

**INTERIM REPORT OF THE MONITORING
COMMITTEE**

**constituted by the Hon'ble National Green Tribunal
vide Order Dated 30/08/2018 in O. A. No. 496/2016 titled
“Tribunal on its own motion v. Government of NCT of
Delhi and others”**

**Justice (Retd.) S. P. Garg
Mr. S K Juneja
Dr. D K Markandey
Mr. Ajay Gupta**

Dated 18th February 2019

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EARLIER PROCEEDINGS

The proceedings in the matter commenced on the basis of a news item dated 19.06.2015 in "Hindustan Times" under the title "***Dirty flows your drinking water***" highlighting the problems of contaminated ground water in various parts of Delhi. It was also highlighted that in such areas the groundwater was not potable drinking water and was unfit for human consumption. The Hon'ble Tribunal required Delhi Jal Board (DJB) to file a status report. A detailed status report was filed to the effect that out of 979 samples collected, 473 were found 'unsatisfactory'. The Hon'ble Tribunal constituted a Committee headed by Secretary (Environment), NCT of Delhi and having representatives from Central Pollution Control Board (CPCB), Delhi Pollution Control Committee (DPCC), Delhi Development Authority (DDA) and the Central Ground Water Authority (CGWA) to identify the areas where the water was contaminated and take necessary steps. Further status report was filed on 09.09.2016 by the Committee and it was registered as Original Application No. 469/2016. On 31.01.2018, the matter was again considered. The Hon'ble Tribunal was informed about Ground Water Yearbook 2015/16 compiling the relevant data. The maps included therein projected the areas having high electrical conductivity shown in violet and red colours. DJB was asked to carry out survey of the said areas. 37 locations were identified where electrical conductivity was found exceeding permissible limits. Illegal bore wells, tube wells, wells were directed to be sealed. Legal bore-wells where water was not fit for human consumption were directed to be painted with red colour. The compilation also showed location of bore-wells having fluoride and nitrate contents exceeding permissible limits. DJB was directed not to give any new license for abstraction of water in such areas. The bore-wells where samples of water were found to be exceeding permissible limits were directed to be closed and permission, if any, granted was directed to be revoked. On 23.05.18, Hon'ble Tribunal considered the case of interveners that they were unable to access

potable drinking water. DJB was directed to file a comprehensive action plan on groundwater recharge. On 06.07.18, the Hon'ble Tribunal considered the issue of making installation of the Rain Water Harvesting (RWH) Systems compulsory in every building or premises of more than 500 meters carrying on business activities.

DJB filed an affidavit dated 07.08.18 indicating that as against estimated demand of 1140 million gallon per day for a population 190 lacs, potable water production was 900 million gallon per day. 820 million gallon per day was produced from surface water sources and 80 million gallons per day from ground water sources. By 2021, water demand would go up to 1380 million gallon/day but surface water resources would become limited requiring more dependence on ground water which was already over stressed. There was need for 3 upstream storages on the river Yamuna and its tributaries in a time bound manner to reduce dependence on ground water. There was also need for comprehensive groundwater management plan with the participation of all stake holders to cover the rain water harvesting systems; use of treated effluents for groundwater recharge through surface storage and to reduce dependence on surface water. Action on revival and rejuvenation of water bodies was also required to be planned. There was requirement of roof top rain water harvesting where plot size was 100 sq meters or more under the Bye-laws dated 28.07.2001 with a need for implementation by the Municipal Corporations of Delhi, DJB and New Delhi Municipal Corporation (NDMC). DJB had taken measures for rain water harvesting, rejuvenation of existing water bodies, creating of new water bodies and treated effluent utilization. DJB was supplying treated effluents for horticulture, thermal power plants and non-potable uses. DJB also filed an action plan that suggested action in the areas of rain water harvesting, use of treated effluents etc. DJB would take the treated effluent from WWTPs upstream of Palla through raising mains and let it flow through the river course and collect the same at Wazirabad Barrage. The combined discharge of about 177 million gallon per day would be

available in addition to the 70 million gallon per day.

Miscellaneous Application 1228/18 was filed by inhabitants of Patparganj Industrial Area who were not getting water supply from DJB. They claimed to be extracting groundwater through bore-wells. There was some dispute over availability of adequate water supply by DJB.

Ld. senior counsel for DJB fairly stated that the issue raised was of a very serious nature on the ground level and in spite of the judgment of this Hon'ble Tribunal dated 10.12.15 and the steps taken by the authorities, the situation remained very grim in terms of shortage of the ground water as well as its contamination. The Action Plan was prepared, but its implementation remained an issue. There was also an issue of co-ordination with several authorities. A suggestion was mooted to have an independent Monitoring Committee (MC) which could constantly monitor the situation for about 6 months with the view to enhance the availability of ground water by adopting suitable measures, check contamination and take final call on the plans for proper utilization of treated effluents. There was also an issue of encroachment of Delhi flood plains which led to reducing the ground water recharge. Beyond suggesting sealing of bore-wells or hand-pumps where the water was contaminated, no suggestions came forward for treating the contamination. Taking into consideration all these facts, it was observed that mere finalization of the Action Plan without oversight of implementation thereof may not achieve the object of these proceedings. It was necessary to constitute a Committee to look into the issue of finalization of Action Plan as well as implementation thereof and also to act as oversight body. Accordingly, while disposing of the application, the present Monitoring Committee was constituted by the Hon'ble Tribunal vide order dated 30.08.2018.

The Committee was directed to take following steps:

- Take stock of all actions taken so far.
- To prepare a time bound action plan to deal with the problem and ensure its implementation.
- The Committee will look into finalization of action plan and time lines for its implementation as an oversight body and also other allied issues.
- The Committee will also take a call urgently on the issue of supply of drinking water, wherever the same was not being supplied and source of potable underground water was not available or legally impermissible.

E.A. 26 OF 2017 IN O.A. NO. 299 of 2016 in the matter of "Diwan Singh v.

Union of India and ors." - Diwan Singh had approached Hon'ble Tribunal in 2016 highlighting the complete apathy and negligent attitude of the authorities, especially DDA with respect to protection and restoration of water bodies in Dwarka area of New Delhi. Vide judgment dated 01.11.2016, Hon'ble Tribunal took note of the negligence on the part of the concerned authorities, including DDA and issued following directions:

1. The DDA shall inventorize all the water bodies and prepare a comprehensive management plan for water bodies and their management and revival in Dwarka. The DDA being land owning agency, shall take all steps for removal of all the illegal encroachment on water bodies, their catchments, removal of unauthorizedly dumped municipal waste including construction and demolition water/malba. This shall be done within a period of 3 months.
2. We constitute a team consisting the following to monitor the progress of identification, documentation, revival and monitoring of water bodies in Dwarka:
 1. Chief Executive Officer of Parks and Gardens Society, Incharge of Water Bodies in NCT, Delhi
 2. An officer of the level of Chief Engineer of Delhi Jal Board,
 3. Chief Engineer in charge of Dwarka, DDA
 4. A professor/Associate Professor nominated by the Director, IIT – Delhi

5. A senior officer (of the rank of Director) of the CGWB, New Delhi
6. Dr. A B Akolkar, Member Secretary, CPCB
3. The Chief Executive Officer of Parks and Gardens Society shall be nodal officer of the Committee. The Committee shall monitor the progress of implementation of the plan prepared by DDA besides monitoring the implementation of CGWB recommendations of 2016.
4. The Govt of NCT shall take all steps within their power and in accordance with law and constitute the State Wetland Authority as expeditious as possible and in any case not later than three (3) months from the date of pronouncement of this judgment
5. The Government of NCT Delhi should submit proposal for declaration of the water bodies/wet lands that have been already identified and recorded in the revenue records for their declaration as wet lands under the Wetlands (conservation and Management) Rules 2010. This exercise should be completed in respect of the already identified water bodies/ wet lands within next 3 months.
6. The MoEF & CC shall after receipt of proposal from the Government of NCT Delhi within 2 months thereafter notify the wetlands under the Wetlands (Conservation and Management) Rules 2010. The Government of NCT Delhi and DDA should ensure that all the water bodies that have been already identified or will be identified in terms of the directions contained herein above, no invasive land use, particularly, those related to construction creation of infrastructure of roads, buildings within the wet land and the zone of influence/catchment in the future planning of Dwarka are **SHALL BE PERMITTED**. In other words, such area will be excluded from planning of residential/commercial infrastructure creation that may be planned in future so as to maintain the characteristics of the wet lands both in terms of their water holding capacity and their environmental role.
7. Management Plan shall also be prepared for greening of the area with local indigenous species through the Horticulture Department of DDA. The DDA shall make sufficient budgetary provision for survey, identification and restoration of the water bodies in their normal budgets.
8. The Committee constituted in terms of Directions at serial No. ii shall file a periodic report after every 6 months before the Tribunal on the progress achieved in implementation of the above directions. The Affidavit shall be filed by the Nodal officer of the Committee.

9. *The DDA shall also survey and map all the primary, secondary, tertiary drains leading to the water bodies and also make provisions to divert flow from drains into the water bodies in case some of the drains do not have an outfall into the water body. While providing connectivity between the drains and the water bodies, as well as inter-connectivity between the water bodies, wherever feasible, due consideration shall be given to the watershed/catchment of each of the water bodies, arrived at on the basis of contour mapping of the area.*
10. *No domestic sewage/industrial effluent should be permitted to flow into the water bodies and any domestic sewage which is flowing into the water bodies such domestic sewage should either be diverted into sewerage network in the area or trapped by constructing individual septic tanks by the house holds. This shall be enforced in consultation with the DJB.*
11. *The Central/NCT Government and Authorities shall comply with the directions contained in this judgment. In the event of default, they shall be liable to be proceeded against personally in accordance with law.*

As there was no implementation of the directions issued, Diwan Singh filed Execution Application No. 26/2017. Hon'ble Tribunal, on 11th Sept 2018 passed the following order:

“Vide order dated 30.08.2018 in Original Application No. 496/2016 titled as “Tribunal on its own Motion v. Government of NCT of Delhi & Ors”, this Tribunal considered the issue of directions already issued on the subject of rain water harvesting and appointed a Committee headed by a former Judge of the Delhi High Court as oversight body for implementation of directions of this Tribunal.

Since this issue is integrally connected to the issue dealt with in the said case, we direct that while all existing efforts by the authorities in terms of the directions of this Tribunal may continue, the Committee appointed by this Tribunal in Original Application No. 496/2016 titled as “Tribunal on its own Motion v. Government of NCT of Delhi & Ors' will also act as oversight body for execution of order in the present matter.

It will be open to the parties to put forward their view point to the said Committee for consideration. The Committee will be at liberty to issue any further directions in the matter for execution of order of this Tribunal.”

Pursuant to the above orders, Diwan Singh made a representation received on 30.11.2018 by this Committee seeking appropriate directions for implementation of the judgment dated 01.11.2016 in letter and spirit.

In Original Application No. 400/2017, titled Westend Greens Farms Society v. UOI and Ors, by an order dated 02.11.18, Hon'ble Tribunal was pleased to constitute a Joint Committee to be headed by the Secretary, Urban Development, Govt of NCT of Delhi to prepare Action Plan especially with regard to system of sewage disposal, extraction of ground water for commercial purposes in critical areas, absence of rain water harvesting system etc. Chairman of the present Monitoring Committee was appointed to oversee the activities of the Joint Committee so constituted.

Representation/Execution petition dated 31.01.2019 has been received from Mr. Sumit Gahlawat, Advocate for the petitioner to direct the Committee to take immediate action against the hotels/motels and to enforce the directions given in the order dated 02.11.2018 by the Hon'ble Tribunal.

On 12.02.2019, Mr. Rajeev Yaduvanshi, Principal Secretary, Urban Development attended the meeting. On discussion it revealed that till date no such committee has been constituted. Mr. Rajeev Yaduvanshi was of the view that directions in the order dated 02.11.2018 in OA No. 400/17 already stood covered in petition No. 4677/85 titled "**M C Mehta v. Union of India**" pending before the Hon'ble Supreme Court. Mr. Yaduvanshi was advised to constitute the committee in terms of order of the Hon'ble NGT immediately and start functioning for compliance of the directions. The officers should not of their own interpret the order and in case of any doubt, approach the Hon'ble NGT. Mr. Yaduvanshi assured that today itself Committee will be constituted and it will start functioning. Mr. Yaduvanshi was asked to submit the status report within a week.

PROCEEDINGS BEFORE THE COMMITTEE

There was delay in constitution of the Committee and the concerned departments took their time to nominate the representatives. Inordinate delay in providing infrastructure including office, manpower, secretarial assistance etc. affected the functioning of the Committee. Till date, no proper infrastructure except the office space has been made available. The Committee could meet on 26-10-2018 to have its first meeting at Niti Bagh Club, New Delhi. Despite all deficiencies, the Committee has conducted 9 meetings till date. Various officers from DDA, DJB, Education, Schools etc. have been associated. There was inaction on part of the officers of DDA to attend the meetings. The Vice-Chairman and CEO of DJB were requested to attend the meetings.

In the first meeting itself, the concerned departments were directed to submit their project wise detailed action plan on groundwater recharge along with time lines and impact on the groundwater resources in Delhi. It were to include the actions already taken and proposed to be taken. Action plan should include measures required to be taken for addressing the issue of groundwater contamination. It was further directed that status report with respect to para 5 of the order dated 30.08.2018 in O. A. No. 496/16 be provided. The DJB was directed to take all necessary actions to provide all logistic supports to the Monitoring Committee that include office accommodation and support staff at the earliest. The office space was made available in December 2018. The Committee has visited various places to have first hand information on the spot. The environmentalist Diwan Singh and S S Maan have been associated.

Status of groundwater levels has been filed by CGWB in compliance with the order dated 24.04.2018. The report is of May 2018. The conclusion is 'Analysis of long term water level data of May 2000 to present period of May 2017' reveals that

over the period, the areas categorized as 'over exploited' as per groundwater resources estimate of 2013, mostly in South, South East, New Delhi, East, North-East and also parts of West and South-West districts of Delhi state Water level declined rate varied from 0.5m/year to more than 2m/year at places. There are some pockets, where change in water level is not significant or remained unchanged. Such pockets of shallow and rising water level areas are diminishing over the period. As such, major part of State is under 'over exploited' and 'semi-critical' categories and in such areas water levels are showing persistent declining trend during the last two decades.

Presently, portable water production by DJB is about 900 million gallon per day against estimated total demand of 114 million gallon per day for a population of 190 lacs. The production from surface water sources is 820 million gallon per day and from groundwater sources, it is 80 mgd. It is projected that a for a population of 23 million in 2021 the total water demand will be 1380 mgd. The surface water sources of Delhi are limited and there is dependence on groundwater for drinking purposes. The groundwater resources undoubtedly are overstressed to meet its ever growing water demands. There is a need to have a comprehensive groundwater management plan which broadly include rainwater harvesting; use of treated effluent for groundwater recharge and regulation of groundwater extraction in Delhi. Revival and rejuvenation of existing water bodies will go a long way in this regard. New water bodies need to be developed. It is informed that new water bodies at Dwarka Water Treatment Plant, Rohini based Water Treatment plant and at Nilothi are under consideration of the government. 80 million liter water is expected to recharge the groundwater to the tune of 3000 ml per annum considering average percolation rate of 10 cm per day at Dwarka Water Treatment Plant. The water body at Rohini is of 130 ml capacity and is expected to recharge the groundwater to the tune of 4800 ml annually. Water body at Nilothi having capacity of 80 ml is expected to recharge groundwater to the tune of 3000 ml annually.

Considering the importance of water bodies, it was decided that the Committee should focus on revival and rejuvenation of water bodies at first instance besides having an eye over installation of Rainwater Harvesting Systems in schools and colleges. The subsequent proceedings of the Committee are reflected ahead.

WATER BODIES

Water bodies have an important role in improving the groundwater recharge, maintenance of aquatic biodiversity, provide habitat for avifauna as well as aquatic life, help regulate temperature and humidity in the locality. They also provide drinking water during critical months to wildlife and ameliorate severity of extreme temperature. Besides, a water body receives surplus runoff, sub-surface and base flow from the adjoining catchment area during monsoons and helps in recharge of aquifers, thereby providing a dynamic equilibrium with the catchment as well as the aquifers underneath. Protection of water bodies is therefore critical to be associated with aquatic and terrestrial ecosystem of the area. The water bodies are nature's bounty; they maintain delicate ecological balance and need to be protected for a proper and healthy environment which enables people to enjoy a quality of life. These water bodies can be good tourist spots. However, capacity of the water bodies can be severely impacted adversely in the absence of a proper vegetative cover, unregulated flow of domestic sewage and industrial effluent into the water body or dumping of municipal waste. Presently, several water bodies have been either covered with municipal waste or *malba* or sewage is freely flowing into these water bodies.

Diwan Singh in the representation has placed Minutes of Meetings dated 23.11.2016 prepared by Dr. S G Singh, CEO – DPGS, Nodal Officer, Water Bodies. The Committee after conducting site inspection of water bodies of Dwarka prepared detailed report dated 02.01.2017. 43 water bodies were inspected by the Committee. It records the details as to where the water bodies are located and what is their present status. Several directions were given to various authorities pertaining to each water body. In order to review the progress regarding revival/development of water bodies of Dwarka, a meeting was held in the office of Chief Engineer, Dwarka, DDA on 06.01.2017. The Minutes of Meetings dated 13.01.2017 reveal the steps taken by the various authorities pursuant to the directions issued earlier. More directions were

given to the authorities including:

1. Proper map of each water body be made with planned land scape and submit to this office in a week's time.
2. Every month, monitoring report of field inspection/sites of each water body be carried out in the last week of the month and be submitted to this office within a week of inspection.

On 15.02.17, in a meeting held in the office of Chief Engineer, DDA (Dwarka) to review the progress, various directions were given to several authorities regarding each water body mentioned therein. CE, Dwarka, DDA informed that works on few sites had already started. He was getting planned maps from area Executive Engineers and reviewing the progress. For certain sites, he was acquiring land scape from Landscape Department of DDA to go ahead in developing and maintaining rest of the water bodies. CEO desired that information of progress be submitted to the Environment Department every month. He reviewed the site specific progress and gave time bound actions to follow.

The Committee again met on 20.04.2017. Minutes of Meetings dated 26.04.17 reveal that discussions regarding each water body took place and the progress was reviewed. In another meeting on 14.07.2017 action taken reports submitted by DDA were considered. Several other directions were issued including:

1. Proper map and brief documents of each water body be made with planned landscape having area, boundary and right of concession be prepared and submitted to this office with 7 days along with;
 - Detailed geographic delineation
 - Its zone of influence along with map
 - Ecological character description
 - Account of pre-existing rights and privileges
 - List of uses permitted within the wetlands List of activities to be regulated
 - Modalities for enforcement of regulations.

2. Plantation should be done by Horticulture Department of DDA and MCD during this Monsoon It has been started in most of the sites. Photographs be provided. Directions were given to complete the activity by August 2017.
3. Revenue Deptt. is to match all the water bodies mentioned here with its records and record all of them as water bodies in its revenue records if not recorded except whose status was agriculture at the time of acquisition by DDA. Revenue Department has already started survey exercise and will mention these water bodies in its records as per direction in 15 days time.
4. A sign board be place on all the water bodies by DDA and MCD depicting:
 - Grand No. given by DPGS (G.No.)
 - Revenue Distt. In which the Water Body is located.
 - Water bodies owning agencies
 - Khasra No.
 - Area

Site inspection of water body of Pochanpur Village and Sahapura Village was carried out on 31.07.17. Report dated 02.08.2017 details the status existing at the spot along with photographs. A meeting of the Committee also took place on 29.06.17 and detailed discussion were held regarding the water bodies described therein. There was a court case pertaining to water body Dhool Siras. Request was made to Court Commissioner Sh. V. K. Tandon to get the stay vacated. DDA was directed to get the encroachment removed and protect the land by fencing/walling. The Committee again met on 14.07.17 and action taken reports submitted by DDA were discussed. Status of the water bodies existing was discussed. The compilation includes list of around 1009 water bodies in various districts. It is a comprehensive list containing several particulars including location, site position of the water bodies along with the land owning agencies etc.

Since Diwan Singh, the petitioner, was not satisfied with the actions taken either by DDA or other competent authorities to implement the directions in a time bound period, he moved an execution application No. 26/17. Diwan Singh filed

another application for directions to DDA and Govt of NCT Delhi to immediately connect the storm water drain to the water bodies in District park, Sector 23 Dwarka and Bharat Vandana Udhyaan, Sector 20 Dwarka and to impose penalty on the concerned officials who had acted contrary to the order and directions. The Monitoring Committee has perused the detailed report minutely.

Delhi Jal Board has furnished photocopy of the list of water bodies taken by it for rejuvenation on 31.01.2019. As per this list, there are 201 water bodies in different parts of Delhi; some are under Delhi Jal Board (155) and remaining are water bodies taken up by the Irrigation and Flood Control Department for rejuvenation. It is a complete list of water bodies along with its location, khasra numbers and the area.

On 31.01.2019 Delhi Jal Board also filed Action Taken Report on the directions issued during 7th Meeting held on 25th Jan 2019. Delhi Jal Board has disclosed in Annexure "A" the status and note on STP treated effluent reused in NCT of Delhi; the meetings taken by the Delhi Jal Board with stake holders from time to time; requirement of treated waste water from stakeholders and future plan/proposed alternatives for reuse of treated waste water. Delhi Jal Board has also filed Annexure B regarding the work of revival of water bodies being undertaken by CE (South). The Committee decided to concentrate on the revival of the water bodies in Dwarka, Delhi. Diwan Singh and S S Maan, environmentalists on whose Writ Petition, directions were given by the Hon'ble NGT were associated to assist.

DJB informed that they have taken up work on about 200 water bodies in 2017. At present, the proposal was in the process of approval. It was further informed that I&FC has also taken up the work of 200 water bodies. Some of the water bodies are at construction stage. The Committee desired list of all these bodies to be made available so that these could be visited.

WATER BODY AT RAJOKRI

This water body used to be a dirty, turbid pond fed by sewage from the nearby village – where stray cows and pigs loitered. At present, it's a landscaped community gathering spot with an artificial wetland, grassland, gravel pathways, rain gardens and a large amphitheater. It has now 9500 sq meter redeveloped area, at the heart of which is 2000 sq meter water body fed by purified effluents from the same sewage that had earlier polluted it. Soon it will have an open air gym. It has a capacity to naturally clear 600 kiloliter per day of sewage water with BOD levels of 150 PPM to less than 20 PPM. The project is divided into two components – the purification system and landscaping of surroundings for sustainable management. SWAB (Scientific Wetland Systems with Active Biodigestors) technology forms the core of the project. Earlier raw sewage in various streams used to collect from village to the lake. All such channels were trapped to meet at the common in-let where BOD level and Total Dissolved Solids (TDS) were as high as 150 and 2214 respectively. Sewage from the entire village is now fed into an underground sedimentation tank, equipped with Biodigestor, where solid components are broken down and decomposed. This coupled with filtration through stone aggregated, reduced BOD levels to half and water is visibly translucent from earlier deep gray. In the second step, solar pumps push the water to an artificially constructed wetland where it passes through 2.5 deep gravel lying with harmonically treated plants such as Umbrella and Canna indica that are capable of absorbing toxins.

The zig zag design through three terrace garden like steps ensure that the water gets to spend maximum time in the wetland. At the outlet, the water is almost clear with a BOD of 20 ppm. The effluent is then allowed to gently pass from the slope of the grassland to the water body. A pump has also been installed in the middle of the lake to recirculate the water. The entire systems functions on solar power and is self dependent. It is informed that the ultra-clear water from the lake will be pumped into

the bottom part of the amphitheater for a neat and clean *chhat-ghat*. Another innovation has been made in the form of a bio-waste rain garden which collects rain water from the pathways to recharge the groundwater.

In the first meeting of Monitoring Committee on 26.10.18 at Niti Bagh Club, CEO Mr. Anil Kumar along with various other officers of Delhi Jal Board and Irrigation and Flood Control Department was present. A detailed presentation was given by Mr. Ankit Shrivastava regarding the water bodies undertaken by Delhi Jal Board and I&FCD. Rajokri water body was one of them. The Committee decided to visit Rajokri water body to ascertain its status.

On 26th December 2018, Monitoring Committee along with various officers from DJB, I&FCD, Dheeraj Singh (Water bodies), Rakesh Panwar (JE, Water Bodies, DJB), Mr. Ankit Shrivastava, Consultant (Hydraulic and water bodies) visited Rajokri water body to monitor its progress. The Committee noted that the work of the water body was complete except some accessories like gym and swings which were to be provided shortly. Mr. Ankit Shrivastava informed that all the drains discharging into water body are trapped and collected at one point through a network of sewer lines. The sewage is discharged into bio-digestors. From Bio-digestors, the sewage is passed through a constructed wetland having graded gravel and plants. At the outlet, the treated sewage is discharged into the water body. The BOD of the treated sewage is about 30. It is proposed to install carbon and sand filters to reduce BOD less than 10. It was further noticed that the water body was used as *Chatt-Ghat* by the local villagers. The water body has been divided by providing stone masonry. In one part, the treated sewage is collected and allowed to percolate. The second part is kept dry and used during *Chatt Pooja* by pumping treated effluent from the water body.

The Committee noted that the quantity of sewage received at the water body was inadequate; depth of the water body was varying and it did not give a

good look. The Committee desired that the flow of water into the water body should be increased by diverting the other drains in the same village or by diverting the sewage from STPs. EE, (DJB) informed that SPS was about 4-5 KM away.

The Committee also noted that the water body looked more like a well maintained park. The shape of the water body was irregular. It was suggested that the shape be made regular to have good view as there was sufficient space available for that. The depth of the water body be increased, regular security be ensured to prevent encroachment or littering and damage to the newly sown plants.

The Committee took sample of the water to ascertain its BOD as the water was emanating foul smell. The result of the sample so collected has been received. Seven parameters were tested. BOD is within limit, but other parameters are deviating. Monitoring committee directed Sh. Ankit Shrivastava, Consultant to further improve the quality of water in the water body. He informed that there was proposal to install carbon/sand filter and floating rafters in Phase – II. Copy of the sample report handed over to the Consultant to do needful and submit his report next time.

WATER BODY AT SECTOR – 23, DWARKA

On 26th December 2018, the Committee also visited water body at Sector 23, Dwarka. CE, (DDA) was directed to remain present during visit along with status of water bodies in Dwarka. However, at the time of visit, only one EE, (DDA) who was not concerned with water bodies was present along with AE, (DDA). The committee expressed displeasure over casual attitude of senior officers of DDA.

Diwan Singh apprised that water body was about 200 years old and its source

of water was rains and sewage from nearby drains. He further informed that a treatment plant (STP) was constructed to treat the sewage from nearby drain however, it has not been made functional for the last three years despite several representations.

The Committee noted that it was a beautiful water body inside a park and can be a good visiting spot for the residents. After inspecting the water body, the Committee suggested that grills around the water body be painted. Height of the boundary wall be raised and dilapidated boundary wall be repaired immediately. It was further directed that STP lying non-functional for the last 3-4 years be made functional immediately to make more water available at the water body. The area of the water body be demarcated and its entry be made in the Revenue Record.

Mr. R. K. Singh, CE, DDA, Dwarka was present on 2.01.2019 in the meeting held in Conference Hall, Manglapuri along with other officers. DDA informed that the painting work has started and the boundary wall is being raised and extended. The Committee directed that the entire work be completed by 20th January 2019. It was informed by DDA that STP/Phytorid was not in working condition. The motor and pipes have been stolen and it needed to be installed again. Mr. RK Singh, CE requested that DJB should execute the work at the cost of DDA and payment for expenses would be made by DDA. Representative of DJB informed that it will take not less than 2 months to make the STP functional. The DJB was directed to take up the task and recover expenses from DDA.

DJB in the subsequent meetings informed that Consultant for commission of the water body along with two other bodies has been appointed. As per the report, site identification, contouring, markings have been completed. Soil testing, ground water table survey, water testing have been carried out and its report is expected to be

available by the end of this month. Alignments are complete. The final report regarding the STP to be made functional is to be given by the Consultant in the first week of Feb 2019. It is assured by DJB that STP would be made functional at the earliest.

In the subsequent report after visit to the water body on 29th January 2019, it is reported that the inner fencing has been completed and painting with green colour is done. Outer fencing is under progress. Soil testing has been done. Plantations will be carried out in the month of Feb 2019. Dr. D K Markandey took sample of water from the water body to ascertain its quality.

DJB has been directed to make the functional at the earliest and to get the water body demarcated and also to provide security guard there. Status report has been called from DDA as on the subsequent meeting on 25.01.2019 again, Mr. R K Singh, CE, DDA was absent. He had deputed Mr. Manoj Sharma at the eleventh hour and he was not aware of the progress.

The Committee showed displeasure about the attitude of Mr. RK Singh, CE, DDA for remaining absent in most of the meetings and deputing officers at the eleventh hour casually without providing any inputs. Their presence was a mere formality. It was decided to report to the Hon'ble NGT regarding his conduct and non co-operation.

WATER BODY IN BHARAT VANDANA PARK, SECTOR 20, TONGAN PUR

On 02.01.2019, the Committee after meeting in the Conference Hall, visited Bharat Vandana Park having a large water body with various officers and Diwan Singh. The water body was at a distance of 1-1.5KM from the main road. The Committee members entered Bharat Vandana park by jumping over the wall as it had no gate. After covering a distance of 1-1.5 KM on foot, there was a big water body

lying dry. DDA was directed to install at least one gate secured by lock to facilitate entry and exit in the park. The concerned authorities were directed to complete the incomplete digging work to give a proper shape to the water body. DDA informed that there is no STP and it has to be installed by DJB. They have informed CE (South), DJB that DJB will bear the expenses of STP/Phytorid bed. The DJB officials objected to it as the ownership of the water body was with DDA. The Committee directed DJB to submit technical feasibility report within 15 days for perennial source of water for this water body.

Diwan Singh made the suggestion that the water body requires a Phytorid technology STP plant to cleanse and supply water during lean season; creating woodland up to a distance of minimum 50 meters around the water body with native species, cluster fencing or other ways to protect the saplings; creating water channels to meander the treated water around the water body before falling into it with purpose to purify the water and to check fires; setting up a system to regulate to and fro movement of storm water / check flow back of water from the water body during monsoons; creating a piped supply facility to bring treated waste from Dwarka STP; updating the entry and proper size of the water body in revenue records; installation of Peizometer system to quality and quantity monitoring of the functioning of the water body. **The concerned authorities were directed to take note of the suggestions and submit its response.**

WATER BODY AT POCHAN PUR VILLAGE

It was informed by DDA that there was no water in this water body, although the fencing/boundary wall has been done, DDA requested that DJB should explore the possibility for perennial source of water and may install STP/Phytorid bed and its expenses will be borne by DDA. The Committee directed DJB to submit feasibility report in 15 days to the Committee.

Technical Feasibility Report - Mr. Ajay Sharma, EE has submitted Joint technical feasibility report for rejuvenation of water bodies at Sector 20, Bharat Vandana Park, Dwarka, Sector 23 DDA Park Dwarka and Pochanpur.

Trunk drain II is flowing near Bharat Vandana Park water body whose area is approximately 1 hectare. The distance of the trunk drain II from the water body is approximately 200 meter. The samples from the trunk drain II near Sector 23, Bharat Vandana Park and Sector 23, DDA Park were collected and its BOD at the two locations was found to be 139 PPM and 111 PPM respectively. In addition to it, scyanide and chorimium were also present in the water sample. TSS of the water sample was 1152 PPM and 1398 PPM. Phytorid technology reduced BOD maximum to 84% and TSS to 80%. The BOD of treated waste water would remain around 25 PPM which was not desirable for ground water recharge/water body. It was suggested that the possibility of treatment of treated effluent from STP Dwarka be explored. STP Drawka was approximately 7.2 km from Sector 20 Bharat Vandana Park, 5.2 KM from Sector 23 and 5.5 KM from Pochanpur.

The sample of water of the airport drain near Pochanpur was also lifted and got tested. The drain is about 100 meter from this water body. There is no perennial source of water and it remains dry. The BOD of this drain was too high and found to be 382 PPM. It was informed that treatment by Phytorid technology would not be possible.

The report gave two options. Option – 1 – providing water from trunk Drain – II after treatment by Phytorid Technology. Option – 2 – providing treated effluent from Dwarka WWTP after treatment by Phytorid Technology. This option was recommended to be adopted as BOD and the TSS of the effluent was 10 and 10 PPM respectively. After treatment, it was to reduce up to 3 PPM which is the desired limit of water quality of water body/recharge of ground water. The total length of pipeline

to be laid for these water bodies from STP Dwarka is approximately 9 KM.

Similarly for Sector 23, Dwarka, it was suggested that the possibility of treatment of treated effluent from STP Dwarka be explored. At present, floating water can be used for Sector 23, Dwarka. The Committee directed the authorities concerned to work on it and submit its report.

The DJB officers have informed that consultancy of commissioning three water bodies of DJB i.e. Pochanpur, Dwarka Sector 20 and Dwarka Sector 23 has already been undertaken and the consultant has start working on it. The site identification for the three water bodies is complete; contouring and markings is complete for two water bodies; soil testing, ground water table survey, water testing has been done and its reports are expected by the end of this month. Alignments are complete for two water bodies. Checking of alignments from existing STP in Sector 16A to Pochanpur and Dwarka Sectors; alignments have been done and its report is expected by the end of this month. Alignments to be checked from existing drain to water body through proposed STP and alignments to be checked from exiting drain to water body Sector 23 through existing STP has been done and its report is expected by the end of this month. Design of floating rafters for in-situ treatment and final report is expected to be given in the first week of Feb 2019.

The Committee is satisfied that some progress has been made for revival of the water bodies at Sector 23, Sector 20 and Pochanpur. Its results are expected to be visible shortly, as assured by CE (South). The Committee will continue to monitor its progress from time to time.

In a meeting dated 29.12.2018, Mr. Brijesh Gupta, EE, DDA handed over location of nine water bodies which were situated in the parks of Dwarka. Out of these water bodies, two at Sector 23, District Park and Narispur Dwarka are perennial. Other water bodies are seasonal and water can be filled in these water

bodies during rainy season only. The Committee intends to visit these water bodies at appropriate time.

Deputy Director, DDA informed that native species are being arranged from neighboring States and would be made available for plantation in Sector 23 water body. He assured that within 10 days, Khejer, Vistendu, Ronjh, Dhak numbering 50 in all would be arranged for plantation.

In the meeting dated 02.01.2019, CE, DDA was directed to get the water bodies demarcated. Spot be visited and inspected in the presence of revenue authorities. He was further directed to co-ordinate and submit report.

The Committee directed Mr. Ankit Shrivastava to give list of 50 water bodies at first instance upon which the Committee can concentrate and ensure that 50 water bodies are made functional at the earliest. Thereafter other water bodies in phases can be taken for revival. DJB has approved separate budget of Rs. 376 Crores for the water bodies, there should not be now shortage of funds for revival of water bodies which is the urgent need considering the scarcity of water in Delhi.

WATER BODY IN SECTOR 25 BETWEEN BHARTAL AND BAMNOLI VILLAGE, WATER BODY IN SECTOR 24, NEAR DHOOL SIRAS VILLAGE AND WATER BODY IN SECTOR 24 BEHIND CREMATION GROUND IN DHOOL SIRAS VILLAGE IN DWARKA

The Monitoring Committee along with officers and Diwan Singh also visited these water bodies. The officials from DDA Mr. J C Verma and M L Upadhayay were given certain directions for setting up a mini Phytorid STP at each water body to treat waste water from nearby sewage line to supply it to the water body. Since no responsible officer from DDA was present, officials present were directed to convey the directions to their higher officers who will be called in the next meetings. Till

date, no progress has been shown on these water bodies.

On perusal of the representation given by Diwan Singh to the Monitoring Committee, it transpires that all these water bodies in Delhi have already been visited by various officers of different departments of NCT of Delhi including DDA and DJB. Comprehensive suggestions and directions were given by Dr. S. D. Singh, head of the Committee constituted. Till date, DDA has not filed status report as to what action has been taken on the said directions/suggestions and what the present status of the water bodies is. As observed above, Mr. RK Singh, CE South even failed to attend the meetings except one held at Manglapuri. Action taken report has not been filed. The Committee decided to associate Vice-Chairman of DDA and to request him to attend the next meeting.

DJB was asked by MC to furnish its Action Plan for revival/rejuvenation of the water bodies under its jurisdiction. It is informed that the work of revival of water bodies is being undertaken under CE (South). Action Plan (Annexure B) has been submitted by DJB indicating that in consultation with Government of NCT of Delhi, DJB has prepared an Action Plan for rejuvenation of 155 number of water bodies (Details attached as Annexure 1). The process to implement the proposal has started. Rs. 376.79 crores has been approved by DJB in its meeting held on 24.12.2018. IIT – Delhi, CSIR – Neeri – Nagpur and Wabcos Limited have been engaged to provide consultancy on rejuvenation of water bodies in Delhi. The proposals shall be implemented on ground in a period of one year in phased manner which includes preliminary survey and inspection report, technical feasibility report, detailed project report from consultants. After approval of DPRs, the detailed estimates of each water body will be prepared and tenders would be called for execution of the work through contract. In the meanwhile, land owning agencies will hand over encroachment free site for execution of the work on ground. The average time period proposed for execution of the work for each water bodies is about 18 months after award of work

which includes execution, commissioning and trial run period. The land owning agencies have been informed about implementation of proposals in first phase.

It is further informed that DPRs of 8 water bodies with floating rafter technology has been finalized and is under approval. After approval, tenders are likely to be invited in the second week of Feb 2019. DPRs of about 17 water bodies in South West and South District is proposed to be taken up for execution. DPRs of these water bodies has been received and is under finalization. After finalization and approval of DPRs, tenders are likely to be invited in March 2019.

Work of revival of three water bodies under the charge of DDA has already been entrusted to DJB on the request of DDA by this Monitoring Committee. The Consultant shall submit its report shortly and tentative expenditure to be incurred will be intimated to DDA for payment. The work will start on ground after receipt of payments from DDA.

Work of creation of a new water body at Timarpur Oxydation Plant at DJB land is processed for implementation on ground. Notice for invitation of tenders of waste water treatment plant have been issued on 25.01.2019. Tenders are proposed to be received on 18.02.2019. The period of completion is 12 months for execution, 3 months of commissioning and 3 months for trial run period. A proposal of landscaping of this water body is also under approval.

The work of creation of water body at the vacant land of DJB at Dwarka Water Treatment Plant has been awarded on 23.04.18 with completion period of 6 months. The work has been delayed due to finalization of boundaries of the proposed WTP at Dwarka. Now the alternative location of water body is approved and the firm has been persuaded to start the work.

The work of laying 700 dia rising main from proposed effluent treatment plant

to proposed water body is in progress.

DJB has proposed to create new water bodies at the vacant lands at Rohini and Nilothi WWTPs. The schemes amounting to Rs. 5384.66 lacs and Rs. 2349.59 lacs have been approved by DJB in its meeting held on 24.12.2018. The work on these schemes is initiated for implementation.

The Action Report submitted by DJB for revival of water bodies was discussed and deliberated at length. The Monitoring Committee appreciated the steps taken by DJB in the recent period for revival of the water bodies and approval of substantial budget of Rs. 376 crores for this purpose. It is expected that 159 dying lakes shall get a fresh lease of life. It was decided that the DJB would continue to put its best efforts for revival of the water bodies in the manner and during the time period mentioned in the Action Report in letter and spirit and MC will continue to monitor its progress at various stages from time to time by having spot visits. DJB shall continue to apprise MC about the developments at different stages regularly.

The Monitoring Committee however put a specific questions to CE (South) as to out of 155 water bodies identified for revival as per Annexure A, how many of them were encroachment free. This information was not available with DJB presently. DJB was emphasized to ascertain as to to what extent these water bodies have been encroached and how the encroachment is to be removed and what steps are required for it to be undertaken by the land owning agencies. Removal of encroachment takes considerable time in many cases and timely steps will have to be taken if the plan to revive 155 water bodies is to be taken to logical conclusion.

After long discussion with all the stake holders, it was impressed that along with the steps being undertaken for revival of 155 water bodies, let 50 water bodies in all be identified at first stage which can be immediately revived

in a short period i.e. which are encroachment free and where the availability of the water can be ensured without long term investment. Mr. Ankit Shrivastava was requested to provide list of such water bodies.

Mr. Ankit Shrivastava has thereafter furnished a list of following 62 water bodies located at 51 locations:

S.No	Location of Waterbodies	Land owning agency* (Concerned CE should attest)
1	Barwala	Delhi govt
2	Burari	Delhi govt
3	Hamidpur	Delhi govt
4	Nangli Poona	Delhi govt
5	Pehladpur	Delhi govt
6	Bijwasan	Delhi govt
7	Ghitorni	Delhi govt
8	Dera Mandi	Delhi govt
9	Bakkarwala	Delhi govt
10	Dhul Siras - 1	Delhi govt
11	Tikri Kalan (4 Numbers)	Delhi govt
12	Neelwal	Delhi govt
13	Mungeshpur (2 Numbers)	Delhi govt
14	Nangal Thakran	Delhi govt
15	Punjab Khor	Delhi govt
16	Hlranki	Delhi govt
17	Holambi Khurd	Delhi govt
18	Siraspur	Delhi govt
19	Ibrahimpur	Delhi govt
20	Dichaun Kalan (2 Numbers)	Delhi govt
21	Rasulpur	Delhi govt
22	Goyal Khurd	Delhi govt
23	Hastsal	Delhi govt
24	Jatkira	Delhi govt
25	Sarangpur	Delhi govt

26	Bindapur	DDA
27	Daulatpur	Delhi govt
28	Tajpur Khurd	Delhi govt
29	Chandan Holla	Delhi govt
30	Chhawala (3 Numbers)	Delhi govt
31	Karala	Delhi govt
32	Mohammad Majri	Delhi govt
33	GomanHera	Delhi govt
34	Malikpur (2 Numbers)	Delhi govt
35	Ghewra (2 Numbers)	Delhi govt
36	Rani Khera	Delhi govt
37	Mundaka (2 Numbers)	Delhi govt
38	Nithari	Delhi govt
39	Hira Kudna	Delhi govt
40	Baoli	Delhi govt
41	Bhalaswa Lake	DDA
42	Sanjay Lake	DDA
43	Satpulla Lake	DDA
44	DSIIDC Lake at Bawana CETP	DSIIDC
45	Timarpur Lake	DJB
46	Pappankalan STP Lake	DJB
47	Najafgarh STP Lake	DJB
48	Rohini Sector 25 Lake	DJB
49	Nilothi	DJB
50	Rajokri (3 Numbers)	Delhi Govt
51	Dwarka sector 23	DDA

These water bodies are located at different parts of Delhi and are under Delhi Government/DSIIDC except 4 water bodies which are under DDA. He

informs that the DPRs of all these water bodies have already been received and work over it can be commenced in a short period without any difficulty. List of these water bodies was made available to CE (South), CE (Dwarka) and concerned officers Mr. RK Singh, CE (Dwarka) on behalf of DDA informed that the water body at Bindapur (At serial No. 26) be developed by DJB at the cost of DDA and all the necessary expenses will be paid by DDA. He further informed that after having consultation with his senior officers and VC DDA he would intimate the MC and the DJB if the water bodies at Bhalasva lake, Sanjay lake and Stapula lake could be developed by DDA or they will issue NOC for its development by DJB at its cost. It was decided that the DJB shall furnish DPRs and the estimated expenditure of all these water bodies under DDA within 2 days and the response to it shall be furnished by DDA within 7 days thereafter.

Action Plan of Monitoring Committee would be that these water bodies, 62 in number are revived in a short period within 9 months. The Monitoring Committee shall have an eye over the development of these water bodies regularly and seek status reports from DJB and other agencies in a time bound manner. Any lapse on part of any agency shall be viewed seriously. DJB has been asked that if they face any difficulty in the implementation of the project pertaining to these 62 water bodies from any quarter or if there is any unnecessary delay in clearance of the relevant file by any department, its intimation be conveyed with detailed facts to the Monitoring Committee and the Monitoring Committee shall endeavor to get the obstruction clear at the earliest.

Mr. R. K. Singh was further informed that there is every possibility of revival of water body situated at office of EE Mr. Anil Sharma in a short period. He agreed to get it revived at the earliest as only water is to be made available in the said water body which can be obtained by setting up an STP plant. Mr. R K Singh was requested to furnish status report about the revival of this water body

before the next meeting.

It was decided that Diwan Singh and Mr S S Maan shall have a meeting with Mr. R. K. Singh, CE (Dwarka) on 12-02-2019. Thereafter, they all shall visit the water bodies in Dwarka under DDA jurisdiction. CE (Dwarka) shall furnish the detailed report after spot inspection to inform as to how many water bodies in Dwarka can be made functional in a short period or how many in the long term. Mr. R. K. Singh was further impressed to get the areas of the water bodies demarcated, measured in the presence of the revenue officials and get the water bodies recorded in the Revenue Records.

Regarding Bharat Vandana Park water body; Sector 23 and Sector 20 water bodies, DJB has already appointed consultant. CE (South) informs that consultant is going to submit its report within 1 or 2 days. DJB shall send the DPRs of these water bodies to DDA along with the estimate expenditure and on approval by DDA, DJB shall start work over it. It was impressed upon DDA that they shall respond without any delay to DJB after receipt of DPRs and estimate expenditure. Mr. R. K. Singh was further asked to get a gate installed to be secured by a lock in the boundary wall of Bharat Vandana park for ingress and egress; he agreed to do so.

After the work over the 62 water bodies is commenced, Monitoring Committee shall concentrate upon the revival/rejuvenation of the other existing water bodies in a time bound manner which shall be indicated at the relevant time.

RAIN WATER HARVESTING (RWH) SYSTEMS

RWH is critical for Delhi's water security. By adding to Delhi's own water resources, it will help cater to the potable water needs to the ever growing Delhi's population; prevent the rapid fall in the groundwater level; help maintain green cover and revive water bodies. It can be helpful to recharge the groundwater. Proper RWH system can help to deal with water-logging and low groundwater levels by diverting water to local ponds and harvesting pits.

Status of the RWH was called for to ascertain the present position. On 20.11.18, a detailed list was filed indicating that there were total 6761 systems in SDMC, North DMC, EDMC, NDMC, DCB, Education Department, Kendriye Vidhayalas, IIT-Delhi, Delhi Higher Education. The functionality, adequacy and feasibility was also disclosed in the said report. It was further informed as to how many RWH systems were in existence and how many were under construction. There were many areas where no harvesting systems were available or were not functional. There was no information regarding Jamia Milia Islamia and Hamdard University. The Department was asked to furnish a detailed status report

The EE (RWH) placed on record list of the RWH inspected pursuant to the directions of the Hon'ble NGT dated 16.11.17 in OA No. 217/16 in the matter of Mahesh Chander Saxena v. Ministry of Urban Development and ors. As per this report total 668 schools/colleges, both govt and private were inspected. In 612 institutions, the systems were adequate whereas in 31 institutions there was no harvesting water system. Regarding functionality, it was informed that it was positive in 613 institutions whereas 35 institutions were lacking in it. The Education Department was directed to have regular inspections of the schools/colleges.

On 19.12.2018 the Department submitted a list of schools and colleges where inspection was conducted and the Water Harvesting systems were found either

inadequate or non functional. In some of the schools, there existed no Rain Water Harvesting. List of 10 schools, government/private was given. The Department was directed to issue Show Cause Notice to these schools and also to direct them to comply with the directions of the Hon'ble NGT to have a functional, adequate and effective harvesting system at the earliest. Attention of the Department was drawn whereby Hon'ble NGT had directed that the institutions not complying with the directions were liable to pay Environmental Compensation of Rs. 5 lac after expiry of 2 months of the judgment. It was informed that as per the directions of the court, Committee was constituted under the convener ship of Chief Engineer (Planning), Water, DJB and the officers of various departments. After meeting with CGWA, representatives, simplified designs were issued for construction of RWH system. It was informed that 19 meetings have taken place, the last one being on 22.10.18. Minutes of the meetings dated 26.10.18 has been place on record.

It was decided by the Committee that regular monitoring of the institutions is required for its effective implementation. It was decided to have random inspections of various schools/educational institutions and other industries etc. availing rebate in water charges on account of installation of the systems. The Committee desired Delhi Jal Board to furnish a detailed list of the industries who were getting huge rebate on account of installation of harvesting systems in their premises to have surprise visit to find out if the RWH systems were in place and functioning adequately. Action was directed to be taken against the institutions who were in violations of the directions of the NGT order for imposition of Environmental Compensation of Rs. 5 lac.

Keeping this in mind, the Committee called the representatives of two schools in its meeting dated 11.01.19. The representative from Red Rose Public School, Saket and Laxman Public School, Hauz Khas appeared before the Committee and informed that RWH system was available in their schools and was functioning properly. They were asked to create awareness among the children to save water. The informed that

awareness programmes are being organized and the schools have organized skits.

CGWB authorities were directed to visit the schools and provide necessary material/drawings/paintings on RWH for creating awareness. It was suggested that logos of RWH be displayed on the school books and note books. When the school authorities were asked how the waste water was being utilized, they were unable to respond. It was insisted that they should install STPs in their schools to utilize the waste water for horticulture activities. They readily agreed to do so. The schools were directed to furnish status report in this regard within 2 weeks. It was further ordered that all schools be intimated and instructed to install recycling plants to use waste water for horticulture purposes.

The members of the Monitoring Committee had a surprise visit in the area of Dwarka to have first hand information about the RWH systems and visited five schools in Dwarka along with officials of DJB. Following is the report:

New Great Mission Public School, BJS International School, Rajkiya Pratibha Vikas Vidhalaya, Kendriya Vidhayala and JM International School were visited. RWH system were found existing in all the schools except Kendriya Vidhayalal Sector – 5. These were functional and adequate. However, RWH system required periodic maintenance. The recharge chamber in JM International School was found filled with stagnant water and non functional. Necessary directions be issued by the concerned authorities to these schools to make up the deficiencies. There was no provision for waste water recycling in these schools except in Rajkiya Pratibha Vikas Vidhayala where STP was in existence but it was to be made operational. The school authorities be directed to make provision for waste water recycling to utilize the waste water for horticulture purposes. The committee also found that some of the schools were having bore-wells/tube-wells. DJB shall initiate necessary action for illegal bore-well, (if any) and submit its report.

In its drive to check RWH systems, members of the Monitoring Committee again inspected five schools on 01.02.2019 in Dwarka. The schools visited were:

1. N. K. Bagrodia Public School – Sector 4, Dwarka
2. Tiny Tulip International School – Sector 5, Dwarka
3. Modern Convent School – Sector 4, Dwarka
4. Kendriye Vidhayala – Sector 5, Dwarka (Re-inspection)
5. Jinwani Bharti Public School – Sector 4 Dwarka

In schools at Serial No. 1, 3 RWH system was found 'inadequate'. Water was found stagnant in recharge pit in RWH system in School at serial No. 1. Maintenance of recharge pits and conveyance system was required to make it fully functional. Similarly RWH system in school at serial No. 5 required maintenance. School at serial No. 4 was directed to get the maintenance done as RWH system was partially functional.

Various other irregularities detailed in the report were detected. The concerned authorities were directed to take necessary steps/actions. In school at serial No. 3, water charges paid by the school were low and the consumption reflected was highly suspicious considering the large number of students. The school authorities were unable to tell the other sources from where the water was being arranged. In the meeting on 12.02.2019, SE (Dwarka) assured to take necessary action against the school for unauthorized use of water (if any).

None of the schools had the provision of Waste Water Recycling. The school authorities were persuaded to have provision for waste water recycling plants to save treated water and reuse it for horticulture.

In the meeting on 12.02.19, it was decided that the members of Monitoring Committee shall visit schools in North Delhi on 14.02.2019 to ascertain status of RWH systems existing there.

Action plan for the Monitoring Committee is to visit schools/colleges at regular intervals to the extent possible to ascertain the status of RWH systems existing there, its adequacy and functionality; also to find if these schools had the provision of waste water recycling plants and to persuade them to install them at the earliest to preserve treated water.

The Monitoring Committee also has a plan to persuade schools and colleges to create awareness among the students in various ways to save water. For this purpose, literature is intended to be distributed to the school authorities. They will be asked to organize skits/drama/quiz/contests etc for this purpose. To sensitize the citizen, continuous process of dissemination of information on RWH systems through platforms like print, electronic, visual, workshop, exhibitions, seminars, booklets, pamphlets shall be undertaken.

The Monitoring Committee shall also ensure that the quality of water in the schools/colleges is improved.

Mr. Harish Chander EE (RWH/GWC) filed Brief Note in the matter of **“Mahesh Chandra Saxena v. Ministry of UD and other”** in OA No. 217/2016 and 591/2016. As per order of Hon'ble NGT dated 18.11.2017, all the schools and colleges were to install RWH systems if not existed within a period of two months, at their own cost. Any institution not complying with the direction was liable to pay Environmental Compensation of Rs. 5 lac after expiry of two months of the judgment.

The Monitoring Committee shall ensure that the directions given by Hon'ble NGT for installation of RWH system are adhered to by all the stakeholders and the defaulters be punished and possibility of imposition of fine of Rs. 5 lacs in terms of the order of the Hon'ble Tribunal be enforced.

A detailed list of inadequate/non-functional/non-existent RWH systems in schools and colleges has been filed along with the dates when the letters were dispatched. These schools are 47 in number. Most of the schools have not furnished response to the letters/notices. Two schools have sent the response seeking issue of design for balance retaining capacity. The concerned authorities were directed to take suitable action as per law and in terms of the directions of Hon'ble NGT against those schools who are in default and even have not bothered to respond to the letters.

The Committee intends to seek status report from all the schools/colleges by issuing a specific circular to ascertain the position/status of the RWH system available in their schools/colleges. The Committee intends to recommend strict action against the defaulters and further to withdraw rebate in water charges being given on this account.

DJB informs that bye-laws make it mandatory for all new buildings on plot of 100 sq meter and above as per Notification issued by the Central Government dated 28.07.2001 to set up RWH systems. Water permission can be granted to new house only when a certificate is given by the Zonal Engineer (DJB) that the applicant has provided the requisite system in the building plans sanctioned by the land developing authority. Bulk water is given to an applicant only when he has a certificate of installation of functional RWH structure in his building by Executive Engineer of the area. Failing to have functional RWH structure invites penalty of 1.5 time the water bill for all property 500 sq meters and above. Rule 50 of the Delhi Water and Sewage (Tariff and Metering) Regulations, 2012, makes it mandatory for all buildings on plot of 500 sq meter or more to set up an RWH system. Recently Hon'ble NGT has directed that the schools and colleges in Delhi without functional RWH systems will have to pay Rs. 5 lacs fine. In January 2019 the Hon'ble NGT was informed that 929 schools under Directorate of Education and 12 colleges under Directorate of Higher Education and 106 school of SDMC would be issued notices within one week by the

authorities and they would have to deposit the compensation amount (Rs. 5 lacs each) with the CPCB within 2 weeks. These institutions are those where RWH system is either not functional or uninstalled as on date. For non-execution of the order passed by the Hon'ble NGT on 16.11.2017 within a period of 2 months as given therein, the NGT has imposed Rs. 5000/- each on Special Director (Education), Director Higher Education and Deputy Director Education (Primary), SDMC which is to be deposited with NGT Legal Aid Bar Association within a week.

Various incentives are being given for installing RWH structure by the government. Plots/properties having area of 500 sq meter or more having RWH system or Waste Water Recycling are granted 10 percent rebate in total water bill amount and for having installed both the systems, 15 percent rebate is given. Consumers having plots between 100 sq meter to 499 sq meter with a RWH system can avail rebate of 10 percent in total water bill amount.

DJB has taken measures to promote implementation of rooftop RWH by the public at large, its design has been simplified and is made available on the website of DJB in pictorial form for public facilitation. Financial assistance to the extent of about Rs. 80 lacs has been given for implementation of RWH systems to 176 institutions in the area which were most affected with groundwater depletion. It is informed that the efforts have annual groundwater recharge potential of about 460 million liters. DJB has also installed RWH systems in 250 installations and have groundwater recharge potential of about 122 million liters. Total rebate of R. 14.24 crores has been given in monthly bills to 1007 consumers of DJB up to July 2018 for having functional RWH system. Penalties of 29.64 crores have been imposed on 1127 consumers of DJB for non-implementation of RWH systems.

DJB has a RWH cell which provides technical assistance on RWH free of cost. It has provided technical designs to about 1600 applicant up to June 2018 which have

the estimated annual recharge potential of about 528 million liters.

It further transpires that Hon'ble SC is also dealing with the issue in WP C No. 4677 of 1985 MC Mehta v. Union of India and others. DJB has placed on record copy of the affidavit filed on behalf of Delhi Government in terms of the order dated 08.05.18. It includes the action plan of Delhi Jal Board on ground water recharge. The Committee intends to oversee whether the action plan submitted before the Hon'ble SC has been translated into action. Latest status report is being called from Delhi Jal Board. The next date of hearing before the Hon'ble SC is 6th Feb 2019. In its order dated 11.07.18, the Hon'ble Supreme Court noted the recent report of Niti Aayog on "Composite Water Management Index", June 2018 in which it was stated that by 2020, 21 major cities including Delhi, Bangalore and Hyderabad were expected to reach zero ground water levels, affecting access for 100 million people. Obviously the situations is critical and requires urgent and concrete steps.

Mr. Ajay Gupta, Member of the Monitoring Committee and an also officer of Delhi Jal Board has prepared a comprehensive pro-forma/questionnaire to ascertain the information with various departments to make an effective action plan. The said pro-forma has been circulated to the Departments and the information is awaited.

Ground Water Recharge - DJB has already filed an action plan on Groundwater recharge in Writ petition No. 4677/85 in M C Mehta v. Union of India and others along with affidavit dated 09.08.2018. The Hon'ble Supreme Court is already seized of the matter and the next date was 6th Feb 2019.

Status report has been filed by DJB in compliance with the orders of the Hon'ble NGT dated 31.01.18 and 20.03.18 in OA No. 496/16 on the issue of ground water quality. It reveals that the total samples collected and tested for fluoride and nitrate in north west (DJB owned) were 581. Out of this 125 samples crossed permissible limit. It was informed that as per action taken report, 125 tube wells were

painted red. 651 tube-wells were tested for electricity conductivity. Out of this, 160 samples crossed the permissible limit and were painted red. It was further informed that there were total 16387 illegal bore-wells in West, East, South and C/N. 2156 illegal bore-wells were sealed. The authorities were directed to strictly enforce the orders of the NGT regarding the bore-wells. Again on 05.11.18, pursuant to the directions of this Committee, Director T&QC furnished status of illegal bore-wells till 30th August 2018. As per this list, sealing pertaining to 14231 bore-wells was still pending. The Committee intends to ensure that the illegal bore-wells are sealed in terms of the order of the Hon'ble NGT expeditiously.

In its meetings, it came to the notice that there was some problem on the issue of water supply to Patparganj area and number of bore-wells are in existence there from where the occupants extract water to meet their demand of water for industries. The representatives of the DSIDC, Patparganj Industrial Area appeared before the Committee on 20.11.18. DSIDC informed that water supply and sewerage services in all the industrial area except Narela and Bhawana was being maintained by DJB. CE (South) stated that the water supply and sewerage services are maintained by DJB after taking over the same from respective developing agencies. On the issue of handing over the water supply network to DJB, ZE (East) stated that a deficiency estimate of about Rs. 8 crore was forwarded to DSIDC which was disputed by DSIDC. It was informed by the representative of Patparganj area that the matter was earlier decided in the meeting chaired by the Hon'ble Chairman EPCA. Some payment was made to DSIDC but the second payment was not made as contaminated water supply was being received. During meeting with Chairman, EPCA it was directed to restore the supply and payment of dues will be settled at the level of Chief Secretary, Delhi. It was informed that bulk supply of DJB was clean but the supply from DSIDC through its network was contaminated. Despite scrubbing of water lines, the supply could not be improved.

It was informed by the representatives of the Association that approximately 400 bore-wells were being operated in Patparganj industrial area. Bore wells installed were declared under Voluntary Disclosure Scheme of DJB and it demanded Rs. 20040 per annum. The bore-wells declared VDS are yet to be regularized by the advisory Committee. As per the orders of the Hon'ble NGT, decision on tube-wells is to be given in 3 weeks. Mr. Hargyan Singh, representative DJB informed that some cases have been placed before the Advisory Committee but not approved as the area was under red zone. It was denied by the representatives of the association. The Committee decided to call DM(Shahdara) with CE (East) on the issue of bore-well declared under VDS. It was also decided that the Association will furnish list of total bore-wells; bore-wells registered with CGWB and bore-wells declared under VDS.

ZE of DJB submitted ATR of MOM dated 2.11.18 SE DSIDC stated that some amount was awaited from MSME and after its receipt DSIDC will replace the water lines. The Committee asked whether DSIDC would restore the lines if DJB supplied bulk water and the association deposited Rs. 40 lac as bank guarantee. It was informed that from payment of MSME is expected to be received in a week. DSIDC was directed to submit an action plan for restoration of the water lines pertaining to that area.

RECYCLING OF WATER

As per amendments in Building Bye-laws 1983 for Delhi, vide Notification dated 28.07.01, recycling of waste water is mandatory for use for horticulture purposes etc where discharge of 10,000 liters per day or more accrues. To promote implementation of reuse of treated effluent, DJB Building Bye laws prescribe that before sanctioning water supply, all buildings having a minimum discharge of 10,000 liters per day and above shall have to incorporate waste water recycle system. The use of recycled water for horticulture/flushing purposes etc would reduce the dependency on groundwater. DJB has a plan to make de-centrelized waste water system mandatory for all schools, which would use treated effluent for their horticulture needs. This will result in zero discharge in DJB sewage network for which rebate of 10 percent sewage charges on volumetric consumption of water could be given to these consumers.

To discourage groundwater utilization by large institutions/public department/private agencies, DJB has issued a public notice whereby treated effluent can be taken by laying pipelines and making pumping arrangements from the WWTP to intended location. DJB has installed filling stations at almost every WWTP to promote the use of treated effluent. At present, 89 million gallon per day of treated effluent is being utilized in Delhi for irrigation, washing, horticulture and industrial uses. DJB is constructing new WWTP plants to accommodate a capacity of 70 mgd per day at Coronation Pillar. It shall also upgrade its treatment plant at Rithala, Rohini, Keshavpuram and Narela.

Recently, expressing concern over extraction of groundwater, Hon'ble NGT suggested use of treated sewage water by farmers for agricultural purposes instead of potable ones. Hon'ble NGT observed that at a time when there is serious depletion of groundwater table, there was a need to switch over to less water consuming crops. It

also observed the need for checking contamination of underground water by whom who are discharging untreated effluents in the earth or in the water bodies. Comprehensive planning and execution on the subject with utmost priority is necessary and absence thereof has led to emergency situation in certain areas.

Center has recently notified revised guidelines for groundwater extraction effective from June 1, 2019. The revised guidelines have introduced the concept of Water Conservation Fee which is payable based on the category of area, the type of industry and the quantum of groundwater extraction. According to Ministry of Water Resources, India is the largest user of groundwater resources in the world. Out of total of 6584 assessment units, 1034 have been categorized as "over-exploited", 253 as "Critical", 681 as "semi-critical" and 4520 as 'safe". Remaining 95 assessment units have been classified as "saline". Groundwater extraction in the country largely goes towards irrigation in agricultural activities; its 90%. The remaining 10% of extraction is for drinking and domestic as well as industrial purposes. Industrial use is estimated to be only about 5% of the annual groundwater extraction in the country. The guidelines also encourage the use of recycled and treated sewage water. A recent Niti Ayog Report has warned that based on current levels of exploitation, Delhi's groundwater reserves would be exhausted by 2020. A latest CGWB report stated that groundwater levels in more than 15 percent of Delhi's area were alarmingly below 40 meters. Presently, Delhi's water demand is 1200 mld. Actual supply is 900 mld. Steps are being taken for augmenting water supply. Fresh water pockets in Dwarka are expected to create additional 22.5 mld. An additional 150 mgd will address the increasing demand but only if the water utility works on plugging leakages and pilferages. According to the official estimates, close to 40 percent of water is lost before being supplied.

FURTHER ACTIVITIES

Besides the above activities, the Monitoring Committee shall endeavor the following in a time bound period:

1. The Monitoring Committee shall ensure that the water bodies are maintained properly and directions of the Hon'ble NGT are complied with whereby DDA was directed to survey and map all the primary, secondary and tertiary drains leading to the water bodies and also make provision to divert flow from drains into water bodies in case some of them do not have an outfall into the water body. Wherever feasible, due consideration would be given to the watershed/catchment of each of the water bodies arrived at on the basis of contouring map. It shall also be ensured that no domestic sewage/industrial effluent is permitted to flow into the water bodies and domestic sewage which is flowing into the water bodies, such domestic sewage should either be diverted into the sewage network in the area or trapped by constructing individual septic tanks by the households in consultation with DJB.
2. The Monitoring Committee shall ensure that in terms of the order, DDA shall make sufficient budgetary provision for survey, identification and restoration of water bodies. With respect to greening of areas with local indigenous species through horticulture department of DDA, efforts will be made that the required plants such as Khejari, Bistendu, Ronjh and Dhak are obtained and planted. The woodland and the greenery around the water bodies shall be maintained.
3. With respect to removal of all illegal encroachments and unauthorized dumping of municipal waste, as per orders dated 01.01.2016, DDA/Delhi Government will be asked to take all such steps for removal of the illegal encroachments on the water bodies, their catchment, removal of unauthorized

dumped municipal waste including construction and demolition waste/*malba* in a time bound period. Police authorities shall be associated. Any illegal activity like encroachment etc. would be reported to police authorities and they will take prompt action as per law. Land owning agencies shall provide sufficient security guards at specific locations to prevent thefts. Fencing will be provided wherever necessary. Recently, the Hon'ble Supreme Court has asked government officials to submit a list of water bodies that have been encroached upon, following which action will be initiated. It sought details of what DJB was doing to tackle encroachments on water bodies.

4. The Hon'ble NGT directed the revenue department of Govt of NCT to take steps to include water bodies as already identified in the report of CGWB, in the revenue records. The concerned department shall be compelled to make necessary amendments in the revenue records and to record all the water bodies existing in their revenue records to have its permanent record.
5. The Hon'ble Tribunal directed Govt of NCT to provide a proposal for declaration of the water bodies as Wetland under the Wetland (Conservation and Management) Rules 2010 within a period of 3 months. Monitoring Committee shall ensure that this direction is duly complied with by the concerned authorities.
6. Flood and Irrigation Department has also jurisdiction over several water bodies. It is informed that it's working to rejuvenate 29 water bodies. This Department will also be associated and involved in the present endeavor.
7. Emphasis will be to set up decentralized sewage treatment plants at different locations near the water bodies. These mini STPs are less capital intensive and more efficient. Smaller lakes can be fed with water treated at these STPs. The bio chemical oxygen demand (BOD) of water released from these plants be

- brought to 10 with natural wetlands, which use plants, gravel and microbes to treat impurities to improve water quality.
8. Instead of cementing roads end to end, the authorities will be asked to explore possibility of inter-locking tiles or grass pavers that are permeable and allow groundwater recharge. All storm water drains need to be put under a single authority.
 9. Mechanical aeration systems will also be explored to be installed in several lakes to improve water quality. All the lakes will aid percolation of water. It will raise raise water table and water can be extracted for other purposes.
 10. Scientists and technical experts would be involved to design harvesting water system scientifically.
 11. Authorities would be directed to plug leakages and pilferages. Presently 40 % water is lost before being supplied.
 12. Use of treated sewage water by farmers for agricultural purpose instead of potable ones would be encouraged. Possibility of switchover to less water consuming crops will be explored.
 13. Comprehensive plan will be chalked out to prevent illegal use of groundwater by industries and big institutions, resorts, hotels, motels in Delhi. To check contamination of underground water by who are discharging untreated effluents in the earth or in water bodies, Polluters Pay Principle shall be followed for such defaulters.
 14. School children shall be involved to spread awareness to save water by various means. To sensitize the citizens, continuous process of dissemination of information on RWH systems and Waste Water Recycling Plants through print

and electronic media, visual, workshop, exhibitions, seminars, booklets, pamphlets etc will be done.

15. The Monitoring Committee shall emphasize that the Rajokri Lake be a template for the revival of 159 other water bodies in the city.

Submitted please.

Justice (Retd.) S. P. Garg
Chairman, Monitoring Committee