	14	24	6	22.6	0.5
4	Sweeper Colony Drain	7.4	24	56	12	21.9	0.51
5	Magazine Road Drain	7.4	236	320	120	12.93	2.1
6	ISBT Drain	7.3	26	44	10	65.5	0.45
7	Tonga Stand Drain	7.4	128	36	11	22.8	0.45
8	Moat Drain	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
9	Civil Mill Drain	7.3	114	256	76	14.06	1.67
10	Power House Drain	7.3	36	120	42	22.5	1.25
11	Sen Nursing Home	7.2	94	100	56	18.56	2.18
12	Drain No. 12A	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
13	Drain No. 14	7.4	128	128	65	26.8	0.44
14	Barapulla Drain	7.2	28	48	12	57.2	1.83
15	Maharani Bagh Drain	7.2	112	236	60	11.1	2.38
16	Kalkaji Drain	7.3	156	216	90	12.71	2.03
17	Sarita Vihar Drain (Mathura Road)	7.3	138	256	75	18.41	1.89
18	Tehkhand Drain	7.4	198	260	120	30.04	3.33
19	Tuglakabad Drain	7.3	116	148	60	28.07	2.32
20	Drain Near LPG Bottling Plant	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
21	Drain Near Sarita Vihar Bridge	7.2	34	48	18	13.18	0.53
22	Shahdara Drain	7.4	296	368	190	11.1	0.51
23	Sahibabad Drain	7.5	284	356	185	24.5	0.66
24	Indrapuri Drain	7.4	232	320	160	54.3	4.11



4.3 Najafgarh Drain waste water quality assessment at various locations w.r.t. Phosphate and Surfactant

Phosphate concentration: Phosphate level at various locations of Najafgarh drain ranged 24.87 mg/l to 77.71 mg/l.

It has been observed that there is a high concentration of phosphate (77.71 mg/l) in the upstream of Najafgarh Jheel. At the outfall of Najafgarh drain (before confluence to river Yamuna), the phosphate level was observed 74.5 mg/l. In the whole stretch of Najafgarh drain no significant increase observed in phosphate level.

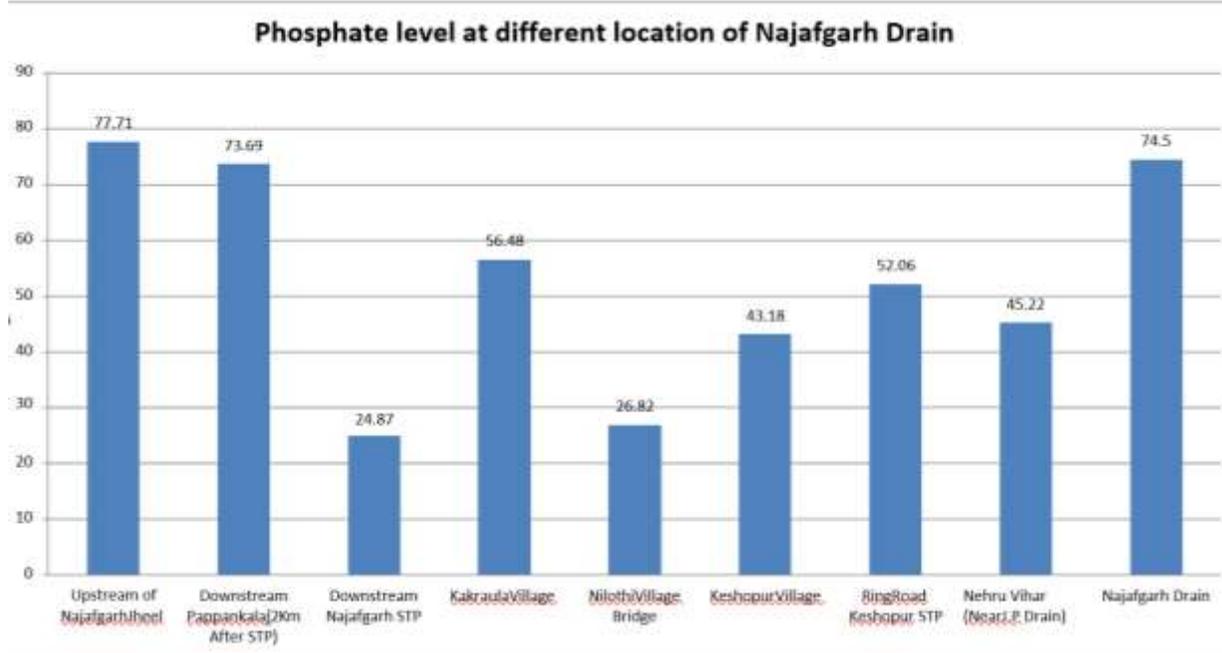
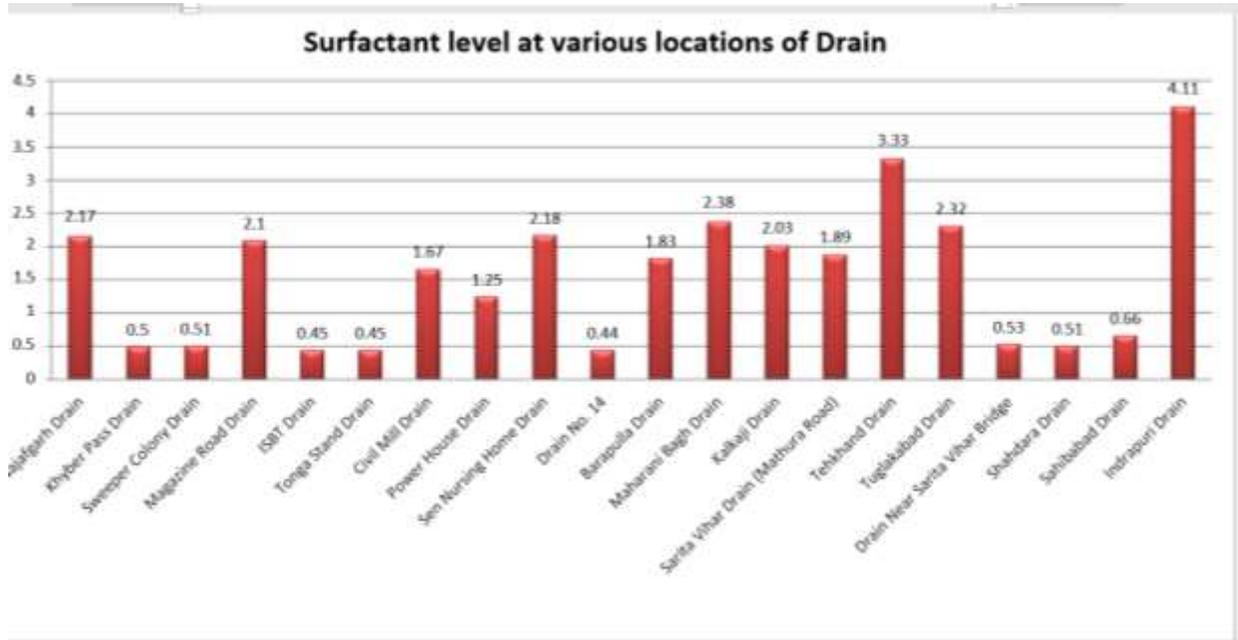
Surfactant concentration: Surfactant level at various locations of Najafgarh drain ranged 0.63 mg/l to 2.17 mg/l. Highest Surfactant level 2.17 mg/l was found at outfall before confluence to river Yamuna.

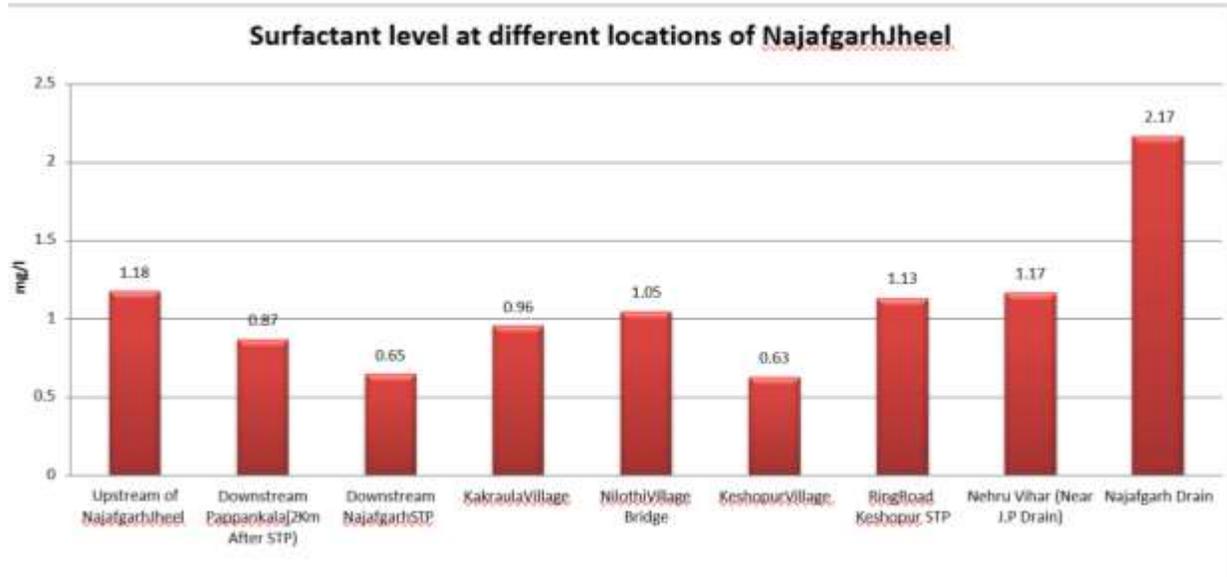
Surfactant level was found 1.18 mg/l in the upstream of Najafgarh Jheel. At the outfall of Najafgarh Drain (before confluence to river Yamuna), the Surfactant level was observed 2.17 mg/l.

The analysis Data of various locations of Najafgarh drain are detailed in the following

Table-4:-

S. No.	Name of Sample	pH	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	Phosphate	Surfactant
	Standards	5.5- 9.0	100	250	30	-	-
1	Upstream of Najafgarh Jheel	7.1	140	72	22	77.71	1.18
2	Downstream Pappankala (2Km After STP)	7.2	136	120	38	73.69	0.87
3	Downstream Najafgarh STP	7.1	148	252	98	24.87	0.65
4	Kakraula Village	7.1	538	360	125	56.48	0.96
5	Nilothi Village Bridge	6.9	120	72	30	26.82	1.05
6	Keshopur Village	7	132	76	30	43.18	0.63
7	Ring Road Keshopur STP	7.1	124	136	48	52.06	1.13
8	Nehru Vihar (Near J.P Drain)	7.2	208	240	65	45.22	1.17
9	Najafgarh Drain	7.2	156	180	95	74.5	2.17





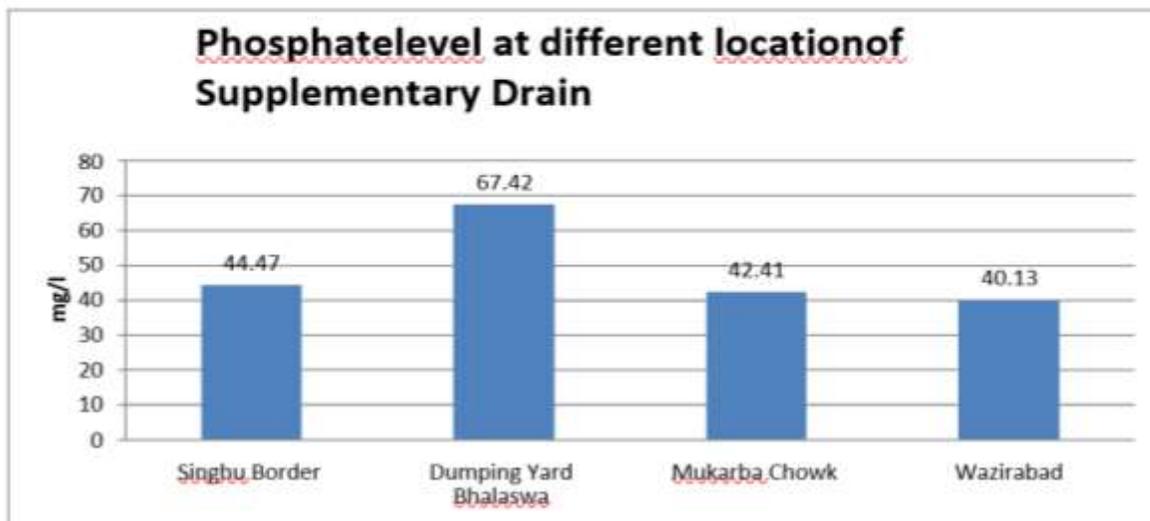
4.4 Supplementary Drain waste water quality assessment at various locations w.r.t. phosphate and Surfactant

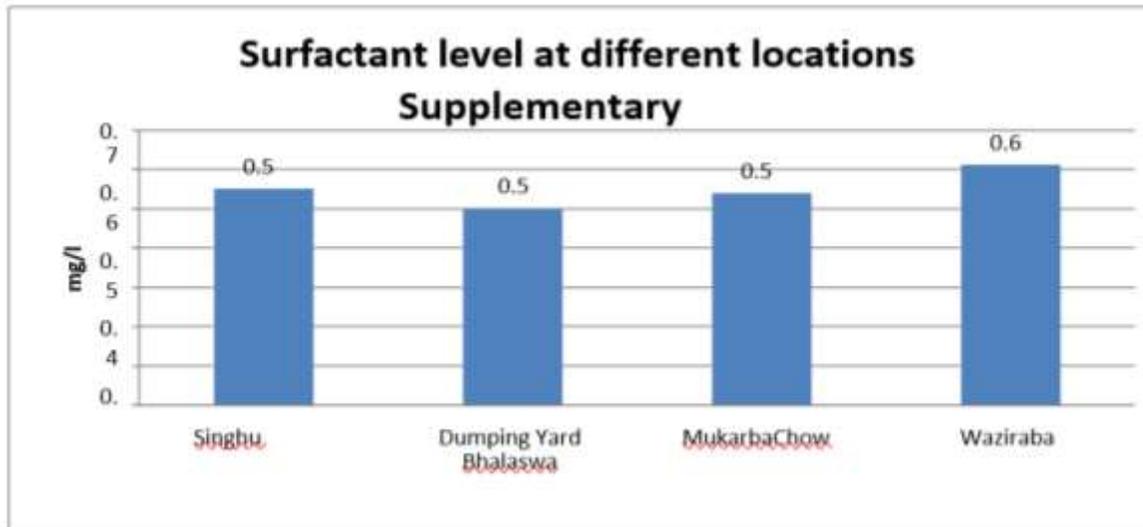
Phosphate concentration: Phosphate level at various locations of supplementary drain ranged 40.13 mg/l to 67.42 mg/l. Highest phosphate level i.e. 67.42 mg/l was observed near dumping yard Bhalaswa bridge Rajiv Nagar. At Wazirabad the phosphate concentration was found to be 40.13 mg/l. Phosphate 40.13 mg/l was observed in drain coming from Sonipat at SinghuBorder.

Surfactant concentration: Surfactant level in supplementary drain ranged 0.50 mg/l to 0.61 mg/l. There is no significant difference in Surfactant level of supplementary drain at variouslocations.

The analysis Data of various locations of Supplementary drain are detailed in the following **Table-5:-**

S. No.	Name of Sample	pH	TSS	COD	BOD	Phosphate	Surfactant
			(mg/l)	(mg/l)	(mg/l)		
	Standards	5.5- 9.0	100	250	30	-	-
1	<u>Singhu</u> Border	7.29	160	280	100	44.47	0.55
2	Dumping Yard <u>Bhalaswa</u> Bridge	7.3	232	160	60	67.42	0.5
3	<u>Mukarba</u> Chowk	7.4	532	580	230	42.41	0.54
4	Wazirabad	7.1	420	380	110	40.13	0.61





4.5 Barapulla Drain waste water quality assessment at various locations w.r.t. phosphate and Surfactant

Phosphate concentration: Phosphate level in Barapulla drain ranged 46.51mg/l to 84.3 mg/l. Highest phosphate level of 84.3 mg/l was observed near Moolchand Metro Station, Chirag Delhi.

Surfactant concentration: Surfactant level in Barapulla drain ranged 0.91 mg/l to 1.83 mg/l. Highest Surfactant level of 1.83 mg/l was found at Barapulla drain.

The analysis Data of various locations at Barapulla drain are detailed in the following

Table-6:-

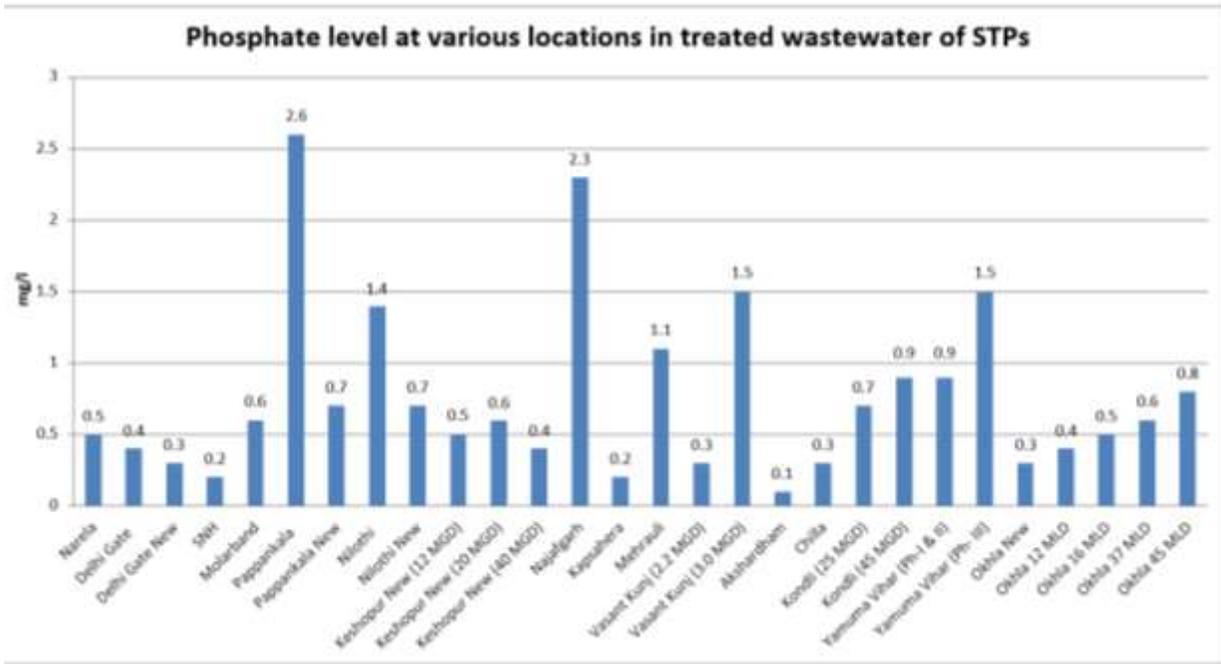
S. No.	Name of Sample	pH	TSS	COD	BOD	Phosphate	Surfactant
			(mg/l)	(mg/l)	(mg/l)		
1	Near Moolchand Metro Station, Chirag Delhi	7.3	112	156	60	84.3	0.91
2	Defence Colony D Block	7.2	192	380	130	64.54	1.26
3	Lodhi Road, Sochna Bhawan	7.1	536	380	150	46.51	1.07
4	Barapulla Drain	7.2	28	48	12	57.2	1.83

The analysis Data at various locations of STPs are detailed in the following T:

Phosphate & Surfactant levels in STPs Treated Water



S. No.	Name of Sample	Phosphate	Surfactant
1	Rithala (Ph-I)	0.9	0.35
2	Rithala (Ph-II)	0.7	0.34
3	Rohini	1.7	0.52
4	Coronation Pillar (Ph-I & II)	1.5	0.31
5	Coronation Pillar (Ph-III)	2.3	0.46
6	Nehru Vihar Oxidation Pond	Nil	Nil
7	Narela	0.5	0.77
8	Delhi Gate	0.4	0.32
9	Delhi Gate New	0.3	0.28
10	SNH	0.2	0.29
11	Molarband	0.6	0.36
12	Pappankala	2.6	0.39
13	Pappankala New	0.7	0.45
14	Nilothi	1.4	0.41
15	Nilothi New	0.7	0.47
16	Keshopur New (12 MGD)	0.5	0.77
17	Keshopur New (20 MGD)	0.6	0.84
18	Keshopur New (40 MGD)	0.4	0.58
19	Najafgarh	2.3	0.84
20	Kapshera	0.2	0.28
21	Mehrauli	1.1	0.4
22	VasantKunj (2.2 MGD)	0.3	0.62
23	VasantKunj (3.0 MGD)	1.5	0.31
24	Akshardham	0.1	0.31
25	Chilla	0.3	0.33
26	Kondli (25 MGD)	0.7	0.36
27	Kondli (45 MGD)	0.9	0.47
28	YamumaVihar (Ph-I & II)	0.9	0.75
29	YamumaVihar (Ph- III)	1.5	0.5
30	Okhla New	0.3	0.57
31	Okhla 12 MLD	0.4	0.77
32	Okhla 16 MLD	0.5	0.78
33	Okhla 37 MLD	0.6	0.82
34	Okhla 45 MLD	0.8	0.46



5.0 Conclusion

The total length of the Najafgarh drain is around 62 km. This drain originates from the Dhansa Regulator located in Dhansa Municipal Territory in South-West of Delhi near Gurugram Border. It joins in river Yamuna at 630 m D/s of Wazirabad Barrage. The drain receives waste water through several sub-drains. Most of the industrial units of Delhi are situated along this drain basin. In addition to domestic waste water, the drain also carries industrial effluent from the various industrial areas located in basin area. The basin areas of Najafgarh drain (after Dhansa Regulator) also possess agricultural wastes as well as dairy wastes.

In river Yamuna Maximum Phosphate and Surfactant concentrations observed at KhajooriPaltoon Pool (D/s Najafgarh drain) i.e. 13.42 & 1.28 respectively.

At Palla, Phosphate & Surfactant levels were observed 9.78 mg/l & 0.45 mg/l respectively. Supplementary drain also carries waste water coming from Sonipat at Singhu Border (Delhi Sonipat Border). The phosphate content of 44.5 mg/l and Surfactant level 0.55 mg/l were observed in Sonipat drain which finally meet into Supplementary drain.

AT the outfall of Najafgarh Drain (before confluence to river Yamuna), the phosphate level was observed 74.8 mg/l. In the whole stretch of Najafgarh drain, no significant increase observed in phosphate level at the upstream and downstream. This study of Najafgarh drain indicates that phosphate contribution is from upper stretch of Najafgarh drain. It may be due to stagnation of water, eutrophication, degradation of organic matter within the drain and deposition of water hyacinth at long stretch of Najafgarh Drain. At the Kakrola Regulator there are many dairy waste i.e. Goela dairy, Kakrola dairy, Nangli dairy. Agricultural waste also deteriorates the water quality including phosphatecontent.



At upstream of Okhla Barrage also such kind of deposition of Water Hyacinth is found due to presence of high amount of nutrients.

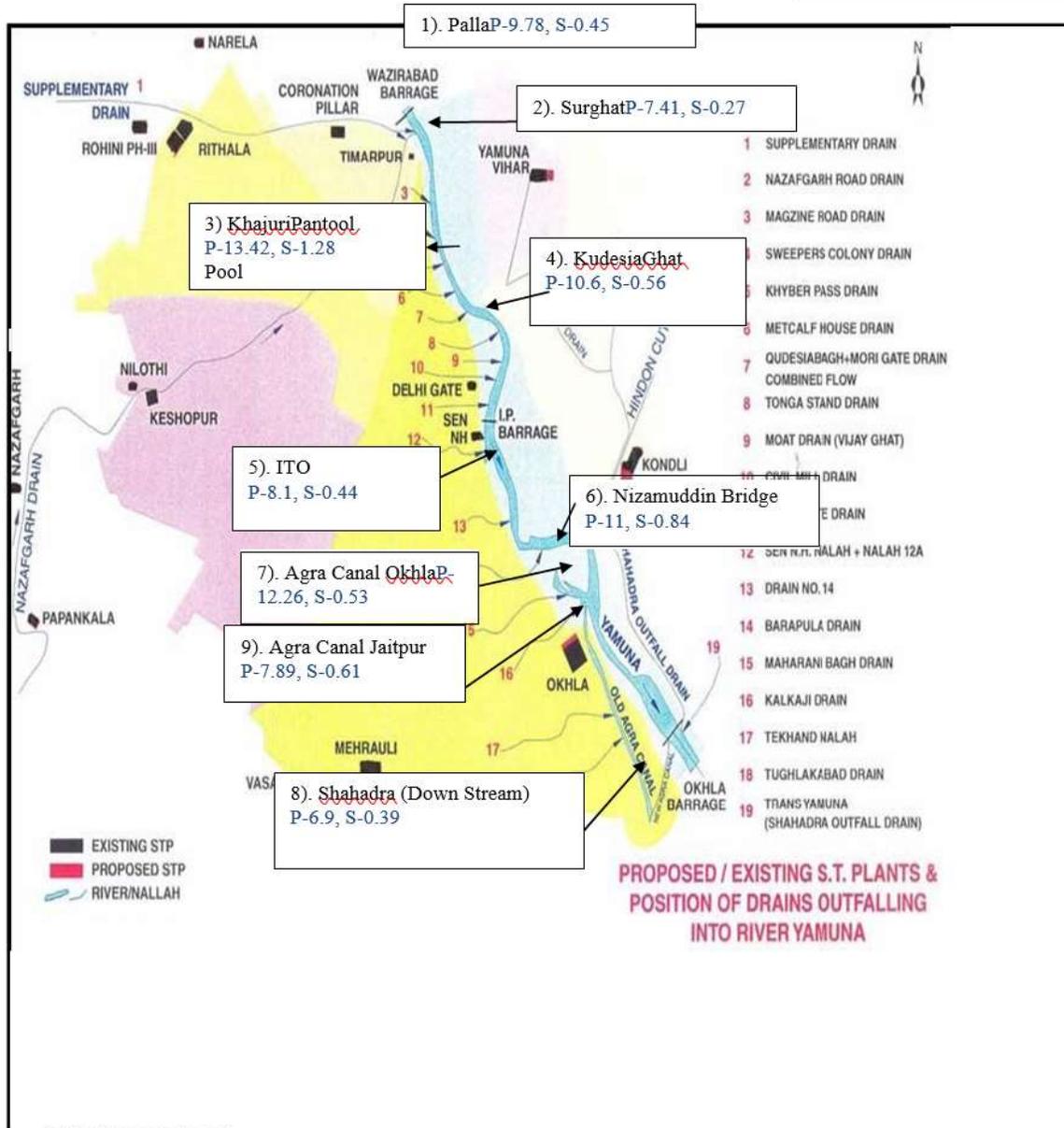
No such significant contribution from waste water discharge from STPs and Industries has been observed. A survey was also conducted by DPCC regarding washing of clothes on various Ghats but no such activity was found all along the stretch of river Yamuna.

Surfactant level was found 1.18 mg/l in upstream of Najafgarh. At the outfall of Najafgarh Drain (before confluence to river Yamuna), the Surfactant level was observed 2.17 mg/l.

Based on the observations it can be concluded that foam formation in river Yamuna at the monitored locations is observed mainly due to presence of phosphates and surfactant in river Yamuna. These Surfactants contain phosphates (Sodium tri-poly-phosphate) generally released from households was observed as 7 mg/L (natural levels of phosphate usually range from 0.005 to 0.05 mg/l).

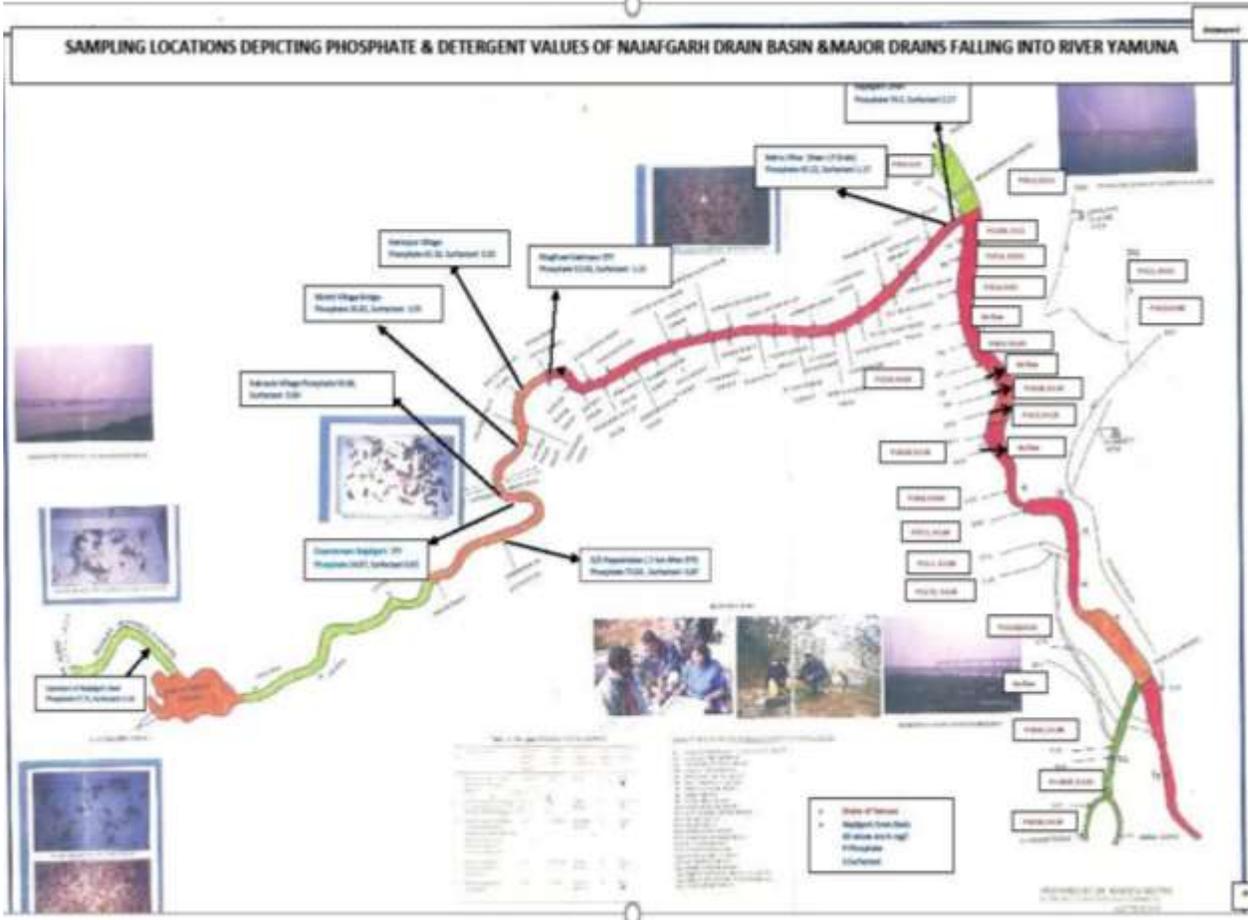
Mechanism of foam formation: The phosphoric compounds in normal cases get settled in the sludge/ riverbed. On release of water from barrage/ reservoir at a particular height, the phosphoric compounds present in the settled sludge on the river bed get agitated and surface forming piles of foam arises. The churning leaves the Yamuna surface covered with a foamy covering. The foam formation increases during rainy days also due to agitation in water flow and low temperature.

Annexure-I



*All values are in mg/l
P-Phosphate
S- Surfactant

Figure: Sampling Locations Depicting Phosphate & Detergent values of River Yamuna



Annexure-III

Action taken by DPCC against the Water Polluting Industries/ Units in Delhi (01.06.2020 to 31.07.2020)

S. No.	Name of CMC	Action taken against Polluting Industries/ Units (Nos)			Show Cause Notices issued w/s SCAJ of Water Act			Directions for Closure issued w/s SCAJ of Water Act			Environmental Compensation Imposed (In Rs.)			Environmental Compensation Received (In Rs.)			Remarks
		Conflicting Area	Non-Conflicting Area	Total	Conflicting Area	Non-Conflicting Area	Total	Conflicting Area	Non-Conflicting Area	Total	Conflicting Area	Non-Conflicting Area	Total	Conflicting Area	Non-Conflicting Area	Total	
1	CMC-I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	CMC-II	17	0	17	0	0	0	17	0	17	443000	0	443000	0	0	0	
3	CMC-III	7	0	7	0	0	0	7	0	7	1400000	0	1400000	0	0	0	
4	CMC-IV	4	0	4	0	0	0	4	0	4	120000	0	120000	0	0	0	
5	CMC-V	7	1	8	7	0	7	0	1	1	2187500	40000	2047500	95000	0	95000	SCN for EDC amount imposed w/s SC Act.
6	CMC-VI	10	0	10	10	0	10	0	0	0	3012500	0	3012500	0	0	0	SCN for EDC amount imposed
7	CMC-VII	0	0	0	0	1	1	0	7	7	0	00000	00000	0	0	0	SCN was sent to one dairy unit in the month of January and now EDC has been imposed on the water seal
TOTAL		51	1	52	27	1	28	28	8	36	4674500	105000	4673450	105000	0	105000	

S. No.	DPC CMC	District	Action taken against Polluting Industries/Units (No)			Show Cause Notices (SCN) Issued				Directions for Closure Issued				Environmental Compensation (EC) Imposed (in Rupees)			EC Received (in Rupees)			Remarks
			Conflicting Areas (No)	Non-Conflicting Areas (No)	Total (No)	SCN as 30(A) of Water Act	SCN as 30(A) of Air Act	SCN as 3 of EP Act	Total SCN	as 30(A) of Water Act	as 30(A) of Air Act	as 3 of EP Act	Total	Conflicting Areas	Non-Conflicting Areas	Total	Conflicting Areas	Non-Conflicting Areas	Total	
			(A)	(B)	(C)=(A+B)	(D)	(E)	(F)	(G)=(D+E+F)	(H)	(I)	(J)	(K)=(H+I+J)	(L)	(M)	(N)=(L+M)	(O)	(P)	(Q)=(O+P)	
1	I	East, North-East & Muzaffarpur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	II	South, South-East & South-West	25	18	43	0	7	19	26	17	25	19	61	1100000	1443750	1240375	0	1443750	1443750	many times SCN / Closure Directions are issued, compliance under various acts. While giving data they have omitted separately.
3	III	North-West	1	0	1	0	0	0	0	7	0	1	8	100000	0	100000	0	0	0	
4	IV	New Delhi	4	0	4	0	0	0	0	4	0	0	4	120000	0	120000	0	0	0	
5	V	North	20	1	21	7	7	1	15	1	2	1	4	407000	45000	452000	175000	0	175000	*SCN for EDC amount imposed in L. M. Column.
6	VI	West	16	44	60	16	44	0	60	0	0	0	0	3017300	4134123	4307042	0	4134123	4134123	*SCN for EDC amount imposed.

7	VII	Central	0	7	7	1	0	0	1	5	0	0	5	0	60000	60000	0	0	0	SCN was sent to one dairy unit in the month of January and now EDC has been imposed on the same unit.
Total			73	70	143	24	58	20	102	34	27	21	82	5741250	6627875	64040375	175000	5577875	7327875	

Annexure C-4/1

Related to Chapter 4 – Sewage Treatment Plants (STPs)

OFFICE THE YAMUNA POLLUTION MONITORING COMMITTEE
 APPOINTED BY HON'BLE NGT
 ROOM NO. 58, INDIA INTERNATIONAL CENTRE
 40, MAX MUELLER MARG, LODHI ESTATE
 NEW DELHI – 110003

No. YPMC/2020/509

Date: 28.10.2020

Subject: Minutes of the review meeting with Delhi Jal Board, held through video conferencing under the chairmanship of the Members of the Yamuna Pollution Monitoring Committee on 13-10-2020 at 2.30 pm.

List of the officers and representatives of the Consultant (Project Management Consultant) is attached at Annexure-I.

Yamuna Monitoring Committee held a review meeting video conferencing with officers of Delhi Jal Board on 13.10.2020 at 2.30 pm. YMC had requested the personal presence of the CEO as the review meeting was scheduled to take up a number of systemic issues like the role of the PMC, how effectively was PMC in the discharging role assigned to it under the agreement, what were the causes of delay in physical and financial progress, what actions were taken by the PMC and the officers of the DJB at various levels, the monitoring mechanisms for resolving issues with the Forest Department for expediting tree cutting permission, which is cited as one of the main reasons for delay particularly in Rithala and Kondli projects under YAP III. However Member Drainage Shri Negi informed the YMC that the CEO was unwell and therefore could not attend the meeting. While it was unfortunate that the CEO was unwell but his continued absence over a period of 12 months was leading to a situation where questions asked by the YMC related to the slow progress of different projects were not being answered adequately by the engineers who represented the CEO resulting in the YMC being deprived of strategic advice on which depended the need to institute timely correctives.

The Members of YMC never-the-less drew the attention of the DJB officers and the PMC to the delays in percentages as reported by NMCG as on 31.08.20 and those reported by DJB in its status report submitted vide mail dated 12.10.20 which are recapitulated below:

YAP III:

	NMCG	DJB
Kondli	26%	27.13%

Rithala	43%	46.50%
Okhla	14%	16.92%
NMCG:		
Coronation Pillar	25%	23%

The various reasons assigned for the delay identified by the NMCG were attributed to :

- Cash Flow constraints
- Contractor's own delays
- Delay in Tree cutting permission
- Covid 19 and labour migration
- EPCA ban

The YMC reviewed the status of project implementation, the causes for delay, the role of the PMC and asked questions to determine what systemic improvements were needed to expedite the progress.

A. Issues relating to Project Management Consultant

YMC had been provided a response to YMC letter dated 21.9.2020 received on 12.10.20 but the information provided did not meet the points raised and when supplementary questions were posed only general replies with no supporting data were given. YMC asked to be apprised of the TORs of PMC and whether the responsibilities were being fulfilled and the steps taken to alert those in the line of decision making seeking intervention to expedite the progress and achieve the targets stipulated. The copies of the PMC's reports given to YMC did not highlight the delays in a way that it demanded intercession .The reports shown had no qualitative content and did not reflect the contribution of PMC in resolving the issues and raising levels.YMC felt that the picture was being glossed over with generalities and asked to see sample cases from PMC to see how they have contributed as part of their assigned role and how this had helped the progress of work.

Member (BSS) pointed out that the Delhi Jal Board has been revising the dates of the completion of all projects and YMC had initially accepted the timelines indicated by the DJB for the reasons cited. However the timelines and milestones were being routinely changed without any accountability on the part of the projects in charge or the Contractor or even

the PMC. This made the objective of monitoring meaningless which required going into the reasons in depth. Since all the four Projects are funded by the NMCG and have a common PMC the role of PMC also needed to be understood as the DJB engineers repeatedly said they were dependent on such advice given by the PMC. YMC needed to know how the PMC was supervising the timelines, the quality and whether action was recommended against contractors and whether levels were raised if the response was insufficient. This was asked to be explained with examples.

Member (BSS) further elaborated that main causes of delay in projects were the delay in Tree cutting permission, cash flow constraints, and contractor's own delays and to a lesser extent due to EPCA ban and COVID-19 disruptions, etc. He further stated that, some of the present contractors have approached the YMC on the issue of considerable delay in release of their payment from DJB and that has had adverse effect on the progress of works. It is not clear as to why there has been a delay in payments to the contractor when as per NMCG as on 31.8.20 there was as much as 180 crores of unutilized funds released by NMCG lying with the DJB. Also if there are no funds available with the DJB the Board will have to submit UCs and make request for further releases. But delay in releasing Contractor's payment when the unutilized funds were available with the DJB was unacceptable.

Member (BSS) asked the PMC to suggest how best the completion schedule could be squeezed to make up for lost time bearing in mind the occurrence of seasonal bans on construction activity imposed on account of air pollution.

Sh. R.S. Negi, Member (Drainage), DJB, pointed out that DJB has almost completed all the specific requirements and formalities of Forest Department, GNCTD and the files are lying with the Concerned Hon'ble Minister for approval. The tree cutting permission is likely to be received very soon. After receiving the tree cutting permission, they will expedite all the works i.e. rehabilitation of STPs at Kondli, Rithala and Okhla. He further stated that before COVID-19 pandemic, payments were released to contractors in time on regular basis. After COVID-19 pandemic, however, the Department of Finance of GNCTD imposed some restrictions on release of payments upto June, 2020 except for disbursement of salaries. This has now been removed. He also clarified that though the DJB agrees with the percentage delays shown against each project, the DJB does not agree with the weightages assigned to the different causes of delay. These weightages may have been assigned by the NMCG based on their own interpretation of the impact of different factors on the project

scheduling. Regarding delay due to cash flow, it was reported that all the funds provided by NMCG for these projects have already been utilized and a request has already been sent to NMCG to release Rs. 300.00 Cr. for YAP-III projects and Rs. 32.39 Cr. for Coronation Pillar project. The DJB share has not been released fully due to shortage of funds in DJB after COVID-19 pandemic. He also stated that DJB is committed for the completion of project on time as well as pushing the contractors on their part so that the implementation is not hindered and plants start functioning at the earliest. He further stated that, Dr. Uday Kelkar is representing PMC M/S NJS & Consortium and he would be providing details on their input to DJB.

Dr. Kelkar of PMC, explained the role of PMC. He explained that delay in payment to the Contractors by DJB although it had happened for various reasons, but, it cannot be considered as a major bottleneck. According to him, Tree-Cutting permission together with contractors own delay, accounted for almost 73% of the 26% delay caused in the Kondli project. Similarly, for Rithala these two factors accounted for 67% of the 43% delay caused as on 31.8.20. For Coronation Plant, the handing over of land and delay in permission itself has attributed to 64% of delays. In all the cases, be it Kondli or others, the Cash flow is only ranging from 11% to 23%. He further stated that as a part of the Contract, each contractor is required to provide cash flow for the project for maintaining six months of buffer for non-receipt of payments from DJB and therefore the cash flow constraint appears to have been over emphasized.

As per their assigned role, they have been providing complete technical as well as project management inputs to DJB and feel that they have contributed it well. He emphasized that the inputs provided by PMC include but are not limited to design review and comments/changes for betterment of designs in meeting the effluent standards. They have been providing daily inputs to both Contractors and DJB through daily site visits and inputs through WhatsApp groups with Photographs. These issues are highlighted and sorted out during routine review meetings / site inspections as well as urgent meetings based on the need in the project and issues at hand at the level SE/CE/Member (DR).

Member (SC) pointed out that YMC needed to see evidence – perhaps (3 to 4) examples supported by data, documentation. Communications, minutes of meetings held, decisions conveyed which exhibit how interaction was taking place and how matters were being pursued with DJB and also to understand how DJB acted on the suggestions and if

inadequate how levels were raised to secure attention. Also what was the relationship with the contractor if he continued to delay and when and how often penal clauses were attracted and used in a way that resulted in compliance. This input was needed to ascertain the effectiveness of the role of the PMC and whether the situation called for an realignment of working systems to expedite the work and in still greater efficiency. The YMC may be informed how the systemic / inherent causes for delay can be avoided in future to ensure early completion of the STPs. PMC told the YMC the documents and advice would be made available.

Sh. Vikram Singh, CE(DR)PR-I pointed out that PMC has been supporting and providing inputs on various issues at the site of construction of 124 MGD STP at Okhla. To make up the slippage in the progress of Okhla STP, fabricated / specialized blocks for shuttering and self compacting concrete are proposed to reduce construction time.

Sh. R.S. Tyagi, Technical Advisor to YMC opined that as per the record submitted by DJB to him on email through YMC, there are many TORs of PMC which should be diligently followed by M/S NJS & Consortium. He pointed out about some basic TORs which are pivotal to monitor the timely completion of the projects. He highlighted that according to their TORs the following aspects inter alia were to be pursued and placed before DJB:

- 1) The Consultants are at all times to exercise all responsible skill, care and diligence in the discharge of their duties. The Consultants are responsible for the accuracy and completeness of their works;
- 2) Consultants need to prepare CPM/ PERT chart which guide DJB and agencies how these projects can be managed and completed in time, in case of any likely hindrance,
- 3) The COVID pandemic was unforeseen, but the trees standing within the alignment must have been in the knowledge of PMC and they should have initiated the action through DJB in time. What inputs were given by PMC was is not seen on record. What mitigation measures were suggested by PMC prior to pandemic would indicate whether enough was done to raise levels when Forest issues were holding up progress.
- 4) PMC should have given more inputs to the CEO and whether this was done is not evident.

- 5) PMC needs to provide annual/monthly forecasting of financials projections in time for smooth project execution and timely fund disbursements.
- 6) Sh Tyagi further pointed out the directions of the Hon'ble Supreme Court on effective monitoring of the projects related to Yamuna cleaning, in the matter of CW(P): 725/1994 titled as "QUET FLOWS MAILY YAMUNA state that:
 - I. CEO, DJB will take monthly review meeting for the projects undertaken by DJB for cleaning of River Yamuna.
 - II. Chief Secretary, Delhi will hold quarterly review meeting of all the concerned department for the projects of Yamuna cleaning.
 - III. Six monthly review by Secretary (UD) Ministry of Urban Development, GOI.

The meetings at S.No. I & II were regularly happening and most of the intra and interdepartmental issues were being resolved. The affidavits to the effect of review meeting by CEO used to be filed by DJB and for S.No. II by Pr. Secretary (UD), Govt. Of NCT of Delhi till 2016-17.

After, the matter was referred to Hon'ble NGT it is not clear if these meetings are still held and appear to have been stopped.

Dr Kelkar clarified that PMC has been doing its duties diligently and to the best of their technical expertise. The CPM-PERT charts on each project component of STPs cannot be prepared as these are DBO projects and the Contractor is supposed to provide their schedule of program, which is then reviewed / commented upon by PMC and suggest changes, if any to achieve the objectives. If this would have been Item rate contract then it's appropriate for PMC to give CPM-PERT chart to be followed by a contractor. YMC encountered difficulty as it was difficult to decide whether such arguments were valid without an assessment by the CEO, the Member Finance among others.

PMC also clarified that they have been providing annual/monthly financial forecasting so as to help understand fund disbursement in time for completion of the projects. PMC stated that they are committed to this project and desire to complete the project on time and meet the objectives of this project which is to clean Yamuna. They are also committed to make any changes in their process if required and will be happy to adopt the changes as might be suggested by YMC based on their review for faster completion of the project.

B. Tree Cutting permissions:

As per the information received from the DJB the following tree cutting permissions were pending with the Forest Department:

Kondli:	1185 trees
Rithala	409 trees
Okhla:	910 trees

Mrs. Surabhi Rai, Conservator of Forests, representing the Forest Department, GNCTD informed that two proposals for Rithala and Okhla have been submitted to the Government for approval and as regards the proposal for felling 1185 trees under the Kondli project, the DJB has to identify land for compensatory afforestation. Only after that is confirmed will further action to process the case for granting permission can be processed. The reasons for delay as explained by her were incomplete proposals or proposals having deficiencies being submitted by the DJB. She however promised to look into this and enquire about the causes of delay.

Member (SC) observed that as per the reply furnished by the DJB the officials of the Board have sent a number of reminders to the Forest Department. However it is not clear if the senior officers have personally approached the Forest Department officials to expedite the process of granting permissions. The delays in some cases are more than a year whereas as per the statement furnished by the Forest Department the delay at the most is of 5 months. This needs to be reconciled to understand the process.

Member (BSS) observed that Projects of such critical importance as the YAP III and Coronation Pillar projects cannot be looked at in a routine way of writing letters and getting responses. This is important as completion of YAP-III projects and Coronation STPs, is linked to treatment of around 279 MGD sewage to the which is almost 40% of total sewage generated by Delhi at present and with high level of treatment standards of BOD/TSS: 10/10 mg/L for the proposed STPs will have a large impact on quality of River water.

Sh. M.K. Jain, CE(DR)PR-II informed that the trees of Kondli Phase-I & III STP sites have been cut / transplanted and the work is in progress. The tree cutting permission for Kondli Phase-II has been applied to Forest Department, GNCTD. DJB has pursued the permission with Forest Department vigorously and about 5 meetings/inspections were done to expedite the permission.

Sh Vikram Singh CE stated that the main delay in getting the tree cutting permission is due to observations and inspections being raised in piece meal by the forest department. Whether there are any procedural delays or any on any other account needs to be understood and the delays pointed out by DJB need to be reconciled with the information furnished by the Forest Department and bring about the changes required to cut short the procedural delays.

YMC decided to hold a separate meeting with the Forest Department officers and the DJB to reconcile the information furnished by the DJB and review the process followed with a view to expedite the process if feasible and also explore how the permission for cutting of 1185 trees in case of Kondli project can be expedited.

3. **Complaint about Illegal Use of By-Pass in Kondli STP**

Member (BSS) asked DJB about what action has been taken against the agency and the DJB officers for bypassing sewage through by-pass channel without treatment. They have been receiving the complaints from RWA residing next to the premises of Kondli STP who are facing noxious gases emitted from Kondli STP due to malfunctioning of STP. Mr. Vashishta CE (SDW) informed that the agency M/S V A Tech WABAG maintaining the Kondli STP has been debarred by DJB for participating in the tenders of DJB for next three years. However, they will continue to maintain the plant. Regarding emission of noxious gases, CE (SDW) informed that they have already received the tenders for installation of Deodorization Plant at Kondli STP and placed the item before the Board for award of work to the lowest tendered at total cost of Rs 16 Cr. But, due to crisis of funds, the item has been deferred for next meeting. They will place the item before the Board again for award of work justifying the urgency of work in the interest of largest public interest.

YMC expressed surprise that despite complicity of the Company in the illegal use of the by- pass repeatedly over almost a year, and issue of show cause notices, no penal action against the Contractor and the plants in charge has been taken. The YMC has also not received any response to its letter dated 21.9.20 from the Board.

4. **Status of short and long-term measures or capacity enhancement of STPs:**

STP at Rohini, Narela, Kapashera, Nilothi 9Ph-i), Najafgarh and Yamuna Vihar have a cumulative capacity of 120 MGD against which treatment is only about 57 MGD(47.5%)-the capacity utilization varying from 33% to 62 %. Several measures were indicated for improved capacity utilization of these STPs by trapping the drains flowing nearby as an

interim measures like trapping of drains. Construction of weirs, construction of rising main and laying of sewer line till the sewer network in the catchment is completed. As per the Status report dated 12.10.20, the capacity utilization has increased from 57 MGD to 92.50 MGD (77%). The timelines for further implementation of the Action Plan be furnished by 12.11.20. The YMC will get also get this independently verified.

5. Removal of operational efficiencies in STPs:

As per DPCC's test report on 31 out of 35 functional STPs, only 7 STPs are meeting BOD/TSS standards of 10/10 mg/L and 17 STPs meeting BOD/TSS standards of 30/50 mg/L. Only one STP was meeting standards of BOD, TSS and TC/FC prescribed by the NGT.

Whether the STPs at present are complying with the standards and the list thereof has not been furnished by DJB. This may be furnished to the YMC. Separately DPCC is being asked to submit their independent report on STPs.

6. Status of setting up 14 STPs is under Najafgarh basin:

7. Status of setting up STP is on these Mori Gate and Barapulla Drains

8. Status of setting up 42 decent lives recipes

Present status of the new STPs under the Najafgarh basin, Mori Gate, Barapulla Drain and the 42 decentralized STPs that DJB proposes to set up.

Directions:

1. The Members reiterated the need for effective and periodic monitoring at the level of CEO/CS considering that large public funds are tied to the projects and their commissioning in time is critical to cleaning of the river Yamuna. The directions of the Hon'ble Supreme Court to hold the review meetings under "**Quiet flows the Mally Yamuna**" may be brought to the notice of the Chief Secretary by the CEO and action taken reported as this would be included in the next report to YMC.
2. Issue of tree cutting permission for two projects, namely, Rithala and Okhla has been submitted to the Government by the Forest Department. Efforts should be made to get the clearance obtained expeditiously and status reported to YMC.
3. The permission for tree cutting under the Kondli Project(1185 trees) is still stuck for want of land having been identified for Compensatory Afforestation(CA) Since the

land requirement for this could be in excess of 11 hectares, vigorous effort need to be mounted to identify land for CA including land within the DJB STP complexes. Side by side the issue needs to be discussed with the PMC and Contractor to explore whether the work can be concentrated in areas within the plant premises where tree cutting is not required. If there are any other suggestions which can be tried YMC may be informed so that after discussion with the Forest Department NGT's intervention can be sought if justified.

4. The PMC should furnish, as discussed and agreed meeting, specific instances (at least 3 to 4) highlighting the issues raised by them on qualitative aspects of the work, the reasons for delay, pointing out the fund requirement for disbursement required to be made to the contractors and intervention made by them at different levels and whether, when and how many times were the matters escalated to the higher levels, with what results. This may be submitted so that YMC so that it can satisfy itself about the role played by the PMC vis a vis the TORs, and if required, undertake assessments to in consultation with the DJB and the contractor.
5. The DJB should submit the status report on the issues raised in the in the meeting as well as those covered in the final report of the YMC by 12th November 2020 for incorporating in the next report due to be submitted to the tribunal on 30th November 2020.



Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

To:

1. CEO, DJB.
2. Member (Dr.), DJB.
3. Chief Engineer (Dr.) PR-I.
4. Principal CCF, Forest Department, GNCTD.



B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

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Telephone No: 011- 24609270
Email id: rymonitcringcommittee@gmail.com

Annexure-I

The following personnel from YMC, DJB and PMC attended the meeting:

YMC	DJB	Consultants – PMC; M/S NJS & Consortium
Ms. Shailaja Chandra, Member (YMC)	Sh. R.S. Negi, Member (DR)	Dr. Uday Kelkar
Sh. B.S. Sajwan, Member (YMC)	Sh. M.K. Jain, CE(DR)PR-II	
Sh. R.S. Tyagi, Former Member, DJB	Sh. Vikram Kumar Singh, CE(DR)PR-I	
Smt. Surabhai Rai Forest Department, GNCTD	Sh. S.C. Vashisth, CE(SDW)NW	
	Sh. D.K. Vishaya, CE(SDW)SE	

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2020/520

Dated: 19.11.2020

Subject: Minutes of the Meeting of the Yamuna Monitoring Committee with the Principal Chief Conservator of Forests (PCCF) and Head of Department of Forests, Government Of NCT Delhi Held through Video Conferencing on 10.11.20.

After welcoming the PCCF Shri Ishwar Singh and his team for agreeing to attend the meeting at a short notice, Member (SC) stated that the objective of the meeting is to understand the process followed in grant of tree felling permissions and the causes of delay in grant of permission for the STPs under YAP III as brought out by the DJB in their submissions before the YMC. It was pointed out that more than 9-10 months have been spent in grant of tree felling permissions by the Forest Department after protracted correspondence between the two Departments. As the projects are related directly to reduce environmental pollution and in public interest the delay is inexcusable. It was also emphasized that the matter is of particular concern considering the fact both the DJB and the Forest Department are under GNCT and the need for such long delays in grant of tree felling permissions appear indefensible. Prima facie several months of delay could have been overcome had there been more proactive interest shown both by the Department of Forests and the DJB.

Member (SC) also referred to a communication received from Sh. Manoj Mishra, the Applicant in the case being handled by the YMC, regarding the desirability of tree plantation on Yamuna Flood Plains. The Reference received from Shri Manoj Mishra will be forwarded to the Forest Department which may be examined from scientific and technical aspects and a response sent to the YMC so that the YMC can thereafter take a view.

Member (BSS) observed that the purpose of the review meeting needs to be seen in the context of the larger objective of cleaning of River Yamuna and the fact that administrative delays caused in grant of time bound statutory clearances will impact commissioning of projects having

large outlays to the tune of Rs 1656 crores. The following specific points were brought to the notice of the PCCF:

1. Member BSS drew attention to the information furnished by the DJB which suggests that tree cutting permission has taken as much as 10 to 15 months. For instance in the case of Kondli Phase I and III the DJB applied for permission for felling/transplanting 492 trees on 19.01.2019 and the permission was granted on 08.04.2020. **The time taken was therefore was as much as 15 months.**

DJB officers /engineers have also stated before the YMC that the Forest Department has been raising piece meal queries causing avoidable delays. Also, in some cases the minimum qualifying girth was reduced from 30 cm to 15 cm after the DJB had submitted the proposal to the Forest Department requiring the whole exercise of enumeration to be done afresh causing delay. While it is evident that there have been delays on the part of the DJB also in responding to the queries of the Forest Department, by following a proactive approach and by holding meetings and sensitizing the DJB officers on various issues raised by Tree officer in his correspondence with DJB, much of the delay could have been reduced.

2. Expeditious processing without compromising on the processes and timelines laid down in the statute was of paramount importance. In this context Member(BSS) asked whether these matters were raised by senior officers in discussions with him and whether the issues were taken by the CEO/DJB in a review meeting at his level with Forest officials; also whether the issue of delay in tree felling was ever raised in an inter- departmental meeting at the level of the Chief Secretary.
3. Member (BSS) requested the PCCF to give brief highlights of the transplantation policy recently approved by the Govt. of NCT Delhi and how successful the efforts at transplantation have so far been.

PCCF's RESPONSES AND SUGGESTIONS

PCCF presented the status of various cases of tree felling permission referred to the Forest Department and measures taken by him to make the process more responsive and to shorten the

time period taken at various levels in the Department of Forests & Wildlife while considering cases for permission for tree felling:

1. (I) He informed that out of 06 cases of STPs, 02 cases (Rithala Phase-I and Chandrawal Water Treatment Area, Civil Lives) have already been approved and tree felling permissions have since been granted.
 (II) Three proposals (Okhla, Rithala Phase-II and Maharani Bagh) have already been submitted to the Competent Authority i.e. Hon'ble Minister (E&F), GNCTD. In the case of Kondli STP, the earlier proposal for 1185 trees had been revised. Also, the DJB was not able to identify land for compensatory plantation and hence there was delay. The new proposal has been received on 06.11.2020. This will be inspected by DCF within next 02 working days and, thereafter, within a week this proposal will also be submitted to the Competent Authority for approval.
2. While commenting on the chronology of events of time taken in according forest/tree cutting related permissions, he accepted that there was definitely delay at the level of respective Tree Officers/ DCF in sending the initial communication to the Applicant Agency. But thereafter time was required for the inspection of the project site and finalization of the site for Compensatory Plantation. In 02 instances the time taken by the tree officer who had raised queries and objections seeking details of the number of trees, details of Compensatory Plantation etc, DCF took more than 40 days which could have been easily reduced to 10 days. Similarly, even before inspection, at times the Tree Officer took more time than was necessary.
3. PCCF informed that after critical analysis of each and every case, he has set the following time limits to be followed by the DCF/Tree Officer as well as by the Applicant Agency:
 - a. Initial scrutiny of proposal in the presence of the Applicant Agency-10 days (07 working days). The Tree Officer may invite User Agency/ Applicant Agency to come to his office and have a meeting in which all issues, including discrepancies in the project proposal and the discussions would be minuted latest by the next day.
 - b. The User Agency shall submit the requisite information within the next one week.
 - c. After scrutiny of information supplied by the User Agency, the site inspections including for Compensatory Plantation would be carried out by the Tree Officer within one week. The minutes of site visit will also be prepared and shared with the User Agency.

- d. The User Agency will submit information required if any, after site inspection within 03 days and the Tree Officer will take another 05 days to submit the proposal to PCCF for approval of the same at the appropriate level.

PCCF emphasized that co-operation and pro-activeness from both sides is required to adhere to the aforementioned time limits.

A fortnightly review meeting of all such important projects will be taken by Conservator of Forests and a monthly review meeting on the last Thursday of every month will be held by PCCF in which the DCFs/ Tree Officers and officers of Applicant Agency will participate.

4. PCCF also informed the YMC about the provisions of deemed approval under Section 9 of the DPTA, 1994:

“Section 9(4): If the Tree Officer fails to communicate his permission on request within the period specified under sub-section (3), the permission referred to in section 8 shall be deemed to have been granted”

The period prescribed under Section 8 is 60 days. He also informed that the DCF is having powers to grant permission for removal of dangerous trees, pruning of trees and felling up to 10 no. of trees; Conservator of Forests is having power to grant permission for felling of 11-20 no. of trees; Pr. Secretary (E&F) has the power to accord the tree felling permission up to 1 ha of land irrespective of the no. of trees. If the land involved is more than 01 ha, the proposal is submitted to Minister (E&F) for his approval. YMC told him that these provisions are not known to the public and need to be communicated to avoid surreptitious pruning and felling which people resort to if the restrictions are unreasonable or dangerous.

5. Regarding tree plantation in Yamuna Flood Plains and the choice of species, it was informed that the kind of trees selected is as per the soil and climatic conditions and a large variety of trees particularly fruit bearing indigenous trees have been planted to avoid monoculture and to provide wide food base to the local fauna of the eco-system. PCCF also assured that he will study the reports and information submitted by Sh. Manoj Mishra and revert back to Hon'ble Members of the Yamuna Monitoring Committee with his comments.
6. As regards the 'Transplantation Policy', PCCF informed that Delhi Transplantation Policy has been approved by the Cabinet of the Government of NCT Delhi in the last month (October 2020) and is being processed for notification. The policy emphasizes transplantation of at

least 80% of trees proposed to be felled excluding the exotic variety of trees like VilayatiKeekar, Subabul and Eucalyptus. It also emphasizes on survival of 80% of trees transplanted. For any exemption/ concession of this 80% bar, a technical committee under the chairmanship of DCF/ Tree Officer concerned will advise the Govt. on case to case basis and submit their advice to Govt. for relaxation in these norms. The Department will empanel expert agencies working in the field of Transplantation and User Agency may engage any of these agency for getting the Transplantation done. YMC asked whether the policy which is well intentioned might delay projects which are time -bound because of the involvement of several new agencies. This may be anticipated and safeguards introduced which may be communicated to YMC to include in the next report.

While summing up the discussion Member (SC), emphasized for timely disposal of cases and also appreciated the suggestions proposed to be taken by the Department for expeditious disposal of proposals. She also suggested holding a monthly review meeting at the level of Pr. Secretary (E&F), GNCTD to resolve inter-departmental issues in a time bound manner.

Member (BSS) reiterated to minimize the time taken by the Tree Officer as well as the User Agency to get much faster disposal of such important cases like those connected with the cleaning of the River Yamuna.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:
PCCF & HOD Govt of NCT Delhi

Copy to:
1. Principal Secretary (E&F), GNCT Delhi
2. CEO DJB

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
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Email id: rymonitoringcommittee@gmail.com

Related to Chapter 4 – Sewage Treatment Plants (STPs)

THE DELHI PRESERVATION OF TREES ACT, 1994
(Delhi Act No. 11 of 1994)
 (12-10-1994)

(As passed by the Legislative Assembly of the National Capital Territory of Delhi)
 AN
 ACT

To provide for the preservation of trees in the National Capital Territory of Delhi

BE it enacted by the Legislative Assembly of the National Capital Territory of Delhi in the Forty-fifth Year of the republic of India as follows :--

CHAPTER 1**Preliminary****1. Short title, extent and commencement.---**

- a) This Act may be called the Delhi Preservation of Trees Act, 1994
- b) It shall extend to the whole of the National Capital Territory of Delhi.
- c) It shall come into force at once.

2. Definition.--- In this Act, unless the context otherwise requires

- a) "Appellate Authority" means an authority appointed by the Government as appellate authority under this Act;
- b) "Deputy Conservator of Forests" means a forest officer in-charge of a forest and exercising jurisdiction over area;
- c) "Secretary" means the Secretary of Forests, Government of the National Capital Territory of Delhi;
- d) "Forest produce" includes---
 - a. the following whether found in, or brought from, forest or not, that is to say:- Timber, charcoal, caoutchouc, catechu, wood-oil, resin, natural varnish, bark, lac, mahua flowers, mahua seeds, kuth and myrabolams, and
 - b. the following when found in, or brought from, a forest, that is to say:-
 - i. trees and leaves, flowers and fruits, and all other parts of produce not herein before mentioned, of trees,
 - ii. Plants not being trees (including grass, creepers, reeds and moss), and all parts or produce of such plants,
 - iii. Wild animals and skins, tusks, horns, bones, silk, cocoons, honey and wax, and all other parts or produce of animals, and
 - iv. Peat, surface, soil, rock and minerals (including limestone, laterite, mineral oils, and oil products of mines or quarries);
- e) "Government" means the Government of the National Capital Territory of Delhi;
- f) "notification" means a notification published in the official Gazette;
- g) "organization" means any company (public or private); government or semi-government department; undertaking; board or local authority;
- h) "to fell a tree" with its cognate expression, means severing the trunk from the roots, uprooting the tree and includes bulldozing, cutting, girdling, lopping, pollarding, applying arboricides, burning or damaging a tree in any other manner,

- i) "tree" means any woody plant whose branches spring from and are supported upon a trunk or body is not less than five centimeters in diameter at a height of thirty centimeters from the ground level and is not less than one metre in height from the ground level;
- j) "Tree Officer" means a forest officer appointed as such by the Government for the purposes of this Act:
- k) "prescribed" means prescribed by rules made under this Act:
- l) words and expressions used in this Act and defined in the Indian Forest Act, 1927 (Central Act 16 of 1927) but not defined this Act, shall have the meanings respectively assigned to them in that Act.

CHAPTER II

Tree Authority

3. Establishment of the Tree Authority.----

1. The Government shall, by notification constitute a Tree Authority for the whole of the National Capital Territory of Delhi.
2. The Tree Authority shall consist of the following members, namely:-
 - i. Secretary of Forests or any other officer not below the rank of Secretary to the Government nominated by the Government -- Chairman
 - ii. Deputy Commissioner, Delhi -- Member
 - iii. Two Members of the Legislative Assembly nominated by the Government -- Members
 - iv. Two Representatives of the local bodies nominated by Government -- Members
 - v. Deputy Conservator of Forests -- Member Secretary
3. The Tree Authority may co-opt as members in such manner and for such period as it may determine not more than five representatives of non-official organizations and Government Departments having special knowledge or practical experience in the preservation of trees.
4. **Meeting of the Tree authority.----**
 - (a) The Tree Authority shall meet at least once in three months at such place and time as the Chairman may decide.
 - (b) The quorum to constitute a meeting of the Tree Authority shall be three members referred to in sub-section (2) of section 3.
 - (c) No co-opted member shall have the right to vote at a meeting.
 - (d) In the case of an equality of votes on any matter, the Chairman shall have a second or casting vote.

CHAPTER III

Officers and Servants

5. Appointment of the Tree Officer

The Government may appoint one or more Forest Officers of the rank not below that of a Deputy Conservator of Forests, as Tree Officers for the purposes of this Act.

6. Appointment of other Officers

cut their girth measure at a height of 1.85 meters from ground level and the reasons therefore, copy of *sajra* showing clearly the site and *khasra* numbers of the property.

2. On receipt of the application, the Tree Officer may, after inspecting the tree and holding such enquiry as he may deem necessary, either grant permission in whole or in part or for reasons to be recorded in writing, refuse permission.

Provided that such permission may not be refused if the tree----

- i. is dead, diseased or wind fallen; or
 - ii. is silviculturally mature, provided it does not occur on a steep slope; or
 - iii. constitutes a danger to life or property or
 - iv. constitutes obstruction to traffic ;or
 - v. is substantially damaged or destroyed by fire, lightening, rain or other natural causes ;or
 - vi. is required in rural areas to be cut with a view to appropriating the wood or leaves thereof or any part thereof for *bonafide* use for fuel, fodder, agricultural implements , or other domestic use.
3. The Tree Officer shall give his decision within sixty days from the date of receipt of the application:

Provided that no permission shall be granted to any person from the same area on more than two occasions during the same year subject to a maximum area of one hectare at a time.

4. If the Tree Officer fails to communicate his permission on request within the period specified under sub-section (3), the permission referred to in section 8 shall be deemed to have been granted.
5. Every permission granted under this Act shall be in such form and subject to such conditions, including taking of security for ensuring regeneration of the area and replanting of trees or otherwise, as may be prescribed.

10. **Obligation to plan trees.**---- Every person, who is granted permission under this Act to fell or dispose of any tree, shall be bound to plant such number and kind of trees in the area from which the tree is felled or disposed of by him under such permission as may be directed by the Tree Officer :

Provided that the Tree Officer may, for reasons to be recorded in writing, permit lesser number of trees to be planted or trees to be planted in any different area or exempt any person from the obligation to plant or tend any tree.

11. **Preservation of trees.**-----

1. Subject to the provisions of section 13 it shall be the duty of the owner of the land to comply with an order made under section 9, or a direction issued under section 10 and to plant tress in accordance with such an order or direction and to ensure that they grow well and are well preserved.
2. All the owners shall effectively protect all lands or trees growing in the lands or the areas under their control and where the Tree Officer is of the opinion that adequate measures have not been taken to protect the tress from any damage, he may direct the owner to take such measures as are considered necessary to protect trees from damage. In case of default, the Tree Officer may himself arrange such measures and recover the expenditure thereon from the owner in the prescribed manner.

12. **Implementation of order made or direction given under sections 9 and 10 and recovery of expenditure on failure to comply with them.**-----

1. Every person who is under an obligation to plant trees under an order made under section 9 or a direction given under section 10 shall start preparatory work within thirty days of the date of receipt of the order or directions, as the case may be and shall plant

trees is accordance with such order or direction in the ensuing or following rainy season or within such extended time as the Tree Officer may allow and shall provide adequate and effective protection to the trees that exist or are planted in the land or the area from any damage

2. In case of default by such person, the Tree Officer may cause trees to be planted and may recover the cost of plantation from such person in the prescribed manner.
13. **Adoption of trees.**----- Notwithstanding anything contained in this Act or in any other law for the time being in force, the Tree Authority may, subject to such terms and conditions as it may specify in that behalf, after giving notice to the owner of the tree to show cause, if any, as to why the trees should not be given in adoption, allow, by a written permission, anybody corporate or institution to adopt the tree for such period as may be specified in the permission and during such period, the said body corporate or institution shall be responsible for the maintenance and preservation of the said tree.
14. **Appeal.**-----
 1. An appeal shall lie against the order or direction of the Tree Officer under sections 9, 10 and 11 to the Appellate Authority within a period of thirty days of passing order or direction by the Tree Office.
 2. Every appeal under this section shall be made by a petition in writing and shall be accompanied by a copy of the order or direction appealed against and a fee of rupees ten.
 3. In disposing of an appeal, the Appellate Authority shall follow such procedure as may be prescribed :

Provided that no appeal shall be disposed of unless the appellate has been given a reasonable opportunity of being heard.

CHAPTER VI

Penalties and Procedure

15. **Seizure of property.**--- Where the Tree Officer has reasons to believe that an offence under this Act has been committed in respect of any tree, he may seize the tools, implements, any boats, vehicles, animals or other conveyances used for the commission of the said offence, along with the tree or part thereof which has been served from the ground or the trunk, as the case may be.
16. Forfeiture of timber and other procedure from the tree, implements used for falling and the vehicle and animals used for transport of such trees.
 1. Where any person is convicted of an offence under this Act, any timber or the tree in respect of which an offence is committed, the tools and implements used for felling and any boats, vehicles, animals or other conveyances used for its transport, may be ordered by the court to be forfeited to Government.
 2. Any timber produce from the tree, tools and implements, etc. and any boats , animals or other conveyances forfeited under sub-section (1) shall be disposed of by the Tree Officer in such manner as may be prescribed.
17. **Power to release property seized under section 15.**---- The Tree Officer may release the property seized under section 15 if the owner of the land executes a bond in such form as may be prescribed for its production whenever required.
18. **Power to arrest without warrant.**----

1. Any Tree Officer or a Forest Officer not below the rank of a Forest Ranger or a Police Officer not below the rank of a Sub-Inspector may, without a warrant, arrest any person reasonably suspected of having been concerned in any offence under this Act, and such person refuses to give his name or address or gives a name or address which the concerned officer has reason to believe to be false or if he has reason to believe that the person will abscond.
 2. Any person arrested under sub-section (1) shall be informed, as soon as may be, of the grounds for such arrest and shall be produced before the nearest Magistrate having jurisdiction in the case within twenty four hours of such arrest excluding the time necessary for the journey from the place of arrest to the court of the Magistrate and no such person shall be detained in custody beyond the said period without the authority of the Magistrate.
19. **Power to release person arrested.**----- Any officer who has arrested any person under the provisions of sub-section (1) of section 18 may release such person on his executing a bond with proper surety to appear, if and when so required, before the Magistrate having jurisdiction in the case, or before the Police or the Forest Officer not below the rank of Deputy Conservator of Forests or the Tree Officer.
20. **Power to prevent commission of offence:** - Every Tree Officer or his subordinates or any Forest, Revenue or the purpose of preventing the commission of any offence under this Act.
21. **Power to compound offence.**-----
1. The Government may, by notification empower a Tree Officer or any Forest Officer not below the rank of Deputy Conservator of Forest:
 - a. to compound any offence committed under this Act on payment of-
 - i. a sum not exceeding rupees ten thousand by way of composition for the offence which such person is suspected to have committed, and
 - ii. the value of timber and other produce, if any, from the tree in respect of which the offence has been committed;
 - b. to release any property seized or liable to confiscation, on payment of the value thereof as estimated by such officer and the amount determined as payable for composition of the offence, as ordered by the Tree Officer or any Forest Officer, as the case may be.
 2. On the payment of such sums or such value or both, as the case may be, to such officer, the property seized and the offender, if in custody, shall be released and no further proceedings shall be taken against such offender or property.
22. **Contravention of Act to be reported by certain Officers.**----- It shall be the duty of every forest Officer, Panchayat Secretary, Police Constable or any officer superior to him and every officers of the Department of Agriculture, Horticulture, Block Development and Revenue---
- a. To give immediate information coming to his knowledge, of any contravention of section 8 and of preparation to commit such contravention to the Tree Officers or the Deputy Conservator of forest;
 - b. To take all reasonable measures in his power to prevent such contravention which he may know or his reason to believe that it is about or likely to be committed.
- Offences by organization.**-----
- (1) If the person committing an offence under this Act is an organization, the organization as well as every person in charge of, and responsible to, the organization for the conduct of its business at the time of the commission of the offence shall be deemed to be guilty of the offence and shall be liable to be prosecuted against and punished accordingly;

Provided that nothing contained in this sub section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge and that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in subsection (1). where an offence under this Act has been committed by an organization and it is proved that the offence has been committed with the consent or connivance of, or is attributed to, any neglect on the part of its Head of the Department / office / unit, director, manager secretary, treasurers or the

Penalty.----- Any person who contravenes any of the provisions of this Act or rules or orders made there under shall, on conviction, be punished with imprisonment which may extend to one year or with fine which may extend to one thousand rupees or with both

Award of penalty or forfeiture of any property under this Act shall not prevent the inflicting or any punishment to which the person affected thereby is liable under any other law.

CHAPTER VII

Miscellaneous

26. **Officers to be public servants.** --- The officers exercising powers or discharging any duties or functions under the Act shall deemed to be public servants within the meaning of section 21 of the Indian Panel Code. (Central Act 45 of 1860). Miscellaneous
27. **Bar of Proceedings.** --- No suit or proceedings shall lie against the Government or any person empowered to exercise power or to perform duties or discharge functions under this Act, for anything done or omitted to be done in good faith under this Act or the rules and orders made thereunder.
28. **Execution of order for payment of money.** ---- Any sum, including any amount of composition of an offence, the payment of which has been directed to be made by any person under any law for the time being in force, be recoverable from him as an arrear of land revenue.
29. **Power of the Government to exempt.** ---subject to such conditions, if any, as may be imposed, the Government may, if it considers it necessary so to do in the public interest, by notification, exempt any area or any species of trees from all or any of the provisions of this Act.
30. **Power of the Government for Preservation of Trees.** ---
 1. The Government may in the interest of general pubic, declare by notification that any class of trees shall not be felled for such period as its specified in that notification.
 2. The management of such trees shall be regulated in the prescribed manner.
31. **Investing Trees Officers with certain powers.**---
 1. The Government may, by notification invest the Tree Officers and other officers Tree Officers and other officers with all or any Central Act 2 of 1974.
 - a. Power to enter upon any land and to survey, demarcate and make a map of the same;
 - b. Powers of a civil court to compel the attendance of witness and the production of documents and material objects;
 - c. Power ti issue a search warrant under the Code of Criminal Procedure, 1973;
 - d. Power to hold enquiries into offence under the Act and in the course of such enquiry to receive and record evidence;
 - e. Power to take possession of property under the Act.
 - f. Power to direct release of property or withdrawal of charges; and

- g. Power to require any person to plant tree or trees of suitable species in adequate numbers on any land owned or occupied by him.
32. **Transit of felled material.** —The provisions of sections 41 and 42 of the Indian Forest Act, 1927 shall mutatis mutandis, apply to the transit of the felled trees under this Act.

CENTRAL Act 16 of 1927

33. **Power of the Government to give directions.** —The Government may, from time to time give to the Trees Officers, other officers of the Tree Authority and officers subordinate to them general or special directions regarding the discharge of their functions and for carrying out effectively the purpose of this Act, and such Tree Officers and other officers shall comply with the directions issued.
34. **Power to make rules.**—
1. The Government may, after previous publication make, by notification, in the official Gazette, rules to carry out the purpose of this Act.
 2. In particulars and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters namely: —
 - a. Specifying attested copies of documents to be attached with application for obtaining permission to fell, cut, remove or otherwise dispose of a tree and prescribing the form in which such permission shall be granted;—(section 9)
 - b. specifying the manner for recovery of the expenditure by tree officers from owners who default to protect trees from damage; —(section 11)
 - c. Specifying the manner for recovery of plantation from persons who fail to plant trees; —(section 12)
 - d. Regulating the procedure for disposal of appeal by the Appellate Authority;—(section 14)
 - e. Specifying the manner of disposal of forfeited timber, other produce from the trees, tools and implement, etc; —(section 16)
 - f. Prescribing the form of bond to be executed by an owner in case of release of property seized under section 15; —(section 17)
 - g. Specifying the manner of regulating the management of class of trees felling of which for specified period is prohibited; —(section 30)
 - h. Any other matter which is to be, or may be, prescribed under this Act.
 3. Every rule made by the Government under this Act shall be laid, as soon as may be after it is made, before the Legislative Assembly.
35. Provision of this Act to be in addition to any other law for the time being in force —Nothing in this Act shall be deemed to effect the operation of any other law and the rules made there under and the provisions of this Act shall be in addition to and not in derogation of the provisions of the said Act and rules made there under.

T. L. D'SOUZA, Under Secy. (L. A.)

Annexure C-4/4

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2020/ 520 (A)

Dated: 19.11.2020

Subject: Minutes of the meeting taken by the Yamuna Monitoring Committee on 4.11.2020 and 6.11.2020 to review the progress of the projects under YAP III with special reference to the Rehabilitation & up-gradation of Rithala and Kondli STPs undertaken by Delhi Jal Board.

The list of those who attended the meeting is enclosed at Annexure-I.

Preamble: The Yamuna Monitoring Committee (YMC) explained the purpose of the meeting to the participants of both meetings which was to understand from the Contractors, the PMC and the DJB, the status of the STPs under construction, the main reasons for shortfall in physical progress, mechanisms available for monitoring and removing the causes of delays, and to review the timelines for project commissioning. The YMC drew attention to the information received from NMCG which pointed to a shortfall in physical achievements by 43% in the case of the Rithala project and by 26% in the case of the Kondli project as on 31.08.2020. The analysis done by NMCG also brings out that in Rithala project almost 15% shortfall can be attributed to delay in tree cutting permission, 14% to contractor's own problems, 10% to the cash flow constraints and the remaining to the stoppage of work due to EPCA ban/Covid19 lockdowns.

These projects were undertaken with the objective of treating additional 30 MGD of sewage and upgrading the existing STPs of a total capacity of 179 MGD to BOD/TSS standards of 10/10 mg/L. The projects were connected with the orders of the Supreme Court which had laid down a mechanism for monitoring the progress. NMCG had given a detailed idea of the delay and expressed concern as the funding agency for both projects. Since the delay would leave vast quantities of sewage going untreated and resulting in continued pollution of the River Yamuna, YMC felt it was necessary to understand the reasons from the Construction agency, the PMC and the DJB as no unified picture was being provided by DJB. In view of their importance it was necessary to identify the

systemic constraints that stood in the way of timely progress and to see if any interventions can be made to bring about improvement to ensure timely completion of the projects.

Review Meeting at 2.30 PM on 04.11.2020

- ❖ In the first phase the review meeting was held with the representative of the Construction agency for the Rithala STP under YAP III, DJB and the representative of NMCG (through Video Conferencing).
- ❖ Later at 3.30 PM the YMC held another review meeting with Project management Consultant (PMC) for Rithala STP, DJB and the NMCG (through VC).

DJB's Comments:

The Chief Engineer DJB Shri Jain informed that the major cause of delay was due to the delay in getting tree cutting permissions which have taken more than one year sometimes. He pointed out that the permission for cutting of 88 trees had been received after 10 months of DJB applying for permission and the work of transplantation of those trees was presently in progress. This had enabled the work of rehabilitation of Digesters and chlorination tanks to start.

On a query by the YMC as to when the process of seeking tree cutting permission was first initiated, C.E. informed that after getting information in October 2018, the process of obtaining tree cutting permission was initiated on 13.2.2019. The initial 4 months were spent in correspondence between the EE and the Horticultural Wing of the DJB.

In July 2019, the Forest department changed the policy of reducing the girth of trees from 30 cm to 15 cm to make an assessment of the number of trees to be felled or transplanted for which permission of the Forest Department is required. Hence, the revised proposal was sent to Forest Department in July 2019. The permission was finally received in December 2019. (In the process another six months were lost.)

The second phase of tree felling permission for 524 trees (since revised to 860 due to revision of girth from 30 cm to 15 cm in the definition of trees) was applied on 16.12.19 and the permission is

yet to be received. (YMC noted that this constituted another delay of 11 months.) The CE informed that he has personally ascertained that the relevant file had been submitted to the Minister (E&F) Govt. of NCT of Delhi on 17th September 2020 but has not yet been received back. The case of tree cutting permission is being pursued by Member (Dr) and CEO also. The Chief Minister, Delhi had also spoken to the Minister for releasing the permission of tree cutting. If the permission is received within a week's time, it will require another 3-4 months to undertake transplantation and felling of trees standing at the project site and the project can be completed by 31st December 2022.

The CE also informed that there has been no undue delay in releasing payment to the Contractor except in a few cases. In any case, under the agreement, the contractor is required to have a cash buffer of Rs. 25 crores and there is a maximum period of 56 days in the agreement for releasing payment.

On a query by the YMC about whether the DJB maintains a separate account for the YAP III projects or not, Shri Jain informed that though there is separate account for YAP-III projects, however, the funds do get transferred for other purposes like salary under other heads. Also, during the lockdown there was some restriction imposed by the NCT government on use of project funds and only salary disbursements were permitted. That restriction has since been lifted.

M/S VA Tech WABAG's (Contractor's) Comments:

The representative of the agency M/S Vatech WABAG informed YMC that the main cause of delay has been non-receipt of tree felling permissions. The permission for 88 trees in the first phase was delayed but the works at that site are now progressing well. However, the second site which has 860 trees requires to be cleared early and handed over to them. After receiving permission, DJB will float tenders for tree transplantation which will take another two months. Around 6 to 8 months will be required in transplantation. Besides, the work of STPs has to be completed in two phases. Only after completion and commissioning of first phase, can the work be started under phase-II which will take another one year.

YMC asked the agency whether they can squeeze the time for completion and whether the works can be started concurrently in all phases. The representative of agency explained that if trees are transplanted in phases, the work can be undertaken in the individual components after getting

clear working space. In order to take advance action for tree felling for Phase II, YMC advised Delhi Jal Board to examine whether tenders for transplantation of trees could be floated in anticipation of tree cutting permissions, to save time. C.E., DJB informed that he will explore the possibility with the Horticulture wing of DJB.

As regards the delay in payments, the contractor informed that there have been at least two occasions in the past when the payments were delayed by almost 60 days beyond 56 days cushion available under the Contract agreement even prior to Covid 19 lockdown. Situation after Covid Lockdown is much worse.

In so far as the revised date of completion is concerned, the Contractor's representative informed that the work can be completed only by 31st October 2023. The date of completion of 31st December 2022 was estimated on the assumption that the tree cutting permissions will be received by June 2020. Since the requisite permission is still uncertain and there is no clarity of when the permission will be granted, it will not be possible to advance the date of commissioning of the project.

NMCG's Comments:

The representative of NMCG, who participated in the meeting through Video conferencing informed that they have been writing several letters to the Delhi Govt. at highest levels, but have received no response. YMC asked DJB about the quantum of work that has suffered on account of delay in payment. C.E. informed that the delay in work due to delayed payments could be about 3-4 months. The NMCG representative also stated that despite having adequate funds received from NMCG, it was unclear why DJB had delayed payments to the agencies. The YMC members observed that being the funding agency, NMCG should evolve some mechanism to make sure that the payments to the agencies executing YAP-III projects are done in time.

Review meeting of YMC with DJB & PMC M/S NJS & JV partners at 3.30 PM:

The YMC Members asked the Project Management Consultants (PMC) about the process they follow for the monitoring of the YAP-III projects, the mechanism of their interaction with DJB, the level at which they interact and how they ensure that their intervention is effective and result oriented. When did they first foresee the requirement of tree cutting permission, to whom did they

report it and what solution did they suggest to DJB and at what level? YMC asked to see their monitoring reports and technical advice to understand whether their intervention had been timely and effective.

The representative of PMC informed that since the preparation of DPR, they have been continuously pointing out to DJB regarding trees which were hindering the alignments of various components of the plants. They have reported this matter up to Chief Engineer level, but they don't have access beyond that level. He also pointed out this issue in the various review meetings taken by the NMCG.

Accordingly, DJB had initiated the administrative process of obtaining tree cutting permission with the concerned department. The representatives of PMC also presented some exhibits i.e. minutes of meetings and letters informing DJB of issues that needed resolution including tree cutting permission. The Chief Engineer DJB clarified that PMC's role is only to flag the issues and is not directly involved in the administrative process of obtaining tree cutting permission. That there has been substantial delay in tree cutting permission is not in dispute and that the Forest Department has been raising piecemeal objections/seeking clarifications.

The PMC also explained that they have been involved in the project right from the stage of planning, checking design & drawings and any delay on account of release in design and drawings was acted upon on time. Further, the design & drawings prepared by the Contractor are divided in three categories, namely, A, B & C.

- In A category, the design and drawings submitted by the agency are found in order as per the contract agreement and PMC immediately releases the design after checking.
- Under B category, there are some modifications suggested to the agency. The concerned EE informs to the agency about those modifications. The agency after modifications, re-submits the design and thereafter the PMC gives a green signal to the Contractor through the DJB.

- In C category, the design and drawings submitted by the agency are not as per the Contract agreement and are rejected outright. However, it is the DJB which officially informs the agency about approval of the design or rejection thereof and not the PMC.

On inquiry by the YMC, the PMC replied that there have been a few instances of category B drawings/design where, the Contractor's drawings were modified by the PMC. On a further query by the YMC, the PMC informed that there is no role of NMCG in the approval of design parameters.

The Terms of Reference (TORs) of the PMC were gone through by the Technical Advisor Shri Tyagi. He drew reference to the TORs which spell out the responsibilities clearly and state:

“The Consultants are all times to exercise all responsible skill, care and diligence in the discharge of their duties. The consultants are responsible for the accuracy and completeness of their works.

2. In all professional matters, the Consultants are to act as a faithful advisor to DJB. DJB may, however, in the case of supervision of work and/or management aspects, delegate to the Consultants more or less authority to act on its behalf, responsibility to make final decision as an independent Engineer instead of being restricted to the role of advisor to the client but with little authority to take prompt decisions relating to technical aspects.

3. The main objectives of the consulting Services for the Yamuna Action Plan Project (III) are stated to assist the Project Implementation Unit of DJB (PIU), which is responsible for Project implementation.”

The representative of PMC informed that though they are bound by these TORs, unless DJB specifically authorizes them to work as their Engineer, the PMC will not be able to take on the responsibility of directly intervening in the matter if the Contractor defaults or delays the work. At present on noticing lapses on the part of the Contractor, the PMC only informs the DJB and it is for the DJB to take action against the Contractor. PMC also informed that previously, they were submitting weekly reports so that timely action is taken on the points informed by PMC which have been

changed to monthly reports now. Also they have no authority to go beyond the level of the CE concerned.

On a query by the YMC as to the nature of advice given by the PMC, the representative showed some of their communications which the YMC found very routine and ineffective. These examples were selected by the PMC as examples of their best efforts at alerting the DJB but even here the YMC found the documentation to lack any qualitative data and it was apparent that the issues requiring attention were not being highlighted sufficiently and there also was no analysis of the impact on the project's timely commissioning, extent of slippages vis a vis the agreed timelines and possibility of cost over runs if the problems did not get addressed immediately.

YMC asked why the level was not raised to Member Drainage and CEO DJB. The PMC admitted that they failed to do that but they can be more effective if they function as DJB's engineer (not just a record keeper.) The YMC reminded the PMC that the prime objective of the projects was to reduce the pollution in River Yamuna, and therefore the PMC was expected to do everything to meet that objective. They are working on behalf of the funding agency and must therefore ring alarm bells to remove all hurdles and bottlenecks foreseen in the way of completing the project in time. PMC should intervene in seeing that the work proceeds as per the Bar Chart submitted by agency or prepared by the PMC. The PMC informed that they would try their best to do so in the interest of work.

The YMC asked the CE DJB to examine whether the TORs for designating Clients' Engineer can be invoked for smoother implementation of the Projects as the system being followed is too long drawn out and lacking ownership by all the stakeholders. The mere movement of a paper from contractor to PMC to DJB and within DJB to the Accounts and Finance Divisions with no one chasing the proposals is inherently faulty given the urgency of completing the projects in the interest of reducing pollution.

The YMC also wanted to know whether other reasons existed for so much delay other than on account of tree cutting permissions. How much delay was attributable to the agency? Did PMC review the progress of work as per the milestones prescribed in the contract agreement and was there a recommendation to DJB for taking appropriate action for the delay caused by the agency? PMC informed that they did so and DJB has issued a show cause notice to the agency. C.E. DJB informed

that they would take action after receiving the response of the agency. YMC noted that this was not effective, and it was necessary to alert more senior levels which was apparently not being done.

YMC members drew the attention of the CE DJB to the orders of the Hon'ble Supreme Court in Maily Yamuna matter in which the Hon'ble Court had specifically directed that the projects of cleaning of Yamuna should be monitored by the CEO DJB once in a month and by the Chief Secretary once in three months and asked whether this monitoring is being done. The CE was not able to confirm this. The PMC also confirmed that this had been discontinued.

The YMC members observed that though the Maily Yamuna matter was transferred to the NGT, the directions of the Hon'ble Supreme Court for periodic monitoring would need to be complied with and do not need any fresh directions. YMC members told the representatives of DJB and the PMC that the monitoring by the engineers had been ineffective and there was no evidence that it had been brought to the notice of the Board and of the Government and would be reflected in YMC's next report to the NGT. The matter should be brought to the notice of the senior levels in Government.

Review meeting of YMC with M/S Triveni Engg, DJB and NMCG on 06.11.2020 in respect of the Kondli project under YAP III.

At the outset, the YMC members explained that the objective was to review the progress of the work, reasons for delay resulting in revised timelines for completion of works and efforts made by Delhi Jal Board and PMC to cut short the timelines in view of the delay.. Since M/S NJS & JV partners act as the PMC for both Rithala and Kondli STPs and no new information on its role as PMC was likely to be provided, YMC decided to only review matters with the Construction Agency along with DJB and the representative of NMCG (through VC). The issues relevant to the PMC had already been discussed with their representative on 4.11.2020. In the Kondli project there is a shortfall of 26% in physical achievements as on 31.8.2020 and tree cutting issues alone accounted for 18% of the delay. This is a matter of concern as delay in commissioning this project will continue to affect the Yamuna River adversely and the reduction of pollution would be delayed further.

CE, DJB's Comments:

The CE Shri Jain, submitted that this work comprises of rehabilitation and up gradation of three Sewage Treatment Plants i.e. Kondli Phase-I (10 MGD), Phase-II (25 MGD) & Kondli Phase-III (10 MGD) under YAP-III. This work has been divided into two phases.

- **Phase I:**

In the first phase-I, Kondli Phase-I & III the STPs which were nonfunctional and were lying closed had been taken up for rehabilitation and up gradation. Kondli Phase-II is being maintained by the construction agency as per the old standards. **The work was taken in hand by the agency on 10-08-2018 and was to be completed by 09-02-2022(42 months)** excluding the six-month trial run as per the contract agreement. But due to delay in tree cutting permissions by the Forest department of Govt. of NCT Delhi, Covid-19 pandemic, Parliament and Assembly elections, migration of labour and enforcement of GRAP due to pollution, the completion date has been revised to September 2021 for Phase-I&III and December 2022 for the entire project which includes Phase-II.

- The tree cutting permission for 492 trees for Phase-I&III has been received and trees have been transplanted.

- **Phase II**

The tree cutting permission for the Phase II was submitted to the Forest Department on 08.02.2020 and after repeated to and fro correspondence between the DJB and the Forest department, permission for 1185 had still not been received. This is because the Forest Department insists on land for compensatory plantation which DJB is vigorously trying to identify. DJB had now succeeded in identifying land at two stretches and would be submitting the proposal to the Forest Department shortly. They had also raised this issue with NMCG and NMCG has written a letter to Delhi Govt. for expediting the process of getting tree cutting permission. The CE also submitted a statement regarding progress of tree cutting, efforts made by them for getting tree cutting permission from the Forest Department and the total delay attributable to the delay in the grant of tree cutting permission.

The YMC wanted to know whether the DJB can consider calling tenders for transplantation, cutting of trees and compensatory plantation in anticipation of tree cutting permission to save time. CE informed that he will explore the possibility after discussion with the Horticulture wing of DJB.

Comments of the representative of M/S Triveni Engineering Ltd:

The representative of the Construction agency explained that the Company has taken up the work where the fronts were available to utilize the time and labour. However, they were helpless to take up the remaining work due to trees growing on the land. They had also mobilized the team on the fronts made available to them. The work of Phase I and III was in full swing. However the work of Kondli phase-II will only start after completion and commissioning of Phase-I & III and after diverting sewage to the rehabilitated STPs.

About 71% of the physical progress is expected to be achieved and Phase I and III(20 MGD) STPs will be commissioned by September 2021. So, if the site is cleared of 1185 trees and transplanting completed before September 2021, there will be no further delay on account of tree felling permissions. They are however, facing a fund crisis as around Rs 23 Crores worth payments are pending with Delhi Jal Board which DJB needs to release. It was stated by the contractor that there was no problem of funds crisis prior to March 2020.

NMCG's Comments:

Dr Praveen Kumar of NMCG informed that NMCG has been monitoring the projects regularly at the level of DG NMCG and Secretary MoJS and had written several letters to CEO DJB and the CS, however, the letters were not replied nor any effective monitoring done. Even regarding the delay in tree cutting permission, NMCG had been told in the past that since CEO DJB was holding additional charge of Secretary Forests, the tree cutting permission will be looked into by him. However, despite these assurances delays in tree cutting permission have continued.

Conclusions Summarizing YMC's Observations and Comments

1. Related to Tree Cutting Permissions

After taking note of the observations of the Construction agency, DJB & NMCG, the YMC emphasized the following points:

- A. DJB should furnish the dates on which the DJB first took up the matter of tree cutting permission with the Forest department. Was the matter escalated to the higher levels when delay was being encountered? At what level, was it pursued? CE DJB was asked to furnish a statement showing the dates of their writing the letters, personal meeting with Forest department and the response of the Forest department in chronological order and the time taken by the DJB to respond to the letters of the Forest Department. This became necessary as the responses given in the meeting were vague and did not show either involvement or ownership within DJB.
- B. YMC needed to understand whether there were undue delays on the side of DJB or of the Forest Department or both. YMC proposed to hold a meeting with the Forest Department and this information will provide the background information for that meeting.
- C. If required, this will be reported to Hon'ble NGT also.

2. Issues of Payment to the Contractor

As regards the delay in releasing payments to the Contractor, YMC asked the NMCG to evolve a mechanism so that funds, if available with the DJB are released in time and no diversion from YAP account happens. Despite having adequate funds received from NMCG, the YMC asked why there were delays within DJB in releasing payment to the agencies. Accountability should be fixed for such diversion as it was financially imprudent and against the terms of financial devolution authorized for the project.

NMCG was requested to consider examining this aspect to find an effective mechanism for smooth and timely release of funds and to impose conditionalities which prevent diversion.

3. Need to follow the Monitoring Mechanisms laid out by Supreme Court

In compliance of the directions of the Hon'ble Supreme Court of Indian in *And Quiet Flows the Maily Yamuna* case, there should be periodic monitoring of these flagship projects once a month at the level of the CEO and once in three months at the level of the CS, Govt of NCT Delhi.

4. Need to improve accountability of the PMC

DJB may consider invoking the TOR clauses to see that PMC is able to play a more proactive role in ensuring that the bottlenecks and hurdles faced by the project and the contractor are addressed promptly and urgency is conveyed at all levels within DJB and not limited to the CE's level. At present the PMC's role has been advisory and routine without any accountability if the project continues to suffer delays. The monitoring process adopted by the SE and the CE had made no apparent difference to project oversight and meetings whenever taken by the Member Drainage had also not resulted in having any impact. Mere meetings without holding key people responsible were serving no purpose judged by the slow progress achieved.

5. Unauthorized use of By-pass in Kondli STP (Phase IV)

The YMC members asked about action taken against the agency maintaining the Kondli Phase-IV against whom, numerous complaints about having created a bypass for unauthorized discharge of sewage resulting in the emission of foul gases were being received by YMC from the RWAs of the nearby colonies. The concerned S.E.(SDW) informed that they had issued several letters and show cause notices to the agency (M/s VA Tech WABAG). DJB had extended the Defect Liability period for one year during which entire O&M was borne by the agency. Finally, the agency has recently been debarred by DJB for three years besides imposition of heavy penalty for not meeting the designed quality parameters of the treated effluent and less generation of power.

The explanations of the DJB officers were unsatisfactory and the practice of officers simply writing letters one after the other along with show cause notices indicated that the contractor was being given a long rope without any deterrent action which would have an impact. This was unacceptable as on the one hand there was continuing pollution of river water and on the other grave inconvenience was being caused to the nearby residents.

YMC also asked the CE DJB to submit a response to YMC's letter dated 21.09.2020 as the RWA's were regularly writing to the YMC seeking redressal of their grievances.

6. Summary of Observations and Directions

- i. YMC has found the system of monitoring by the engineers to be ineffective and there was no evidence that it had been brought to the notice of the Board and of the Government seeking intervention.
- ii. DJB does not seem to be maintaining a separate account for different YAP III and the admission that funds do get transferred for other purposes like salary under other heads was against accounting principles for such time bound externally funded projects. Also, during the lockdown there was restriction imposed by the NCT government on use of project funds and only salary disbursements were permitted which had added to the delay giving an opportunity to the contractor to justify delay.
- iii. The tree felling approvals were not being treated with due expedition by either DJB or the Forest Department. Too much reliance was being placed on letter writing and the matter was not being raised with sufficient concern to the level of the PCCF, or the Principal Secretary Environment & Forests and even to the Chief Secretary for intervention. Since. All officers are in the same Government prompt intercession was needed.
- iv. The reported delay in approval at the level of the competent authority will retard the project completion and will give an excuse to the Contractors to further delay the project and make other claims on account of such unforeseen delays. This needs to be taken up at Government level immediately and the downstream consequences of the delay placed before higher levels in the Government.

- v. NMCG being the funding agency, needs to evolve a water tight mechanism to ensure that payments to the agencies executing YAP-III projects are made promptly. YMC found that despite funds having been provided by NMCG, DJB had delayed release of payments to the agencies.
- vi. The representative of NMCG informed that they had been writing several letters to the Delhi Govt. at higher level, but had received no response. It was DJB's version that this had delayed the project by some 3-4 months. This required examination by a suitable agency because any such delay was against the tenets of good governance and financial control. The monitoring of YAP III projects was expected to be done using modern tools of project monitoring. This was not being done and needed to be instituted with a sense of urgency. If the DJB engineers were merely allowing the PMC to give routine, non- qualitative reports they were not using the agency in a meaningful manner. This required to be rectified considering the huge financial outgo assigned to the project consultants. There was a need for complete overhaul of the monitoring systems and the present establishment did not seem to have the capability to do this effectively.
- vii. All the above issues were brought to the notice of the Member Drainage, the Chief Engineer, and the PMC during the meetings and no part of what was discussed was repudiated by the officers. There was acceptance on the conclusions and findings which calls for instituting vastly different oversight systems without delay.
- viii. The issue of a contractor being given a slew of show cause notices and no penal action having been taken for so many months and having been initiated belatedly after YMC highlighted the gravity of the situation needs investigation. This was too serious a matter to have been delayed for so many

months by giving one extension after another to show cause for something which was clearly a flagrant violation of prescribed practice.

- ix. The YMC exhorts the CEO DJB to take necessary action even without waiting for the NGT's directions on all these matters. YMC is not endorsing the minutes to the contractors or the PMC but it is for the officers in DJB to communicate the YMCs findings and directions which have been gleaned from the data made available to the Committee. The findings and advice may be implemented in the interest of project completion.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

Encl: as above

To: CEO DJB

Copy to:

1. Director General, NMCG.
2. Additional Chief Secretary (UD).
3. Principal Secretary (UD).
4. Principal Secretary (E&F).

Annexure-I

following personnel from YMC, PMC, Agency & DJB attended the meeting on 04-11-2020 at 2.30 pm:

<i>YMC</i>	<i>DJB</i>	<i>PMC</i>
1. Ms. Shailaja Chandra, Member (YMC) 2. Sh. B.S. Sajwan, Member (YMC) 3. Sh. R.S. Tyagi, Former Member, DJB	1. Sh. M.K. Jain, CE(DR)PR-II 2. Sh. B.P. Saraswat, S.E.(Dr).P-IV 3. Sh. Anil Chaudhary, E.E.(Dr).P Agency: M/S Vatech-WABAG	1. Mr UdayKelkar 2. Mr. SurajAggrawal

Related to Chapter 4 – Sewage Treatment Plants (STPs)**Section 69 of Delhi Jal Board Act of 1998****Power of administrator regarding audit of account of the Board**

The administrator may, where he is of the opinion that it is necessary in public interest so to do, request the comptroller & Auditor General to audit the accounts of the board as provided under Section 19 (3) of the C.A.G. Act, 1971.

Provided that no such request shall be made except after consultation with the Comptroller & Auditor General and except after giving a reasonable opportunity to the Board to make representation with regard to the proposal for such audit.

Related to Chapter 4 – Sewage Treatment Plants (STPs)

Annexure C-4/6

SEWAGE TREATMENT PLANTS AND UTILIZATION OF SEWAGE																						
S No	Name of STP	Design parameter of Treated effluent			Output treated effluent parameters for Apr, 2020			Output treated effluent parameters for May, 2020			Output treated effluent parameters for June, 2020			Output treated effluent parameters for July, 2020			Output treated effluent parameters for August, 2020			Output treated effluent parameters for Sept, 2020		
		TSS	COD	BOD	TSS	COD	BOD	TSS	COD	BOD	TSS	COD	BOD	TSS	COD	BOD	TSS	COD	BOD	TSS	COD	BOD
1	Keshopur Phase-I	10	250	10	9.95	48.95	6.1	12.2	32.6	6.9	10.3	51.9	8.3	9.45	49.05	7.03	8.72	46.3	5.86	9.94	37	5.41
2	Keshopur Phase-II	50	250	30	795	971.5	163.2	Not Available			149	280	81	149	238	78	153	271	85.7	140	264	83.5
3	Keshopur Phase-III	50	250	30	Not Available			187	291	87	170	280	91	143	238	72	149	242	83.5	137	252	78.3
4	Rithala Ph. I	50	250	30	75.77	136.3	54.91	Not Available			136.3	228	53.9	Not Available			56	71	37.6	48	151	31.4
5	Rithala Ph. II	20	250	15	18.04	54.28	12.8	11.7	51.77	14	11.36	61.4	16.48	17.97	84.51	18.4	21.5	78.9	11.48	17.5	68.5	9.93
6	Coronation Pillar(I&II)	50	250	30	85.6	238	51.14	System was Offline due to Vandalism														
7	Coronation Pillar-III	50	250	30	53.43	158.3	41.43	54.2	120.1	40	64.52	101	34.12	65.96	114.1	33.1	38.1	76.7	24.37	59.4	101	32.4
8	Narela	50	250	30	131.9	149.2	69.54	665	302.2	107	426.4	198	68.65	40.8	99.76	54.4	36.1	64.2	22.29	29	55.4	18.4
9	Nilothi Phase-I	50	250	30	57.48	199	197.8	Not Available			146.4	239	150.6	287.4	165.5	29.8	250	213	44.19	133	182	43.5
10	Nilothi Phase-II	10	250	10	12.13	38.54	12.3	Not Available			25.41	46.1	13.23	22.56	30.92	6.99	7.74	19.6	6.47	8.6	19.2	6.3
11	Najafgarh	50	250	30	35.07	108.6	52.93	35.1	222.8	180	14.36	29	4.56	29.23	36.09	4.06	45.3	52	8.81	35.9	82.7	16
12	Peppankakan Phase-I	50	250	30	73.99	186.1	61.03	139	452.6	152	62.27	215	71.35	44.16	181.1	84.7	Not Available			82.4	183	37
13	Pappankakan	10	250	10	41.18	70.72	28.7	Not Available			38.02	47.8	16.06	14.35	23.69	6.02	12.8	19.8	4	5.98	16.1	3.26
14	Rohini	50	250	30	182	94.79	19.83	339	93.91	17	35.73	100	23.61	40.25	135.5	37.5	28.5	96.9	19.14	46.9	107	18
15	Kapashera	10	250	10	2.32	15.42	2.79	7.73	87.11	13	10.47	109	16.63	8.02	48.54	7.48	8.21	31.8	9.18	8.33	22.6	7.97
16	DJB- CWG Village	50	250	30	0.7	3.79	0.13	0.72	3.84	0.1	2.84	11.1	1.06	2.5	11.4	1.4	1.53	11	4.47	0.9	8.73	1.52
17	DJB- Yamuna Vihar Phase-2	50	250	30	System was Offline due to Vandalism																	
18	DJB-Chilla	10	250	10	8.92	11.8	2.73	8.51	16.8	2.7	8.57	18.8	3.04	17	23.6	3.12	13.4	21	2.48	11	22	4.06
19	DJB-Delhi Gate Nallah	15	250	10	8.02	10.1	5.28	25.5	25.3	6.9	6.26	23.4	5.05	4.17	22.1	3.35	4	20	2.48	7.2	14.3	4.92

20	DJB-Delhi Gate Nallah II	10	250	10	6.08	30.2	3.62	5.43	33.2	4.2	4.73	42.2	5.36	4.51	38.5	4.18	4.45	45	4.68	4.5	31.4	4.88
21	DJB-Dr Sen Nursing Home	15	250	10	0.31	14.5	5.27	14.2	15.4	2.1	10.8	13.1	2.57	5.91	19.9	3.17	7.5	21	3.24	7.9	18.9	3.68
22	Ghitorni	50	250	30	68.9	116	21	110	219.8	43	111	216	40.3	76.7	134	24.3	86.3	146	25.6	44	83.9	17.9
23	Yamuna Vihar Ph - 1	50	250	30	43.1	71.8	22.6	48.3	132	28	703.9	366	82.51	84.3	138	32	40.2	102	32.3	34	53.7	14.3
24	Yamuna Vihar Ph - 3	30	250	20	29.24	57.97	18.07	53.4	72.66	14	24.5	80.9	18.2	27.8	113	15.2	29.1	131	20.2	29	78.6	18.4
25	DJB-Kondli Phase II	30	250	20	27.4	39.3	13.7	50.2	49.9	15	28.6	41	14.2	40	47.2	15.8	72.4	62	18.5	60	75.9	26
26	DJB-Kondli Phase IV	30	250	20	78.2	201	69.8	79.7	224	97	75.1	190	53.2	445	439	74.4	276	322	58.9	92	196	50.4
27	DJB-Mehrauli	50	250	30	216	166	32.9	45.8	90	21	54.8	61.6	20.6	65.5	76	33.7	35.2	69	23.6	32	63.3	15.7
28	DJB-Molar Band	50	250	30	52.8	74.4	18.2	83.7	92.8	20	47.8	88.5	28.1	57.1	94.7	28.2	72.4	85	17.9	45	90.7	22.6
29	DJB-Okhla Phase II	50	250	30	72.7	85.5	24.1	155	121	27	85.6	143	27.8	142	110	26.1	46.3	115	24.7	38	85.4	18.9
30	DJB-Okhla Phase III	50	250	30	42.4	92	15.5	66.9	186	19	41.6	106	19.1	66.9	199	27.2	54.4	139	22	60	152	24.7
31	DJB-Okhla Phase IV	50	250	30	101	118	51.6	58	220	37	205	198	58.9	165	212	70.7	64.3	106	38.3	90	219	59.6
32	DJB-Okhla Phase V	50	250	30	52.9	53.7	16.7	88.7	69.6	22	59.9	50.2	12.5	21.1	48.8	8.52	27	85	24.4	17	50.1	10.2
33	DJB-Okhla Phase VI	30	250	20	7.19	14.3	2.7	8.35	17.5	4.2	7.57	15.7	3.56	7.19	14.3	2.7	8.1	21	4.1	7.6	19	3.23
34	DJB-Vasant Kunj	50	250	30	60.9	50	12.8	116	89	17	25.3	45.7	21.6	18.4	21.4	12.1	15.9	18	10.6	16	26.5	11.2
35	DJB-Vasant Kunj New	50	250	30	45.6	112	31	29.9	67.6	10	23.7	52.4	9.74	14.3	46.4	10.2	15.4	50	10.3	19	46.8	13.7

Annexure C-4/7**Related to Chapter 4 – Sewage Treatment Plants (STPs)****Up-gradation of Balance 16 STPs of DJB [348 MGD (1582 MLD)] (with Parameters BOD - 10mg/l & TSS-10mg/l including Bio-nutrient & Pathogen Removal & Sludge Management)**

The existing STPs of DJB have been designed for BOD / TSS 30 : 50 and 20 : 30. However, as per the directions of Hon'ble NGT dated 30.04.2019, the STPs are required to be upgraded for BOD / TSS 10 : 10.

The STPs at Pappankalan Phase – II (20 MGD), Nilothi Phase-II (20 MGD), Kapashera (05 MGD), CWG Village (01 MGD), Delhi Gate Phase-II (15 MGD) & Chilla (09 MGD) with total capacity of **70 MGD** are already working on BOD/SS 10:10 parameters.

The details of balance 16 STPs to be upgraded are as follows:

Up-gradation of balance Existing STPs with Parameters of BOD/TSS as 10/10 mg/l (including Bio-nutrient & pathogen removal & sludge management)						
S. No.	Name of STP	Phase Wise Breakup	Design Capacity (in MGD)	Design Outlet Parameters BOD/TSS	Estimated Cost for Upgradation to 10/10 Parameters (Rs. Crore)	Expected Timelines of Completion (subject to availability of funds)
1	Rithala	Phase – II	40	15/20	312.76	The completion period for up-gradation of STPs is 3 to 4 years from the date of availability of funds.
2	Okhla	Phase-V	16	30/50	125.10	
		Phase-VI	30	20/30	234.57	
3	Kondli	Phase – IV	45	20/30	351.86	
4	Keshopur	Phase-I	12	20/30	93.83	
		Phase-II	20	30/50	156.38	
		Phase-III	40	30/50	312.76	
5	Yamuna Vihar	Phase – I	10	30/50	78.19	
		Phase-III	25	20/30	195.48	
6	Vasant Kunj	Phase – I	2	30/50	15.64	
		Phase – II	3	30/50	23.46	
7	Mehrauli	Mehrauli	5	30/50	39.10	
8	Narela	Narela	10	30/50	78.19	
9	Nilothi	Phase – I	40	30/50	312.76	
10	Najafgarh	Najafgarh	5	30/50	39.10	
11	Pappankalan	Phase – I	20	30/50	156.38	
12	Dr.Sen Nursing Home Nalla	Dr. Sen Nursing Home Nalla	2.2	10/15	17.20	
13	Delhi Gate	Phase – I	2.2	10/15	17.20	
14	Rohini	Rohini	15	30/50	117.29	

15	Ghitorni	Ghitorni	5	30/50	39.10	
16	Molar Bandh	Molar Bandh	0.66	30/50	5.16	
		Total	348.0 6 MGD		2721	
Total fund requirement for 348.06 MGD @7.82 Crore/MGD = Rs. 2721 Crores						

Related to Chapter 4 – Sewage Treatment Plants (STPs)

Annexure C-4/8

Brief of Analysis Reports of DPCC laboratory in respect of operational/functional STPs of Delhi Jal Board for the month of October-2020

S. No.	Name of STP	Capacity (in MGD)	Date of Sampling	Brief of Analysis Report
1	Molarband	0.66	12.10.2020	Not Meeting the Prescribed standard in respect of TSS (36 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (24 mg/l against the prescribed standard of ≤ 10 mg/l), COD (76 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (7.2 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (4.2 mg/l against the prescribed standard of ≤ 2 mg/l)
2	Coronation Pillar Phase – I & II	20	07.10.2020	Not Meeting the Prescribed standard in respect of TSS (60 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (42 mg/l against the prescribed standard of ≤ 10 mg/l), COD (144 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (6.8 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (2.7 mg/l against the prescribed standard of ≤ 2 mg/l)
3	Coronation Pillar Phase – III	10	07.10.2020	Not Meeting the Prescribed standard in respect of TSS (48 mg/l against the prescribed standard of ≤ 10 mg/l), COD (136 mg/l against the prescribed standard of ≤ 50 mg/l), BOD (38 mg/l against the prescribed standard of ≤ 10 mg/l) and Ammonical Nitrogen (5.8 mg/l against the prescribed standard of ≤ 5 mg/l).
4	Delhi Gate Nalla Phase – I	2.2	09.10.2020	Meeting the Prescribed standards.
5	Delhi Gate Nalla Phase – II	15	09.10.2020	Meeting the Prescribed standards.
6	Keshopur New (Phase I)	12	19.10.2020	Not Meeting the Prescribed standard in respect of TSS (14 mg/l against the prescribed standard of ≤ 10 mg/l).
7	Dr. Sen Nursing Home Nalla	2.2	09.10.2020	Meeting the Prescribed standards.
8	Nilothi Phase – II	20	19.10.2020	Meeting the Prescribed standards.
9	Nilothi Phase – I	40	19.10.2020	Not Meeting the Prescribed standard in respect of TSS (46 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (32 mg/l against the prescribed standard of ≤ 10 mg/l), COD (128 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (8.9 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (4.7 mg/l against the prescribed standard of ≤ 2 mg/l)

Brief of Analysis Reports of DPCC laboratory in respect of operational/functional STPs of Delhi Jal Board for the month of October-2020

S. No.	Name of STP	Capacity (in MGD)	Date of Sampling	Brief of Analysis Report
10	Najafgarh	5	15.10.2020	Not Meeting the Prescribed standard in respect of TSS (32 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (24 mg/l against the prescribed standard of ≤ 10 mg/l), COD (76 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (5.8 mg/l against the prescribed standard of ≤ 5 mg/l) & Dissolved Phosphate as P (2.6 mg/l against the prescribed standard of ≤ 2 mg/l)
11	Rithala Phase - I	20	06.10.2020	Not Meeting the Prescribed standard in respect of TSS (70 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (40 mg/l against the prescribed standard of ≤ 10 mg/l), COD (160 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (9.4 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (2.3 against the prescribed standard of ≤ 2 mg/l)
12	Rithala Phase - II	40	06.10.2020	Not Meeting the Prescribed standard in respect of TSS (14 mg/l against the prescribed standard of ≤ 10 mg/l), Ammonical Nitrogen (6.8 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (3.6 against the prescribed standard of ≤ 2 mg/l)
13	Pappankola Phase - I	20	15.10.2020	Not Meeting the Prescribed standard in respect of TSS (40 mg/l against the prescribed standard of ≤ 10 mg/l), COD (80 mg/l against the prescribed standard of ≤ 50 mg/l), BOD (28 mg/l against the prescribed standard of ≤ 10 mg/l), Ammonical Nitrogen (6.9 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (3.8 mg/l against the prescribed standard of ≤ 2 mg/l)
14	Pappankola Phase - II	20	15.10.2020	Meeting the Prescribed standards.
15	Rohini	15	06.10.2020	Not Meeting the Prescribed standard in respect of TSS (20 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (16 mg/l against the prescribed standard of ≤ 10 mg/l), COD (60 mg/l against the prescribed standard of ≤ 50 mg/l) and Dissolved Phosphate as P (2.8 against the prescribed standard of ≤ 2 mg/l)
16	Narela	10	08.10.2020	Not Meeting the Prescribed standard in respect of TSS (16 mg/l against the prescribed standard of ≤ 10 mg/l)
17	Kondli Phase - II	25	15.10.2020	Not Meeting the Prescribed standard in respect of TSS (26 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (18 mg/l against the prescribed standard of ≤ 10 mg/l), COD (58 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (5.8 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (3.6 mg/l against the prescribed standard of ≤ 2 mg/l)

Brief of Analysis Reports of DPCC laboratory in respect of operational/functional STPs of Delhi Jal Board for the month of October-2020

S. No.	Name of STP	Capacity (in MGD)	Date of Sampling	Brief of Analysis Report
18	Kondli Phase - IV	45	20.10.2020	Not Meeting the Prescribed standard in respect of TSS (36 mg/l against the prescribed standard of ≤ 10 mg/l), COD (88 mg/l against the prescribed standard of ≤ 50 mg/l), BOD (32 mg/l against the prescribed standard of ≤ 10 mg/l), Ammonical Nitrogen (8.6 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (4.2 mg/l against the prescribed standard of ≤ 2 mg/l).
19	Kapashera	5	16.10.2020	Meeting the prescribed standards.
20	Chilla	9	20.10.2020	Meeting the prescribed standards.
21	Common Wealth Games Village	1	20.10.2020	Meeting the prescribed standards.
22	Mehrauli	5	16.10.2020	Not Meeting the Prescribed standard in respect of TSS (18 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (18 mg/l against the prescribed standard of ≤ 10 mg/l) and COD (72 mg/l against the prescribed standard of ≤ 50 mg/l)
23	Vasant Kunj Phase - II	3	16.10.2020	Not Meeting the Prescribed standard in respect of TSS (16 mg/l against the prescribed standard of ≤ 10 mg/l)
24	Yamuna Vihar Phase - I	10	14.10.2020	Meeting the prescribed standards.
25	Yamuna Vihar Phase - II	10	14.10.2020	Not Meeting the Prescribed standard in respect of TSS (16 mg/l against the prescribed standard of ≤ 10 mg/l) and Dissolved Phosphate as P (2.3 mg/l against the prescribed standard of ≤ 2 mg/l).
26	Yamuna Vihar Phase - III	25	14.10.2020	Not Meeting the Prescribed standard in respect of TSS (36 mg/l against the prescribed standard of ≤ 10 mg/l), COD (88 mg/l against the prescribed standard of ≤ 50 mg/l), BOD (28 mg/l against the prescribed standard of ≤ 10 mg/l), Ammonical Nitrogen (7.8 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (3.8 mg/l against the prescribed standard of ≤ 2 mg/l).
27	Okhla Phase - II	12	12.10.2020	Not Meeting the Prescribed standard in respect of TSS (18 mg/l against the prescribed standard of ≤ 10 mg/l) and BOD (12 mg/l against the prescribed standard of ≤ 10 mg/l)
28	Okhla Phase - III	37	12.10.2020	Not Meeting the Prescribed standard in respect of TSS (32 mg/l against the prescribed standard of ≤ 10 mg/l) and BOD (16 mg/l against the prescribed standard of ≤ 10 mg/l)

Brief of Analysis Reports of DPCC laboratory in respect of operational/functional STPs of Delhi Jal Board for the month of October-2020

S. No.	Name of STP	Capacity (in MGD)	Date of Sampling	Brief of Analysis Report
29	Okhla Phase – IV	45	12.10.2020	Not Meeting the Prescribed standard in respect of TSS (54 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (20 mg/l against the prescribed standard of ≤ 10 mg/l), COD (64 mg/l against the prescribed standard of ≤ 50 mg/l) and Ammonical Nitrogen (6.4 mg/l against the prescribed standard of ≤ 5 mg/l)
30	Okhla Phase – V	16	12.10.2020	Not Meeting the Prescribed standard in respect of TSS (16 mg/l against the prescribed standard of ≤ 10 mg/l)
31	Okhla Phase – VI	30	12.10.2020	Meeting the Prescribed standards.
32	Keshpur Phase-II	20	19.10.2020	Not Meeting the Prescribed standard in respect of TSS (68 mg/l against the prescribed standard of ≤ 10 mg/l), BOD (40 mg/l against the prescribed standard of ≤ 10 mg/l), COD (96 mg/l against the prescribed standard of ≤ 50 mg/l), Ammonical Nitrogen (9.2 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (4.2 mg/l against the prescribed standard of ≤ 2 mg/l)
33	Keshpur Phase – III	40	19.10.2020	Not Meeting the Prescribed standard in respect of TSS (72 mg/l against the prescribed standard of ≤ 10 mg/l), COD (120 mg/l against the prescribed standard of ≤ 50 mg/l), BOD (45 mg/l against the prescribed standard of ≤ 10 mg/l), Ammonical Nitrogen (9.6 mg/l against the prescribed standard of ≤ 5 mg/l) and Dissolved Phosphate as P (4.6 against the prescribed standard of ≤ 2 mg/l)

Related to Chapter 5- Interceptor Sewer Project (ISP)

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2020/511

Dated: 04.11.2020

Subject: Minutes of the 2nd Review Meeting taken by the Yamuna Monitoring Committee with officers of the Delhi Jal Board on 19.10.2020 at 2.30 PM.

The list of the officers who attended the meeting is at Annexure-I. The meeting was held through video conferencing.

At the outset, Mr. R.S. Negi, Member (Dr), DJB informed the YMC that due to ill health, CEO DJB has not been attending the office for the last many days and is therefore unable to attend the review meeting. His technical team was present to respond to the queries of YMC.

Members of the YMC observed that due to continued absence of the CEO in the review meetings for over a year YMC was facing continuing difficulties in getting satisfactory responses relating to several administrative and policy issues which were responsible for delays in timelines of various projects. These went beyond engineering and technical issues being handled by the Member Drainage and his team of engineers. YMC also drew the attention of DJB officers to the meeting notice sent on 8.10.2020 wherein YMC had requested the DJB to send status report to enable the YMC members to study and understand the progress achieved and issues involved well in time for the meeting to be productive. The status report regrettably was received only half an hour before the commencement of the meeting and did not cover several aspects which had been raised by YMC.

Subjects highlighted in advance to DJB

The following issues largely related to sewage were taken up for review by the YMC, with the DJB officers:

- i. Levying EC under polluter pays principle on all households whether situated in sewered or unsewered colonies- Current status of reported policy decision taken by the Board awaiting Government approval.
- ii. Providing connectivity to the sewer network to all the households situated in notified sewered colonies – status of implementation.

- iii. Commissioning of ISP – number of drains trapped, actual volume of sewage trapped and sewage treated.
- iv. Status of trapping of 204 drains not covered under ISP.
- v. Status of implementation of DJB's action plan for control of sewage in Kushak/Barapulla drains.
- vi. Status of repairing punctured Sewers.
- vii. Functioning of the Sewage collection services.

1. **Levying E.C. under polluters pay principle on all households whether situated in sewerred and unsewerred colonies:** YMC drew attention of the DJB to the orders of the NGT directing that the orders of the Tribunal which have since been confirmed by the Hon'ble Apex Court regarding levy of EC under the Polluter Pays Principle be levied on every household regardless whether located in sewerred areas or unsewerred areas have remained unimplemented so far.

Member (Dr) informed that the Board in its meeting held on 24-09-2020 has recommended levy of **Annual Sewage Pollution Charge on Polluter's Pay Principle** on all households whether located in sewerred/un-sewerred areas as per directions of Hon'ble Supreme Court and NGT. The Charges are to be collected from Domestic and Non-Domestic consumers at the following rates:-

Category of Class	Annual Charges for Domestic Households	Annual Charges in case of non-domestic Categories (on the basis of sanctioned Electricity Load in KW)
A, B	Rs.5000./-	Rs.5000/- + Rs.200/KW
C	Rs.2000/-	Rs.2000/- + Rs.100/KW
D	Rs.1000/-	Rs.1000/- + Rs.50/KW
E, F	Rs. 200/-	Rs. 200/- + Rs.50/KW
G, H	Rs. 100/-	Rs.100/- + Rs.50/KW

The Annual Sewage Pollution Charge will be added to the Electricity Bill in the First Month of Financial Year i.e. April. DISCOMS will recover this amount as an outsourced service to comply the directions of Hon'ble Supreme Court and NGT. **The recommendations of the Board have been sent to Urban Development Department, Government of N.C.T. of Delhi on 12.10.20 for Cabinet approval.**

2. **Delay in connectivity of households' sewer connections with DJB sewer line:** YMC expressed concern that despite assurances given by the DJB and incorporated in the YMC's

report of 5.2.20 to complete the household level sewer connections to be provided to 2.34 lakhs consumers in 436 notified sewer colonies by 31.3.2020, the timelines continued to be extended. In the Final report of the YMC, the timeline as indicated by the DJB was 31.12.2020. However, as per the status report received today, the timelines for completion of the household level sewer connectivity has been further extended to 31.3.2021. This clearly shows lack of planning and effective monitoring.

Member (Dr), DJB informed that they have conducted the household survey in notified areas, issued notices to the residents who have not yet connected their household sewer connection. Out of total 1,14,708 consumer in notified area which have not taken sewer connections, survey of around 77,195 cases has been done, out of which 62,294 consumers were found to have unauthorized connections, which have now been regularized. Delhi Jal Board has the target to complete the connectivity of all house hold sewer connections by March 2021 in notified areas. Thereafter, they will start similar actions in other areas.

YMC has been informed that the number of sewer connections has seen an increase of 32% from 15.60 lakhs households on 01.01.20 to 20.68 lakhs households on 30.09.20. The Board has also taken a decision in June 2020 to levy sewerage charges in notified sewer colonies at the rate of 60% of the water charges on all households who have been provided water connections and:

- a) who have taken authorized sewer connections.
- b) who have taken unauthorized sewer connections.
- c) who have not yet taken sewer connections.

While welcoming this development, YMC was of the view that the sewage has still to be trapped and treated and unless the household connections are provided sewage will continue to flow into the river Yamuna through the drains. DJB should not draw comfort from only realizing the sewerage charges but actually trap sewage going into the drains. The track record showed repeated cases of slippages of milestones and timelines in providing household connectivity. The 1.14lakh consumers who have not taken sewer connections pertain to the 436 notified sewer colonies although as per the information furnished to YMC by the DJB in June 2020, there were 561 notified sewer colonies and another 59 were to be sewer by June 2020 and 166 by December 2020. It thus clearly shows that

there is information gap about the number of households in all the notified sewer colonies and those that have not been provided household level sewer connections. Survey for this purpose needs to be fast tracked, assessment of household without sewer connectivity made and action mounted to provide connectivity. Else sewage will continue to be discharged into the drains which otherwise would have been conveyed to the STPs. Charging sewer maintenance charges from all households doesn't prevent pollution in River. Also even if household level sewer charges levied after the cabinet decision, the problem of sewage from sewer colonies going into the river through the drains will continue till last mile sewer connectivity is provided.

DJB should submit to submit their report on the following latest by 10th November 2020:

- a. Colonies notified as sewer colonies, number of households in the colonies and the population.
 - b. Plans for providing sewer network with timelines in the remaining unsewered colonies, number of household and populations.
 - c. Timelines for completing household level sewer connectivity in all the notified sewer colonies, number of households and population.
 - d. Number of colonies located within the catchment of ISP whose sewage is expected to be **intercepted and treated** (and not just intercepted) by 31.12.2020.
2. **(I) Progress of Interceptor sewer and trapping of additional 204 drains:**

Interceptor sewer project has been the flagship project of the Delhi Jal Board which has been planned to trap 242 MGD sewage currently flowing through 108 drains. There are still 204 drains which have come up after commencement of this work and yet to be connected with Interceptor sewer. EIL was engaged to conduct the survey and submit the plan for connecting these drains into Interceptor sewer. Has Delhi Jal Board accounted for the quantum of sewage flowing into these additional 204 drains which will pollute river, if not connected to the Interceptor sewer?

2. **(II) Timelines for completion of ISP**

Regarding completion of Interceptor sewer work, Delhi Jal Board has been repeatedly revising and stretching the completion dates in all its reports submitted to the YMC so far. The completion date last indicated and incorporated in the Final Report of YMC

was August 2020. This date has again been revised to December 2020. Mr. R S Tyagi, Advisor YMC informed that there is a mismatch between the dates of completion of Interceptor sewers project and commissioning of STPs being rehabilitated under YAP-III including the STP at Coronation Pillar. There is no synchronization between the interception of sewage under the ISP and treatment at the STPs.

DJB in its status report submitted to the YMC had indicated that by December 2020, 200 MGT of sewage will be trapped and treated. However as per the Status report now submitted provision for trapping 226.30 MGD has so far been made but actual treatment is only 158.70 MGD. Additional interception capacity of 15.70 MGD will be created by December 2020. However, treatment will be possible only with the commissioning of Coronation Pillar STP by June 2021 and Rithala by December 2022. This mismatch of information is not acceptable as it makes any sort of monitoring meaningless and will be reflected accordingly to NGT in the November report.

Member (Dr) informed that due to major financial constraints, the payments to the agency executing Interceptor sewer works could not be made after March 2020. Around Rs 52 Crores is due payment to these agencies.

YMC asked DJB at what level, they have taken up this matter? Have they raised this point of financial constraints for this project at the level of CEO/ Chief Secretary or Minister? Member (Dr) informed that he took up the case of financial constraints in general for all the projects at the level of Member (F) who is responsible to raise this issue further at appropriate levels. In the absence of the CEO YMC felt constrained to elicit precise details of the constraints faced and whether financial constraint will cause further dislocation in completion of the ISP

As regards the status of 204 drains not covered under the ISP, the details furnished by the DJB are as under:

Already trapped:	40 Nos
Trapping not required:	10 Nos
Pertains to Haryana and DDA:	03 Nos
By Dec 2020:	1 No
By Dec 2021:	89 Nos
By Dec 2022:	58 Nos.

Sewerage system is being laid in the command area of these drains as per above timelines and flow will be trapped in sewage system after commissioning/ notification and Providing House Service Connections to the residents. As per orders of Board vide Resolution No. 974 dated 12.06.2020, notification of sewer line could only be made after providing house service connections by DJB.

The DJB should also furnish the assessment of sewage flowing through the 89 and 58 drains which are planned to be trapped by December 2021 and December 2022 respectively.

3. Sewage from Neighboring States

It was also brought out that there is no proposal for treatment of sewage coming from the neighboring states through Drain No.6, Badshahpur drain and Loni drain. Delhi Jal Board should have taken up these issues with U.P & Haryana authorities to expedite their works of setting up / rehabilitation of STPs under their jurisdiction so that only treated effluent is discharged into above drains. YMC is separately monitoring with the states of Haryana and UP on the steps being taken in the respective states to prevent flow of untreated sewage in these drains but ownership has to be of DJB to pursue these projects as the pollution is going into Delhi drains coming under Department of Irrigation & Flood Control. Coordination, raising levels and seeking intervention of higher authorities as well as the Ministry of JS was called for and should be pursued.

4. Trapping of Drains:

DJB's Report and Variance with CPCB Report

DJB has informed that the following 11 drains have so far been trapped and that no sewage is flowing beyond the point of trapping.

1.	Magazine Road Drain	These drains have been trapped into Aruna Nagar Sewage Pumping Station (SPS) from where wastewater is pumped to Nigam Bodh SPS and through a rising main, it is pumped into Ring Road Trunk Sewer leading to Ring Road SPS and finally pumped to Okhla STP for treatment.	Already trapped.
2.	Sweepers Colony Drain		
3.	Khyber Pass Drain		
4.	Metcalf House Drain	From this drain, wastewater is pumped into Bela Road Trunk sewer leading to Nigam Bodh SPS. From there through a rising main, it is pumped into Ring Road Trunk Sewer leading to Ring Road SPS and finally pumped	Already trapped.

		to Okhla STP for treatment.	
5.	Tonga Stand Drain	This drain has been trapped into Bela Road Trunk sewer leading to Nigam Bodh SPS. From there through a rising main, it is pumped into Ring Road Trunk Sewer leading to Ring Road SPS and finally pumped to Okhla STP for treatment.	Already trapped.
6.	Moat Drain (Vijay Ghat)	There is no dry weather flow.	Dry drain
7.	Civil Mill Drain	The drain has been trapped into Ring Road Trunk Sewer leading to Ring Road pumping station from where it is pumped to Okhla STP for treatment.	Already trapped.
8.	Delhi Gate Drain	The drain has been trapped and wastewater is being treated at old 2.2 mgd capacity STP and newly constructed 15 MGD Delhi Gate STP. Excess flow is diverted to Ring road sewer.	Already addressed
9.	Sen N.H. Nallah	The drain has been trapped and wastewater is being treated at 2.2 MGD Sen N. H. STP. Excess flow is diverted to Ring road sewer.	Already trapped.
10.	Drain No. 14	The drain has been trapped into Ring Road Trunk Sewer leading to Ring Road pumping station from where it is pumped to Okhla STP for treatment.	Already trapped.
11.	Tughlakabad Drain	Trapped.	Already trapped.

Variance of DJB Report when compared to the CPCB Report. As per the last CPCB inspection report, the sewage from Sen Nursing Home, Power House and Tughlakabad drains is still overflowing into river against the claim of DJB that they have completely trapped these drains. DJB needs to explain this discrepancy. No action on trapping of other drains pointed out by CPCB i.e. Sonia Vihar, Shastri Park, Kailashnagar and Abul Fazal drains; has been taken by Delhi Jal Board. Similarly, no action has been taken for setting up of STPs at the mouth of Morigate and Barapulla drains. DJB submitted action plan for trapping of Barapulla drain before the Hon'ble NGT in 2015 and all works related to this action plan were to be completed by June 2016 whether as a part of short, medium or long term plans. But, nothing has been done so far. Now DJB has proposed setting up 20 MGD capacity STP at the mouth of Barapulla drain, whereas; DJB has proposed trapping around 28 MGD sewage from Kushak drain into various rehabilitated trunk/ peripheral sewers, 3 trapping points at Krishivihar, Andrews Ganj & Nizamuddin and Sewage Pumping Stations. These

works were to be completed by June 2020, which are now targeted to be completed by December 2020. The action plan for trapping of Sunheri Bagh drain is still awaited from DJB and New Delhi Municipal Council. DJB should consider setting up STP and decide on its capacity only after accounting for the sewage to be trapped as per their action plan for Kushak and Sunehari Bagh drains.

Mr. Negi informed that they have already taken up action on treatment of Sonia Vihar drain through bio-enzyme treatment. As regards the Kailash Vihar drain, he informed that matter has already been taken by DJB with the DUSIB and EDMC and requested YMC's intervention in the matter so that sewage of Kailash nagar drain could be pumped into Geeta Colony Sewage Pumping Station instead of sewage being discharged from DUSIB colonies into River by laying rising main from Kailash nagar SPS to Gandhi nagar SPS. YMC asked DJB officers to resolve the matter through one to one discussions drawing attention to the NGT's order prohibiting release of untreated sewage into the drains.

5. Related Issues concerning Drains and the Conveyance of Sewage

Sh. R .S. Tyagi pointed out that due to malfunctioning of Trunk Sewer No. 4 in Shahdara, the sewage of Geeta Colony SPS was being pumped into disused Canal drain. Before connecting rising main of Kailashnagar drain with Geeta Colony SPS, DJB must ensure whether the rising main of Geeta Colony SPS has been connected with Trunk Sewer No. 4.

Shri Tyagi further pointed out that in various meetings DJB has been reminded for de-silting and rehabilitation of three gravity ducts from Ashram Chowk to Okhla STP to increase the carrying capacity of these ducts. The Okhla STP is treating only 110 MGD sewage against its present capacity of 140 MGD, which is going to be increased to 170 MGD after commissioning of 124 MGD STP under YAP-III. YMC asked for the progress to be reported by 12th November.

YMC asked Mr. R S Tyagi, Advisor to inspect these drains along with CPCB team to verify again after making program with CPCB & DJB. A communication in this will be sent by the YMC to all concerned.

6. Status of 79 Locations of Punctured Sewers Discharging into Drains: On the status of punctured sewers at 79 locations, DJB has submitted the status report as below:

- | | | |
|----|---------------------------|---------------|
| a. | Punctured sewers plugged: | 50 locations |
| b. | Work to be completed: | 3 by 31.12.20 |
| | | 6 by 31.3.21 |

3 by 30.4.21

2 by 31/5/21

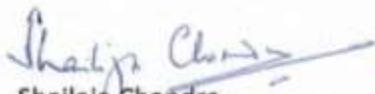
2 by 30.6.21

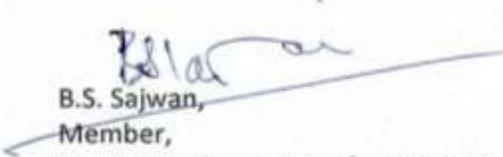
c. Work Pertaining to other Departments: 5 (DUSIB-2, DDA-1, Railways-1 and CPWD-1)

YMC expressed concern that not enough attention is being to this and punctured sewers releasing sewage into storm water drains are a manifestation of poor maintenance of sewerage network. Sh. R.S. Tyagi, Advisor to YMC informed that on the directions of the members of YMC, he selected 5 locations randomly for checking. Out of 5 locations, two locations claimed to be plugged by DJB, had sewage in the storm water drain. Member (Dr) informed that out of 79 locations 50 locations have already been plugged and further clarified that those 2 locations were earlier plugged, but the agencies rehabilitating the peripheral sewer lines, they had to operate those points again to divert the sewage from the sewer lines under rehabilitation and trolleys were found operated. After rehabilitation of sewer lines, they have plugged those points. Members, YMC asked Sh. Tyagi to verify these locations along with some other locations claimed to have been plugged by the DJB on a random basis. Also, the DJB should plug the remaining points on priority rather than letting sewage flow through these punctures sewers. DJB should also take up with other organizations, namely, DUSIB, DDA, CPWD and the railways citing the orders of NGT against permitting sewage in the drains.

A consolidated Status report on the issues discussed above be furnished to the YMC latest by 12.11.20 for incorporating in the next report of YMC due to be submitted to the NGT by 30.11.20.

The meeting ended with a vote of thanks to the chair


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

CEO DJB

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
Telephone No: 011- 24609270
Email id: rymonitoringcommittee@gmail.com

Annexure-I

The following personnel from YMC & DJB attended the meeting on 19-10-2020 at 2.30 pm:

YMC	DJB
1. Ms. Shailaja Chandra, Member (YMC).	1. Sh. R.S. Negi, Member (DR)
2. Sh. B.S. Sajwan, Member (YMC).	2. Sh. Ankit Srivastava, Consultant, Hydraulics, DJB
3. Sh. R.S. Tyagi, Former Member, DJB	3. Sh. M.K. Jain, CE(DR)PR-II
	4. Sh. Vikram Kumar Singh, CE(DR)PR-I
	5. Sh. Ajay Gupta, CE(Dr).P-III
	6. Sh. Gajender Tomar, S.E.(Dr).P-I
	7. Sh. B.P. Saraswat, S.E.(Dr).P-IV
	8. Sh. Anil Sharma, S.E.(Dr).P-V
	9. Sh. Deepak Srivastava, EE(ISP)

Annexure - C- 6/1**Related to Chapter 6- Repair and maintenance of Drains****STATUS REPORT ON DRAINS IN DELHI**

The Yamuna Monitoring Committee vide letter dated 28.10.2020 directed CPCB to provide status of trapping, pollution load and flow, if any in the drains namely Delhi Gate drain, Sen Nursing Home Drain, Tughlaqabad drain, Abul Fazal Drain, Sonia Vihar Drain, Shastri Park Drain, Civil Military Drain and Tonga Stand Drain.

Water Quality Monitoring of drains in Delhi is carried out by CPCB on monthly basis. Water quality data for the months of September and October, 2020 is placed in Table along with status on trapping waste water in drains.

CPCB has carried out inspection of 22 drains on 09.11.2020 for field verification on status of trapping. Photographs of selected drains depicting current status are attached as **Annexure**. Based on the inspection, following observations are made:

1. Total **14** drains namely Sonia Vihar, Najafgarh Drain, Kailash Nagar Drain, Shastri Park drain, Sen Nursing Home drain, Tughlaqabad drain, AbulFazal Drain, Civil Military Drain, Barapullah, Maharani Bagh, Jaitpur Drain, ISBT drain, Molaband Drain and Shahdara drain are found untapped and do not have any infrastructure for diversion.
2. **Seven** drains namely Magazine road drain, Sweeper Colony drain, Khyber Pass, Metcalf House, Tonga Stand Drain, Delhi Gate drain, SaritaVihar drain has infrastructure in place for diversion and trapping of wastewater.
3. Out of 07 drains, **05** drains (Magzine road drain, Sweeper Colony drain, Khyber Pass, Metcalf House, Tonga Stand Drain) are 100% tapped and no flow is allowed at downstream of interception.
4. Overflow at **02** drains (Delhi Gate drain, SaritaVihar drain) was observed.
5. No Flow was observed at Drain no. 14.

Table: Water Quality Monitoring data of drains for the month of September and October, 2020

Drains	September, 2020				October, 2020				Status on 09/11/2020
	COD (mg/l)	BOD (mg/l)	SS (mg/l)	DISCHARGE (m ³ /sec)	COD (mg/l)	BOD (mg/l)	SS (mg/l)	DISCHARGE (m ³ /sec)	
NAJAFGARH DRAIN (DELHI)	104	23	155	27.54	203	51	144	24.37	Untapped
SONIA VIHAR DRAIN	-	-	-	-	171.00	66	1077.00	-	Untapped
MAGZINE ROAD DRAIN (DELHI)	251	114	128	0.02	NF	NF	NF	NF	Trapped

Drains	September, 2020				October, 2020				Status on 09/11/2020
	COD (mg/l)	BOD (mg/l)	SS (mg/l)	DISCHARGE (m ³ /sec)	COD (mg/l)	BOD (mg/l)	SS (mg/l)	DISCHARGE (m ³ /sec)	
SWEeper COLONY DRAIN (DELHI)	37	15	25	0.03	65	21	79	0.05	Trapped
KHYBER PASS DRAIN (DELHI)	31	5	106	0.03	NF	NF	NF	NF	Trapped
METCALF HOUSE DRAIN (DELHI)	107	27	59	0.03	NF	NF	NF	NF	Trapped
ISBT + MORI GATE DRAIN (DELHI)	85	23	49	0.40	92	26	81	0.49	Untapped
TONGA STAND DRAIN (DELHI)	20	2.7	21	0.02	27	11	21	0.02	Trapped
SHASTRI PARK DRAIN	189	54	58	0.07	266	92	63	0.06	Untapped
KAILASH NAGAR DRAIN (DELHI)	399	176	239	0.15	NF	NF	NF	NF	Untapped
CIVIL MILL DRAIN (DELHI)	48	19	42	0.06	98	37	85	0.05	Untapped
DELHI GATE DRAIN (DELHI)	141	64	66	0.58	350	139	189	0.65	Overflow
SEN NURSING HOME DRAIN (DELHI)	95	41	87	0.3	256	90	83	0.34	Untapped
DRAIN NO.14 (DELHI)	26	5	56	0.11	NF	NF	NF	NF	No Flow
BARAPULLA DRAIN (DELHI)	120	48	50	1.6	127	56	58	1.66	Untapped
MAHARANI BAGH DRAIN (DELHI)	167	71	101	0.43	229	65	136	0.39	Untapped
ABU FAZAL DRAIN (DELHI)	202	72	56	0.22	213	80	190	0.26	Untapped
JAIPUR DRAIN (DELHI)	271	111	123	0.21	303	140	176	0.19	Untapped
TUGLAKABAD DRAIN (DELHI)	232	88	101	0.34	220	85	87	0.31	Untapped
SHAHDARA DRAIN (DELHI)	203	80	123	6.30	244	61	201	5.94	Untapped
OLD AGRA CANAL AT OKHLA (DELHI)	NF	NF	NF	NF	73	20	36	0.22	-

Drains	September, 2020				October, 2020				Status on 09/11/2020
	COD (mg/l)	BOD (mg/l)	SS (mg/l)	DISCHARGE (m ³ /sec)	COD (mg/l)	BOD (mg/l)	SS (mg/l)	DISCHARGE (m ³ /sec)	
OLD AGRA CANAL NEAR KALINDI KUNJ (DELHI)- Saritavihar Bridge	110	45	88	2.78	76	20	58	2.73	-
CONTRIBUTION OF OUT FALLS IN OLD AGRA CANAL (DELHI)*	-	-	-	2.78	-	-	-	-	-
SARITA VIHAR DRAIN (DELHI)	325	162	89	0.32	361	138	156	0.38	Overflow
MOLD BANDH DRAIN (DELHI)	292	128	88	0.26	283	99	93	0.34	Untapped
Note:									
i. <i>NF: No Flow</i>									
ii. <i>Gates of trapped drain were remain opened during monsoon months (August- September)</i>									

Related to Chapter 6 – Repair and maintenance of Drains

Annexure C-6/2

REPORT ON

Verification of plugged sewer lines by Delhi Jal Board for stoppage of flow of sewage from storm water drains

Under the aegis of

**MONITORING COMMITTEE
NATIONAL GREEN TRIBUNAL, DELHI**



**DEPARTMENT OF ENVIRONMENTAL ENGINEERING
DELHI TECHNOLOGICAL UNIVERSITY
DELHI**

November 16, 2020

1. SCOPE

The monitoring committee for abatement of pollution in the river Yamuna, created under the direction of National Green Tribunal (NGT), has deputed a team of faculty members from the Department of Environmental Engineering, Delhi Technological University, Delhi & Mr R.S. Tyagi, Expert Technical Advisor to verify the statement submitted by Delhi Jal Board reg. plugging of sewer lines which were punctured and sewage was overflowing into the storm water drains at 79 locations. Delhi Jal Board has plugged 50 such punctured sewers which list was submitted by DJB to Yamuna Monitoring Committee. The YMC provided the list to the above team and the report was to be submitted by 15th November 2020. Due to constraints of time and the festival season, 14 locations were randomly selected for verification of the points. However, during the verification, total 18 points were checked and verified.

TEAM FOR MONITORING

1. Prof. S. K. Singh
Deptt. of Environmental Engineering, Delhi Technological University, Delhi

2. Sh. R. S. Tyagi
Former Member, Delhi Jal Board, Delhi

Delhi Jal Board officers present:
The Executive Engineers, Zonal Engineers and Junior Engineers of the respective areas

Delhi Jal Board has plugged 50 out of total 79 punctured sewers. YMC provided the list to the above team for verification. Due to constraints of time, following 18 locations have been verified:

S. No./ S. No. in DJB list	Location Latitude Longitude	Fault in sewer line	Area/ Concerned officer	Corrective measure taken	Current status by Delhi Jal Board	Observation on physical verification	Pics of the site
1/8 09.11.2020	Inder Puri Todapur, Dasghara area)C-Block JJ Colony, Inderpuri near Shiva Medicos	Out fall arrangement under the railway track is defunct for last several years	West/ C.E.(Dr).P-I	Sewer has been rehabilitated	50 H.P. & 20 H.P. Trolley removed	Trolleys have been removed, Electric connection is disconnected but temporary shed still exists. DJB has been advised to remove entire structure	 
2/9 09.11.2020	Inder Puri Todapur, Krishi Kunj, Inderpuri	Out fall arrangement under the railway track is defunct for last several years	(West) C.E.(Dr).P-I	Sewer has been rehabilitated	50 H.P. & 20 H.P. Trolley removed	Electric connection is disconnected but Pumps still exist. DJB has been advised to remove entire structure and pumps	 

3/13 On 10.11.2020	Vishram Chowk I SPS Rohini Secto r-6 28°42'31.3"N 77°06'17.7"E	700 mm dia peripheral sewer line discharging to Haiderpuri SPS has settled and discharging into drain.	North- West C.E(Dr)P-II	The rehabilitation of settled sewer line done by Project divn EE(C) Dr.-III. Rehabilitation work completed and presently no sewerage flow into drain.	Trolley removed	Removed	
4/14 On 10.11.2020	Sector-5 Rohini	Settlement of sewer line between Vishram Chowk to Haiderpuri SPS Sec.6 Rohini	North- West C.E(Dr)P-II	The rehabilitation of settled sewer line done by EE(C) Dr.-III. Rehabilitation work completed and presently no sewerage flow into drain.	Trolley removed	Removed	

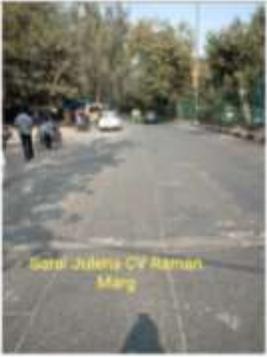
<p>5/34</p>	<p>C-Block Vikaspuri</p> <p>28°63'137197 N</p> <p>77°07313462 E</p>	<p>Settlement in 900 mm dia trunk sewer near Outer Ring Road</p>	<p>West</p>	<p>Trolley has been removed after repair of settled sewer</p>	<p>Sewer line repaired</p>	<p>The trolley installed by DJB Has been removed, however the agency rehabilitating the sewer has installed temporary pump to divert sewage into drain. DJB has been advised to pump sewage into repaired sewer line</p>	 <p>DJB Trolley removed</p>  <p>Agency has installed temp. pump</p>
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<p>6/35</p>	<p>654 MIG opposite Vatika Apppt., Harinagar</p>	<p>Inadequate size of sewer line</p>	<p>West</p>	<p>New sewer line laid</p>	<p>Sewer line laid and trolley removed.</p>	<p>Trolley has been removed</p>	
<p>7/36</p>	<p>7/17 Kirti Nagar Industrial area</p> <p>28° 39'03.6"N</p> <p>77°08'47.2"E</p>	<p>Existing outfall sewer of 450 mm dia at the junction of Rama Road and Najafgarh Road is settled</p>	<p>West</p>	<p>Trolley has been removed after repair of sewer line</p>	<p>Sewer line repaired</p>	<p>Trolley has been removed, but, temporary shed still exists.</p>	

8/59	AIIMS back side 28°33'44.5"N 77°12'36.6"E	Outfall not provided, hence sewer line was connected with Gautampuri drain by AIIMS	South	Outfall sewer line laid by DJB and sewer line has been connected with main sewer line	Sewer line connected with peripheral sewer line by DJB	No sewage is flowing into the drain	
9/61	Settled sewer opp. Defence Colony 28.5692141N 77.2351403E	Settled 800/900 mm dia trunk sewer opposite Defence Colony on BRT	South C.E.(Dr).P-I	Peripheral sewer was rehabilitated by project wing.	Peripheral sewer was repaired and made functional and trolleys were removed	Trolleys removed around 4 years back	

10/65	One at Dakshin Puri Siddarth Mkt 28°30'54.4"N 77°14'02.5"E	Settlement of sewer at Madangir	South C.E.(Dr).P-II	Rehabilitation of peripheral sewer line completed	The trolleys were removed.	Trolleys have been removed.	
11/67	B2 Block Madangir	Settlement of sewer	South C.E.(Dr).P-II	Due to settlement of sewer line at Madangir, trolleys were installed to give relief to the area	After rehabilitation of sewer line, the trolleys were removed.	Trolleys have been removed.	

12/66	Rajaram Market Madangir 28°31'23.9"N 77°14'01.0"E	Settlement of sewer	South C.E.(Dr).P-II	Due to settlement of sewer line at Madangir, trolleys were installed to give relief to the area	After rehabilitation of sewer line, the trolleys were removed.	Trolleys have been removed.	
13/69	Replacement of outfall sewer of private colony Srinivaspuri 28.5685580 77.2566590	Outfall sewer damaged	South	New Sewer line laid	No overflow into drain	Yes, sewage is flowing into sewer line.	

14/73	Surcharging/overflow from sewer on Dr. CV Raman Marg near Sarai Julena	Due to inadequate size of trunk sewer surcharging/overflow occurred	CE(South)	The storm water has been trapped in the Sewer system in the downstream side.	S.W. drain trapped	No sewage overflow observed.	
15/74	Gali No. 13 Govindpuri	Due to damaged trunk sewer on Ravi Dass Marg	C.E.(South)	Rehabilitation done by Project drainage wing.	Trolley removed	Removed	

16/75	Jatav Mohalla, Khari Kuan, Madanpur Khadar village	The S.W. has been disconnected	C.E.(South)	No outfall system. Now it is connected with the sewer system.	Trolley removed	Trolley removed	
17/58	Hill view appt. & CPWD colony (not taken over by DJB)	No outfall was provided by DDA	CE(South)	Outfall has been connected with Sewage Pumping Station	Trolley removed	Trolley removed	

18/56	Sector-9, R.K.Puram, oppsite Sangam Cinema	Damaged manhole	CE.(South)	Bypass sewer line was laid	Trolley removed	Trolley removed	
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Prof. S. K. Singh,
 Professor & Head,
 Deptt. of Env. Engg., DTU, Delhi

Er. R.S.Tyagi,
 Former Member, DJB
 Technical Advisor

Related to Chapter 7- Industrial Pollution and CETPs

List of 33 approved Industrial Areas

S.No.	Name of Industrial Area
1	Narela Industrial Area
2	Bawana Industrial Area
3	DSIIDC Sheds, Nangloi
4	Flatted Factory Complex at Jhilmil Industrial Area
5	Functional Industrial Estate for Electronics, A-Block, Okhla Industrial Area
6	Functional Industrial Estate for Electronics, S-Block, Okhla Industrial Area
7	Patparganj Industrial Area
8	Badli Industrial Area
9	Okhla Industrial Area, Ph-III
10	Flatted Factories for Leather goods, Wazirpur Industrial Area
11	flatted Factories Complex at Rani Jhansi Road
12	Flatted Factories Complex, Okhla Industrial Area
13	Rajasthani Udyog Nagar Industrial Area
14	G.T.K Road Industrial Area
15	Lawrence Road Industrial Area
16	Wazirpur Industrial Area
17	Udyog Nagar Industrial Area
18	(A) Naraina Industrial Area, Ph-I (B) Naraina Industrial Area, Ph-II
19	DLF Moti Nagar Industrial Area
20	Najafgarh Road Industrial Area
21	Jhilmil Industrial Area
22	Kirti Nagar Industrial Area
23	(A) Mangolpuri Industrial Area, Ph-I (B) Mangolpuri Industrial Area, Ph-II
24	(A) Mayapuri Industrial Area, Ph-I

	(B) Mayapuri Industrial Area, Ph-II
25	S.M.A Industrial Area
26	S.S.I Industrial Area
27	Mohan Cooperative Industrial Area
28	Shahzada Bagh Industrial area
29	Rani Jhansi Road
30	(a) Okhla Industrial Area, Ph-I (b) Okhla Industrial Area, Ph-II
31	Tilak Nagar Industrial Area
32	Friends colony Industrial area, Shahdara
33	Shahdara Industrial Area

Annexure – C-7/2

Related to Chapter 7- Industrial Pollution and CETPs

OFFICE THE YAMUNA POLLUTION MONITORING COMMITTEE
 APPOINTED BY HON'BLE NGT
 ROOM NO. 58, INDIA INTERNATIONAL CENTRE
 40, MAX MUELLER MARG, LODHI ESTATE
 NEW DELHI – 110003

No. YPMC/2020/512

Date: 06.11.2020

Subject: Industrial Pollution in the River Yamuna and review of the functioning of CETPs.

A review meeting was held on 3.11.2020 and the following attended:

1. Shri Vikash Anand, Commissioner Industries-cum-MD DSIIDC
2. Dr. K.S. Jayachandran, MS, DPCC
3. Sh. Aman Gupta, ED (DSIIDC)
4. Sh. Mukesh Gupta, CE (DSIIDC)
5. Sh. S.K.Goyal, Sec. Head CSIR-NEERI
6. Sh. Raman Sharma, Senior Scientist-NEERI.
7. Sh. P.B.Meshram, S.A.
8. Sh. D.K.Singh, SEE, DPCC
9. Sh. Sharat Kumar, SE (Env.), DSIIDC

At the outset members YMC welcomed the participants and drew the attention of Industries Commissioner and MD DSIIDC Sh. Vikash Anand to the report submitted by DSIIDC on 31.8.2020 and the subsequent report dated 1.11.2020. The Commissioner explained that the pollution caused by the industries needs to be examined by segregating them by location and by the oversight body. In the NCT Delhi industries can be broadly categorized as follows:

- a. industries located within the notified industrial areas.
 - b. industries located in unplanned industrial clusters notified for redevelopment .
 - c. industries in non-conforming/residential areas
- a. **Industries located within the notified industrial areas:**

There are 33 approved industrial areas in Delhi out of which only 24 industrial areas/estates have been handed over to DSIIDC for which DSIIDC is responsible for maintenance and regulating developmental activities. Out of these 24, the lease administration of only 12 areas is with DSIIDC and for the rest the authority lies with DDA.

The authority to collect revenue and levy various types of penalties/charges in these 12 industrial clusters is vested either with DDA or the concerned DMCs.

Out of the 33 industrial clusters, 17 clusters, have water polluting industries connected to 13 CTPs, whereas four flatted factory complexes and 12 other industrial areas do not have water polluting industries. There are about 31,000 industries located within 17 industrial clusters connected to 13 CETPs. These were surveyed during 2018-19 under the direction of YMC and certain enforcement actions have been taken which have already been reported to the YMC. List of 33 Industrial clusters is attached at **Annexure I**.

b. **Industries in industrial clusters notified for redevelopment:** There are in all, 24 unplanned industrial clusters notified for redevelopment under the provisions of the Delhi Master Plan 2021. These industrial clusters have come up on agricultural land or land under the control of DDA and as per the scheme, the local body/landowning agency in consultation with the concerned society or each cluster is responsible for preparing the redevelopment scheme. DSIIDC does not have any control or jurisdiction over these 24 unplanned industrial areas. On a query by YMC, the MD DSIIDC informed that these clusters may have more industries than the number of industries located within the notified industrial clusters. Also, the nature of industries and the pollution of drains and groundwater caused by these industries has not been ascertained as these are completely unregulated as of today. It is learnt that many of these units use ground water for the purpose of carrying out industrial activities such as dyeing and washing etc. This had not been projected earlier until YMC sent specific questions to the Department. The information needed to be collected from the DMCs' where the Additional Commissioner (Factory Licensing) would have authority to get the areas under their jurisdiction surveyed and can furnish a report about the areas where such units are operating. The DPCC also has no information on the number of industries and the nature thereof in these clusters.

c. On enquiry by the YMC, Dr Singh of DPCC informed that consent was given by DPCC only for industries existing prior to 2007 under the green and high tech industry categories. Also due to paucity of staff DPCC does not undertake any inspections, whether planned or by surprise, in these areas unless there is a specific complaint. List of 24 Industrial clusters is attached at **Annexure II**.

d. **Industries in non-conforming/residential areas:** Hon'ble Supreme Court of India in the year 1996 had directed the relocation of industries functioning from residential areas to conforming areas of NCT Delhi. 51,837 applicants had applied for alternative plots under the relocation scheme out of this 21,960 applicants were given alternate plots. The premises of these applicants were to be sealed and the premises of the remaining unsuccessful 29,877 applicants were also to be sealed. This is being monitored by a committee under the chairmanship of the chief secretary NCT Delhi. There is also another NGT appointed committee headed by Justice Pratibha Singh which is monitoring the closure of industries functioning in non-conforming/residential areas.

Summing up, the MD DSIDC emphasized that DSIIDC controls and regulates only a small subset of the industries functioning in the entire NCT Delhi. Even here DSIIDC does not have complete control on the functioning of the industries and the developmental activities that need to be taken up in the industrial clusters under DIDOM Act and the CETP Act of 2002.

YMCA asked the MD DSIDC and MS,DPCC to jointly prepare status report on the nature of industries in different categories of clusters and what enforcement action under the CETP Act, Water Act that is being taken and that needs to be taken by the Industries department and DPCC. This report should be submitted to the YMC preferably within a week. It should be ~~a~~ specific and the justification should be evident as the continued operation of such industries is not on anyone's radar and many of them are not having any measures to protect the environment.

Matters relating to DPCC:

MS DPCC informed that out of 343 sanctioned posts in DPCC only 117 posts are filled as of today with 226 vacant posts. While some posts are promotional, a large number of posts are direct recruitment posts. YMC had raised this issue with the DPCC in 2018 and even asked the MS DPCC to explore the possibility of filling up the posts through contractual appointments till the time regular appointments are made. Obviously there has been little progress so far. The YMC asked for a report on the steps taken in the last 2 years to fill up the sanctioned posts of all categories in the DSIIDC and where difficulty was encountered the special efforts made. YMC asked to be apprised of the difficulties in complying with the pollution- related directions of the NGT in the absence of

Scientist/Engineers as well as Enforcement Staff. If this was not taken up apropos the Tribunal's orders compliance of the orders would be deficient and therefore the situation called for proactive handling by the Secretary Environment and Chairman DPCC. He may be apprised of the outcome of this meeting, the specific steps taken to fill the posts, whether NGT was apprised of the difficulties. YMC would be reporting on these matters in its next report.

As per the information furnished by DPCC, they have issued Show Cause Notices to the 258 water polluting industries and ordered closure of 714 industries during the period from 1.1.2020 to 30.9.2020. In addition EC of Rs 23.58 crores has been levied of which only Rs 2.40 crores (10%) has been realized so far. It is not clear if the industries on which EC has been levied are in addition to those which have either been closed or show cause notices issued. The MS, DPCC clarified that the EC has been levied on the industries for the pollution caused in the past and in addition closure orders have been issued or show cause notices issued. The total industries however is only 972. On the low recovery of EC, the YMC wanted to know the proposed action for recovery of the balance amount of the EC levied. The poor recovery pointed to a routine approach to penalizing polluters and should be overcome showing due initiative. A fuller report may be furnished to YMC after the Chairman DPCC has reviewed the matter which he may do in the next 8 days.

Issues relating to NEERI:

NEERI, which had been entrusted with the job of inter-alia looking at the possibility some of the existing CETPs being also used for the treatment of sewage was to give its report. The details of where the preparation and conclusion of the report stands was sought from the representative of NEERI together with details of the upgradations required in each CETP and the modifications needed to be made in the CETPs in order to treat sewage. This obviously require close interaction with DJB which has so far not taken place. DSIIDC as the organization which has commissioned the study needs to take it up proactively keeping in view the projections for industrial effluent that these CETPs are likely to receive in future and whether some of them can actually be dedicated completely to sewage treatment. Industries Department/DSIIDC will have to coordinate with DJB and DSIIDC to furnish the data to NEERI and supply it to the YMC with reference to the terms of

reference given. YMC will decide whether it is necessary to request Director, NEERI to have this expedited.

Important Findings of NEERI related to unorganized Industries.

1. Dr Goyal informed that their survey has found that in industrial clusters like the Wazirpur, the amount of industrial effluent found in the drains within a cluster was almost twice the industrial effluent reaching the CETP and that the characteristics of the effluent in the drains showed the presence of industrial pollutants in the effluent. This clearly points to industries either not conveying all the effluent to the CETPs or resorting to the use of bypass or water polluting activities functioning from Jhuggis within such clusters. This was a matter of concern as industrial effluent was being allowed to pollute the water with no oversight. The strategy to be able to handle this needs to be deliberated by the Industries Deptt/DSIIDC and the DPCC. YMC asked the officers concerned, MS, DPCC and Executive Director, DSIIDC to jointly prepare a paper with suggestive strategies which can have an impact. These would be brought to NGT's notice seeking the Tribunal's orders after it has been assessed within the Departments. The leadership has to be shown by Industries Commissioner.
2. The YMC expressed concern that out of 13 CETPs only three CETPs are meeting environmental standards. Can the NEERI therefore suggest short term measures to improve functioning of the CETPs so that they start meeting standards was the question asked of NEERI. Dr. Goyal informed that as an interim short term measure the CETPs can be cleaned and de-sludged as this does not appear to have been done. This alone will improve the functioning of most if not all the CETPs. Industry Department informed that they have issued notices to the industries associations managing CETPs directing them to get the CETPs desludged and in the event of their failure to do so the industry department will undertake the job and recover the cost from the industries. A report on this should be furnished to YMC by **12.11.2020**.

Miscellaneous:

3. The YMC would also have a separate meeting with the Additional Commissioners of DMCs on the general issue of how household industries are being tackled in terms of pollution caused, their source of water, licensing system and how the activity both

within the unplanned clusters identified for redevelopment and in non-conforming residential areas is overseen.


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

Encl: as above

To:

1. Commissioner Industries.
2. MD, DSIIDC.
3. MS DPCC.
4. Dr. S.K. Goyal, Scientist in charge, Delhi (NEERI)

Copy to:

1. Chairman, DPCC

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
Telephone No: 011- 24609270
Email id: rymonitoringcommittee@gmail.com

Annexure - I**33 approved Planned Industrial Areas in Delhi.**

S.No.	Name of Industrial Area
1.	Narela Industrial Area
2.	Bawana Industrial Area
3.	DSIIDC Sheds, Nangloi
4.	Flatted Factory Complex at Jhilmil Industrial Area
5.	Functional Industrial Estate for Electronics, A-Block, Okhla Industrial Area
6.	Functional Industrial Estate for Electronics, S-Block, Okhla Industrial Area
7.	Patparganj Industrial Area
8.	Badli Industrial Area
9.	Okhla Industrial Area, Ph-III
10.	Flatted Factories for Leather goods, Wazirpur Industrial Area
11.	flatted Factories Complex at Rani Jhansi Road
12.	Flatted Factories Complex, Okhla Industrial Area
13.	Rajasthani Udyog Nagar Industrial Area
14.	G.T.K Road Industrial Area
15.	Lawrence Road Industrial Area
16.	Wazirpur Industrial Area
17.	Udyog Nagar Industrial Area
18.	(A)Naraina Industrial Area, Ph-I (B)Naraina Industrial Area, Ph-II
19.	DLF Moti Nagar Industrial Area
20.	Najafgarh Road Industrial Area
21.	Jhilmil Industrial Area
22.	Kirti Nagar Industrial Area
23.	(A) Mangolpuri Industrial Area, Ph-I (B) Mangolpuri Industrial Area, Ph-II
24.	(A) Mayapuri Industrial Area, Ph-I (B) Mayapuri Industrial Area, Ph-II
25.	S.M.A Industrial Area
26.	S.S.I Industrial Area
27.	Mohan Cooperative Industrial Area

28.	Shahzada Bagh Industrial area
29.	Rani Jhansi Road
30.	(a) Okhla Industrial Area, Ph-I (b) Okhla Industrial Area, Ph-II
31.	Tilak Nagar Industrial Area
32.	Friends colony Industrial area, Shahdara
33.	Shahdara Industrial Area

Annexure - II

24 unplanned Industrial Clusters Notified for Redevelopment under the provisions of the Master Plan Document of DDA.

S.No.	Name of Industrial Area	Date of Notification in MPD (Master Plan of Delhi)	Agency Responsible for Cleaning/ Sweeping/ SWM, Maintenance of Roads/ Drains & other Pollution Mitigation Activities
1.	Anand Parbat	01.08.1990	North MCD
2.	Shahdra	01.08.1990	EDMC
3.	SamaiPurBadli	01.08.1990	North MCD
4.	Jawahar Nagar	30.06.2016	North MCD
5.	SultanpurMazra	02.12.2005	North MCD
6.	Hastal Pocket- A	02.12.2005	SDMC
7.	Naresh Park Extension	02.12.2005	SDMC
8.	Libaspur	02.12.2005	North MCD
9.	Peeragarhi Village	02.12.2005	SDMC
10.	Khyala	02.12.2005	SDMC
11.	Hastal Pocket- D	02.12.2005	SDMC
12.	Shalimar Village	02.12.2005	North MCD
13.	New Mandoli	02.12.2005	EDMC
14.	Nawada	02.12.2005	SDMC
15.	Rithala	02.12.2005	North MCD
16.	Swarn Park Mundka	02.12.2005	North MCD
17.	HaiderPur	02.12.2005	North MCD
18.	Karawal Nagar	02.12.2005	EDMC
19.	Dabri	02.12.2005	SDMC
20.	BasaiDarapur*	28.04.2006	SDMC
21.	MundkaPhirni Road	17.09.2007	SDMC
22.	Mundka Udyog Nagar (South)	17.09.2007	SDMC
23.	Prahladpur Banger	11.09.2007	SDMC
24.	Ranhola	27.08.2019	SDMC

Related to Chapter 7- Industrial Pollution and CETPs

Brief of Action taken by Consent Management Cell (CMCs) of DPCC against the Water Polluting Industries/ Units in Delhi in the period 01.01.2020 to 31.10.2020																		
S.No.	CMC	District	Action taken against Water Polluting Industries/ Units (Nos)			Show Cause Notices issued u/s 33(A) of Water Act			Directions for Closure issued u/s 23(A) of Water Act			Environmental Compensation Imposed (in Rs.)			Environmental Compensation Received (in Rs.)			Remarks
			Conforming Area	Non Conforming Area	Total	Conforming Area	Non Conforming Area	Total	Conforming Area	Non Conforming Area	Total	Conforming Area	Non Conforming Area	Total	Conforming Area	Non Conforming Area	Total	
1	CMC-I	East, North-East & Shabdaru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	CMC-II	South, South East & South West	47	0	47	22	0	22	25	0	25	14410000	0	14410000	716711	300000	1247111	
3	CMC-III	North West	110	0	110	24	0	24	06	0	06	22062500	0	22062500	1000000	0	1000000	
4	CMC-IV	New Delhi	101	0	101	50	0	50	51	0	51	10507000	0	10507000	4050000	0	4050000	
5	CMC-V	North	665	6	671	133	0	133	552	6	558	16537500	2010000	10547500	11011875	0	11011875	Show Cause Notice for imposition of EC

6	CMC-VI	West	19	22	41	19	11	29	1	11	12	40637500	13013370	17730170	0	1005500	1005500	Show Cause Notice for imposition of EC
7	CMC-VII	Central	1	0	10	1	1	2	0	0	0	0	000000	000000	0	0	0	
TOTAL			942	27	969	240	12	260	609	25	720	11,04,20,000	1,98,23,250	25,26,87,210	24,98,850	2,93,500	26,92,360	

Annexure – C-7/4

Related to Chapter 7- Industrial Pollution and CETPs

Realisation of Environmental Compensation

Brief of Action taken by Consent Management Cell (CMCs) of DPCC against the Water Polluting Industries/ Units in Redevelopment Areas of Delhi in the period 01.01.2020 to 18.11.2020					
Action taken against Water Polluting Industries/ Units (Nos)	Show Cause Notices issued u/s 33(A) of Water Act	Directions for Closure issued u/s 33(A) of Water Act	Environmental Compensation Imposed (in Rs.)	Environmental Compensation Received (in Rs.)	Remarks
25	2	24	2290625	815625	One Unit has been issued Show Cause Notice and Closure Direction both.

Related to Chapter 7- Industrial Pollution and CETPs

Brief Status of Common Effluent Treatment Plants (CETPs) in Delhi (Based on the Analysis Reports of DPCC Laboratory for the Month of October, 2020)

S. No.	Name of CETP	Industrial Areas Connected with CETP	Capacity (in MLD)	Flow (in MLD)	Date of Sampling	Influent Quality at Inlet (in mg/l)	Effluent Quality at Outlet (in mg/l)	Brief of Analysis Report (For Treated Effluent)	Action Taken
1	Jhilmil CETP	Jhilmil and Friends Colony Indl. Areas	16.8	2.48	14.10.2020	pH - 6.5 TSS - 204 BOD - 108 COD - 332 TDS - 1950 SO ₄ - 1465	pH - 7.0 TSS - 42 BOD - 26 COD - 88 TDS - 1770 SO ₄ - 1460	Not meeting the Prescribed Standard in respect of SO ₄ (1460 mg/l against Prescribed Standard of 1000 mg/l).	Letter issued to the CETP Societies on 18.11.2020 enclosing effluent
2	Badli CETP	Badli Industrial Estate	12	2.0	06.10.2020	pH - 6.5 TSS - 88 BOD - 50 COD - 160 TDS - 1600	pH - 6.5 TSS - 48 BOD - 28 COD - 88 TDS - 1010	CETP was Meeting the Prescribed Standards.	Analysis Report of DPCC Laboratory with the direction to take immediate
3	Mayapuri CETP	Mayapuri Indl. Area	12	2.76	09.10.2020	pH - 7.2 TSS - 124 BOD - 72 COD - 228 TDS - 1690	pH - 7.3 TSS - 28 BOD - 18 COD - 64 TDS - 1130	CETP was Meeting the Prescribed Standards.	necessary measures to comply with the prescribed standards and
4	Mangolpuri CETP	Mangolpuri Indl. Area	2.4	2.4	07.10.2020	pH - 6.8 TSS - 344 BOD - 180 COD - 552 TDS - 3780 Chloride - 2685	pH - 7.0 TSS - 56 BOD - 35 COD - 132 TDS - 3780 Chloride - 2010	Not meeting the Prescribed Standards in respect of BOD (35 mg/l against Prescribed Standard of 30 mg/l), TDS (3780 mg/l against Prescribed Standard of 2100 mg/l) and Chloride (2010 mg/l against	send the compliance report along with rectification measures taken to meet the
								Prescribed Standard of 1000 mg/l)	prescribedstandards.
5	Wazirpur CETP	Wazirpur Indl. Area	24	2.5	13.10.2020	pH - 7.4 TSS - 368 BOD - 190 COD - 576 TDS - 1840	pH - 7.4 TSS - 54 BOD - 36 COD - 128 TDS - 890	Not meeting the Prescribed Standards in respect of BOD (36 mg/l against Prescribed Standard of 30 mg/l.)	
6	Nangloi CETP	Nangloi & Udyog Nagar Indl. Areas	12	3.367	07.10.2020	pH - 7.3 TSS - 408 BOD - 210 COD - 640 TDS - 3360 Chloride - 2090	pH - 7.2 TSS - 38 BOD - 22 COD - 88 TDS - 3360 Chloride - 2075	Not meeting the Prescribed Standards in respect of TDS (3360mg/l against Prescribed Standard of 2100 mg/l) and Chloride (2075 mg/l against Prescribed Standard of 1000 mg/l).	
7	SMA CETP	SMA, Rajasthani Udyog Nagar and SSI Industrial Areas	12	1.5	13.10.2020	pH - 6.9 TSS - 548 BOD - 280 COD - 848 TDS - 1710	pH - 6.9 TSS - 22 BOD - 18 COD - 64 TDS - 1140	CETP was Meeting the Prescribed Standards	
8	Okhla CETP	Okhla Indl. Area	24	1.20	12.10.2020	pH - 7.2 TSS - 352 BOD - 180 COD - 848 TDS - 3310	pH - 7.2 TSS - 50 BOD - 26 COD - 96 TDS - 1810	CETP was Meeting the Prescribed Standards	
9	Narela CETP	Narela Indl. Area	22.5	12.602	08.10.2020	pH - 7.8 TSS - 142	pH - 7.0 TSS - 32	CETP was Meeting the Prescribed Standards	

						BOD - 78 COD - 240 TDS - 1810	BOD - 21 COD - 78 TDS - 1060		
10	Bawana CETP	Bawana Area	Indl.	35	17.7	08.10.2020	pH - 7.6 TSS - 208 BOD - 110 COD - 336 TDS - 2470	pH - 7.1 TSS - 40 BOD - 27 COD - 120 TDS - 1040	CETP was Meeting the Prescribed Standards
11	Naraina CETP	Naraina Area	Indl.	21.6	4.98	09.10.2020	pH - 7.1 TSS - 162 BOD - 86 COD - 248 TDS - 861	pH - 7.2 TSS - 42 BOD - 28 COD - 92 TDS - 733	CETP was Meeting the Prescribed Standards
12	GTK CETP	GTK Road Area	Indl.	6	1.9	13.10.2020	pH - 7.2 TSS - 564 BOD - 280 COD - 848 TDS - 950	pH - 7.4 TSS - 36 BOD - 22 COD - 72 TDS - 891	CETP was Meeting the Prescribed Standards
13	Lawrence Road CETP	Lawrence Indl. Area	Road	12	1.3	13.10.2020	pH - 7.2 TSS - 472 BOD - 240 COD - 728 TDS - 1820 SO ₄ - 1293	pH - 7.3 TSS - 66 BOD - 48 COD - 152 TDS - 1620 SO ₄ - 1166	Not meeting the Prescribed Standards in respect of BOD (48 mg/l against Prescribed Standard of 30 mg/l) and SO ₄ (1166mg/l against Prescribed Standard of 1000 mg/l)
		Total		212.3	56.689				

Annexure – C-7/6

Related to Chapter 7- Industrial Pollution and CETPs

Efforts being made for filling of the vacant posts and strengthening of DPCC.

Presently, there are a total of 343 sanctioned posts in DPCC out of which 226 posts are lying vacant viz a viz 152 direct recruitment quota posts, 65 promotional posts and 09 deputation quota posts.

Out of 152 direct recruitment, requisition has been sent to DSSSB in the year 2018 for filling up of 97 direct recruitment Group 'B' and 'C' posts out of which dossiers of following 40 posts has been received in DPCC. The details of the dossiers received and number of person joined is as below:-

S. NO.	NAME OF POST	POST CODE	Details of Dossiers Forwarded/Nominated by DSSSB to user Departments w.e.f 01.01.2017			No. of candidates to whom offer of appointment issued	No. of candidates joined	No. of Dossier returned after cancellation	NO. OF PENDING DOSSIER S
			LETTER NO.	DATED	No. OF DOSSIERS NOMINATED BY DSSSB				
1.	Scientific Assistant	12/19	3510	19.03.2020	1	1	01	0	0
2.	Jr. Lab Assistant	10/19	3621	17.06.2020	5	5	04	0	1
3.	Jr. Lab Assistant	10/19	6227	18.06.2020	2	2	0	2	0
4.	Legal Assistant	11/19	3826	24.07.2020	5	5	03	0	2
5.	Lower Division Clerk	08/19	4030	07.09.2020	24	24	04	02 till date	18
6.	Lower Division Clerk	08/19	4094	24.09.2020	03	03	00	--	03
TOTAL					40	40	12	04	24

For 48 posts of Junior Environmental Engineer, Part I exam has been conducted by DSSSB. Advertisement for 06 Posts Steno Grade II has also been issued by DSSSB.

It is not out of place to mention here that out of 152 vacant posts, 134 posts have been filled through contract basis including 88 trainee engineers and the effective vacancy is 92 posts.

It is submitted that in the year 2018, there were a total of 267 sanctioned posts. For strengthening of DPCC , **a number of 76 additional posts have been created in the year 2019 out of which 50 posts are of technical cadre.** Against these newly created posts, promotions have been granted to eligible officers/officials.

However for filling up of direct recruitment quota posts, efforts are being made to fill these posts through Recruitment Agency after approval of Hon'ble Lt. Governor, GNCTD.

For deputation quota posts including alternate mode of Deputation quota posts, requisition for filling up of posts of Accounts cadre i.e. 1 post of Accounts officer and two Assistant Accounts Officer has also been sent to Finance Department. Circular, for remaining 20 posts of Technical/Scientific/Ministerial posts, is being published in the Employment News.

Related to Chapter 8 – Sewage and Faecal Sludge Management



1795
11/4/2020

CHIEF ENG(SDW)S&E
DELHI JAL BOARD

DIARY No. 1097
DATE 17/04/2020

E-Num

1

Government of NCT of Delhi
Department of Urban Development
10th Level C-Wing, Delhi Secretariat,
I.P. Estate, New Delhi - 110002.
Ph-011-23392343

No.F.16(463)/UD/W/2015/Vol.-III/Pt.File/707-718

Dated:- 31/3/2020

17/04/2020

Sub: SOP for collection, transportation and disposal of Septage from Households of unauthorised /unsewered colonies.

CEO
M&B
MUC's

(A) Emptying of septic Tanks/De-sludging procedure (Responsibility- All ULBs of their area):-

- As per the Gazette notification No. 219 dated 21/11/2018 on Delhi Water Board Septage Management Regulation 2018 and the SOP thereof, the jurisdiction with respect to the Septage Management has been defined as under:-

S.No.	Area of Working	Authority/Department responsible
1.	Entire sewerage network in sewered areas being maintained by DJB within Delhi Municipal limits.	Delhi Jal Board
2.	Sewer line, private septic tanks/close pits in Delhi Cantonment Area.	Delhi Cantonment Board
3.	Sewer lines/septic tanks if any, maintained in New Delhi Municipal Council Limit	New Delhi Municipal Council
4.	All septic tanks and the House Sewer connections constructed by private entities etc. where sewer lines are not being maintained by DJB.	All Municipal Corporation, Delhi Cantonment Board, New Delhi Municipal Council, Delhi Development Authority etc. and the private entities which is owner of the premises.
5.	Apartments/ Group Housing Societies/Malls/Pvt. Hospitals etc.	Residents Welfare Associations/Owner of the premise
6.	Government Premises	The respective authority i.e. Delhi Development Authority, PWD, CPWD, all Municipal Corporations, Delhi Cantonment Board, Delhi Urban Shelter Improvement Board etc. maintain the premise.

3/4
F32

- All ULBs should ensure safe emptying of septic tanks at regular intervals. The ULBs shall initiate scheduled septic tank desludging services and carry out extensive awareness campaign to ensure that the septic tanks are cleaned at least once in a three years.

CE (SD) S&E
[Signature]

- 2
3. The Delhi Jal Board will undertake an awareness campaign to make the people aware to engage only the licensed agencies for collection, transportation and disposal of septage.
 4. Septic Tank Waste (Septage) shall be collected and transported only by the vendors having a valid license for the purpose issued by the DJB.
 5. It shall be the duty of each owner/occupier of the building/house to engage the services of valid licensee vendors of DJB.
 6. The licensee vendors(s) will engage only trained workers having valid certificate of training from the recognised institution or the department. The vendor will also ensure that required Safety Gadgets as specified in PEMS Rules-2013 are available and used at work place.
 7. The fee for collection and transportation of Septic Tanks Waste (Septage) upto notified locations at SPS/STP as well as locations for disposal of septage shall be notified by the Designated Officer of Delhi Jal Board from time to time.
 8. The process of collection/desludging of the Septic Tank will be done under the supervision of officials of the respective ULBs.
 9. The desludging shall be carried out using appropriate procedures, equipments, safety gear and operating practices which are in compliance with all relevant laws or directions prevailing at the time.
 10. The ULB shall ensure that operation and cleaning of septic tanks shall be carried out only by using mechanical devices. The desludging trucks shall be fully equipped with required tools, equipment and spares for the operation.
 11. ULBs should either provide the emptying services themselves or enter into service contract with the private agencies. If the private players are providing the services, ULB should monitor their services. In case of any untoward incident, the concerned ULB should be fully responsible.

12. Desludging Procedure:

- a) The sanitary workers, with proper safety tools, shall undertake visual inspection of the interior and exterior of the tanks after opening the access covers and check for:
 - i. Level of water/sludge with respect to the flow line of outlet pipe.
 - ii. Back pressure.
 - iii. Whether inlet pipe and sanitary tee are in place.
 - iv. Cracks in the wall using mirror on a long pole.
 - v. Number of compartments -If more than one compartment, sanitary worker needs to locate and remove lids from all the compartments. Each compartment will need separate pumping.
 - vi. Indication for high ground water, saturated soils.
- b) The sanitary workers shall use a long handle-rod to determine the sludge level in a septic tanks.



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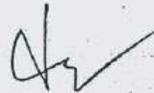
3

- c) Workers shall take out the hoses and fitting from the tool box required to complete pumping.
- d) To probe the tank, the hose shall be lowered slowly to the last length of hose, to get an indication on the volume of sludge to be pumped.
- e) Then the hose shall be connected to the truck. Screw on clamp fitting shall be used in case back pressure is required to break up the sludge masses.
- f) Next, the pump or vacuum equipment shall be engaged. The worker must:
 - i. Ensure suction and operation of pump by checking rapid decrease in volume of tank.
 - ii. Monitor the level gauge on the septage cleaning tank. Always ensure there is adequate volume in the cleaning tank to accommodate the load. If only partial load can be pumped, monitor the level closely.
 - iii. Monitor the septic tank as pumping progresses. Also check for blockage at the inflow and outflow pipes.
 - iv. Check the tank for remaining sludge after pumping. Ensure that 1-2 inch of sludge should be left on the take to facilitate future decomposition.
- g) If accumulated solids are still remaining, the works shall initiate the pump back procedure, which will send the piped septage back to the septic tank under pressure and direct this flow toward the sludge mass. This will break the mass, making it possible to pump out again. As little as 200-300 liters will be enough to break the mass.
- h) After pump-back is completed, pumping out the septic tank shall be done again. The above steps can be repeated if required. Pumping from the tank shall be continued till about 100-200 litres of septage remains in the tank after cleaning.
- i) On the completion of pumping, the hose shall be washed with water by directing water stream back to the tank and the cleaned hoses shall be placed back in the truck tool box.
- j) Before leaving the site, the workers shall ensure that the tank lids/asses cover is securely placed.

(B) Septage Transportation (Responsibility- Committee headed by District Magistrate):- After desludging of septage from premises, it has to be transported to the approved treatment site designated by the DJB for safe disposal or reuse. The septage transporter is primarily responsible for the safe transport of septage.

The Committee headed by the District Magistrate/Deputy Commissioner (Revenue) constituted under "Delhi Water Board Septage Management Regulation, 2018" shall need to ensure that handling, transport and disposal are in compliance with the Environment Protection Act, The Water Act and the Municipal Solid Waste Management (Handling) and Management Rules. The committee will also ensure for the implementation of the following:-

- (1) Septage shall be transported only in the vehicles approved for this purpose by the designated officer of Delhi Jal Board.



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(2) To ensure safe transportation of septage, the septage transporter in consultation with the DM headed Committee shall prepare a transportation plan which shall include:

- (a) Scheduling and routing for trucks
- (b) Customer services protocols

(3) The septage transporter must ensure that:

(a) The registered septage transport vehicle including all equipments used for the transport of septage shall have a leak-proof body and lock to secure the septage; comply with applicable standards and must be able to withstand a collision with another vehicle or any permanent structure;

(b) The tank and equipments used to transport septage shall not be used for the transportation of any other materials or liquids;

(c) The vehicles used to transport septage shall be equipped, at all times, with spill control or absorbent materials and disinfectant materials such as lime or chlorine bleach;

(d) The company name, contact number, company logo, and body number of the septage transportation vehicle are displayed on both sides of the vehicle. The information shall be marked using permanent and legible lettering at least 3 inches high and of reflective material;

(e) List of emergency contact numbers are pasted at the prominent place in all vehicles involved in septage transport;

(f) Most competent trained drivers are employed for transportation of sludge and septage;

(g) Each worker wears a proper uniform with company logo on dress and hold identity cards;

(h) The vehicle involved in transportation is cleaned and washed inside as well as outside every day; the vehicles and equipment shall be serviced, greasing, oiling, minor repairs, etc. are done at least twice a month;

(4) The septage transporter shall retain the documentation relating to all stages of septage management i.e. desludging and transportation for a minimum period of 5 years.

(5) The septage transporter shall retain registration related documentation permanently and shall present such documentation on request by any authorized official/agency.

(6) All the septage transportation vehicles shall be directed to transport septage to the designated treatment sites. Movement of vehicle without a valid licence by the ULB shall attract fine and / or even seizure of vehicle.

(7) Prior to starting the journey, the driver shall ensure that the vehicle is well equipped with spill control or absorbent materials and also disinfectant materials like lime and chlorine bleach.

5

(8) The driver of the vehicle shall take the most convenient and congestion free route considering traffic flows and plan the trip to arrive at the treatment site within the specified operating hours.

(9) While transporting septage, the driver and worker shall ensure that there is no discharge or emptying of septage in to locations other than designated treatment sites.

(10) At the disposal site, the truck must be parked in such a way that the septage may be directed to the inlet chamber with one length of hose, wheels need be checked and parking brakes need be placed properly, then the valves be opened and septage allowed to flow by gravity into the collection chamber.

(C) Disposal of Septage (Responsibility- Delhi Jal Board):-

(1) The Delhi Jal Board will identify and notify the Sewage Pumping Stations and Sewage Treatment Plants where the Septage shall be disposed of by the License vendor(s).

(2) The Licensee shall dispose off Septage only at the locations notified by the Delhi Jal Board from time to time.

(3) The Delhi Jal Board will create necessary infrastructure and provide necessary equipments at the notified locations, to facilitate the disposal of Septage brought by the Licensee Vendor.

(4) Any licensee vendors found dumping septage other than the notified locations shall be liable to pay the penalty of Rs. 50000/- or as notified from time-to-time per default. The license shall be cancelled for two defaults.

(5) The worker deployed by the licensee vendors shall be insured for minimum Rs. 10 lacs towards the compensation to be paid in the eventuality of an accident during the process of cleaning, transportation and disposal of septage as per PEMS ACT 2013 and APEX Courts order dated 27/03/2019 in writ petition no. 583 of 2003.

This issues with the prior approval of the Chief Secretary, Delhi.

[Signature]
31/03/2020
(KULDEEP PAKAD, IAS)
SPECIAL SECRETARY (UD)

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No.F.16(483)/UD/W/2015/Vol.-III/Pt.File/707-718

Dated:- 31/3/2020

6

Copy forwarded to the following for information and necessary action please:-

1. The Chairperson, NDMC, Palika Kendra, Sandad Marg, New Delhi - 110001.
2. The Chief Executive Officer, Delhi Jal Board, Varunalaya, Jhandewalan, Karol Bagh, New Delhi - 110005.
3. The Vice Chairman, Delhi Development Authority, Vikas Sadan, INA, New Delhi.
4. The Commissioner, South Delhi Municipal Corporation, Dr. S.P. Mukherjee Civic Centre, J.L.N. Marg, Minto Road, New Delhi.
5. The Commissioner, North Delhi Municipal Corporation, Dr. S.P. Mukherjee Civic Centre, J.L.N. Marg, Minto Road, New Delhi.
6. The Commissioner, East Delhi Municipal Corporation, Patparganj Industrial Area, New Delhi.
7. The Pr. Secretary, Public Works Department, 5th Level, "B" Wing, Delhi Secretariat, I.P. Estate, New Delhi - 110002.
8. The Divisional Commissioner, Revenue Department, Govt. of NCT of Delhi, 5-Sham Nath Marg, Delhi - 110054 with the request to forward the copy of SOP to all the District Magistrate's for compliance.
9. The Managing Director, DSIIDC, N-Block, Bombay Life Building, Connaught Circus, New Delhi - 110001.
10. The Chief Executive Officer, Delhi Urban Shelter Improvement Board, Punarwas Bhawan, I.T.O., New Delhi.
11. The Chief Executive Officer, Delhi Cantonment Board, Delhi Cantt., New Delhi.
12. The Chief Engineer, Irrigation & Flood Control Department, L.M. Bund Office Complex, Shastri Nagar, Delhi.

3. The Commissioner, North Delhi Municipal Corporation, Dr. S.P. Mukherjee Civic Centre, J.L.N. Marg, Minto Road, New Delhi.

(KULDEEP PAKAD, IAS)
SPECIAL SECRETARY (UD)

Related to Chapter 9- Online Monitoring of STPs, CETPs and Yamuna

Subject: Report on OLMS Calibration of STPs received from DJB.

S. No.	Name of STP	Capacity (in MGD)	Design Parameters		OLMS Results before calibration		OLMS Results after calibration		Lab Results		Variation		Remarks
			TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	
1.	Okhla Ph-II	12	50	30	28.95	25.65	28.61	26.32	31.4	28.8	-2.79	- 2.48	
2.	Okhla Ph-III	37	50	30	40.39	23.59	41.31	27.02	42.1	25.9	-0.79	1.12	
3.	Okhla Ph-IV	45	50	30	28.84	13.1	24.77	13.13	25.4	12.8	-0.63	0.33	
4.	Okhla Ph-V	16	50	30	27.19	9.21	23.62	9.17	25.8	10.5	-2.2	-0.8	
5.	Okhla Ph-VI	30	30	20	8.17	4.06	8.05	3.96	9.2	3.7	-1.15	0.26	
6.	Vasant Kunj	2	50	30	7.23	4.52	8.23	5.02	7.8	5.2	3.21	- 0.18	
7.	Vasant Kunj New	3	50	30	11.31	5.52	11.56	5.62	12.5	5.8	0.94	- 0.18	
8.	Meharuli	5	50	30	25.65	21.87	24.61	21.75	26.5	20.8	-1.89	0.95	
9.	Delhi Gate Ph-I	2.2	15	10	9.42	6.78	8.82	6.12	8.9	7.2	-0.08	- 1.08	
10.	Delhi Gate Ph-II	15	10	10	10	8.11	8.79	8.52	9.5	7.9	-0.71	0.62	
11.	Chilla	9	10	10	9.21	3.26	11.92	3.3	10.2	3.7	1.72	-0.4	
12.	C.W.G. Village	1	50	30									System under repair
13.	Kondli Ph-II	25	30	20	21.63	17.7	22	11.09	23.1	10.8	-1.1	0.29	
14.	Kondli Ph-IV	45	30	20	27.72	13.68	27.47	14.31	25.8	15.2	1.67	- 0.89	
15.	Yamuna Vihar Ph-I	10	50	30	44.44	62.13	34.67	20.93	38.9	26.4	-4.23	- 5.47	

16.	Yamuna Vihar Ph-III	25	30	20	46.91	19.45	22.21	16.35	25.9	15.4	-3.69	0.95	
17.	Coronation Ph-I & II	20	50	30									System was offline due to vandalism
18.	Coronation Ph-III	10	50	30	90.49	40.08	87.3	39.31	92.5	42.1	-5.2	-2.79	
19.	Narela	10	50	30	54.05	29.85	51.61	29.42	55.8	30.4	-4.19	-0.98	
20.	Rithala Ph-I	40	50	30	65.97	16.96	51.21	16.69	54.8	15.4	-3.59	1.29	
21.	Rithala Ph-II	40	20	15	17.85	10.94	17.95	11.03	16.7	11.1	1.25	-0.07	
22.	Keshopur Ph-I	12	10	10	8.33	3.28	8.39	3.3	8.5	3.6	-0.11	-0.3	
23.	Keshopur Ph-II	20	50	30	239.21	104.16	135.74	104.3	148.4	105.8	-12.66	-1.5	
24.	Keshopur Ph-III	40	50	30	158.47	65.86	65.63	52.75	70.5	58.7	-4.87	-5.95	
25.	Nilothi Ph-I	40	50	30	33.13	27.04	32.94	27.06	31.5	28.4	1.44	-1.34	
26.	Nilothi Ph-II	20	10	10	7.44	2.44	7.66	2.45	8.2	2.6	-0.54	-0.15	
27.	Pappan Kala Ph-I	20	50	30	32.26	32.02	28.14	18.23	26.4	21.1	1.74	-2.87	
28.	Pappan Kala Ph-II	20	10	10	9.07	2.88	8.98	3.56	9.2	2.9	-0.22	0.66	
29.	Kapashedha	5	10	10	30.88	6.55	30.67	6.51	32.1	6.6	-1.43	-0.09	
30.	Ghitotni	5	50	30	53.56	27.46	43.26	24.78	47.56	23.15	-4.3	1.63	
31.	Yamuna Vihar Ph-II	10	50	30									System was offline due to vandalism
32.	Dr. Sen	2.2	15	10									

	Nursing Home												
33.	Molar Band	0.66	50	30									
34.	Rohini	15	50	30									
35.	Najafgarh	5	50	30									

Related to Chapter 9- Online Monitoring of STPs, CETPs and Yamuna

Subject: Analysis report of STPs by DPCC.

S. No.	Name of STP	Capacity (in MGD)	Design Parameters		OLMS Results		Lab Results		Variation in %		Remarks
			TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	
1.	Okhla Ph-II	12	50	30	36.43	27.72	24	10	51.79 D	177.2 D	Not Meeting the standards w.r.t. TSS.
2.	Okhla Ph-III	37	50	30	27.71	24.15	38	34	27.07 I	28.97 I	Not Meeting the standards w.r.t. BOD, TSS, COD, AN & DP
3.	Okhla Ph-IV	45	50	30	24.94	20.11	32	22	22.06 I	8.59 I	Not Meeting the standards w.r.t. BOD, TSS, COD & DP.
4.	Okhla Ph-V	16	50	30	---	---	---	---	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD. (OLMS was not working)
5.	Okhla Ph-VI	30	30	20	4.31	2.29	8	6	46.12 I	61.83 I	Meeting the standards
6.	Vasant Kunj	2	50	30	15.96	11.75	14	10	14 D	17.5 D	Not Meeting the standards w.r.t. TSS.
7.	Vasant Kunj New	3	50	30	20.02	15.98	26	18	23 I	11.22 I	Not Meeting the standards w.r.t. BOD, TSS & COD.
8.	Meharuli	5	50	30	28.87	13.80	28	18	3.10 D	23.33 I	Not Meeting the standards w.r.t. BOD, TSS & COD.
9.	Delhi Gate Ph-I	2.2	15	10	8.0	4.99	6	2	33.3 D	149.5 D	Meeting the standards
10.	Delhi Gate Ph-II	15	10	10	5.78	2.64	4	2	44.5 D	32 D	Meeting the standards
11.	Chilla	9	10	10	7.83	6.1	12	9	34.75 I	32.22 I	Not Meeting the standards w.r.t. TSS.
12.	C.W.G. Village	1	50	30	---	---	8	4	---	---	Meeting the standards (OLMS was not working)
13.	Kondli Ph-II	25	30	20	16.97	13.83	32	20	46.96 I	30.85 I	Not Meeting the standards w.r.t. BOD, TSS & COD.

14.	Kondli Ph-IV	45	30	20	---	---	24	76	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD. (OLMS was found locked)
15.	Yamuna Vihar Ph-I	10	50	30	24.85	15.13	16	10	55.31 D	51.3 D	Not Meeting the standards w.r.t. TSS & COD.
16.	Yamuna Vihar Ph-III	25	30	20	34.01	24.98	32	24	6.28 D	4.08 D	Not Meeting the standards w.r.t. BOD, TSS & COD.
17.	Coronation Ph-I & II	20	50	30	---	---	52	32	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD. (OLMS was not working)
18.	Coronation Ph-III	10	50	30	35.95	28.0	60	38	40.08 I	26.31 I	Not Meeting the standards w.r.t. BOD
19.	Narela	10	50	30	19.97	16.14	24	18	16.79 I	10.33 I	Not Meeting the standards w.r.t. BOD, TSS & COD.
20.	Rithala Ph-I	40	50	30	---	---	60	36	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD.
21.	Rithala Ph-II	40	20	15	16.62	8.0	12	8	38.5 D	No variation	Not Meeting the standards w.r.t. BOD, TSS & COD.
22.	Keshopur Ph-I	12	10	10	16.83	15.06	30	20	43.9 I	24.7 I	Not Meeting the standards w.r.t. BOD, TSS & COD.
23.	Keshopur Ph-II	20	50	30	11.38	5.66	132	72	91.37 I	78.72 I	Not Meeting the standards w.r.t. BOD, TSS, COD, AN & DP
24.	Keshopur Ph-III	40	50	30	35.10	26.75	56	40	37.32 I	33.12 I	Not Meeting the standards w.r.t. BOD, TSS, COD, AN & DP
25.	Nilothi Ph-I	40	50	30	52.50	33.04	36	28	45.83 D	18 D	Not Meeting the standards w.r.t. BOD, TSS & COD.
26.	Nilothi Ph-II	20	10	10	9.98	6.0	10	6	0.2 I	No variation	Meeting the standards
27.	Pappan Kala Ph-I	20	50	30	---	---	38	26	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD. (OLMS was not working)
28.	Pappan Kala Ph-II	20	10	10	---	---	6	4	---	---	Meeting the standards (OLMS was under maintenance)
29.	Kapashedha	5	10	10	7.88	4.20	8	4	1.5 I	5 D	Not Meeting the standards w.r.t. BOD, TSS & COD.
30.	Ghitotni	5	50	30	---	---	---	---	---	---	No report from DPCC

31.	Yamuna Vihar Ph-II	10	50	30	---	---	14	8	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD.
32.	Dr. Sen Nursing Home	2.2	15	10	60.1	3.0	4	3	1402.5 D	No variation	Meeting the standards
33.	Molar Band	0.66	50	30	25.82	16.63	46	32	43.86 I	48.03 I	Not Meeting the standards w.r.t. BOD, TSS, COD, AN & DP
34.	Rohini	15	50	30	---	---	18	14	---	---	Not Meeting the standards w.r.t. BOD, TSS & COD. (OLMS found non functional)
35.	Najafgarh	5	50	30	26.31	16.01	62	40	57.56 I	59.97 I	Not Meeting the standards w.r.t. BOD, TSS & COD.

I = Increase

D = Decrease

Annexure - C- 9/3

Related to Chapter 9- Online Monitoring of STPs, CETPs and Yamuna

OLMS CETP STATUS IN MONTH OF SEPTEMBER-2020

Statement of Calibration																		
S.No.	Name of CETP	Calibration Date	EPA Standard		Flow (MLD)	DPCC Lab Report	OLMS Reading (before calibration)		OLMS Reading (after calibration)		% Variation							
							Timing	Timing										
1.	Badli	02.09.2020 & 18.09.2020	pH	5.5-9.0	NA	-	-	-	-	-	-							
			TSS	100								-	-	-	-			
			BOD (3 days at 27° C)	30												-	-	-
			COD	250														
2.	Mangolpuri	03.09.2020	pH	5.5-9.0	1.90	7.0	1:23 pm	7.65	01:31 pm	7.64	-8.57 Decrease							
			TSS	100							60	15.8	38.1	36.5 Increase				
			BOD (3 days at 27° C)	30							36	15.9	86.6	-140.55 Decrease				
			COD	250							112	48.6	282.0	-151.78 Decrease				
3.	Nangloi	03.09.2020	pH	5.5-9.0	3.36	6.7	2:00 pm	7.39	2:09 pm	7.36	-9.85 Decrease							
			TSS	100							76	61.8	27.6	63.68 Increase				
			BOD (3 days at 27° C)	30							25	11.6	21.8	12.8 Increase				
			COD	250							84	58.3	67.6	19.52 Increase				
4.	Narela	04.09.2020	pH	5.5-9.0	11.12	7.2	1:32 pm	7.31	Refused for calibration		-							
			TSS	100							24	13.6	-					
			BOD (3 days at 27° C)	30							20	11.2	-					
			COD	250							64	37.8	-					
5.	Bawana	04.09.2020	pH	5.5-9.0	25.5	7.2	-	-	-	-	-							
			TSS	100							48	-	-					
			BOD (3 days at 27° C)	30							28	-	-					
			COD	250							88	-	-					
6.	Naraina	07.09.2020	pH	5.5-9.0	5.12	6.9	12:10 pm	7.06	12:52 pm	7.30	-5.79 Decrease							
			TSS	100							56	5.62	43.0	23.21 Increase				
			BOD (3 days at 27° C)	30							22	11.1	21.9	0.45 Increase				
			COD	250							68	54.1	72.6	-6.76 Decrease				
7.	Mayapuri	07.09.2020	pH	5.5-9.0	2.42	7.6	1:30 pm	8.04	1:36 pm	8.04	-5.78 Decrease							
			TSS	100							44	37.8	34.5	21.59 Increase				
			BOD (3 days at 27° C)	30							26	25.5	19.7	43.46 Increase				
			COD	250							76	84.5	64.4	15.65 Increase				
8.	Okhla	08.09.2020	pH	5.5-9.0	1.28	7.3	3:29 pm	7.61	3:54 pm	7.61	-4.10 Decrease							
			TSS	100							82	41.29	49.35	39.8 Increase				
			BOD (3 days at 27° C)	30							36	24.15	29.00	19.44 Increase				
			COD	250							112	122.42	116.52	-4.03 Decrease				
9.	GTK	09.09.2020	pH	5.5-9.0	1.0	7.1	11:45 am	7.32	12:17 pm	7.53	-5.63 Decrease							
			TSS	100							48	34.04	47.81	0.39 Increase				
			BOD (3 days at 27° C)	30							28	16.73	27.83	0.60 Increase				
			COD	250							92	62.8	79.32	13.77 Increase				
10.	Wazirpur	09.09.2020	pH	5.5-9.0	0.75	7.2	12:50 pm	7.30	12:55 pm	7.28	-1.11 Decrease							
			TSS	100							82	77.9	112.4	-37.07 Decrease				
			BOD (3 days at 27° C)	30							48	30.8	48.2	-0.41 Decrease				
			COD	250							148	100.2	136.1	8.04 Increase				
11.	SMA	09.09.2020	pH	5.5-9.0	1.9	7.3	1:45 pm	7.28	2:26 pm	7.56	3.48 Increase							
			TSS	100							48	45.05	21.80	54.58 Increase				
			BOD (3 days at 27° C)	30							22	20.7	20.79	5.5 Increase				
			COD	250							88	75.51	68.79	21.82 Increase				
12.	Jhilmil	14.09.2020	pH	5.5-9.0	4.03	7.3	3:58 pm	8.35	4:03 pm	8.35	-14.38 Decrease							
			TSS	100							30	35.3	62.5	-108.33 Decrease				
			BOD (3 days at 27° C)	30							18	15.4	27.1	-50.55 Decrease				
			COD	250							52	47.0	88.5	-70.19 Decrease				
13.	Lawrence Road	18.09.2020	pH	5.5-9.0	1.5	7.2	1:20 pm	7.45	1:31 pm	7.31	-1.38 Decrease							
			TSS	100							88	109	106.50	-21.02 Decrease				
			BOD (3 days at 27° C)	30							46	-	51.9	-12.82 Decrease				
			COD	250							148	158	198	-33.78 Decrease				

Related to Chapter 9- Online Monitoring of STPs, CETPs and Yamuna



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

File No. A-19014/43/06-UPC-I

Date: 07/08/2020

To,

The Chairman,
Haryana Pollution Control Board,
 C-11, Sector 6, Panchkula,
 Haryana

Directions Under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 for installation of Online Continuous Effluent Monitoring System (OCEMS) for self-surveillance of Sewage Treatment Plants.

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

WHEREAS, amongst others, under Section 17 of the Water (Prevention and Control of Pollution) Act, 1974, one of the functions of the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs), constituted under the Water (Prevention & Control of Pollution) Act, 1974, is to plan a comprehensive programme for prevention, control or abatement of pollution of streams and wells in the State/U.T. and to secure the execution thereof; and

WHEREAS, SPCBs and PCCs are empowered to prescribe stringent standards for discharge of environmental pollutants from industries including Sewage Treatment Plants (STPs) than those notified by the Central Government and ensure its compliance, under the Environmental (Protection) Act, 1986 and rules framed there under; and

WHEREAS, Central Pollution Control Board vide its letter No. B-29016/04/06PCI-1/5401 dated 05.02.2014 had already issued directions under section 18(1) (b) of the Water Act to the State Pollution Control Boards and Pollution Control Committees for directing 17 categories of highly polluting industries (such as Pulp & Paper, Distillery, Sugar, Tanneries, Power Plants, Iron & Steel, Cement, Oil Refineries, Fertilizer, Chloral Alkali Plants, Dye & Dye Intermediate Units, Pesticides, Zinc, Copper, Aluminum, Petrochemicals and Pharma Sector, etc.), Common Effluent Treatment Plants (CETP), Common Bio Medical Waste and Common Hazardous Waste Incinerators; for installation of online effluent quality and emission monitoring systems and;

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'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032

Parivesh Bhawan, East Arjun Nagar, Delhi-110032

दूरभाष/Tel : 43102030, 22305702, वेबसाइट/Website : www.cpcb.nic.in

WHEREAS, CPCB and SPCBs / PCCs have installed necessary software and hardware in their headquarters for centralized data collection, analysis and corrective actions and industrial sectors as mentioned in the above para have installed OCEMS and established connectivity with servers of CPCB and SPCBs / PCCs. The industrial units which have failed to install OCEMS and establish connectivity have been issued directions for closure; and

WHEREAS, STPs are operated by State Public Health Engineering Departments, Municipal Authorities and other State or City level Agencies; and

WHEREAS, STPs have been discharging environmental pollutants directly or indirectly into the ambient water bodies which pose constant threat to cause adverse effect on the water quality and SPCBs and PCCs are also required to ensure installation of sewage treatment facilities and their regular operation in the areas under their jurisdiction; and

WHEREAS, continuous monitoring is essential to regulate and minimize inspection of STPs on routine basis and also to inculcate habit of self monitoring mechanism by the STPs to ensure compliance of prescribed standards and transmit data of effluent compliance to SPCB/PCCs and CPCB on continuous basis. This can be achieved by installing online effluent monitoring devices; and

WHEREAS, Central Pollution Control Board (CPCB) has already issued directions to all the SPCBs / PCCs under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 to ensure treatment and utilization of treated sewage vide letter no. A-19014/43/06-Mon dated 21/04/2015; and

WHEREAS, Central Pollution Control Board (CPCB) has also issued direction to the Municipal Commissioners / Chief Executive Officers of 46 Metropolitan Cities and 26 State Capitals on 09.10.2015 under Section 5 of the Environmental (Protection) Act, 1986 to ensure treatment and utilization of treated sewage and installation of Online Effluent Monitoring Systems; and

WHEREAS, CPCB has developed guidelines for Online Continuous Monitoring System for effluents on 07/11/2014; and

WHEREAS, CPCB has developed Standard Operating Protocol for Verification of Installation and Calibration of UV-Vis Dual Beam Scanning & Multipoint calibration mechanism technology based OCEMS (Effluent) used in Sewage Treatment Plants (STPs); and

WHEREAS, the ground truthing of the values indicated by the online devices need to be done before bringing them in public domain for proper interpretation and such measures need to be taken at the level of SPCBs/PCCs; and

WHEREAS for regulatory purposes and for purposes of actions to be taken against non-complying STPs, existing methods of sampling, analysis and related procedures under the existing statutes need to be continued.

NOW THEREFORE, in exercise of the powers conferred under section 18 (1) (b) of the Water (Prevention & Control of Pollution) Act, 1974 and keeping in view strengthening of monitoring mechanism for effective compliance through self-regulatory mechanism, SPCBs / PCCs are hereby directed to issue following directions to all Municipal Corporations OR concerned Body / Agency / Authority who is operating STP, for installation of OCEMS in following phase-wise manner;

1. All the STPs being operated in Million Plus Cities by Municipal Corporations or concerned Body shall install 'Online Effluent Monitoring Systems' for the parameters namely pH, TSS, COD, BOD and Flow Meter before 31.01.2021.
2. STPs being operated in remaining cities and towns by Municipal Corporations, Municipalities, Local Bodies or any other concerned Body shall install 'Online Effluent Monitoring Systems' for the parameters namely pH, TSS, COD, BOD and Flow Meter before 31.07.2021.
3. STP Operating Authority shall connect and upload the online effluent monitoring data with the servers of the concerned SPCB/PCC and CPCB in a time bound manner but not later than timelines as mentioned in 1 and 2 above, as the case may be.
4. STP Operating Authority shall ensure regular maintenance and operation of the online system with temper proof mechanism with facilities for calibration;
5. STP operator should follow guidelines prescribed by CPCB for Online Continuous Monitoring System for effluents and Standard Operating Procedure (SOP) for Verification of Installation and Calibration of UV-Vis Dual Beam Scanning & Multipoint calibration mechanism technology based OCEMS (Effluent) used in STPs.

The Haryana Pollution Control Board shall acknowledge receipt of these directions and communicate action taken report once every 30 days with first report submitted within 30 days from the date of issue of these directions.


[Shiv Das Meena]
Chairman



Related to Chapter 9- Online Monitoring of STPs, CETPs and Yamuna

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

File No. A-19014/43/06-UPC-I

Date 07/08/2020

To,

The Chairman,
Uttar Pradesh Pollution Control Board,
Building No. TC-12V, Vibhuti Khand, Gomti Nagar,
Lucknow, Uttar Pradesh - 226010.

Directions Under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 for installation of Online Continuous Effluent Monitoring System (OCEMS) for self-surveillance of Sewage Treatment Plants.

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

WHEREAS, amongst others, under Section 17 of the Water (Prevention and Control of Pollution) Act, 1974, one of the functions of the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs), constituted under the Water (Prevention & Control of Pollution) Act, 1974, is to plan a comprehensive programme for prevention, control or abatement of pollution of streams and wells in the State/U.T. and to secure the execution thereof; and

WHEREAS, SPCBs and PCCs are empowered to prescribe stringent standards for discharge of environmental pollutants from industries including Sewage Treatment Plants (STPs) than those notified by the Central Government and ensure its compliance, under the Environmental (Protection) Act, 1986 and rules framed there under; and

WHEREAS, Central Pollution Control Board vide its letter No. B-29016/04/06PCI-1/5401 dated 05.02.2014 had already issued directions under section 18(1) (b) of the Water Act to the State Pollution Control Boards and Pollution Control Committees for directing 17 categories of highly polluting industries (such as Pulp & Paper, Distillery, Sugar, Tanneries, Power Plants, Iron & Steel, Cement, Oil Refineries, Fertilizer, Chloral Alkali Plants, Dye & Dye Intermediate Units, Pesticides, Zinc, Copper, Aluminum, Petrochemicals and Pharma Sector, etc.), Common Effluent Treatment Plants (CETP), Common Bio Medical Waste and Common Hazardous Waste Incinerators; for installation of online effluent quality and emission monitoring systems and;

1

WHEREAS, CPCB and SPCBs / PCCs have installed necessary software and hardware in their headquarters for centralized data collection, analysis and corrective actions and industrial sectors as mentioned in the above para have installed OCEMS and established connectivity with servers of CPCB and SPCBs / PCCs. The industrial units which have failed to install OCEMS and establish connectivity have been issued directions for closure; and

WHEREAS, STPs are operated by State Public Health Engineering Departments, Municipal Authorities and other State or City level Agencies; and

WHEREAS, STPs have been discharging environmental pollutants directly or indirectly into the ambient water bodies which pose constant threat to cause adverse effect on the water quality and SPCBs and PCCs are also required to ensure installation of sewage treatment facilities and their regular operation in the areas under their jurisdiction; and

WHEREAS, continuous monitoring is essential to regulate and minimize inspection of STPs on routine basis and also to inculcate habit of self monitoring mechanism by the STPs to ensure compliance of prescribed standards and transmit data of effluent compliance to SPCB/PCCs and CPCB on continuous basis. This can be achieved by installing online effluent monitoring devices; and

WHEREAS, Central Pollution Control Board (CPCB) has already issued directions to all the SPCBs / PCCs under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 to ensure treatment and utilization of treated sewage vide letter no. A-19014/43/06-Mon dated 21/04/2015; and

WHEREAS, Central Pollution Control Board (CPCB) has also issued direction to the Municipal Commissioners / Chief Executive Officers of 46 Metropolitan Cities and 26 State Capitals on 09.10.2015 under Section 5 of the Environmental (Protection) Act, 1986 to ensure treatment and utilization of treated sewage and installation of Online Effluent Monitoring Systems; and

WHEREAS, CPCB has developed guidelines for Online Continuous Monitoring System for effluents on 07/11/2014; and

WHEREAS, CPCB has developed Standard Operating Protocol for Verification of Installation and Calibration of UV-Vis Dual Beam Scanning & Multipoint calibration mechanism technology based OCEMS (Effluent) used in Sewage Treatment Plants (STPs); and

WHEREAS, the ground truthing of the values indicated by the online devices need to be done before bringing them in public domain for proper interpretation and such measures need to be taken at the level of SPCBs/PCCs; and

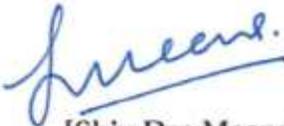
WHEREAS for regulatory purposes and for purposes of actions to be taken against non-complying STPs, existing methods of sampling, analysis and related procedures under the existing statutes need to be continued.

NOW THEREFORE, in exercise of the powers conferred under section 18 (1) (b) of the Water (Prevention & Control of Pollution) Act, 1974 and keeping in view strengthening of monitoring mechanism for effective compliance through self-regulatory mechanism, SPCBs / PCCs are hereby directed to issue following directions to all Municipal Corporations OR concerned Body / Agency / Authority who is operating STP, for installation of OCEMS in following phase-wise manner;

1. All the STPs being operated in Million Plus Cities by Municipal Corporations or concerned Body shall install 'Online Effluent Monitoring Systems' for the parameters namely pH, TSS, COD, BOD and Flow Meter before 31.01.2021.
2. STPs being operated in remaining cities and towns by Municipal Corporations, Municipalities, Local Bodies or any other concerned Body shall install 'Online Effluent Monitoring Systems' for the parameters namely pH, TSS, COD , BOD and Flow Meter before 31.07.2021.
3. STP Operating Authority shall connect and upload the online effluent monitoring data with the servers of the concerned SPCB/PCC and CPCB in a time bound manner but not later than timelines as mentioned in 1 and 2 above, as the case may be.
4. STP Operating Authority shall ensure regular maintenance and operation of the online system with temper proof mechanism with facilities for calibration;
5. STP operator should follow guidelines prescribed by CPCB for Online Continuous Monitoring System for effluents and Standard Operating Procedure (SOP) for Verification of Installation and Calibration of UV-Vis Dual Beam Scanning & Multipoint calibration mechanism technology based OCEMS (Effluent) used in STPs.

These directions are not applicable to STPs located in cities / towns in the catchment of river Ganga as listed in Annexure, as directions for installation of OCEMS for those STPs have already been issued earlier.

The Uttar Pradesh Pollution Control Board shall acknowledge receipt of these directions and communicate action taken report once every 30 days with first report submitted within 30 days from the date of issue of these directions.



[Shiv Das Meena]
Chairman

Related to Chapter 10- Use of treated Waste water

विजय कुमार देव
VIJAY KUMAR DEV, I.A.S



मुख्य सचिव
राष्ट्रीय राजधानी क्षेत्र, दिल्ली सरकार
Chief Secretary
Government of NCT of Delhi

DO No. CS/GNCTD/DJB/2019/3098
March 09, 2019

Dear Sir,

There is presently a huge gap of more than 240 mgd between the demand and supply of drinking water. Delhi has been confronting an annual water crisis which is exacerbated in the summer months. Delhi Jal Board is producing around 460 mgd treated waste water from various Sewage Treatment Plants which if used for non-potable purposes would greatly alleviate dependency on precious drinking water. There are standing directions issued under Section 5 of the Environment Protection Act 1986 by the LG Delhi vide notification of 18th May 2010 on the Regulation And Management of Ground Water which mandates the use of recycled water both at the time of granting permission for new bore wells as well as for continued use of existing bore well water for commercial and industrial use.

The ground water table has gone down to alarming levels and the Central Ground Water Board in its report of 2017 reported that the drawal of ground water in Delhi exceeds annual recharge by as much as 27%. The Hon'ble National Green Tribunal (NGT) has stressed upon the need to use treated effluent in Delhi instead of extracting ground water. It is, therefore, essential that every department and agency that uses a large quantity of water for parks, gardens, washing, and cooling takes measures to reduce the stress on drinking water by using treated waste water instead of drinking water.

Although the CEO, Delhi Jal Board has held meetings with senior officers of all the departments and written letters to them about increasing the use of treated water, the results are not evident. NGT has taken an adverse view of the poor utilization of treated waste water and directed the Monitoring Committee set up by the Tribunal to provide a plan for reducing dependence on ground water for watering functions. Every Government Department/ Agency which is a large consumer of water is required to prepare a Department and Agency wise action-plan for expanding the use of treated waste water within a fortnight. This has to be submitted to the NGT.

Contd....2/-

दिल्ली सचिवालय, आई.पी.एस्टेट, नई दिल्ली-110002, फोन : 011-23392100, 011-23392101, फैक्स : 011-23392102

DELHI SECRETARIAT, I.P. ESTATE, NEW DELHI-110002, Tel. : 011-23392100, 011-23392101 Fax : 011-23392102
E-mail : csdelhi@nic.in

Kindly allocate the task of preparing such a plan to a nodal officer who can apprise the Delhi Jal Board and NGT's Monitoring Committee details of the present consumption and how much it is planned to be reduced by the use of treated waste water. Questions about creating a link with the Sewage Treatment plants and other logistics may be sent to the CEO Delhi Jal Board at the earliest so that the plan takes the operational requirements into account.

The Monitoring Committee set up by NGT will be holding meetings with your nodal officer in due course.

Best wishes,

Yours Sincerely



(VIJAY KUMAR DEV)

Ms. Varsha Joshi,
Commissioner, North DMC,
Civic Centre, J.L. Nehru Marg,
New Delhi.

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Sh. Mangu Singh, CMD, DMRC 2. Sh. Naresh Kumar, Chairman,
New Delhi Municipal Council 3. Sh. Sanjeev Khirwar, Secretary, PWD, Delhi 4. Sh. Anil Kumar Singh, Secretary,
Irrigation & Flood Control GNCTD 5. Sh. Puneet Goel, Commissioner, South DMC 6. Sh. Madhup Vyas, Secretary,
Environment & Forests GNCTD 7. Dr. Dilraj Kaur, Commissioner, East DMC 8. Ms. Varsha Joshi, Commissioner,
North DMC | <ol style="list-style-type: none"> 1. Sh. Tarun Kapoor, V.C., DDA 2. Sh. Prabhakar Singh, D.G., C.P.W.D. 3. Sh. Puspendra Singh, CEO,
Delhi Cantonment Board 4. Sh. T.P.Singh, GM, Northern Railway |
|---|---|

Annexure - C- 10/2

Related to Chapter 10- Use of treated Waste water

OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
 APPOINTED BY HON'BLE NGT
 ROOM NO. 58, INDIA INTERNATIONAL CENTRE
 40, MAX MUELLER MARG, LODHI ESTATE
 NEW DELHI – 110003

No. YPMC/2020/510

Date: 03.11.2020

Subject: Minutes of the Review meeting taken by the YMC with the CEO DJB through video Conferencing at 2.30 PM on 28.10.20.

The YMC held the third review meeting with officers of DJB in respect of the Agenda which had been issued vide letter dated 08.10.2020 relating to waste water and its treatment, utilization as well as septage management.

The list of officers that attended the meeting is attached. The four subjects related to:

1. In situ Bio/Phyto remediation of waste water in the drains
2. Use of Treated waste water
3. Online Monitoring of Functioning of STPs and
4. Status of Septage management

1. Status of phyto remediation projects decided by IDMC:

YMC drew attention of the CEO DJB to the NGT's order dated 11.9.2019 directing that in situ bio/phyto-remediation in the drains may be taken up in case the STPs planned to prevent flow of sewage in the drains were delayed. CPCB has also prepared detailed guidelines for in situ bio/phyto- remediation and circulated them to all the State Pollution Control Boards and the state governments for guidance.

Department of UD, Government of NCT Delhi had in the report submitted to YMC in June 2020 informed the YMC that an Integrated Drain Management Cell headed by the Chief Secretary has been constituted which has all the Municipal Corporations and drain owning agencies as its members with CEO DJB as its Member Secretary.

SDMC: The SDMC informed the YMC that it has involved the IIT Delhi in preparing the Action Plan for seven drains identified for the purpose of phyto remediation.

EDMC: EDMC too had also identified six drains for preparation of an Action Plan. YMC wanted to know the present status of phyto-remediation work by these two Municipal Corporations and whether any other drain owning agency has also made any progress on this.

It was apprised that consultant have been appointed by various drain owing agencies. First IDMC report has already been submitted before Hon'ble NGT on 26.08.2020 and copy of the same has also sent to YMC for its information. Status of action plan of all drain owning agencies as per technologies suggested by CPCB have been prepared. However, due to paucity of funds caused by COVID 19 most of the drain agencies were unable to proceed further for implementation of their Action Plan and have approached CPCB for funding of their projects. The Action Plans have remained unimplemented as the Municipal Corporations are going through an acute fund crunch.

Members YMC asked for the minutes of all the meetings of all the IDMC held so far as these do not seem to have been received in the YMC's office. This will help YMC to understand the direction given, decisions taken and efforts made so far for integrated drain management with a view to control and treat waste water in the drains. Also a copy of the report submitted to the NGT on 26.08.20 may be submitted to the YMC so as get the status of the Action Plans prepared together with the latest status of their implementation, the drains sought to be covered and whether, funds were being made available.

Considering the repeated statement that there was funds constraint, YMC asked the Member Secretary IDMC to explore the possibility of each drain owning agency taking up at least one drain within its jurisdiction in which in situ phyto remediation could be tried as a pilot. The YMC could consider recommending to the NGT for directing CPCB/DPCC to make funds available for experimenting these alternative technologies flowing from models delineated in the CPCB guidelines. YMC also advised the CEO DJB/ Member Secretary IDMC to consider tying up with CII and FICCI for industry support through CSR or even otherwise. The two industry associations had evinced considerable interest and promised in the recent meetings which the YMC that they would like to be given a range of alternatives to decide where they had technical competence and experience. The details of the discussions held with the CII and FICCI are available on the Website of the YMC.

Member Secretary, IDMC assured YMC that this issue will be taken up in next IDMC meeting which is going to be held shortly.

2. Use of Treated Waste Water- Present Status of implementation of DJB's action described in Chapter –10 of YMC Final Report.

YMC wanted to ascertain the status of treated water usage at present and whether there has been any increase from the 89 MGD out of about 550 MGD which the DJB was able to use by supplying to various users. CEO DJB stated that there has not been any substantial increase except 1-2 MGD as the action for utilization of treated effluent for horticulture purpose is to be taken by respective Garden/Park owning agencies like the DDA and the Municipal Corporations and DJB is fully committed to extend all kind support to increase its utilization. Besides bulk users like the Railways and the DMRC may have to be directed to switch over to the use of treated water. Elaborating further, he explained that about 1 MGD of additional treated effluent is being utilized by various stake holders by deploying 192 no. of tankers with average 340 of trips per day. Other steps taken in this regard by the DJB are:

- DJB has recently notified a scheme under which treated effluent of good quality is being supplied free of cost for its utilization to horticulture purpose or recharging of water bodies. Earlier it was sold at the price of Rs 7 per KL.
- A policy has been framed for the implementation of decentralized STPs for utilization of treated water for horticulture purposes to reduce ground water extraction. Under this scheme park owning agencies are encouraged to install DSTPs at their own cost and DJB grants necessary permission for lifting of sewage from the nearby sewer line. SE(Maintenance) of DJB was the Nodal Officer of the area.
- The Delhi Parks & Garden Society under the Department of Environment, GNCTD has a proposal to provide financial assistance for installation of DSTPs to RWAs and NGOs for maintenance of Parks & Gardens.
- There is a proposal for utilization of 70 MGD of water from Coronation Pillar STP after Micro filtration and is proposed to conveyed to Palla and thereafter released into River Yamuna for treatment at Wazirabad WTP. DJB also proposes to trade 20 MGD out 51 cusec of fresh water at Auchandi and Jaunti regulator with the state of

Haryana and in lieu thereof provide treated wastewater. It was apprized by CEO, DJB that both proposals are under consideration of UYRB and approval is still awaited. If this scheme is approved then sufficient achievement in utilization of treated effluent could be made by DJB.

- As per the water sharing agreement of 1994, there is mandatory requirement to release 267 MGD (495 cusec) treated effluent in River Yamuna by Delhi as return flow.
- As regards sealing of borewells being used in parks and gardens, necessary action regarding sealing of bore well of the garden lies with the respective DM of the area and Delhi Jal Board is committed to extend full support but prosecution powers are with respective DMs.

YMC has desired the following information may be provided specifically as it would enable YMC to report whether the efforts were commensurate with the criticality repeatedly underscored by NGT:

- I. Number of bore wells, name of park along with agency intimated to different DMs by DJB.
 - II. Level at which issue of sealing of borewells has been taken by DJB and with what outcome.
 - III. Level at which issue of clearance from UYRB has been escalated by DJB.
 - IV. Level at which proposal of supply of treated water to UP Irrigation Department in lieu thereof to seek 112 MGD of fresh water from the share of state of UP has been taken up by DJB.
 - V. Details of parks along with its owning agency be made available by DJB as per information available with them.
- 3. Online monitoring of STPs and its effectiveness as a tool for better performance of STPs.**

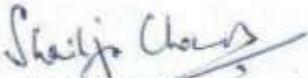
Latest information on performance of STPs monitored through OLMS and whether the OLMS is being calibrated in accordance with the directions issued by the CPCB. The present performance of the STPs vis a vis their performance in June 2020 be also furnished to understand if there has been any improvement.

Keshopur II, Keshopur III and Coronation Pillar STP-III continue to exceed prescribed design parameters. However there has been no improvement. The Action Plan prepared by DJB for these STPs together with the timelines be furnished to the YMC.

4. Septage Collection, Transportation and Treatment:

Septage collection which had reached a peak of 27.9 ML per month in January 2020 had declined to 15.53 ML per month in May 2020. It was also explained that average daily collection is only about 6 lakhs liters against 6 ML generated every day. Also against 9 lakhs household in 1238 unauthorized unsewered colonies, septage is being collected only from 2.39 lakhs households. YMC does not have the latest data on the amount of septage collected and treated daily/monthly and whether there has been any improvement and what steps are being envisaged for removing bottlenecks in scaling up collection, transportation and treatment. The DJB was to engage 80 trucks through its own arrangements. The progress thereof be furnished to the YMC along with action plan for improving collection, transportation and treatment.

The information sought above on all the four subjects be furnished to the YMC by 12th November 2020 for incorporating in the report of YMC due to be submitted to NGT by 30.11.2020.


Shailja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:
CEO DJB

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
Telephone No: 011- 24609270
Email id: rymonitoringcommittee@gmail.com

Name of Officer	Designation	Contact No.	E-mail ID. (PL. WRITE EASILY READABLE)	Signature
Sh. Nikhil Kumar	CEO, DJB	8800902428	ceodelhi.djb@nic.in	
Sh. Vikram Singh	CE(Dr)Proj-I	9650290929	cedrainage1@gmail.com	
Sh. M.K. Jain	CE(Dr)Proj-II	9650291092	cedrpri@gmail.com	
Sh. Ajay Gupta	CE(Dr)Proj-III	9650291023	cedrpr3@gmail.com	
Sh. D.K. Vaishya	CE(SDW)South-East	9650290922	cesdwdjb@gmail.com	
Sh. S.C. Vashishth	CE(SDW)North-West	9650290904	cesdwnwdjb@gmail.com	
Sh. Gajender Tomar	SE(Dr)Proj-I	9868127408	sedrpr1djb@gmail.com	
Sh. B.P. Saraswat	SE(Dr)Proj-IV	9650894421	saraswatee64@yahoo.in	
Sh. Anil Sharma	SE(Dr)Proj-V	9650291103	sedrpr5@gmail.com	

Annexure - C- 10/3

Related to Chapter 10- Use of treated Waste water

Annexure - C- 10/3

Subject: Details of the treated effluent taken by the various agencies from DIB STPs during the month of May-2020 to Sep-2020.

S. No	Name of STP	Name of agency taking treated effluent CPWD / PWD / DTC / PPCL / DDA/ MCDs / Pvt agencies etc.	Mode of taking treated effluent i.e through Pipeline or through Tankers	Total Quantity taken in the month of May 2020 in MG	Total Quantity taken in the month of June 2020 in MG	Total Quantity taken in the month of July 2020 in MG	Total Quantity taken in the month of Aug 2020 in MG	Total Quantity taken in the month of Sep 2020 in MG	Total Quantity taken in the month of Oct 2020 in MG	Remarks
1	10 MGD STP Ph-I Yamuna Vihar	DTC	Tankers	0.080	0.142	0.153	0.153	0.155	0.155	---
		PWD	Tankers	0.248	0.182	0.208	0.183	0.219	0.250	---
		EDMC	Tankers	0.162	0.168	0.128	0.001	0.060	0.110	---
		IL & FS	Tankers	0.000	0.000	0.033	0.102	0.089	0.110	---
2	1MGD STP at CWG	DDA	Through Pipeline	4.310	5.690	3.660	3.310	4.440	4.310	---
3	45 MGD Phase-IV STP Kondli	DTC	Tankers	0.011	0.064	0.130	0.109	0.239	0.120	---
		M/s Deepak Memorial Hospital	Tankers	0.002	0.024	0.044	0.033	0.031	0.130	---
		East MCD	Tankers	0.019	0.099	0.044	0.010	0.010	0.048	---
		Pvt. Agency.	Tankers	0.367	0.289	0.477	0.223	0.165	0.494	---
4	Coronation Pillar STP	PWD	Tankers	1.880	1.990	2.340	1.190	2.240	2.490	---
		NDMC	Tankers	0.110	0.120	0.030	0.020	0.060	0.170	---
		DIB	Tankers	0.950	0.740	0.560	0.260	0.830	0.800	---
		DDA	Tankers	0.120	0.190	0.190	0.130	0.100	0.120	---
		Pvt. Agency.	Tankers	0.000	0.090	0.000	0.000	0.000	0.050	---
5	Narela STP	PWD	Tankers	0.080	0.060	0.030	0.010	0.040	0.010	---
		DTC	Tankers	0.000	0.040	0.000	0.000	0.000	0.000	---
		Pvt. Agency.	Tankers	0.000	0.000	0.000	0.000	0.020	0.040	---
6	RITHALA STP Ph-1	PWD	Tankers	0.690	0.630	0.430	0.390	0.590	0.840	---
		DTC	Tankers	0.110	0.020	0.015	0.090	0.060	0.074	---
		Pvt. Agency.	Tankers	0.590	0.680	0.860	0.310	0.870	1.040	---
7	40 MGD STP	PPCL	Pipeline	138.000	186.000	152.000	109.000	129.000	170.000	---

S. No	Name of STP	Name of agency taking treated effluent	Mode of taking treated effluent	Total Quantity taken in the month of May 2020 in MG	Total Quantity taken in the month of June 2020 in MG	Total Quantity taken in the month of July 2020 in MG	Total Quantity taken in the month of Aug 2020 in MG	Total Quantity taken in the month of Sep 2020 in MG	Total Quantity taken in the month of Oct 2020 in MG	Remarks
1	STP Sector 25 Rohini	NDMC	Tankers	0.025	0.048	0.000	0.000	0.003	0.015	---
		PWD	Tankers	0.022	0.015	0.000	0.000	0.000	0.000	---
		MCD	Tankers	0.000	0.052	0.000	0.000	0.000	0.005	---
1	Keshapur STP	MCD's	Tankers	0.510	0.710	0.590	0.570	0.660	0.660	---
		Pvt. Agencies	Tankers	2.930	4.040	3.460	3.260	3.760	3.770	---
8	Pappankal an STP Ph-I	DDA	Through Channel	42.000	41.000	36.000	16.000	18.000	18.000	---
		NDMC Najafgarh	Through Tankers	0.000	0.000	0.000	0.000	0.000	0.131	---
		Pvt. Agency.	Through Tankers	0.200	0.199	0.220	0.120	0.079	0.613	---
11	Pappankal an STP Ph-II	NSIT	Through pipe line	6.150	8.900	6.810	4.220	3.730	3.730	---
		Pvt Agency.	Through Tankers	0.842	1.290	1.090	1.540	1.220	2.980	---
12	23 MLD Kapashera	Pvt. Agency.	Through Tankers	0.800	0.020	0.020	0.020	0.060	0.160	---
13	Delhi Gate Ph-II STP 15 MGD	PWD	Tankers	2.410	2.310	1.670	0.960	1.770	2.910	---
		NDMC	Tankers	0.028	0.034	0.025	0.016	0.089	0.037	---
14	VasantKun STP Ph-1 2.2 MGD	PWD	Tankers	0.310	0.480	0.260	0.170	0.418	0.744	---
		NHA	Tankers	0.260	0.000	0.000	0.000	0.000	0.000	---
		Forest Department	Tankers	0.222	0.140	0.022	0.088	0.220	0.283	---
		DDA	Pipeline	0.000	0.000	2.890	6.340	7.760	5.196	---
		AAI	Tankers	0.000	0.000	0.000	0.000	0.086	1.699	---
15	Mehrauli STP	DDA	Pipeline	44.760	46.050	61.350	61.990	60.110	62.000	---
		MCD	Tanker	0.010	0.010	---	0.003	0.003	0.003	---
		DMRC	Tanker	---	---	0.160	0.310	0.340	0.220	---
		Forest Department	Tanker	1.650	0.660	0.690	0.490	1.940	1.940	---
		Pvt. Agency.	Tanker	0.900	0.790	0.181	0.180	0.710	1.190	---

16	Okhla STP	CPWD	Pipeline	465.260	332.540	182.530	0.000	344.650	426.000	The EPH was closed from 20 th July to Aug-20, due to Maintenance work of rising mains
		Jindal Waste to energy plant Okhla	Pipeline	1.810	1.290	1.350	1.120	1.330	1.540	
		DTC Depot Sukhdev Vihar	Pipeline	0.330	0.290	0.260	0.330	0.350	0.340	
		CBRI Mathura Road	Pipeline	0.660	0.660	0.440	0.400	0.480	0.450	
		Suez India Pvt. Ltd.	Pipeline	0.000	0.050	0.270	0.330	0.350	0.440	
		DDA	Tanker	0.000	0.620	0.660	0.340	0.990	1.390	
		DTC	Tanker	0.000	0.190	0.340	0.350	0.410	0.460	Due to road work filling point was closed w.e.f 20.03.2020 and operation satrated again 15.06.2020
		Forest Dept.	Tanker	0.000	0.020	0.000	0.000	0.460	0.580	
		L&T	Tanker	0.000	0.600	1.160	0.850	1.070	1.230	
		DMRC	Tanker	0.000	0.000	0.000	0.000	0.800	0.080	
		NBCC	Tanker	0.000	0.040	0.140	0.320	1.190	2.030	
		PWD	Tanker	0.000	0.660	1.380	0.890	1.130	1.160	
		SOHC	Tanker	0.000	0.010	0.010	0.000	0.040	0.050	
		Private Agency.	Tanker	0.000	0.520	1.030	1.310	1.900	1.640	
17	Sen Narsing Home	PPCL	Pipelines	74.400	72.000	74.400	74.000	72.000	74.000	
18	Delhi Gate Phase-I	PPCL	Pipelines	74.000	71.000	75.000	74.000	72.000	75.000	
19		DJB Internal horticulture use	Pipelines	310.000	300.000	290.000	295.000	300.000	310.000	
20		DDA from Kondli ,Vasant Kunj, Pappankalan & Rithala	Pipeline/ Channel	335.000	330.000	340.000	330.000	340.000	341.000	
21		IFCD from Okhla, Keshapur, Connaught	Pipeline/ Channel	1054.000	930.000	1023.000	992.000	1020.000	961.000	
Total (MG)				2665.629	2344.447	2268.690	1982.991	2398.508	2486.037	
CE(SDW)SE				EO to CE(SDW)SE						

Related to Chapter 10- Use of treated Waste water**Details of the various proposals outlined in the table**

Extract of the Action Taken Report of DJB dated 27.10.2020 for the 3rd meeting of YMC held on 28.10.2020

The ATR for the DJB proposed initiatives for enhanced utilization of treated waste water :-

1. 70 MGD of water from Coronation STP after micro filtration is proposed to be conveyed to Palla and thereafter released into in the River Yamuna for treatment at Wazirabad Water Treatment Plant. DJB has sought approval of Upper Yamuna River Board (UYRB) where it is pending presently. The YMC had earlier recommended that this proposal needs examination by some expert body considering treated waste **water after being subjected to microfiltration is proposed to be used for drinking purposes.** YMC reiterates its earlier recommendation for study of scientific as well as social acceptability aspects, before giving green signal to the proposal.

Present status:- Clearance from Upper Yamuna River Board (UYRB)/Haryana Govt. is awaited.

- 2 DJB also proposes to trade 20 MGD out of 51 cusecs of fresh water of Yamuna at Auchandi and Jaunti Regulator with the state of Haryana and in lieu thereof provides treated waste water. As informed by DJB has, the matter is still pending with the UYRB and formal concurrence from Haryana has also not been received

Present status: - Clearance from Upper Yamuna River Board (UYRB)/Haryana Govt. is awaited.

3. DJB has another proposal for supply of treated water to UP Irrigation Department and in lieu thereof seek 112 MGD of fresh water from the share of the state of UP. A request has been made to the UP-Irrigation Department and Rs 70 lakhs released for a feasibility study for this exchange of treated water in lieu of the fresh water out of the share of UP Government. YMC has been informed that the report of consultants has not yet been received and once that is received matter will be taken up with UYRB for approval.
- **Present status:-** CEO, DJB held a meeting with Principal Secretary, Irrigation and Water Resources, UP on 03.05.2018, followed by meeting at CE's level on 02.07.2018 to arrange raw water from UP. CEO, DJB vide DO letter dated 10.07.2018 to Principal Secretary Irrigation and Water Resources, Uttar Pradesh highlighted three options of giving additional raw water to Delhi (i) 140 MGD (approx 270 cusec) of raw water may be provided by Uttar Pradesh and cost of which will be borne by Delhi. (ii) dedicated supply of adequately treated effluent for irrigation needs of

UP against the supply of raw water to Delhi; and (iii) lining of canal system including irrigation minors and distributaries in UP at Delhi's cost and supply of resultant savings to meet Delhi's requirement of raw water. CEO further requested UP to engage Consultant to carry out feasibility study.

- U.P. Jal Nigam vide their letter dated 25.07.2018 submitted an estimate amounting to Rs. 2261.00 Cr. for option (i) for laying additional water conduit of 3250 mm dia from Murad Nagar to Sonia Vihar WTP in a length of about 31 Km MS conduit. This 3rd conduit shall also act as stand by in case of any breakdown of existing mains to ensure uninterrupted supply of raw water to existing Sonia Vihar and Bhagirathi WTPs. To treat this augmented raw water supply, a block estimates amounting to Rs. 1161.40 crore for construction of second 140 MGD WTP at Sonia Vihar has been prepared including the cost of Civil, E&M and 10 year O&M.
- Total cost of Integrated projects involving construction of 140 MGD WTP at Sonia Vihar at a cost of Rs. 1161.40 crore and conveyance arrangements of raw water by laying of additional pipeline of 3250 mm dia from Murad Nagar to Sonia Vihar WTP in a length of about 31 km MS conduit (to carry 270 Cusec) and restoration and strengthening of the 2800 mm dia RCC conduit feeding Bhagirathi WTP at a cost of Rs.2261 crore, will be Rs. 3931.46 crore. This will require funding from external agencies.
- Block estimate of arranging 140 MGD raw water from UP by laying 3rd new water main and construction of WTP and Rehabilitation of existing conduit was in principally approved by the Board in its meeting on 15.10.2018 vide Resolution No. 684.
- Subsequently, during various meetings held with UP, it was deliberated that UP will be able to supply Raw water to Delhi only in lieu of effluent water to be supplied by Delhi. For making these arrangements, huge infrastructure arrangements have to be made, e.g. laying of transmission mains for raw water and treated effluent, construction of pump house etc. etc. For these arrangements, specialised consultant (s) has to be engaged. DJB will bear the cost of engagement of consultant for feasibility studies, preparation of DPR and other related activities. Consultant shall be engaged for preparing preliminary feasibility report comprising of the survey work and Shajra Sheet (mapping) for conveyance of treated effluent from Delhi to Uttar Pradesh. For preparing detailed project report (DPR), the consultant has to do massive exercise i.e. Seepage losses counting , Soil testing, total Station Survey, G.P.S. Survey,

preparation DPR and other related activities, which will be done after the acceptance of preliminary feasibility report.

- Matter was followed vide CEO, DJB D.O. letter dated 05.11.2018 to Principal Secretary, Irrigation, UP, CE DJB letter dated 28.12.2018 to CE, UP, meeting between Member (WS) and CE, UP Irrigation dated 15.07.2019, Inspection by DJB and UP Irrigation team on 01.08.2019.
- CEO, DJB vide D.O. letter dated 08.08.2019 addressed to Principal Secretary, UP Irrigation & Water Resources requested for visit of DJB team to Lucknow for fruitful discussion on this issue of seminal importance for both States and expedite the issue.
- A meeting was held on 28.09.2019 between Principal Secretary Irrigation and CEO, DJB at Delhi to pursue the matter further.
- UP Irrigation vide letter dated 09.09.2019 requested for release of Rs. 70.00 Lakh (Tentative) for engagement of Consultant which will be subject to truing up of account. Board vide Resolution No. 893 dated 25.10.2019 accorded in principal approval to release the payment for engagement of consultant and the same has been released on 04.10.2019.
- Member (WS) DJB vide DO letter dated 18.03.2020 addressed to Additional Secretary, Department of Water Resources, Ministry of Jal Shakti, Govt. of India, requested to get the matter expedited.
- CEO, DJB vide DO letter dated 18.03.2020 addressed to Pr. Secretary, Irrigation & Water Resources, Uttar Pradesh, further requested to hold a joint meeting to expedite the issue.
- **Estimated cost of the Project**

(i)	Construction of 2nd 140 MGD Sonia Vihar WTP	Rs.1161.40 Cr
(ii)	270 Cusec additional pipeline of 3250 mm dia from Murad Nagar to Sonia Vihar WTP having approx. length of 31 KM	Rs.2261.00 Cr.
(iii)	Restoration and strengthening of existing 2800 mm internal dia RCC caste in situ conduit from Murad Nagar to Bhagirathi WTP	Rs.509.06 Cr
(iv)	conveyance of treated effluent from Delhi to UP including construction of effluent Pump House and Rising Main etc	Rs. 3000 Cr.

Total Rs. 6931.46 Cr.

- As per the approval of the Board, Rs. 70.00 lakhs has been paid to UP Irrigation Department (EE Meerut Division Ganga Canal Meerut) on 04.10.2019 for engaging the consultant to prepare feasibility report for exchange of treated effluent from UP with raw water to Delhi.
- The Feasibility report has been received from Executive Engineer, Meerut Ganga Canal vide letter No. 2269 dated 01.07.2020. As per the summary of the report, there is feasibility of releasing 270 cusec of raw water to DJB from Murad Nagar Regulator and equivalent quantity of treated effluent will be released by Delhi Jal Board at Okhla.
- CEO, DJB vide D.O.letter dated 10.07.2020 addressed to Pr. Secretary, Irrigation and Water Resources, UP has requested for an early meeting possibly through video conferencing due to prevailing COVID-19 pandemic.

4. DJB's proposal also includes release of 267 MGD of water in the river Yamuna as return flow which is stated to be in terms of water sharing agreement. However, YMC has not been furnished the details of the clauses of the agreement and whether it is mandatorily required to supply only treated waste water or even untreated water could also meet the requirement of the Agreement. This has not yet been responded to by DJB

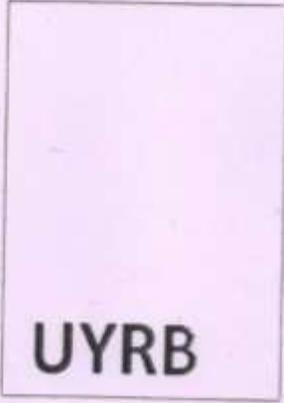
Present status: - The copy of the document is attached herewith

सत्यमेव जयते

Ministry of Water Resources, River Development &
Ganga Rejuvenation

Govt. of India

WATER ACCOUNTING MANUAL
of
UPPER YAMUNA BASIN



UYRB

UPPER YAMUNA RIVER BOARD

WB-1, WING-4, RK PURAM, NEW DELHI- 110066

3.0 YAMUNA WATER DISTRIBUTIONS AMONG BASIN STATES

As the demands by various states increased, the shortages began to be felt and differences over sharing of waters arose. To resolve these differences, the Central Government initiated discussions with the basin States and eventually a Memorandum of Understanding (MoU) was signed by the five basin states of Uttar Pradesh, Haryana, Himachal Pradesh, Rajasthan and Delhi on 12th May, 1994. The State of Uttarakhand came into existence after signing the MoU and is included in the Board vide Resolution dated 16th March, 2001. The Resolutions dated 11th March 1995 & 16th March, 2011 are annexed at **Appendix-2**.

The revised seasonal distribution of water among five states as per decision taken in 42nd meeting of UYRB held on 6th July 2012 is given in Table-1.

Table-1 Four monthly water distributions

State	Allocation during July to Oct		% share w.r.t. total availability	Tentative distribution			Return flow	Net distribution
				Taje-Wala	Wazira-bad to Okhla	Okhla		
	BCM	Cusecs		Cusecs			Cusecs	Cusecs
Haryana	4.107	13637	45.36	13037	0	600	-	13637
U.P.	3.216	10679	35.50	4000	0	6679	-	10679
Rajasthan	0.963	3198	10.64	1917	0	1281	-	3198
H.P.	0.190	631	2.10	0	0	0	-	631
NCT of Delhi	0.580	1926	6.40	751	1553* +117	0	495	1926
Total	9.056	30071	100.00	19705	1670	8560	495	30071

*Subject to sufficient availability of water D/s Tajewala.

Annexure C-11/1

Related to Chapter 11: Industry Interface

OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
 APPOINTED BY HON'BLE NGT
 ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
 40, MAX MUELLER MARG, LODHI ESTATE
 NEW DELHI – 110003

No. YPMC/2020/ 501

Dated: 16.10.2020

Subject: Minutes of Meeting of CII officials with Yamuna Monitoring Committee on 05.10.2020 on exploring avenues for CSR activities for rejuvenation of river Yamuna.

List of Participants:

- Ms Shailaja Chandra, Member, Monitoring Committee for Yamuna
- Mr B S Sajwan, Member, Monitoring Committee for Yamuna
- Mr Arun Mishra, Member Secretary, Delhi Pollution Control Committee
- Ms Poonam Dewan, DDA.
- Mr Ankit Srivastava, Advisor, Delhi Government
- Mr Aditya Berlia, Chairman, CII Delhi State, and; Co-Promoter, Apeejay Styra & Svarn Group.
- Mr Ankur Bhatia, Past Chair, CII Delhi State: Chairman, CII NR Tourism Committee & Managing Director, Bird Group.
- Mr Puneet Kaura, Chairman, CII-NR committee on NCR Pollution & MD, Samtel Avionics Group.
- Ms. Soraya Rebello, Co-Chair, CII-NR Regional Committee on CSR & AA & Vice President-CSR & Corporate Communications, Jakson Group.
- Ms Seema Arora, Deputy Director General, CII.
- Ms Vaishali Srivastava, Deputy Director & Head-CII Delhi State Office.

Ms Shailaja Chandra in her welcome remarks apprised that NGT has set up a Yamuna Monitoring Committee with the aim of monitoring implementation of the Tribunal's directions for control of pollution in and rejuvenation of river Yamuna. There are as many as 16 stakeholders, mostly Government Departments, public authorities and regulatory bodies involved in the range of activities which are collectively expected to result in the control of pollution and rejuvenation of the river. The incremental progress achieved by different stakeholders is being reported to the NGT through periodic reports which YMC has been submitting to the Tribunal. In one of its recent orders dated 4.9.20 the Tribunal directed the YMC to explore avenues for bringing the industries on board for undertaking CSR activities for river rejuvenation. This meeting was accordingly convened to brainstorm with the industry associations and to discuss ideas for the of revival of the 22kms polluted stretch of the Yamuna

within Delhi which accounts for 75% of the pollution in an entire stretch of over 1270 kilometres.

The purpose of the exchange of ideas was not necessarily to employ CSR funds to implement big ticket projects but to use the opportunity for innovative thinking to deal with at least one of the drains, preferable Shahdara drain or Signature Bridge through technologically sound but rapidly executable strategies. Once the solution is approved, the idea is to route the funds from various Government bodies like DDA, Delhi Pollution Control Committee etc. to execute the same subject to orders of NGT on using funds collected for environment protections.

With 22 drains having direct outfall into the river Yamuna and many more smaller drains in Delhi discharging into those drains, despite being storm water drains only which should normally be dry except during the monsoons, the containment of pollution becomes very difficult. These storm water drains carry sewage and industrial effluent and release stench and toxic gases in the colonies through which they pass causing health hazards besides being a blot on the cleanliness of the Capital city.

As per NGT, they have shared 3 possible solutions:

1. STP: Sewage Treatment plants can be established at the outfall points of the drains into the river and the treatment of waste water treated to the standards prescribed by the Central Pollution Control Board.
2. Waste water treatment through constructed wetlands on the pattern of what has been achieved in the Neela Hauz area of south Delhi and is sought to be done in the South Delhi biodiversity Park by DDA.
3. Phyto remediation- in specific drains which however requires land.

Mr B S Sajwan further added that 22 storm water drains and 200 sub drains release almost 4000 MLD of sewage carrying a very heavy organic load in excess of BOD of 50 mg/l into river Yamuna. With no fresh water flow in the river Yamuna below Wazirabad barrage, the river for almost 8 to 9 month is full of only sewage and industrial waste released by more than 51000 industries in residential areas located within industrial clusters serviced by mostly non-functional CETPs.

The expectation from the industry was to suggest the adoption of internationally proven technologies that have succeeded in treating industrial effluent and domestic sewage elsewhere, to be taken up as models or pilots in selected drains- already referred in paragraph 1. Each drain being different from other in terms of volume of flow, pollutants in the waste water and the configuration of the catchment area, site specific contemporary solutions need

to be tried out. Industry with its outreach and level of exposure can bring in such innovative technologies on the table given an interest in preserving the Yamuna.

The idea is to try multiple solutions or one particular solution e.g. in-situ phyto/bio remediation, constructed wetlands and root zone treatment technologies applied to the main drains and their tributary drains. The YMC can consider recommending that these pilot projects may be supported from funds with CPCB and DPCC.

Ms Chandra also suggested that Delhi Jal Board produces huge quantity of treated wastewater which is just thrown back into the Yamuna. This treated water is generally of good quality, treated at high cost and fit for many non potable uses, but it is released after expensive treatment which is wasteful. This huge quantity of treated water can be directed to be used by industry instead of borewell water. Also, the treated water can be used for water parks and garden as is being done at present in Delhi instead of borewell water. CII can take ownership for projects which achieve this.

Mr Aditya Berlia, Chairman, CII Delhi conveyed to the Core Group that CII is excited about this project. As part of Delhi CII is extremely glad that this conversation is now taking a formal shape and that the CII would be happy to contribute its ideas and experiences towards the same.

CII has a Centre of Excellence, called the **CII Water Institute** which aids Industry Members in water audits, ways to manage water waste etc. and does all this at very nominal/subsidized charges. CII can explore bringing their international expertise in providing solutions/ideas to deal with the industrial waste in the Yamuna Corridor. They can brief YMC and stakeholders on a multitude of technologies used internationally on dealing with wastewater, its treatment and conversion, innovations applied worldwide to sewage water etc. and share their project experiences across India in providing these related services.

CII can also seek inputs from member companies in the water space to share their international experiences or any technologies they have exported/imported in this regard and send in their experts too to join this mission to contribute their ideas. CII can send out a briefing document to these members and seek inputs with a specific call to action.

Most of the industries in Delhi are in clusters and they can be linked through pipelines to a central tanking system in their cluster from where they can use the treated water for uses other than for trees and parks.

CII also needs to drive awareness campaigns about the high quality of treated water amongst industry users as well as common users. Internationally, the treated water is being supplied to homes and people are using it as tap water as good as drinking water.

To build public consciousness, CII would like to recommend from its experience in Air Pollution, testing centers, where real time data was visible to general public to understand the levels of pollution and their contribution in its rise to create some conscious awareness.

CII at Delhi are very excited about Delhi becoming International Tourist Destination especially with Yamuna as its clean and beautiful waterfront and be labelled as International tourist sensation.

It was suggested by Mr. Berlia that CII can form a committee along with field experts and provide terms of reference to them regarding the expectations and plausible outcomes. They can either come back saying that already best techniques have been applied and there's nothing more to add or they can come back with amazing ideas to employ in the field or lastly they come back stating that they have better ideas. In any of the case the YMC can put out that a good faith exercise was put across and share results accordingly. This would be in keeping with NGT's directions.

Mr Arun Mishra mentioned that DPCC as regulator, seeks industry inputs in employing better innovations. Also, many rural clusters have come up around the city and water catchment areas putting pressure on urban settlements especially in terms of increased waste. We need to come together to come up with very feasible solutions. He mentioned that synergized effort from both the govt. and the industry can lead to very fruitful results.

Mr Puneet Kaura stated that it is important to have a good combination of intent, ideas and fund to ensure proper and enthusiastic partnership to pull off something like this. A proper balance will keep all the stakeholders interested in executing the talked about ideas as well.

Based on the inputs available from experts, CII would be happy to play the advisory role in this regard bringing experts in terms of ideas and maintaining economies of scale.

Mr Ankur Bhatia mentioned about International best practices that when reviving a river, its embankments are developed with the purpose of giving access to larger groups of people/public. Unfortunately, Delhi's Yamuna embankments haven't developed, and most parts are encroached. To start with we should focus on developing these embankments and then invite corporate houses to adopt some stretch of it to maintain the embankment and the drains in the area to treat and resupply the water as well. We should bring onboard urban planners to develop these embankments and see and make visible to public the work that goes into cleaning the river. He suggested to look at a similar kind of idea on lines of "Adopt a Heritage", to look at possible partnerships from Industry.

Ms Chandra pointed out that Yamuna has an extensive floodplain, unlike the Sabarmati river and is surrounded by cultivation and dairying activities. Any construction or use of

concrete has been embargoed by NGT. This means that no concrete construction can take place along its banks. Having said that, DDA has developed some green areas alongside the banks, as prescribed but it is not maintained in a way that encourages public participation with oversight and regulation of permissible activities. This is also an area where CII can partner subject to DDAs approval by selecting sites where public can be allowed entry and taught to enjoy but respect the sanctity of the river and its surrounding.

Ms Poonam Dewan apprised that DDA has developed 4 hectares of land alongside the river. The real help required instantly is spreading awareness about it to the public. These 4 hectares are open for public use, yet no one knows about it. We can look at two areas of assistance when involving Industry:

- Adopt a park or rent it
- Spreading Public Awareness through good PR campaigns about the already developed sites.

Mr Berlia has suggested to formulate following joint working group with a team of industry and Government stakeholders to offer feasible solutions to the Yamuna problems. Government can also take the lead to design this partnership to avoid any backlash due to industry involvement.

In response to this, **Ms Chandra** suggested that the 10 DDA projects for biodiversity development on the floodplains could be taken up with the approval of DDA so that a industry assistance/partnership can help expedite and offer oversight with the aim of building public awareness and participation. This would need to be examined by DDA (Attention Ms Poonam Dewan).

Mr Ankit Srivastava apprised the team that there is already some interaction he has had with the CII and in fact some areas for joint effort have been identified. He also felt that more than CSR funding, Industry through the CII can help Delhi Government in the following areas:

- CII support in identifying right Technology to be employed in executing these ideas.
- CII Support could help design the right Advisory keeping in mind the fast-changing norms by the pollution control board. The advisory must keep in mind the future possibilities of sustaining whatever is achieved.

Ms Seema Arora concluded that CII would be happy to collaborate with the Government in formalizing a committee of passionate industry stakeholders interested in the area alongside the Government and provide advisory services wherever required in the project. CII can bring experts on board to ideate on the same.

The minutes would be shared with DDA and the Department of Environment and Forests of GNCT and once CII reverts with specifics, YMC will set up discussions at the appropriate fora.

1. For inspection of the drains DPCC would coordinate with the team from CII. This would help identify the technologies and partners that hold promise.
2. For DDA projects the CII team would contact Smt. Poonam Dewan to take this forward subject to internal approvals.
3. For awareness building CII would give a plan for what they consider feasible and productive. On receipt, YMC would share the plan with different Departments depending on the areas selected- educational institutions, cultural and environmental bodies or any other groups.


 Shailaja Chandra, 15/7/20
 Member,
 Monitoring Committee for Yamuna


 B.S. Sajwan,
 Member,
 Monitoring Committee for Yamuna

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Related to Chapter 11: Industry Interface



Meeting with Yamuna Monitoring Committee

20th October 2020, 11:00 – 12:30 Hours
Through Virtual Platform (Zoom)

Minutes of the Meeting

Proceedings

The meeting started with introduction of all the members.

Ms Shailaja Chandra started the meeting with briefing about the Yamuna Monitoring Committee (YMC). Yamuna Monitoring Committee was set by National Green Tribunal (NGT). The committee has produced 7 reports on contribution of 16 stakeholders for cleaning of River Yamuna which includes industry in Delhi as well. The committee is also looking at the wastewater coming from Haryana and Uttar Pradesh draining into Najafgarh and Shahdara Drain, respectively.

The YMC is looking for possibilities as follows:

1. Industry to suggest wastewater treatment technological innovations for Signature bridge and Shahdara Drain where polluted water is getting mixed with clean water. Technologies such as bioremediation, phytoremediation, creation of wetlands etc. which can be used for many other drains.
2. The industry can help CETPs in conforming zones of Delhi to prevent their discharge into the river through technology or any other means.
3. Make a flagship project for diversion and use of treated wastewater for non-potable purposes which as of now is discharged into filthy drains and rivers.

NGT has come up with 16 orders which need to be carried out for cleaning and rejuvenation of River Yamuna. The activities which need to be taken up include flood plains protection and rejuvenation, environmental flows, setting up of Sewage Treatment Plants (STPs), industrial effluent control, use of treated wastewater and others.

Mr Sajwan mentioned about the status of wastewater generation and wastewater treatment in Delhi. Delhi generates about 3500 million litres of sewage per day and only about 60-70 percent of the sewage is treated. Delhi also faces problems of quality of treated wastewater generated. There are 13 CETPs in Delhi catering to 30000 industries in 17 clusters which are water consuming. Delhi Jal Board treats 570 million gallons of water per day and only about 80-90 gallons of water is reused, and rest of the treated water is dumped into drains. Delhi has around 201 natural storm water drains which ideally should carry storm water and not sewage and effluent. Huge amount of *Puja samagri* is released into these drains.

To address these issues (both large and local level issues), he suggested two approaches. First one is innovation approach – industries can propose different innovation technologies and activities to be implemented. Second one is using conventional method, which is setting up of STPs, CETPs etc.

Cleaning and rejuvenating these drains will not only clean these water bodies but will also rejuvenate groundwater and create better surroundings.

Mr Dilip Chenoy welcomed all the officials from YMC and other government agencies. He mentioned that these interactions and collaborations with YMC will lead to actions on ground. Some flagships projects will be implemented which will attract more organizations to involve in the cleaning of River Yamuna.

Way Forward

Mr Mukund Vasudevan, Co-Chair, FICCI Water Mission suggested areas where FICCI members can contribute:

1. **Sewage Treatment Plants:** work around Hybrid PPP models – where infrastructure, water EPC companies can participate.
2. **Recycling treated sewage:** Infrastructure needs to be developed for treating sewage as well as for transporting the treated sewage water, where private players can help. To encourage this, incentives should be provided to industry for use of treated wastewater instead of freshwater (sewage water to be cheaper than fresh water).
3. **Industrial Effluent:** Incentives to be provided to MSMEs for treating sewage water.
4. **Monitoring mechanism** – There is need to set up a robust monitoring mechanism using remote sensing and IOT solutions which can be economically set up in each industry and can be easily monitored by state or central pollution control boards. It can identify hot spots of leakages.
5. **CSR in catchment:** Industry can own catchments of Yamuna and improve it, including biodiversity around these areas, and small-scale recycling. Treat it as a basin that feeds the Yamuna.

Suggestions

- Water should be declared as a resource (Maharashtra has declared water as resource).
- Many existing digestors and STPs are available in Delhi which can be used for decomposing all the *puja samagri* and other organic waste and can be used for gas production and converting it to fuel such as compressed biogas, etc.
- Rejuvenating water bodies: Wastewater can be taken to these water bodies, treated and reused for various applications.
- Direct injection of treated wastewater into the groundwater.
- Encouraging Public Private Partnerships – Namami Gange models can be implemented for Yamuna River
- Rejuvenation of water bodies along the River Yamuna, in the NCR regions and beyond should be given to group of industries (CSR or non-CSR initiatives) on priority basis and develop successful models to be built upon.
- Encouragement and promotion of new technologies
- Funding agencies should be encouraged to participate whether it is sewage treatment, recycling, pipes, monitoring etc. and a framework should be developed for financial aspects, such as attracting private investment by giving required assurances and bank guarantees
- 3 Working Groups to be formed (Visit to these sites would be the first step of these groups):
 - Sewage Treatment
 - Recycle – Technology, usage of treated wastewater and pricing of treated wastewater
 - Facilitation of CSR projects
- A paper on the final recommendations of the 3 working groups would be prepared.

Agenda

11:00 AM – 11:20 AM	Opening Remarks and Context Setting Ms Shailaja Chandra Member, Monitoring Committee for Yamuna Mr B S Sajwan Member, Monitoring Committee for Yamuna
11:20 AM – 11:25 AM	Welcome Remarks Mr Dilip Chenoy Secretary General, FICCI
11:25 AM – 11:30 AM	Introductory Remarks Mr Mukund Vasudevan Co-Chair, FICCI Water Mission Managing Director & Country Head, Ecolab India
11:30 AM – 11:35 AM	Introduction of Members
11:35 AM – 12:35 PM	Discussion Moderated by Mr Mukund Vasudevan, Co-Chair, FICCI Water Mission & Managing Director & Country Head, Ecolab India
12:25 PM – 12:30 PM	Closing Remarks Ms Rita Roy Choudhury Assistant Secretary General, FICCI

List of participants

S. No.	Name	Organisation
1	Ms Shailaja Chandra	Member, YPMC
2	Mr B S Sajwan	Member, YPMC
3	Dr K S Jayachandran	Member Secretary, DPCC
4	Ms Poonam Dewan	Addl. Commissioner (Landscape)
5	Mr R S Tyagi	Expert Consultant
6	Mr Ankit Srivastava	Consultant (Water Bodies) Hydraulics, GNCTD
7	Mr D K Singh	Sr. Env. Engineer & Incharge (WMC-II)
8	Mr Vishal Gandhi	Scientist 'D', CPCB
9	Mr Naushad Ahmad	System Analyst
10	Mr Mukund Vasudevan	Managing Director and Country Head, Ecolab India Co-Chair, FICCI Water Mission
11	Mr Adwait Hebbar	Head CSR, Indusind Bank
12	Ms Ridhi Bhatia	Zonal Head CSR, Indusind Bank
13	Ms Sangeeta Thakral	Head CSR & Sustainability, Diageo
14	Mr Rohan Mishra	Coca Cola
15	Mr Jitendra Chaudhary	Head CSR, Arvind Limited
16	Mr Rajneesh Chopra	Global Head - Business Development, Va Tech Wabag
17	Mr Sourav Daspatnaik	Managing Director, Swach Environment Private Limited
18	Mr Dilip Chenoy	Secretary General, FICCI

S. No.	Name	Organisation
19	Ms Rita Roy Choudhury	Assistant Secretary General, FICCI
20	Ms Uma Seth	Senior Director and Head, CSR, Diversity & Inclusion, FICCI
21	Ms Kirtika Arora	Senior Assistant Director, FICCI

Annexure-C-12/1

Related to Chapter 12-State of Haryana and Pollution of the Yamuna

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/482

Dated: 10.9.2020

**Subject: Review Meeting under the Chairmanship of the Chief Secretary Haryana to
Review the Progress of Projects for control of pollution caused by sewage and
industrial effluent discharged in drains meeting the River Yamuna.**

Dear Smt. Keshni Anand,

We are enclosing a record note of discussions held on 8.9.20 under your Chairmanship. Thank you for a productive meeting. Minutes may be drawn up at your end but YMC will reflect on the attached PPT which can be commented on in the minutes issued by Haryana officers in due course. It is better to have the HYMC Monitoring Committee associated when preparing comments as they can update on the ground status making the comments serve a purpose and not merely recounting the official version.

We are putting up the summary of discussions and the PPT on our website but adding that the progress as stated by Haryana state officials at the meeting will be uploaded when received officially.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. Ms. Keshni Anand Arora, Chief Secretary, Govt of Haryana, Chandigarh

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
Telephone No: 011-24609270
Email id: rymonitoringcommittee@gmail.com

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/

Dated: 10.9.2020

Subject: Review Meeting under the Chairmanship of the Chief Secretary Haryana to Review the Progress of Projects for control of pollution caused by sewage and industrial effluent discharged in drains meeting the River Yamuna.

A meeting was held on 8.9.20 under the Chairmanship of the Chief Secretary of Government of Haryana State to mainly review the progress of construction of STPs, conveyance systems as well as establishment of CETPs to treat industrial discharge. The meeting was conducted on video and was attended by senior officers of the state government as given in the attached list. On the side of the Yamuna Monitoring Committee Ms. Shailaja Chandra and Shri B.S.Sajwan, Members of the NGT appointed Committee attended the meeting and presented the findings based on reports collected from CPCB and the Haryana Monitoring Committee comprising Shri Y.K. Garg and Dr M.K.P.K Das, Members HYMC.

The YMC took the Chief Secretary through a detailed presentation which indicated the progress in respect of the work being done in Haryana, the present status and the major milestones which are getting delayed. The positive takeaway was that substantial progress had been made in decision making connected with the construction of STPs/CETPs. However the timelines on the side of award of work and construction were being exceeded and needed to be compressed and temporary alternatives found to make substantial difference to the huge pollution that was entering the River Yamuna.

The position in respect of STPs/Conveyance systems/CETPs was reviewed town by town keeping in mind the CPCB's findings on continuing high levels of BOD & COD which were placed before the Chief Secretary by the YMC. A number of projects are expected to be commissioned only by 2021 and 2022. The YMC noted that the Chief Secretary was fully aware of progress made on the infrastructure and fund allocation fronts which was to be appreciated but it had to translate into lowering the pollution in drains which had not happened. There was therefore an urgent need to compress the target dates for completion

of ongoing Projects and commencement of new projects. The YMC drew attention appraised to the Niti Ayog guidelines on simplifying the procurement and project implementation processes which had been drawn up under the aegis of NGT. If these were adopted it could help compress the timelines considerably in respect of new projects. NGT had already been in its orders directed the use of such strategies.

The Chief Secretary was also appraised that since a number of STPs, CETPs and the sewer network for conveyance of sewage are several and are likely to get delayed with some projects even stretching into 2022, the State authorities needed to adopt a parallel Plan B for implementing a Septage management policy in unsewered areas in the interregnum. This had been repeatedly advised by the YMC in earlier meetings with Haryana Government officers but was not being heeded despite a policy from Central Government and by the State having been notified. The steps that NGT has directed be taken include :

- (I) Septage from the pit latrines is to be collected by registered private vendors and transported to SPS/STPs with weighment and daily recording and
- (II) undertaking in-situ phyto/bio-remediation of waste water where feasible.

The Chief Secretary assured that the available policy directions for implementing septage management would be got implemented and would be supported by effective enforcement. The regulations may need to be revisited. The collection and depositing of septage which has been done successfully in a state like Tamil Nadu and the Municipal corporations of Hyderabad, Trichy and are under implementation in Delhi too need to be emulated or modified to suit local conditions.

It was also confirmed at the meeting that in- situ phyto/bio remediation, on a pilot scale had commenced in Gurugram, and based on the outcome it will be extended to other drains. This was encouraging.

YMC lauded the policy decision taken by the state government to incentivise farmers to switch over from water intensive crops like paddy to other crops to alternate crops by offering cash incentives and price support. The state government also informed that it had plans to use the treated waste water for irrigation . Both these policy initiatives will have a positive bearing on the conservation of water and rejuvenation of river Yamuna. But they

would need to be pursued and the incremental progress monitored and related to water conservation outcomes.

YMC requested the Chief Secretary to provide a status report on the progress achieved on the acreage by location which had been and is proposed to be diverted to alternative crops and also to quantify the treated waste water being used for agriculture as a result of this initiative. This would be included in the next report of YMC being submitted to NGT.

A copy of the PowerPoint Presentation is attached.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

Encl: as above

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
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List of participants of meeting with Principal River Yamuna Monitoring Committee under the Chairmanship of Smt. Keshni Anand Arora, IAS, Chief Secretary, Government of Haryana held on 08.09.2020 at 15:30 Hrs, CS Main Committee Room, Main Secretariat, Chandigarh to review the progress of Yamuna Action Plan.

S. No.	Name and Designation
1.	Smt. Keshni Anand Arora, IAS, Chief Secretary, Haryana, Chandigarh
2.	Sh. V.S.Kundu, IAS, CEO, GMDA, Gurugram
3.	Sh. Alok Nigam, IAS, ACS, Environment Department, Haryana, Chandigarh
4.	Sh. Devender Singh, IAS, ACS, PHED & Irrigation Department, Haryana, Chandigarh
5.	Sh. S.N.Roy, IAS, ACS, Urban Local Bodies, Haryana, Chandigarh
6.	Sh. Sudhir Rajpal, IAS, PS, Panchayat Department, Haryana Chandigarh
7.	Sh. Anurag Aggarwal, IAS, MD, HSIIDC, Panchkula
8.	Sh. Ashok Kheterpal, Chairman, HSPCB, Panchkula
9.	Sh. S. Naryanan, IAS, Member Secretary, HSPCB, Panchkula
10.	Sh. Pankaj Yadav, IAS, Chief Administrator, HSVP, Panchkula
11.	Sh. Manpal Singh, EIC, PHED, Panchkula.
12.	Sh. P.K.Garg, GM, HSIIDC, Panchkula
13.	Sh. D.R.Bhaskar, CE, ULBD, Panchkula
14.	Sh. V.K.Kalra, Chief Engineer, HSVP, Panchkula
15.	Sh. J.P.Singh, SEE, HSPCB, Panchkula
16.	Sh. Ranbir Singh, XEN, ULBD, Panchkula
17.	Sh. A.K.Bhardwaj, DA/ Chief Secretary Office, Haryana, Chandigarh.

3rd Review Meeting Under the Chairmanship of Chief Secretary, Haryana along with NGT Appointed YMC

**With inputs based on reports and field visits undertaken
by the Haryana Monitoring Committee**

Date 08.09.2020

Via Video Conferencing

Important CPCB Findings on Drain & River Pollution given to YMC

- Despite Haryana having availability of 90% sewage treatment and 83% of this capacity reported to be getting utilized, the BOD of water flowing through drains into the Yamuna is **reported to be very high**.
- **The quantity and quality of treatment is unsatisfactory** and substantial quantity of untreated sewage is flowing in the drains. Immediate action is required through:
 - (I) interception of drains to ensure that untreated sewage is prevented from flowing into drains and subsequently into rivers.
 - (II) In May 2020, flow in Yamuna River before Dhanua Escape was indicated as 367.5 MLD. However, the e-flow at this point (as per Hon'ble Supreme Court order) should be minimum 10 Cumces (864 MLD).
- The flow in river needs to be got inspected and the situation improved.

Orders of Hon'ble NGT in Original Application Number 6/2012 Manoj Mishra v/s Union of India and Ors. Dated 06.07.2020

The Hon'ble NGT after considering the final Reports submitted by YMC dated 29.06.2020 directed the State of Haryana as follows in the order dated 06.07.2020:

21 (b) *Let the concerned authorities in Haryana take further action in terms of the recommendations of the Committee as well as earlier directions of this Tribunal dated 13.01.2015, as updated vide earlier orders dated 11.09.2019 and 05.03.2020.*

The compliance may be overseen by the Chief Secretaries concerned.

24. *As per procedure currently being followed, the YMC furnishes its quarterly report with a copy to the Chief Secretaries of Delhi, Haryana and UP and the DDA/any other statutory body. Their response, if any, is required to be given to the Committee and the Committee gives its observations thereon. We find that some of the parties mechanically file their action taken reports even when there is no contest to the recommendations of the Committee as such. The role of the Delhi, Haryana, UP and DDA/other authorities in Delhi in presentation before this Tribunal is limited to their response, if any, to the desirability of recommendations of the Committee and not of mechanically filing action taken reports which have already been considered by the Committee and on which the recommendations have been made.*

Environmental standards for BOD is 30 and for COD it is 250. Reports from CPCB, DPCC & HYMC show huge excess of pollution load

SNo.	Name of the drain	Flow (MLD)	BOD (mg/L)	COD (mg/L)	Town /City responsible
1	Dhanaura Escape	110	630	1970	Yamuna Nagar, Jagadhari
2	Drain no. 2	120	90	297	Sonipat
3	Drain no. 6	36	215	484	Panipat
4	Leg 1	12	48	138	Gurugram
5	Leg 2	45	58	162	Gurugram
6	Badshahpur(L3)	395	62	188	Gurugram
7	Budhia Nallah	55			Faridabad
8	Gauchi Nallah	42			Faridabad
Total		815			

Bird's Eye view of the Progress of Sewage Treatment in Haryana State.

- Within the Yamuna stretch, 18 STPs with 177 MLD cumulative capacity are under construction.
- 16 STPs with capacity of 162 MLD capacity are due for completion by December' 2020.
- Among the projects in the pipeline, 180 MLD capacity STPs at Faridabad will exceed the NGT mandated timelines as works are yet to be tendered.
- This is a critical area as Faridabad has no functional STP.
- Between January review and September 2020 only 1.2% sewage has been channelized for treatment (Just 15 MLD).
- This is negligible considering the passage of 9 months.

Physical and Financial Progress on Capital Works related to Domestic Sewage From 10.01.2020 to now.

- Operational deficiencies which affected 46 STPs have been rectified and confirmed by HPCB. This will be checked randomly by HYMC but it is encouraging.
- 3 New STPs at Yamuna Nagar and 2 STPs at Karnal commissioned. Will add 70 MLD capacity.
- Financial Approval accorded for laying an additional sewer line (117 KM) to divert sewage and also to construct 2 New STPs at Panipat.
- Work awarded for the replacement of settled trunk sewer carrying effluent to STPs at Rathdana and Kakroi Road Sonapat . Completion date, March 2021.
- GMDA is constructing 3 STPs (25 MLD at Manesar, 20 MLD at Jhajgarh and 100 MLD at Dhanwapur)
- According to HYMC the progress is OK.
- Municipal Corporation Faridabad is constructing 2 STPs (80 MLD at Mirzapur and 100 MLD at Partapgarh, Faridabad).
- According to HYMC the progress is OK.

Matters Needing Attention of Chief Secretary

- The progress of Construction of the Sewer Conveyance Network (600 KM) is very slow in 7 major cities e.g. Yamuna Nagar, Panipat, Karnal, Sonapat, Faridabad, Rohtak and Palwal. In the absence of the sewage conveyance systems the capacity of the existing Sewage Treatment Plants is unutilised. Delay is 12 Months (Except Panipat Town where work has not yet started) as compared to the time lines assigned when work was awarded.
- Construction of 30 Nos. New STPs is very slow and may not be completed by 31.12.2020. (Details given in next slide.)
- Presently, 521 MLD untreated effluent is being discharge into River Yamuna from different towns. This is HUGE and there is no reduction over the last 2 years.
- During a recent inspection it was observed that SOPs prepared for operation and maintenance of STPs are not being followed at Sonapat and Panipat. Ignoring checklists and SOPs should be a black mark against the project in – charge. Details of those not following SOPs will be shared with NGT.

ACTION REQUIRED TO BE TAKEN

- Administrative Secretaries of ULB, HSVP, PHED and GMDA need to personally monitor the progress of diversion of sewers in 7 Major Cities and construction of new STPs.

Matters Needing Attention of Chief Secretary (Contd.)

Under Construction STPs			Proposed STPs			
Name and Address of the STPs	% Work done	Likely Date of completion	Sr. No.	Name and Address	Status	Likely Date of completion
10 MLD STP at Baddimra, Yamuna Nagar by PHED	80	30.09.2020	18	25 MLD STP at Panipat	Work not started	31.12.2022
30 MLD STP at Transport Nagar, Karnal, ULBD	95	30.09.2020	19	15 MLD STP at Panipat	Work not started	31.12.2022
8 MLD STP Shiv Colony, Karnal, ULBD	54	30.10.2020	20	15 MLD STP at Sonapat/Alemaj by HSVP	Work not started	30.06.2021
20 MLD STP at Ptooshgarh, Karnal, ULBD	55	31.12.2020	21	3 MLD STP at Murthal, ULBD	Work not started	30.06.2021
4 MLD STP at Indri, Karnal by PHED	60	31.12.2020	22	10 MLD STP Rohtak by HSVP	Work not started	31.07.2021
10 MLD STP at Singhpura, Rohtak by ULBD	72	31.12.2020	23	30 MLD STP at Faridabad by HSVP	Work not started	31.12.2021
12 MLD STP at Dahi Bohar, Rohtak by ULBD	50	15.08.2021	24	80 MLD STP at Mirzapur, Faridabad by ULBD	Work not started	31.07.2022
15 MLD STP at Peer Bodhi, Rohtak by ULBD	8	31.09.2021	25	100 MLD STP at Partagarh, Faridabad by ULBD	Work not started	31.07.2022
2 MLD STP at Serai by PHED	8	30.06.2021	26	0.5 MLD STP at Dhankot, Gurugram by GMDA	Work not started	30.09.2021
7.5 MLD STP at Faridabad by ULBD	70	30.09.2020	27	2 MLD STP at Bagghem by GMDA	Work not started	30.09.2021
10 MLD STP at Sector 21, Faridabad by ULBD	8	31.03.2021	28	20 MLD STP at Jhazgarh by GMDA	Work not started	31.12.2021
2.5 MLD STP at Ferozpur, Palwal by ULBD	33	31.12.2020	29	25 MLD STP at Manesar and Naharpur Kasan, Gurugram by GMDA	Work not started	31.12.2022
15 MLD STP at Jodhpur Road, Palwal by ULBD	33	31.12.2020	30	100 MLD STP at Dhansapur by GMDA	Work not started	31.12.2022
10 MLD STP at Kothiwar (against Ferozpur, Palwal) by ULBD	18	31.12.2020				
1 MLD STP at Sarai Alawari, Gurgaon by ULBD	95	31.10.2020				
1 MLD STP at Gadhri Kalan, Gurgaon by ULBD	90	31.10.2020				
2 MLD STP at Mohmadpur Jhana, Gurgaon by ULBD	50	31.12.2020				

Treatment of Industrial Effluent

- HSHDC has decided to install 2 CETPs (20 MLD at Jagadhri & 10 MLD at Yamuna Nagar) to treat the untreated industrial waste generated from non conforming industrial areas. Land and executing agency has to be decided quickly as effluent from Jagadhri Yamuna Nagar Town is being discharged into River Yamuna through the Ditch Drain. This is against the directions of NGT.
- The MCF and HSHDC are constructing 3 new CETPs at Faridabad (50 MLD at Partapgarh, 25 MLD at Mirzapur and 15 MLD at Badshapur) along with laying a separate sewer line for carrying industrial waste. The land needed for the CETPs has been identified and timelines for the major milestones firmed up. YMC will be reporting action taken and Chief Secretary is requested to give firm directions to the concerned officers.
- The HSVP and HSHDC are upgrading 1 CETP at Panipat and 4 existing CETPs at Sonapat respectively. Target date for completion is 31.12.22 which is far beyond NGT's orders. This needs to be compressed.
- The HSVP has allotted work for construction of new 6 MLD CETP for treating industrial effluent generated from industries operating in Kundli Area of Sonapat Town after obtaining CLU from Competent Authority.
- The GMDA has decided to install 4 CETPs (20 MLD at Sector 34, 9 MLD at Sector 37, 1.5 MLD at Sector 18 and 0.75 MLD at IDC Sector 14 Gurugram) but no action plan is available. This shows that a lot of action has still to be taken and a direction is needed to expedite it.
- Construction of New CETPs at Kundli, Sonapat, Faridabad, Bahadurgarh and Gurugram have not yet started. Partially treated/untreated Industrial Effluent is entering the Sewage System which is holding back the treatment of domestic sewage.

Treatment of Industrial Effluent (Contd)

Matters Needing Attention of Chief Secretary

The continuing pollution adds up to 140 MLD which enters the Yamuna through 11 Drains.

- This was to be stopped as per NGTs orders.
- The fact that there has been no reduction in pollution load, which need to be placed before NGT. In the YMC's next report.
- Departments and officers of Industry, ULB and GMDA to review the progress frequently and use HYMC's inputs to help identify the bottlenecks.

Pollution in Drain Number 8

Problem:

- Increasing pollution load in River Yamuna is caused by mixing of discharge from Drain No. 6 and the Channel carrying effluent from Kundli CETP into Diversion Drain No. 8 at Sonapat.

Solutions Noted but needing intensive follow -up

1. HSIIDC is depositing Rs. 6.5 Crore with the Irrigation Department Haryana to construct a conduit carriage for disposing treated effluent from CETP of Kundli Industrial Area, to stop discharge of effluent from Kundli CETP into Diversion Drain No. 8 by diverting it to an abandoned Drain No. 6.
2. Irrigation Department had sent proposal for constructing 7.3 KM conduit carriage (at the cost of approximately Rs. 24 Crore). This must be approved and work started as this is polluting drinking water.
3. Due to mixing of discharge from drain no. 6 and Channel carrying effluent from Kundli CETP into Diversion Drain No. 8 at Sonapat, the water treatment plant at Wazirpur has been affected. This is continuing negligence which must be stopped and fast track approvals are needed for the conduit carriage. Administrative sanction and financial approval has to be given to Irrigation Department with a direction to complete the construction of 9.8 KM conduit carriage within 6 months.
4. Action taken will be reported to NGT in November for which reports on progress will be collected by HYMC in September, October and early November.

Annexure-C-13/1

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
 APPOINTED BY HON'BLE NGT
 ROOM NO. 58, INDIA INTERNATIONAL CENTRE
 40, MAX MUELLER MARG, LODHI ESTATE
 NEW DELHI – 110003

No. YPMC/2020/484

Dated: 11.9.2020

Subject: Meeting to review the implementation of NGT's directions pertaining to drains in the state of Uttar Pradesh causing pollution as related to OA no. 06/2017-Manoj Mishra vs. UOI and ors with particular reference to the latest NGT orders dated 5.3.20 and 6.7.20

Dear Chief Secretary Tiwari,

Hon'ble NGT vide order dated 26.7.18 had inter alia directed that YMC shall coordinate with the State of Uttar Pradesh to overcome pollution in the River Yamuna caused by sewage and industrial effluent emanating from the cities/towns of Uttar Pradesh. The YMC has been handicapped in conducting monitoring meetings and this letter puts things in context.

NGT Order dated 6.7.20

Hon'ble NGT after considering the Final Report of YMC accepted its recommendations and issued directions which required different stakeholders to continue working with the YMC and submit status reports in compliance of various directions issued by the Tribunal. The relevant portion of NGT's order dated 6.7.20 is as under:

"We have carefully perused the recommendations of the YMC. We are in agreement with the same. The directions proposed are essential for compliance of orders of this Tribunal and environmental norms.

Let the concerned authorities in Delhi, Haryana and UP to take further action in terms of the recommendations of the Committee as well as earlier directions of this Tribunal dated 13.01.2015, as updated vide earlier orders dated 11.09.2019 and 05.03.2020. The compliance may be overseen by the Chief Secretaries concerned."

The recommendations of the YMC contained in its Final Report dated 29.6.20 so far as UP is concerned are as follows:

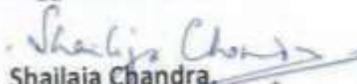
1. *"Independent assessment of flow in all the drains reaching Yamuna be undertaken within next two months and to submit an action plan for setting up STPs to bridge the gap with definite and monitorable timelines.*
2. *Out of 427 MLD of treatment capacity in Sahibabad and Loni STPs only 80 MLD capacity complies with standards. YMC had recommended that the UP Jal Nigam, Ghaziabad MDA and Ghaziabad Municipal Corporations should upgrade/rehabilitate the STPs to meet the revised 137 environmental standards of TSS/BOD: 10/10 mg/L within next two years and to submit an Action plan to achieve this within next three months. The status of preparing the Action Plan by the 3 agencies needs review to enable ensuing action to be taken.*
3. *Stoppage of all sewage from sewerred areas of Sahibabad Banthala and Indira Puri as per the Action Plan of UP Urban Development Department to adhere to the timeline of December 2020 given by the State.*
4. *Implementation of the Septage management by December 20 in all areas which are not sewerred.*
5. *UPSIIDC was to ensure setting up CETPs and ensure their proper functioning. UPPCB needed to have put in place policy for realizations in case the industries failed to pay. As requested by the UP PCB, NGT has supported the suggestion to realize the arrears of unpaid EC as arrears of land revenue. YMC has to review whether action on this has commenced.*
6. *The YMC had told NGT that the Committee was unable to comment on the omnibus compendium submitted by UP Urban Development Department seeking NMCG funding for undertaking Phyto and Bio remediation. The reply of UP on in-situ bio/phyto remediation is vague. YMC needs to know whether the feasible.*
7. *The UP Irrigation Engineer in Chief and the Principal Secretary Irrigation had undertaken to see that the inordinate delay in paying DDA Rs 35 crores for undertaking the rejuvenation of the flood plains on the UP side as a deposit work which was promised on several occasions since December 2018 would be overcome and the sanction got issued by November 2019 but the matter has not made any headway in the last 9 months when only one month's time had been sought".*

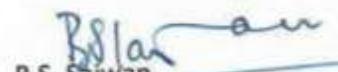
Fighting Covid19 pandemic and the disruption caused due to lockdowns may have slowed down the progress on implementation of various directions of NGT, but

polluting drains cannot also continue for years together in the face of NGT's specific directions. Projects connected with abatement of pollution in river Yamuna emanating from towns of Ghaziabad, Shahabad, Loni and Noida in Uttar Pradesh in the Delhi stretch of the river need to be completed . In the absence of a state specific Monitoring Committee for UP to coordinate with this Committee as ordered by the NGT vide its order of 26.7.20, the YMC is handicapped to periodically review the progress achieved by the various Departments/authorities of the state government.

In the light of this YMC requests for a one hour meeting with you to review the progress achieved. We have never had the benefit of a meeting being Chaired by you and attended by the YMC and judging from the experience of Haryana and Delhi where 3 meetings with Haryana and 5 meetings with CS Delhi have been held, a lot falls into place under the CS's leadership. We request you to kindly ask the Principal Secretaries of Environment, Urban Development, Industries and Irrigation and the Chairman and Member Secretary of UP PCB to attend a meeting under your Chairmanship through Video Conferencing. It will require no more than one hour of your time and can be held on any date and time convenient to you in the last week of September 20.

We will appreciate receiving a confirmation of your agreeing to hold the meeting as suggested above.


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To: Shri R.K.Tiwari, Chief Secretary
Govt of Uttar Pradesh,

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi - 110003
Telephone No: 011- 24609270
Email id: rymonitoringcommittee@gmail.com

Annexure-C-13/2

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/ 399

Date: 7 /1/2020

Subject: Record note of discussion held with senior officers of UP State concerning pollution in the drains in and around Ghaziabad discharging into the Shahdara drain leading to River Yamuna

The purpose of the meeting was to review the progress of directions of NGT with special reference to pollution caused by sewage and industrial discharge and steps being taken to upgrade and set up new STPs, maintain the sewerage system and introduce bio/phytoremediation wherever needed. The presence of the senior most officers had been sought because in previous meetings no officer was willing to make any commitment on the upcoming plans and time lines as directed by NGT. The presence of the Principal Secretary Urban Development and the Principal Secretary, (Environment & Forests) who was also Chairman of the UPPCB was welcomed.

At the outset the Yamuna Monitoring Committee highlighted the following issues:

1. The recent report of CPCB, the statutory regulator, in respect of the 3 drains at Sahibabad, Loni and Indrapuri which showed high discharge of effluent into the Shahdara drain.
2. The fact that the report of the CPCB and the Expert engaged by the YMC Sh. RS Tyagi had shown the presence of both industrial effluent and sewage and the need for upgrading the STPs to correspond to the discharge.
3. Steps taken by the UPPCB to contain the problem.
4. Future plans, milestones and timelines in respect of NGT's orders.

The meeting started with CPCB giving an overall view of the presence of the pollutants referring both to sewage and Industrial effluent. Thereafter, the Principal Secretary (UD), Government of Uttar Pradesh informed the YMC that they had engaged M/s VA TECH WABAG LTD. to take responsibility for the entire operation, maintenance and management of the sewerage

treatment system in Ghaziabad district. The contract has been made operational from 16.12.19 and would continue for 10 years. As a result of the measure, the diffusion of responsibility due to multiplicity of agencies which was holding back the progress, has been overcome. The major component of the work assigned to this agency insofar as the specific area being monitored by YMC is concerned comprised of the following:

- a. Operation and maintenance of all STPs and main pumping stations and intermediate pumping stations.
- b. Major replacement of the system (STPs)
- c. Maintenance of sewer networks and rising mains.
- d. Establishing online 24x7 public complaints redressal system to attend and dispose the complaints received from the public within stipulated period. (such as overflow of sewer, manhole cleaning and repair etc.)

The representative of the SMCG, UP Sh. R. K. Chaudhary was made nodally in-charge of feeding the YMC with full details which can be incorporated in the report which should be supplied by 10.1.2020.

Urban Development/Septage Management

1. The Principal Secretary (UD) on a query by the YMC on the target date by which sewage flow in the Sahibabad drain will be completed, trapped and treated in STPs, stated that with the appointment of M/s VA TECH WABAG LTD. and upgradation at Loni which is under way, it is expected that in about six months' time all the sewage flowing from the State of UP into Sahibabad drain will be trapped and treated.
2. On the implementation of Septage Management, the Principal Secretary stated that septage management plan has already been approved for Loni and Sahibabad areas and the actual commencement of the septage collection and treatment should happen by Nov. 2020. Such a long time line is not acceptable to YMC and must be compressed and a revised timeline informed to the YMC for incorporating in the report to be submitted by YMC by 31.1.2020.

3. On phyto/bio remediation Principal Secretary (UD) informed that the State of UP had undertaken bio/phytoremediation work in certain areas during Kumbh Mela at Prayagraj in technical collaboration with NEERI. The results have been encouraging and the state has submitted a detailed proposal for all the drains which are unlikely to be connected to the STP, for funding through NMCG. The YMC was also informed that in some of the drains the work of phytoremediation was initiated and the same has been continued even after the Kumbh Mela and that there is some improvement in the quality of waste water effluent in the drain. YMC said that the phyto remediation had been ordered by NGT and at least for the 3 drains under discussion the State should work out the timelines for execution. The general response given covering an omnibus project and funding by NMCG goes beyond the specific scope of what the YMC was expected to monitor which related specifically to pollution in the Sahibabad, Loni and Indrapuri drains at Ghaziabad. The timelines for abatement of pollution in these drains may be given to the YMC by 15.1.2020 as otherwise the observations on continuing pollution based on the CPCB report will be included in the report.
4. On a query by YMC, the Regional Officer of UPPCB informed that in the absence of a laboratory to test metals and heavy metals, UPPCB is only testing 4 parameters, namely, pH, TSS, BOD and COD in the CETPs installed at Ghaziabad. This is highly unsatisfactory considering that there are as many as 30 parameters at serial number 55 of Environment (Protection) Rules 1986 which are required to be monitored by the Pollution Control Boards who had to regularly assess the performance of CETPs. YMC asked the CPCB to carry out a technical audit on testing protocol for the UPPCB.

Pollution caused by Industries in the Ghaziabad area.

In respect of this particular area the Principal Secretary (Industries) stated that there were 36 industries in conforming areas (88 in Loni area and 148 in Sahibabad area) and 331 in the non-conforming area (295 in Loni area and 36 in Sahibabad area.) The action as follows has been taken:

Conforming Areas

- a. An Environmental compensation of Rs. 2, 48, 75,016 have been imposed against industries in confirming areas (EC of Rs. 45, 75,016 against 6 defaulting industries in Loni area since August 2019 and Rs2.03 crore on 27 industries in Sahibabad area since June 2019.
Show cause notices have been to 20 units and closure order against 4 units have been issued since June 2019.

Non-conforming Area

- a. 295 illegal industries have either been closed down/demolished and a fine of Rs. 1, 34,500 has been imposed in Loni area since August 2019.
- b. A joint team of district administration, electricity, land owning agency and UPPCB has already closed/sealed 36 such industries in Sahibabad area since August 2019.

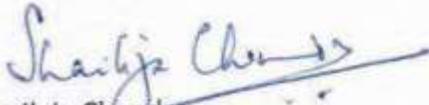
The CPCB was asked to check on the facts provided from the point of view of control of effluent discharge and send a report by 15.1.2020.

Irrigation and Flood Department –ATN on last meeting

The Engineer- in- Chief Irrigation UP, on a query by the YMC, informed that the State Finance Department has concurred in the proposal to transfer Rs 35 crores for the Floodplain development to DDA and soon approval of the State government will be obtained and communicated to the DDA. YMC asked the E-in-C to report the progress in about a fortnight so as to inform the progress to the NGT by 31.1.2020.

This is a brief aid memoir only and a comprehensive report will be given in January Report of the YMC. The material given above needs to be supplemented with up- to- date information to avoid old data being transmitted to NGT in respect of Ghaziabad region.

This should be done before 15.1.2020



Shailaja Chandra,
Member,
Monitoring Committee for Yamuna



B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. Principal Secretary (UD), U.P.
2. Principal Secretary (E&F), U.P.
3. Principal Secretary (Industries), U.P.

Copy to: 1. Chief Secretary, UP
2. CEO, DJB
3. Website

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Annexure-C-13/3

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
 APPOINTED BY HON'BLE NGT
 ROOM NO. 58, INDIA INTERNATIONAL CENTRE
 40, MAX MUELLER MARG, LODHI ESTATE
 NEW DELHI – 110003

No. YPMC/2020/491

Dated: 21.9.2020

Principal Secretary,
 Irrigation and Flood Control Department,
 Government of UP,
 Lucknow

Subject: Reported Encroachment on the floodplains near Noida in Delhi stretch of the river Yamuna in violation of Hon'ble NGT's order dated 13.01.15, 11.06.15 and 14.07.15 regarding demarcation, protections, removal of un-authorized structures from the floodplains and prevention and removal of construction and demolition waste being dumped on the floodplains of the river Yamuna.

Please recall the meetings held in the office of the YMC on 17.11.18, 27.11.18, 25.9.18, 9.4.19, 10.10.19 and 30.12.19 regarding implementation of NGT's order for demarcation, protection, removal of encroachments from the floodplains and rejuvenation of the UP portion of the floodplains in Delhi stretch of the river Yamuna.

Despite undertakings given by the State government before the NGT and the YMC after its constitution by the NGT vide order dated 26.07.18, the encroachment continue to be reported.

The YMC has recently received reports of alleged encroachment in the Noida portion the Yamuna floodplains from Delhi Chapter of SANDRP- a Civil Society Organization interested in rivers and dams. The report along with pictures(September 2020) of encroachment on the floodplains received from SANDRP are attached. These are self explanatory.

The nature of violations of NGT's order are:

1. Disappearance of a water body near NOIDA morh that had existed prior to 2016.
2. Construction on the floodplain in violation of NGT's order
3. Use of machinery like JBC for levelling the floodplains

In this connection please refer to the relevant portion of NGT's order dated 14.07.15:

NGT's order dated 14.07. 15:

"....."

Learned Counsel appearing for DDA have submitted that the floodplain in Delhi territory stands fully demarcated. Learned Counsel appearing for Uttar Pradesh on instructions submits that 75% portion of flood plain falling in Uttar Pradesh on the banks of River Yamuna, has already been demarcated and remaining 25% of demarcation work shall be completed within one week from today. Mr. Durn Kumar, Assistant Engineer submits that the Chief Engineer namely Mr. Gulesh Chandra, U.P. Irrigation Department has directed him to make such statement regarding demarcation of flood plain before the Tribunal. We accept the undertaking/statement given and direct that the work should be completed within one week from today as afore directed.

In view of the above, we pass further directions that DDA and State of Uttar Pradesh shall send within one week from today a list of the structures that have been found to be existing on the floodplain of River Yamuna whether in Delhi or in U.P. We further direct the Principal Committee to make its recommendation in terms of our orders dated 13th January, 2015 and 11th June, 2015. Let the Committee submit its recommendation to the Tribunal as expeditiously as possible.

Learned counsel appearing for DDA as well as State of Uttar Pradesh submit that all the construction debris and allied waste have been cleared from the flood plain of river Bank of Yamuna. According to them the Agency is in place for overseeing that nobody dumps any waste of any kind on the floodplain. They submit that they will furnish the details, of person/s caught or found throwing any construction debris and MSW on the flood plain of River Yamuna and challaned. Let them do so before the next date of hearing.

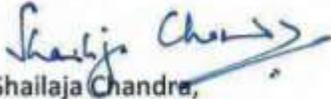
"....."

These are serious complaints and may be got investigated. DDA had had a similar inspection done along with the complainants which brought to light many things which were apparently not even known to the concerned Departments or were happening because of lack of supervision and conversance with the directions of the Hon'ble Tribunal. A detailed report on the outcome of a thorough investigation carried out and action taken

there on may be sent to this Yamuna Monitoring Committee as soon as possible but no later than 28.09.20.

Somewhat related to the land issue, the E-in- Chief UP Irrigation had also informed the YMC in the meeting held on 30.12.19 that by December 2019, Rs 35 crores for rejuvenation of UP portion of the floodplains in Delhi will be sanctioned in favour of DDA. NGT has also taken note of this undertaking and issued directions for compliance vide its order dated 5.3.2020. DDA has informed the YMC that funds for the purpose have not yet been received from UP Government. Please furnish a status report on this also as the matter is more than 1 year and 9 months old since the time an in principle approval was given by UP Irrigation.

The YMC will have to report to the NGT about the compliance of these directions in its next report due to be submitted to the Tribunal. *An early action is therefore called for.*


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

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Email id: rymonitoringcommittee@gmail.com

Annexure-C-13/4

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/494

Dated: 01.10.2020

Dear Shri Tiwari,

The Yamuna Monitoring Committee appreciates your efforts to address the issues pertaining to abatement of pollution in River Yamuna and the rejuvenation of the River. We were glad to find that you already were fully aware of the extent of pollution in the Shahdara drain emanating from three drains in U.P. for which numerous activities have to fall in place to see that sewage and industrial effluent does not go into the river- which is presently happening.

We are sharing herewith the Power Point Presentation (15 slides) which was displayed during the meeting chaired by you. This may kindly be shared with all officers who participated or are have responsibility to implement the NGT's orders. We will not be issuing any further minutes of the meeting. The slides in the PPT may be got updated giving the latest position vis-a-vis the data provided by us, which may be independently verified by the UPPCB. In particular the YMC will seek report on the following issues:

1. Progress of short and long term measures for control of pollution in the drains in Sahibabad, Indirapuri, Loni and Noida and compliance to timelines promised by the State.
2. Independent assessment of waste water in Sahibabad through a third party to confirm the actual flow in the drain considering that Shahdara drain which receives waste water from Sahibabad and Indirapuri drains is the most polluted of drains joining river Yamuna in the Delhi stretch of the river.
3. Status of functioning of STPs in Indirapuri, Sahibabad, Ghaziabad and Noida, their capacity utilization and whether they are meeting standards.
4. Status of One- city-one operator scheme in the cities of Ghaziabad, Sahibabad and Loni. The Principal Secretary Urban Development had assured the YMC on 31. 12. 19 that the one city one operator scheme had been handed over to M/s VA TECH WABAG LTD. company and in 6 months the completion, trapping and treating of

Sahibabad and Loni drains would stop sewage related pollution going into the Delhi drain. The Company also was present and confirmed this. It appears now that there is a conditionality which needs that the STPs are rectified and made functional before they're handed over to the operator and that work itself will take 6 months. In other words a misleading picture was given to the YMC which had shared the record note of discussions with the authorities in UP and even then there was no effort to clarify the correct position. The submission of the UP officers was shared with NGT and in the meeting held by you on 28.9.20 it was abundantly clear that even handing over to the Company will take time. This was not expected and will be reflected in the YMC's next report. The record note of discussions held on 31.12.19 and issued on 7.1.20 is attached.

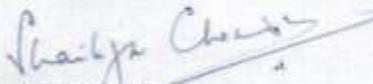
5. Status of setting up new STPs and upgrading the STPs not meeting standards.
6. Status of implementation of septage management policy in the towns of Sahibabad, Loni and Ghaziabad. The Principal Secretary had told the YMC that the Septage Management Policy had been approved for Sahibabad and Loni and the collection and treatment should happen by November 2020. YMC had asked for this to be compressed. This did not come up in your meeting but we need to have the progress in terms of collection services having started since 9 months have elapsed.
7. Status of in-situ bio/phyto remediation in drains.
8. Installation of OEMS in STPs and ETPs/CETPs and their connectivity to UPPCB and CPCB servers.
9. Stoppage of untreated industrial from industries in conforming areas of Loni and Sahibabad and present status of enforcement action against the defaulting industries.
10. Status of enforcement action against industries in non-conforming areas in Loni and Sahibabad. Whether the industries ordered to be closed have actually been closed.
11. Report on functioning of stand- alone ETPs of industries and the CETPs.
12. Status of administrative measures to protect and safeguard floodplains against encroachment, illegal dumping of C&D waste and unauthorized cultivation.
13. Status of the pending litigation in respect of the 3835 big has (about 700 acres) of floodplain land between UP, DDA and 221 others which was brought to your notice. YMC cannot go into the merits of the matter but the fact that a matter involving a

vast tract of floodplain land has been under litigation since 1972 needs to be looked into at a high level.

14. Status of rejuvenation of 167 hectares of UP portion of floodplains through DDA and whether the funds for the purpose have been transferred.

Our report to NGT is due in November 2020. The Tribunal has made clear that they only want the State Government's comments on our report and, therefore, it is best that whatever is sent to us pertains to the pollution going into the Shahdara drain and does not cover the whole State.

Thanking you once again,


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

End: as above

To:

Shri R.K.Tiwari, Chief Secretary, Govt of Uttar Pradesh, Lucknow.

Copy to:

Chairman, UP PCB.

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi - 110003
Telephone No: 011- 24609270
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Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

Meeting of the Chief Secretary UP

on the Abatement of Pollution and
Rejuvenation of River Yamuna
at Delhi-

Meeting with Yamuna Monitoring Committee of
NGT- on 28.9.2020

**Directions of NGT in orders dated 11.9.20 and
5.3.20 cover 4 specific areas.**

- A. Sewage Management.
- B. Industrial Pollution
- C. Demarcation, Protection and Rejuvenation of Floodplains
- D. Environment Compensation which has been /will be to be levied by Tribunal for failure to fulfill the time lines.

Why reducing /stopping pollution in UP drains is so important for the Yamuna.

- The 22 Km stretch of the River Yamuna from Wazirabad to Okhla is the most Polluted stretch.
- 2% of The length of the River from Yamnotri to Allahabad is in Delhi and this accounts for 70 % of total pollution in the Yamuna.
- Most of The Pollution from UP goes into the Shahdara drain which accounts for nearly 15 % of Delhi pollution in the Yamuna.

Why reducing /stopping pollution in UP drains is so important for the Yamuna.

- The CPCB in its report dated 27.12.19 reports that the cities of Sahibabad and Loni Generate 575 MLD of sewage for which there exist seven(7) STPs with a total capacity of 427 MLD.
- This translates into about 15 % of the total sewage (4000) MLD going into the Yamuna from Delhi and is enormous looking at the populations involved.
- Out of seven (7) STPS only 2 STPs are functioning properly according to CPCB and are treating 80 MLD to the prescribed standards.
- Consequently huge quantities of sewage flows through the Sahibabad and Indrapuri drains.
- In addition, Noida drain, which originates in Delhi and thereafter flows through Noida before joining river Yamuna discharges 354 MLD of sewage

Sewage in Drains from UP

S. No.	Drains	Flow (In MLD)	Parameters				Confluence
			pH	BOD	COD	TSS	
1	Indrapuri	31	6.73	744	1615	1189	Shahdara Drain
2	Shahibabad	40	6.96	743	1463	647	Shahdara Drain
3	Noida	354	7.82	46	163	83	River Yamuna

Note: All the concentrations are expressed in mg/l except pH

Directions of the NGT on Sewage Management

- Sewage Management.
 - (i) The Principal Secretaries, Environment and Forest and Urban Developments were required to prepare short- and long-term plans to control flow of sewage from UP into the river Yamuna at Ghaziabad with time lines for execution. U.P. Chief Secretary was to monitor it.
 - (ii) Chief Secretary U.P was asked to ensure interception and diversion of Banthala and Indira Canal drains.
 - (iii) Chief Secretary, U.P was asked to review the status of sewered and un-sewered areas and fix timelines for execution.
 - (iv) Chief Secretary U.P was asked to review the matter with regard to upgradation of STPs and ensure coordination amongst departments.

NGT Directions Relating to Industrial Pollution

Industrial Pollution:

- a) State PCB was to evolve a mechanism to recover the EC from those refusing to pay.
- b) Complete inventory of industries both in conforming and non- conforming areas was to be prepared by State PCB within one month.
- c) A Report was to be submitted on performance of CETPs and ETPs of industries by UPSIDC and PCB.

Progress Reported after meeting Principal Secretaries of UP

The first review meeting with Principal Secretaries of Urban Development and Environment took place only on 30.12.19- after intervention of the Chief Secretary. YMC had been trying for 17 months

1. Complete tapping of Shahibabad drain: November 2020
2. Sewage going to Shahibabad from Sewered areas(4 points): April 2020
3. Repair of leaking sewers in Loni and Ghaziabad& making Loni STP fully functional : June 2020
4. OLMS for STPs/ISPs: Under tendering
5. New STP 60 MLD for Indrapuri/Banthala 24 months after sanction
6. Septage Management Policy 2019-State aims to have complete coverage by 2023: Present status of the SLI drains and Septage management in surrounding households?
7. One City -one operator- agreement executed in December 2019---Minutes of meeting with Principal Secretary UD had recorded that work stood awarded.
8. Phyto /Bio-remediation in drains: Present status of projects

Need for Professional 3rd Party Determination of Key Parameters.

- PS UD and PS E&F Govt of UP had in their reports to YMC in February 2019 informed that the flow in Shahibabad drain was 166 MLD. This was based on a WAPCOS study. Out of this some waste water is taken to the 74 MLD sewage treatment plant at Indirapuram.
 - As per CBPC only about half of the 74 MLD capacity is being utilised due to limited capacity of the outfall drain which carries 112 MLD from STPs of Ghaziabad Nagar Nigam and GDA.
- . As per the Affidavit of Feb 2020, the drain Shahibabad carries 90 MLD of sewage . It was conveyed to NGT / YMC that an action plan to ensure full capacity utilisation had been prepared and the work was awarded on 7.12.19. By Nov 2020 the capacity utilisation will reach 74 MLD. About 16 MLD additional sewage will be conveyed to ISP with rehabilitation of sewer network . This will also be done by Nov 2020. So entire 90 MLD will be trapped and treated by Nov 2020.
- What is the present status? Does the timeline of Nov 2020 stand?
 - **This may be confirmed .**

Inventory of Industries and Enforcement Action. Affidavit of February 2020 refers

Area	Total No. of Industries	Defaulters	EC imposed	Show cause /closure orders issued
Conforming areas of Loni and Shahibabad	236	33	248.75 lakhs	20-Show cause notices and 04 closure orders
Non-conforming areas of Loni and Shahibabad	331	331	1.35 lakhs	Closed/demolished by Dist Admin

Industries Inspected by CPCB and Pollution Load

SNo.	Industrial Area	No of Industries	Effluent Generated (in MLD)	Disposal
1	Sahibabad	145 units (105 Red + 40 Orange)	10	Sahibabad Drain
2	Loni	55 Industries , Effluent from 28 Industries only	NA	Indirapuri Drain
3	Noida	85 Small Scale units	5.2	Noida Drain

Functioning of CETP

S. no	Name and Address of CETPs	Installed Capacity (MLD)	Operational Capacity	OCEMS Connectivity	Status	Disposal Point
1.	Apparel Park Tronica City CETP, Phase-I (for textile units), Ghaziabad, Uttar Pradesh	4	1.8	OCEMS Connected to CPCB server	Complying to discharge limits, as per UPPCB in November, 2019 . Capacity utilisation-50%	To Jawli Irrigation Canal through 7 KM underground pipeline finally meets to River Hindon

Floodplain Protection and Rejuvenation

- 1. UP had agreed to get biodiversity/wetland development done through DDA on 167 hectares of the floodplains belonging to UP in the Delhi stretch of the river. This was also agreed and an affidavit filed before the NGT on 13.2.20. However DDA has informed that the confirmation on this has not yet been received from UP Government. DDA on its part has gone ahead and commenced tendering process.
- 2. What is the administrative mechanism for safeguarding the UP portion of the floodplains in Delhi from encroachment and illegal dumping of C&D waste. DDA on its part of the floodplains has installed CCTV cameras and posted security guards to patrol the area and maintain surveillance. Recently SANDRP had informed the YMC that there is illegal encroachment on the floodplains and some water body which existed in 2012 has since disappeared. YMC has asked for a report from Government of UP.
- 3. There is an Execution application no.45449/2016 -State of UP vs DDA and 221 others . This case involving 3835 bigha(about 700 acres)of land is pending since 1972 in the Karkadooma Court Delhi. This case needs to accorded urgency as prolonged litigation has only helped the encroachers on the floodplains.

Tribunal's Directions on Compensation for default by State authorities of UP:

- Operational deficiencies of the existing STPs must be rectified within three months **failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.**
- For works under construction, after 01.07.2020, environmental compensation of Rs. 10 lakhs per month to be paid to CPCB for discharging untreated sewage in any drain connected to river Yamuna.
- **Rs. 10 lakhs per month to be paid to CPCB** for incomplete STPs, non-functional sewerage network.
- Where works relating to STPs, sewerage network and its connectivity have not yet started, UP State has to pay an EC at the rate of **Rs. 10 lakhs per month per STP/ related Sewerage network connectivity after 31.12.2020.**
- **The State of UP had not furnished performance guarantee in terms of order dated 29.01.2019.**
- *The State of UP may cooperate and coordinate with the committee constituted by this Tribunal in absence of any satisfactory mechanism constituted by the State.*
- In case Timelines are exceeded YMC would need justification or will have to report status

Need for Single Point Monitoring Cutting Across Departmental Issues is Needed.

- ✦ The 2 UP drains(Shahibabad and Indrapuri) carry a huge quantity of chemical (COD varies from 1400 to 1600 ppm and BOD in excess of 740 mg/L when it should not exceed ...250 mg/L and 30 mg/L respectively.
- ✦ This cannot be treated by conventional methods of treatment.
- ✦ Ghaziabad Municipal Corporations, UP SIIDC, UP PCB and UP Jal Nigam may be directed to prevent industrial effluent entering the drains and to prevent industrial effluent getting mixed with sewage.
- ✦ NGT had asked that an independent, functional Monitoring Committee should be able to do day-to-day monitoring but this was negated after placing officers in Lucknow and a CE looking after Irrigation which proved ineffective.
- ✦ This requires co-ordination by two competent local officers preferably retired officers who can give feedback every month.

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

Report of Field Inspection by Mr RS Tyagi, Former Member (Drainage), DJB and Presently Technical Expert Advisor of YMC

In compliance to the order of Hon'ble NGT, the Secretary, UPPCB has submitted the progress report to YMC vide his letter no. G-32902/NGT-53/C-1/2020 dated: 12.06.2020. After going through the report and having meeting with the concerned C.E., U.P. Jal Nigam and the senior officers of UPPCB, the following report is as under:

1. Functioning of STPs/CETs/ETPs

- The cities of Sahibabad and Loni Generate 575 MLD of sewage for which there are 7 STPs of a total capacity of 427 MLD. However out of these, only 2 STPs are functioning properly treating 80 MLD to the prescribed standards. Consequently there is large quantity of sewage flowing through the Sahibabad and Indrapuri drains contributing the pollution in River Yamuna.
- It has been informed that the In Ghaziabad, 9 STPs have been constructed, out of which 4 STPs are maintained by Ghaziabad Development Authority, remaining five STPs are maintained by UP Jal Nigam. A contract has been given by state Govt. to M/s VA- TECH WABAG LTD under "one city one operator Scheme" to maintain these STPs along with sewerage network in Ghaziabad and Loni. M/s VA- TECH WABAG LTD has started maintenance work in Ghaziabad w.e.f. 6-12-2019 who is responsible for repair & maintenance of all short coming in the STPs, collection of entire sewage and its treatment. Due to lockdown, the work has been delayed.
- EC of Rs 35,62,500/- has been imposed on 30 MLD STP at Loni and show cause notice issued to levy EC of Rs.56,50,000/- on 74 MLD STP at Indrapuram for not meeting prescribed quality of treated effluent. Rs 5.21 Crore EC has been imposed on 12 group housing projects in NOIDA for non compliance of discharge norms of STPs
- There is no CETP under the command of River Yamuna. As per direction of YMC, one CETP in Apparel Park Tronica City Loni was inspected and quality of effluent was checked. Only one parameter i.e. Lead content was bit high i.e.0.109 against required 0.10. Notice has been issued to EE in charge of the plant.

2. **Stoppage of sewage flowing through the Sahibabad, Indrapuri and Banthala drains from sewerred areas:** it has been reported that by December 2020 (against previous timeline of June 2020), entire sewage flowing from sewerred areas into Shaibabad drain will be plugged with the following schemes:

- (a) The flow in Shahibabad drain was earlier measured as 166 MLD by M/S WAPCOS. However, C.E., UPJN clarified that they have measured flow in the drain as 90 MLD which is correct. The existing STP of 74 mld capacity in Indirapuram is not being operated at its full capacity due to inadequate capacity of the final treated effluent channel which carries combined effluent from three STPs discharging total effluent of 186 MLD, if all the three STPs run at full capacity. In order to solve this problem, the work of laying of 1800 mm dia effluent line is being laid from 74 MLD STP Indirapuram to storm water drain situated along NH-24 for disposing combined effluent of all three STPs. 600 mtr pipe line has been laid out of total 2500 mtr. **The work was stopped due to Covid -19 from 25-03-2020 to 20.05.2020. Due to Covid -19 and forthcoming rains, the work will now be completed upto Dec. 2020 in place of June2020.**
- (b) Remaining 16 mld discharge (90-74) will be pumped through Intermediate Pumping Station of 17 MLD capacity (under construction at Vijay Park in Shalimar Garden) into regular sewerage network instead of Sahibabad drain at present. 80 % civil work has been completed but due to covid19, the construction of this work was stopped. Now civil and E&M work for this IPS will be completed **by Dec- 2020.**
- (c) **The accurate flow measurement must be done by the third party as quantity of flow plays major role in future planning. Earlier WAPCOS measure 166 MLD and now UPJN is verifying 90 MLD discharge. Who is correct?. The above proposal may take care of the existing flow of 90 MLD. But, UP Govt. does not have plan for future expansion for growing population.**
- **Indrapuri &Banthala drain:** The proposal of setting up new STP of 60 MLD capacity is sent for seeking financial assistance from NMCG, Govt of India. As soon as proposal is cleared, the work will be completed within two years after award.
 - **There is no definite time lines given by UPJN for executing the work**
 - These drains carry a huge quantity of chemical (COD varies from 1200 to 1600 ppm) which cannot be treated by the conventional method of treatment. Hence, UPJN doesn't have plan

for pre treatment of chemicals or set up CETP in place of STP resulting into bad quality of treated effluent.

3. **Septage Management:** The U.P. Government has also formulated Septage Management Policy in October 2019 which seeks to cover all the unsewered areas. The septage management projects presently are under implementation and expected to be completed by November 2020.
4. **Phytoremediation/Bioremediation:** The U.P. Government has submitted a DPR for bioremediation in 459 drains using NEERI technology to the NMCG for approval. The State Government has also agreed to contribute 50% of the budgetary requirement towards this scheme out of its own financial resources.
5. **Industrial Pollution:** Pursuant to the directions of the Tribunal, following action has been taken since August 2019 to May 2020:

Conforming area:

- Environmental compensation (EC) of Rs. 3.16 Crore in Sahibabad & Loni out of which only 1.67 Crorelacs has been realised.
- 14 Industries in Loni, 8 industries in Sahibabad and 1 in NOIDA, have been closed on account of pollution or not having valid documents.
- In compliance of NGT orders, UPPCB has also evolved a Policy under which the “consent to operate” for the defaulting unit is not being renewed until the EC has been paid. Besides, EC if not paid is purposed to be recovered as arrears of land revenue.

UPPCB has requested YMC for recommending to Hon’ble NGT to pass an order for recovery of EC as arrear of land revenue so that it has a legal back up and process will be expedited.

6. **Industries in Non-Conforming areas:** since August 2019 till May 2020, following action has been taken by UP Govt.:
 - Loni area: 530 illegal industries are either closed or demolished. Rs.1.35 lacs fine has been imposed and recovered from illegal industries.
 - Sahibabad area: 45 illegal industries were sealed and demolished.
 - Barola area: 10 illegal industries have been sealed.

7. Flood Plain Rejuvenation; as per previous report

“167 Hectare flood plain of river Yamuna falling within UP is proposed to be rejuvenated by creating wetlands and biodiversity parks through DDA and funds for this purpose has been agreed to be provided by the state of UP. in the meeting held on 30.12.19, the Engineer in Chief UP Irrigation Department informed the YMC that the Finance department has since concurred in the payment of Rs. 35 Crores to DDA for flood plain rejuvenation as a deposit work on the lines of 10 projects that are being implemented by DDA on flood plains under its control. The DDA has on its part already completed the tendering process and once funds are received from the state of UP, the implementation of flood plain rejuvenation activities as per the project prepared by DDA can commence on the ground”.

No latest report is submitted by UP Govt. in this regard

Er. R S Tyagi, Former Member (Dr)

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

Report of CPCB on issues relating to River Yamuna Pollution – UP Segment

1. Discharge of Wastewater from Loni and Ghaziabad

Inderpuri drain (30-35 MLD) and Shahibad drain (35 MLD) carries domestic and industrial wastewater generated from towns of Loni and Ghaziabad respectively and discharges into Shahdara drain.

▪ **Shahibad drain:**

- ✓ Infrastructure for intercepting Shahibad drain available with UP Jal Nigam. Wastewater of Shahibad drain conveyed to STP of capacity 74 MLD. At present, around 37 MLD of wastewater pumped to STP and remaining water allow to discharge into Shahdara drain.
- ✓ Reason for low Capacity utilization- The 74 MLD capacity is operating far below designed capacity as the conveyance channel does not have adequate carrying capacity to carry treated effluent of all three STPs.
- ✓ Further, performance of STP is not up to mark and always found non –complying.
- ✓ Shahibad drain carries domestic as well as industrial wastewater. STP is designed to treat influent of quality BOD-250 mg/l and COD-500 mg/l whereas it receiving influent having COD more than 700 mg/l.

▪ **Inderpuri drain**

At present there is no infrastructure for interception, treatment and disposal of wastewater of Inderpuri drain.

2. Discharge of wastewater from Noida drain

Noida drain receives wastewater of Kondli, Gharuli from Delhi side, Khora Nagar Palika and Noida city. Drain originates from Delhi and after receiving wastewater from Khora, it enter to Noida city. Action points are summarized:

- Delhi has intercepted the drain discharging into Noida drain and diverted to Kondli STP.
- Khora Nagar Palika has not taken any action for collection, treatment and disposal of wastewater generated from Khora. Hon'ble NGT directed Principle Secretary, Urban Development for prepration of action plan. However, no action plan received till date.
- Noida has prepared comprehensive action plan for abatement of pollution of Noida drain. Action plan covers augmentation of sewerage and treatment capacity, interception of drain, Fecal disposal points, surprise inspection of STPs of housing societies and In-situ treatment of Noida drain.

Vishal Gandhi, Scientist D

CPCB

Annexure-II

Annexure-C-13/8

Related to Chapter 13- State of Uttar Pradesh and Pollution of the Yamuna

Compliance of the Directions issued by Hon'ble Yamuna Monitoring Committee in the meeting held on 28-09-2020 in O.A. No. 06/2012, Manoj Misra Versus Union of India&Ors.

(UPJal Nigam & U.P Irrigation deptts have submitted compliance report vide letter no. 782/OA06/2020 Dt. 07-11-2020.)

S.No.	Direction/Recommendations of Hon'ble YMC	Concerned Department	Compliance Status as on date submitted by U.P. Govt.
1.	Progress of short and long term measures for control of pollution in the drains in Sahibabad, Indirapuri, Loni and Noida and compliance to timelines promised by the State.	Nagar Vikas Vibhag/ U .P. Jal Nigam/ Infrastructural and Industrial Development Department/ Urban Development Deptt.	<p>Compliance is as under:-</p> <ul style="list-style-type: none"> • Short Term Action Plan : It is proposed to treat the untreated waste water of Sahibabad drain, Banthla Canal drain and Indirapuri Drain by In-situ Bioremediation based treatment method for the time being as a short term measure until long term treatment facilities are commissioned. By the order of Principal Secretary, Urban Development Anubhag-9 Lucknow dated 03-02-2020, the Bio-remediation is to be carried out by respective Nagar Nigam / Nagar Palika Parishad. <p style="text-align: center;">Long Term Action Plan</p> <ol style="list-style-type: none"> 1. Sahibabad Drain -The measured average discharge for this drain is 90 mld. The treatment of this drain is divided in two parts: <ol style="list-style-type: none"> (a) Treatment of 74 MLD discharge: <p>74 MLD discharge shall be treated through 74 MLD STP at Indirapuram. Presently, this STP is not being operated at its full capacity because the capacity of the treated effluent channel is inadequate. This channel does not have sufficient capacity to carry combined effluent of 186 MLD from 3 STPs (56+56+74) at Indirapuram. In order to solve this</p>

			<p>problem, a DPR for laying of treated effluent pipeline from 74 MLD STP Indirapuram to storm water drain situated along NH24 in 2500 m length, for disposing combined effluent of all the three STPs has been approved and laying of Pipe line has been started from 01-02-2020. Laying of 2100 m pipeline against 2500 m has been completed. The pipeline work is delayed due to unforeseen circumstances as Covid - 19, monsoon and public utilities such as Electricity cables. IGL gas pipelines, sewer lines and water supply lines etc falling in the pipeline alignment, the balance work is likely to be completed by Nov, 2020</p> <p>(b) Treatment of 16 M LD discharge: Due to insufficient pumping capacity of sewage generated in Sahibabad Drain catchment area, the sewage is being pumped temporarily to Sahibabad Drain. To address the remaining 16 MLD discharge (90-74) an additional Intermediate Pumping Station of 17 MLD capacity is under construction at Vijay Park in Shalimar Garden (Main) under AMRUT. Sewage from Shalimar Garden, DLF Colony, Vikram enclave. Jawahar Park and Shaheed Nagar area will reach 17 MLD IPS. The overall progress of IPS is 80%.</p> <p>Alter completion of IPS, this 17 MLD sewage shall be treated at 56 M LD STP at Indirapuram. Thus, Sahibabad drain will be completely tapped by December, 2020.</p> <p>2. Indirapuri and Banthla canal drain: It has been planned to Intercept and divert both Indrapuri drain and Banthla canal drain and treat the untreated waste water of the drain at a newly proposed STP of 60 MLD</p>
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			<p>capacity. The land for Sewage Treatment ..Plant and Sewage pumping station has been identified and made available by Nagar Palika Parishad, Loni. Letter has been written to UP Irrigation Department to allow the construction of interception and diversion work on Banthla Canal Drain, permission for which is yet to be granted; The work of DPR preparation has been completed and has been sent to National Mission for Clean Ganga, New Delhi by Project Director, State Mission for Clean Ganga. Lucknow vide letter No. IIS9/0557/SMCG/01 dated 20.09.2019. NMCG by Letter dated 10-12-19 raised some observations in the DPR. After removal of observations, the revised DPR has been submitted to SMCG vide letter No.251/0220272/2020 dated 22.05.2020. SMCG forwarded the DPR vide letter No. 501/0032/SMCG-UP/06 dated 02.06.2020 to NMCG Delhi for approval & allotment of funds. After approval of DPR from NMCG, its construction period will be 2 years.</p>
2.	<p>Independent assessment of waste water in Sahibabad through a third party to confirm the actual flow in the drain considering that Shahdara drain which receives waste water from Sahibabad and Indirapuri drains is the most polluted of drains joining river Yamuna in the Delhi stretch of the river.</p>	<p>Nagar Vikas Vibhag/ U .P. Jal Nigam/ Infrastructural and Industrial Development Department/Urban Development Deptt.</p>	<p>The discharge of Sahibabad Drain was measured by U.P. Jal Nigam in May, 2019 using Rectangular Notch ,methed. The rectangular notch_ was fixed near the tapping point on Sahibabad Drain. The reading of depth of flow over the Rectangular Notch was recorded in presence of Chief Engineer (Ghaziabad Zone), U.P. Jal Nigam, Ghaziabad and the discharge was calculated using the standard formula and was found to be 90 MLD. Although, Shri Ram Institute of Industrial Research, New Delhi has been requested by Project Manager, Yamuna Pollution Control Unit Ist, U.P. Jal Nigam, Ghaziabad to measure the-flow</p>

			in Sahibabad Drain vide letter dated 02.11.2020.
3.	Status of functioning of STPs in Indirapuri, Sahibabad, Ghaziabad and Nolda, their capacity utilization and whether they are meeting standards.	Nagar Vikas Vibhag/UP Jal Nigam	<p>2. Indirapuri :It has been planned to Intercept and divert both Indrapuri drain and Banthla canal drain and treat the untreated waste water of the drain at a newly proposed STP of 60 MLD capacity. The land for Sewage Treatment Plant and Sewage pumping station has been identified and made available by Nagar Palika Parishad, Loni. Letter has been written to UP Irrigation Department to allow the construction of interception and diversion work on Banthla Canal Drain, permission for which is yet to be granted. The work of DPR preparation has been completed and has been sent to National Mission for Clean Ganga, New Delhi by Project Director, State Mission for Clean Ganga, Lucknow vide letter No. I 159/OSS7/SMCG/OI dated 20.09.2019.</p> <p>NMCG by letter dated 10-12-19 raised some observations in the DPR. After removal of observations the revised DPR has been submitted to SMCG vide letter No.251/0220272/2020 dated 22.05.2020. SMCG forwarded the DPR vide letter No. 501/0032 SMCG dated 02.06.2020 to NMCG Delhi for approval & allotment of funds. After approval of DPR from NMCG, its construction period will be 2 years.</p> <p>Sahibabad Drain;74 MLD discharge shall be treated through 74 MLD STP at Indirapuram. Presently, this STP is not being operated at its full capacity because the capacity of the treated effluent channel is inadequate. This channel does not</p>

			<p>have sufficient capacity to carry combined effluent of 186 MLD from 3 STPs (56+ 56 +74) at Indirapuram.</p> <p>In order to solve this problem. a DPR for laying of treated effluent pipeline from 74 MLD STP Indirapuram to storm water drain situated along NH-24 in 2500 m length, for disposing combined effluent of all the three STPs has been approved and laying of Pipe line has been started from 01-02-2020. Laying of 2100 m pipeline against 2500 m has been completed. The pipeline work is delayed due to unforeseen circumstances as Covid-19, monsoon and public utilities such as Electricity cables, IGL gas pipelines, sewer lines and water supply lines etc falling in the pipeline alignment, the balance work is likely to be completed by Nov, 2020.</p> <p>Ghaziabad :In Ghaziabad, 8 nos. and in Loni I no. STP has been constructed, the details are as follows</p> <p>1- STP constructed and maintained by GDA in Ghaziabad.</p> <ol style="list-style-type: none"> 1. 56 MLD STP Morti, (SBR Technology) 2. 56 MLD STP Bapudham, (SBR Technology) 3. 56 M LD STP Govindpuram, (SBR Technology) 4. 56 MLD STP Indrapuram (SBR Technology) <p>2- STP supervised by UP Jal Nigam and maintained by one city one operator firm M/S VATECH WABAG in Ghaziabad.</p> <ol style="list-style-type: none"> 5. 70 MLD STP Dundaheda.
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			<p>(UASB Technology)</p> <p>6. 56 MLD STP Dundaheda, (SBR Technology)</p> <p>7. 56 MLD STP Indirapuram (UASB Technology)</p> <p>8. 74 MLD STP Indirapuram, (SBR Technology)</p> <p>3- STP supervised by UP Jal Nigam and maintained by one city one operator firm M/S VATECH WABAG in Loni</p> <p>9- 30 MLD STP at Loni (MBBR Technology)</p> <p>Present status of STP supervised by UP Jal Nigam 70 MLD (UASB) Dundahera and 56 MLD STP Indirapuram:</p> <p>70 MLD STP (UASB) Dundahera and 56 MLD STP (UASB) Indirapuram are more than 20 years old and are at present not complying the standard norms because of damaged civil structure as well as electrical mechanical equipments. The plant is maintained by one city one operator firm from 16-12-2019 and target date to remove all short coming will be Feb 2021.</p> <p>74 MLD STP (SBR) Indirapuram is at present complying the standard norms.</p> <p>30 MLD STP (MBBR) Loni is at present not complying the standard norms due to all electrical mechanical equipment have been damaged. A project for renovation of this STP has been submitted to state Govt. for approval and allotment of funds. Govt. has been sanctioned the project for renovation of this STP vide GO no. 186/2020/3150(I)/9-5-2020-41 Budget /2020 Dt. 28-09-</p>
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			<p>2020. To finalize Tender SLTC meeting was held on 02.11.2020, minutes of meeting are awaited. After completion of tender process 4 months time will be required to remove all short comings in the STP.</p> <p>56 MLD STP (SBR) Dundahera is at present complying the standard norms. The plant is functioning at full capacity.</p>
4.	<p>Status of One-city-one operator scheme in the cities of Ghaziabad, Sahibabad and Loni. The Principal Secretary Urban Development had assured the YMC on 31. 12. 19 that the one city one operator scheme had been handed over to M/s VA TECH WABAG LTD. company and in 6 months the completion, trapping and treating of Sahibabad and Loni drains would stop sewage related pollution going into the Delhi ' drain. The Company also was present and confirmed this. It appears now that there is a conditionality which needs that the STPs are rectified and made functional before they're handed over to the operator and that work itself will take 6 months, In other words a misleading picture was given to the YMC which had shared therecord note of discussions with the authorities in UP and even then there was no effort to clarify the correct position. The submission of the UP officers was shared with NGT and in the meeting held by</p>	<p>Nagar Vikas Vibhag/ U .P. Jal Nigam/ Infrastructural and Industrial Development Department/ Urban Development Deptt.</p>	<p>M/s VA Tech Wabag. Chennai has been done renovation of 74 MLD STP Indirapuram and in present STP complying the standard norms. The firm is doing renovation of 70 MLD STP Dundahera, 56 MLD STP Indirapuram and 30 MLD STP Loni and it will be completed by end of Feb, 2021.</p>

	you on 28.9.20 it was abundantly clear that even handing over to the Company will take time. This was not expected and will be reflected in the YMC's next report. The record note of discussions held on 31.12.19 and issued on 7.1.20 is attached.		
5.	Status of setting up new STPs and upgrading the STPs not meeting standards.	Nagar VikasVibhag/U .P. Jal Nigam	<p>70 MLD (UASB) Dundahera and 56 MLD STP Indirapuram:-</p> <p>70 MLD STP (UASB) Dundahen and 56 MLD STP (UASB) Indirapuram are more than 20 years old and are at present not complying the standards norms because of damaged civil structure as well as electrical& mechanical equipments. The plant is maintained by one city one operator form from 16-12-2019 and target date to remove all short comings will be Feb 2021.</p> <p>74 MLD STP (SBR) Indirapuram is at present complying the standard norms.</p> <p>30 MLD STP (MBBR) Loni is at present not complying the standard norms due to all electrical mechanical equipment have been damaged. A project for renovation of this STP has been submitted to state Govt. for approval and allotment of funds. Govt. has been sanctioned the project for renovation of this STP vide GO no 186/2020/3150(I)/9-5-2020- 41budget / 2020 Dated 28-09-2020. To finalize Tender SLTC meeting was held on 02.11.2020, minutes of meeting are awaited. After completion of tender process 4 months time will be required to remove all short comings in the STP.</p>
6.	Status of implementation of septage management policy in the towns of Sahibabad, Loni and Ghaziabad. The	Nagar VikasVibhag/U .P. Jal Nigam	<p><u>Loni:-</u></p> <p>In Loni , the construction of 1 no. 32 kld FSTP is under progress for unsewered area of Nagar PalikaParishad, Loni. 60%</p>

	Principal Secretary had told the YMC that the Septage Management Policy had been approved for Sahibabad and Loni and the collection and treatment should happen by November 2020. YMC had asked for this to be compressed. This did not come up in your meeting but we need to have the progress in terms of collection services having started since 9 months have elapsed.		work has been Completed and remaining work will be completed by Dec-2020. Ghaziabad:- : In Ghaziabad, 50 kld FSTP has been approved by state Govt. the tendering process for construction has been completed and an agreement has been made with M/s NACOF India Ltd, Pushpanjali, C-145, Sec-A, Mahanagar, Lucknow-226006. Date of start has been issued to firm from 04.11.2020, work will be completed in 6 months.
7.	Status of in-situ bio/phyto remediation in drains.	Nagar VikasVibhag/U .P. Jal Nigam	Pilot Project for in-situ bio/phyto remediation in drains started at Arthla Drain Ghaziabad. Same shall be adopted in other drains, if successful.
8.	Installation of OEMS in STPs and ETPs/CETPs and their connectivity to UPPCB and CPCB servers.	Nagar VikasVibhag/U .P. Jal Nigam	Bids for Design, Supply, Installation, Testing & Commissioning of Online Continuous Effluent Monitoring System (O.C.E.M.S.) of STP's, including five years Operation and Maintenance under AMRUT programme, invited by Superintending Engineer (Nagar), UPJN, Lucknow vide NIT no. 84/ Chief Engineer (Nagar) Camp/20 dated 22.09.2020 have been received. Evaluation of technical bids is under process. After completion of tender process, the work will be complying within 12 months.
9.	Stoppage of untreated industrial from industries in conforming areas of Loni and Sahibabad and present status of enforcement action against the defaulting industries.	UPPCB/ District Level Committee	<ol style="list-style-type: none"> 1. Show cause against 25 defaulters units in Sahibabad area under Water Act. 2. Closure against 05 defaulter unit in Sahibabad area under Water Act. 3. Total No. of 02 defaulter units Electric connection disconnected and units sealed in Arya Nagar industrial area, Loni by Joint Team. 4. Recommendation for electricity disconnection to Executive Engg.

			<p>UPPCL against 01 defaulter unit in Sahibabad area</p> <p>5. EC of Rs. 248.75 Lakhs has been imposed against defaulters.</p>
10	Status of enforcement action against industries in non-conforming areas in Loni and Sahibabad. Whether the industries ordered to be closed have actually been closed.	UPPCB, Electricity Department, District Level Committee	<p>6. Total 435 no. of illegal units have been demolished and 10 no. of illegal units have been sealed with Joint Team in Krishna Vihar, Phase-II, AmitVihar, BehtaHazipur&Farukhnagar, Loni Ghaziabad</p> <p>7. Recommendation for electricity disconnection to Executive Engg. UPPCL against 01 illegal unit in Bhopura Sahibabad area.</p> <p>8. EC of Rs. 1.35 Lakhs has been imposed against defaulters.</p>
11	Report on functioning of standalone ETPs of industries and the CETPs.	UPPCB, UPSIDC, District Level Committee	Regular sampling is being done by UPPCB, Ghaziabad and report is being uploaded on Ganga Portal.
12	Status of administrative measures to protect and safeguard floodplains against encroachment, illegal dumping of C&D waste and unauthorized cultivation.	Irrigation Department	<p>U.P. Irrigation and water resources department has defined flood plain zone vide letter no. 38/ENC/unit-9 dated 15.01.2015. The extreme boundary of flood plains is the bunds existing on the banks of the river Yamuna on the eastern side(on the land of U.P.Irrigation Department) upstream of Okhla Barrage in the area of NCT Delhi / UP. It is also demarcated by fixing bollards at the extreme edges of flood plain. Earlier it was decided that flood plain maps for river Yamuna in NCT area shall be prepared by I.I.T Delhi ,in consultation with DDA. The Delhi Development authority has already submitted the flood plain map before the Hon'ble court of NGT. It is stated that UP Irrigation Deptt. Keeps continuous watch-and-ward to protect the flood plain from any pucca construction .The UP.Irrigation land in flood plain has been verified physically and demarcated and found free from pucca constructions.</p>

			UP Irrigation Deptt. is keeping continuous watch-and-ward over such type of activities . Presently there is no solid waste / debris existing on the UP Irrigation land. In future violation of directions issued related to dumping of debris and resulting compensation shall be implemented as per directions given by hon'ble NGT. Govt. Of U.P. also give permission to DDA for installing of CCTV camera's in U.P portion.
13	Status of the pending litigation in respect of the 3835 big has (about 700 acres) of floodplain land between UP, DDA and 221 others which was brought to your notice. YMC cannot go into the merits of the matter but the fact that a matter involving a vast of floodplain land has been under litigation since 1972 needs to be looked into at a high level.	Irrigation Department	It is stated that an execution no. 45449/2016 state of UP Vs DDA& 221 others is pending in Karkarduma court, Delhi is pending for taking repossession of the land which is to be used for the development of wetland development on the eastern bank of River Yamuna.
14	Status of rejuvenation of 167 hectares of UP portion of floodplains through DDA and whether the funds for the purpose have been transferred.	Irrigation Department	Govt. of U.P. released 1049.10 lakhs for rejuvenation of 86 hectares of UP portion of floodplains through DDA out of 167 hectares in first phase (Old railway to ITO Barrage). Soon it will be transferred to DDA after completion of formalities.
