Action Plan

for

Abatement of Pollution

of

Critically Polluted Area i.e. Najafgarh Drain Basin Including Okhla, Naraina, Anand Parbat and Wazirpur Industrial Areas of NCT, Delhi

Prepared by

Delhi Pollution Control Committee

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CHAPTER 1

GENERAL INTRODUCTION

1.0 INTRODUCTION

After analyzing the Environmental Status of 88 Industrial Clusters selected in the country, Central Pollution Control Board in consultation with the Ministry of Environment & Forests has identified 43 critically polluted industrial clusters based on Comprehensive Environmental Pollution Index (CEPI). Out of 43 critically polluted industrial clusters, Najafgarh Drain Basin including Wazirpur, Naraina, Anand Parbat and Okhla industrial areas in NCT of Delhi is at 11th position with score of 79.54(combined Air, Water, and Land CEPI) in descending order arrangement based on CEPI.

1.1 GEOGRAPHICAL FEATURES

1.1.4 Location

The National Capital Territory of Delhi is stretched over an area of 1483 sq km. As far as the location of Delhi is concerned, it stands in the middle of the Indian sub-continent, between the Himalayas and Aravalli range. Bordered by Haryana in the east and by Uttar Pradesh across the river Yamuna, Delhi is located approximately 213 to 305 m above the sea level. It is around 33 miles and 30 miles broad and extends latitude 28.38°N and longitude 77.12°E.

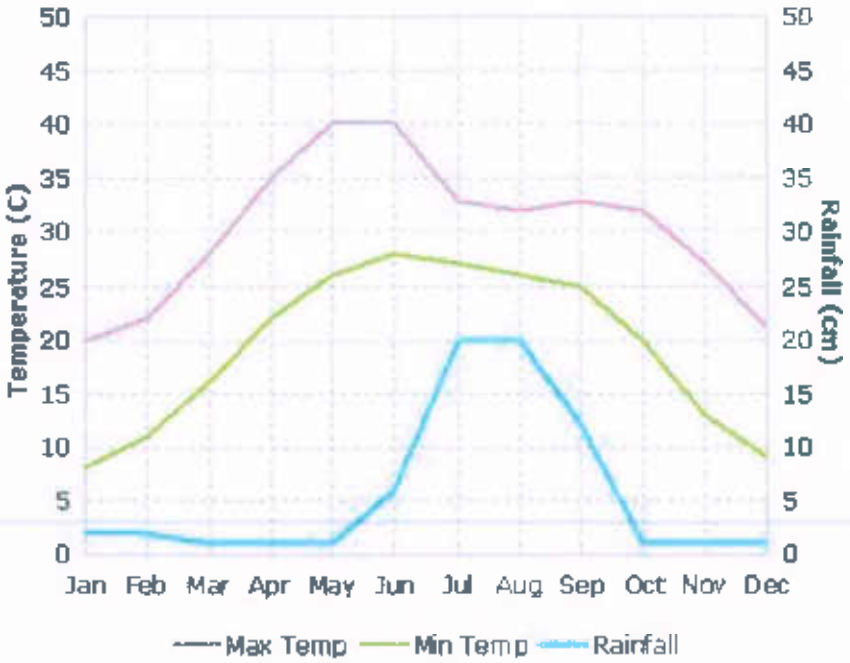
The location of Delhi is such that a major part of the city falls on the western side of the Yamuna River. Apart from Yamuna, which is the main river of the city, there are 3 canals, Agra Canal, Hindon Canal and western Yamuna Canal. Geography of Delhi has divided it into 3 segments. The three segments consist of the Yamuna flood plain, the Ridge and the Plain. The low

The winter months are characterized by dip in the temperature levels often reaching 5°C or less than that.

1.1.4 Weather

The city does not witness much of rainy season. The monsoon lasts from July to September. October sees the end of the monsoon but it is reasonably pleasant.

Fig.-1: *Weather Graph for Delhi*



Source: IMD

Note: These are average maximum and average minimum temperature for Delhi. The highest temperature in Delhi for the month is usually higher than the average maximum temperature. Similarly, the lowest temperature in Delhi for the month is usually lower than the average minimum temperature.

lying and flood prone area of Yamuna flood plains is also known by the name of Khadar.

The area of the Ridge stretches from the Aravalli hills, encircling the city on the northwest and west. One of the highlights of the Ridge area is the Tughlaqabad Fort that stands at its highest point. The Plains consist of all the area of Delhi, apart from the Yamuna flood plain and the Ridge. Majority of the city area, consisting of Delhi, New Delhi and Delhi cantonment, falls in the fertile land of the Plains.

1.1.2 Topography

The topography of Delhi can be divided into three different parts, the plains, the Yamuna flood plain, and the ridge. As per the topography, Delhi is located on the western fringes of the Gangetic Plains. The low altitude Yamuna flood plains provides an excellent scope of agriculture, as it is covered with the fertile alluvium brought by the river Yamuna and deposited here during the frequent floods. The other topographical feature is the Ridge, which reaches the height of 1043 ft above sea level, and is the highest point in Delhi. The ridge originates in the south and surrounds its western, the northwestern and northeastern part. It is a part of the Aravalli Hills.

1.1.3 Climate

The climate of Delhi is one of the most varied and purely depends upon the climate of nearby areas of Himachal Pradesh, Rajasthan etc. Delhi experiences the extremes of weather. This is because of the geological location of Delhi. The climatic conditions of Delhi are similar to that of the temperate grasslands with hot, dry summers, and cold winters. The summers in Delhi start from the month of April and continue till the month of July. It is very hot and dry in the summer months, with temperature soaring up to 45°C. The rainy season provides relief from scaring heat and continues till the month of October. The humidity levels very high in Delhi at this time of the year.

Table-1: Rainfall data since Jan. 2006 to Jan. 2015

Month/ Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Normal	16.6	18.9	14.3	12.1	32.7	69.3	179.3	219.6	117.3	15.7	4.9	8.0	708.7
2006	3.2	0.0	17.8	2.8	93.2	90.2	263.6	66.3	78.5	0.4	0.3	2.4	618.7
2007	0.0	49.8	54.4	0.0	40.4	83.8	83.6	216.8	72.8	0.0	0.0	0.0	601.6
2008	1.8	0.0	0.0	31.0	136.6	100.7	166.2	299.1	115.6	0.0	0.0	0.0	815.0
2009	4.2	6.5	3.9	2.0	43.0	5.4	124.2	188.6	201.9	0.3	14.2	1.0	595.5
2010	0.0	14.2	0.0	1.2	7.6	4.6	236.8	338.8	314.2	22.0	13.	0.3	953.1
2011	0.0	49.9	2.3	2.2	33.4	104.2	33.8	272.4	163.6	0.0	0.0	0.0	661.8
2012	14.8	0.0	19.2	9.0	13.6	12.4	139.8	274.0	57.0	11.0	0.0	8.6	559.4
2013	40.8	109.4	12.6	11.6	0.0	151.0	459.8	521.9	108.1	109.0	0.4	6.8	1531.4
2014	18.6	63.5	63.5	16.4	79.6	59.6	227.8	92.9	123.3	0.0	0.0	26.4	772.6
2015	35.8	0.0*											35.8 6

***Rainfall recorded during February (upto 3 rd morning 8:00 AM)**

(Source: Division of Agricultural physics, Indian Agricultural research Institute, New Delhi-110012)

1.1.5 Ground Water Scenario

The dependence on ground water is quite considerable in the area. The Ground water availability in the territory is controlled by the hydro geological situation characterized by occurrence of alluvial formation and hard rocks such as quartzite. The hydro geological set up and the following distinct physiographic units further influence the ground water occurrence: (1) Older Alluvial Plain on the eastern and western side of the ridge. (2) Yamuna Flood Plain deposits. (3) Isolated and nearly closed Chattarpur alluvial basin. (4) NNE-SSW trending Quartzite Ridge. The yield of tube wells ranges between 18-144 m3/hr in Yamuna Flood Plain aquifers. In Older Alluvium of eastern and western sides of the ridge, the yield of tube wells ranges between 12 to 36 m3/ hr. Tube wells constructed in Chattarpur alluvial basin tapping the aquifers of both alluvium and weathered and fractured quartzite yield about 9 to 27 m3 / hr. Discharge of tube wells

constructed in Quartzite varies from 6-15 m3 / hr.

The groundwater is declining in majority of the areas of Delhi on account of overexploitation of the resources. The rate of decline is as high as 1.7 to 2 meters/year in some areas (South & South west Dist.). Thus eight out of eleven districts of Delhi are categorized as overexploited with respect to dynamic groundwater resources. The groundwater quality shows horizontal and vertical variation in space. The deeper aquifers are mostly underlain by saline water in alluvial areas. The extent of fluoride contamination in groundwater is also high in western part of Delhi in areas like Northwest, Southwest & West districts. The groundwater management aspects of Delhi emphasizes on augmentation of groundwater resources and improvement in groundwater quality through measures like rainwater harvesting and artificial recharge, conservation of groundwater by limiting withdrawal in overexploited areas and limited development of potential aquifers of Delhi to augment drinking water supply.

The quality of ground water is alkaline with pH ranging from 7.1 to 9.2, chloride content ranges between 21 and 1380 ppm. South of Delhi average chloride content is 250 ppm while in Najafgarh area it is around 1000 ppm rendering the water saline covering the area of 32 km. Sq. and marginally saline over the area of 129 sq km.

The ground water study done by the NEERI for MoEF& CC revealed high nitrate and fluoride concentrations. High metallic content, particularly manganese and iron have also been observed in the samples collected. The manganese content was found to be 0.1 mg/L against the permissible limit of 0.5-mg/L and iron concentration of 4.05 mg/L to 0.337 mg/L have been observed.

Ground water in maximum part of the South district is fresh and potable with electrical conductivity ranging from 320 to 4130 micro-mhos/cm at 25°C. Electrical conductivity values more than the permissible limit are observed at Deragaon, Molarbund and at Gadaipur. High values of

nitrate are found at three locations i.e. at Gadaipur, at Rajokri and at Jaunapur. In north Ghitorni and Andheri More, Fluoride is more than permissible limits. Except chromium concentrations at one locality, ground water is devoid of pollution by heavy metals. A comparison of ground water quality from 1983 to 2000 shows quality deterioration in the central part of the Chattarpur basin and in the areas around Nizamuddin. In central part of the Chattarpur basin, quality deterioration is mainly because of over-development of ground water resources. The exhaustion of fresh water present at shallow depths is resulting into brackish water pumping from the tube wells that are tapping the deeper aquifers of alluvium.

The electrical conductivity of shallow ground water in the Southwest district varies from 630 to 13200 micro-mhos/cm at 25° C. Detailed Electrical Conductivity map prepared for this district, ground water quality is fresh with elcetrical conductivity 1000 to 2000 micro-mhos/cm at 25° C. Thus, with over-development of ground water resources in the district, more and more areas are becoming brackish.

CHAPTER 2

CURRENT SCENARIO

2.1 BACKGROUND:

Najafgarh Drain Basin is figuring at Sl. No. 11 in the list of 43 critically polluted clusters/areas. Along with Najafgarh Drain Basin, four more industrial areas of Delhi i.eWazirpur, Naraina, Anand Parbat and Okhla have been added as critically polluted. The map of area is as follow:-

Fig. 2: Tributary Drains of Najafgarh Drain

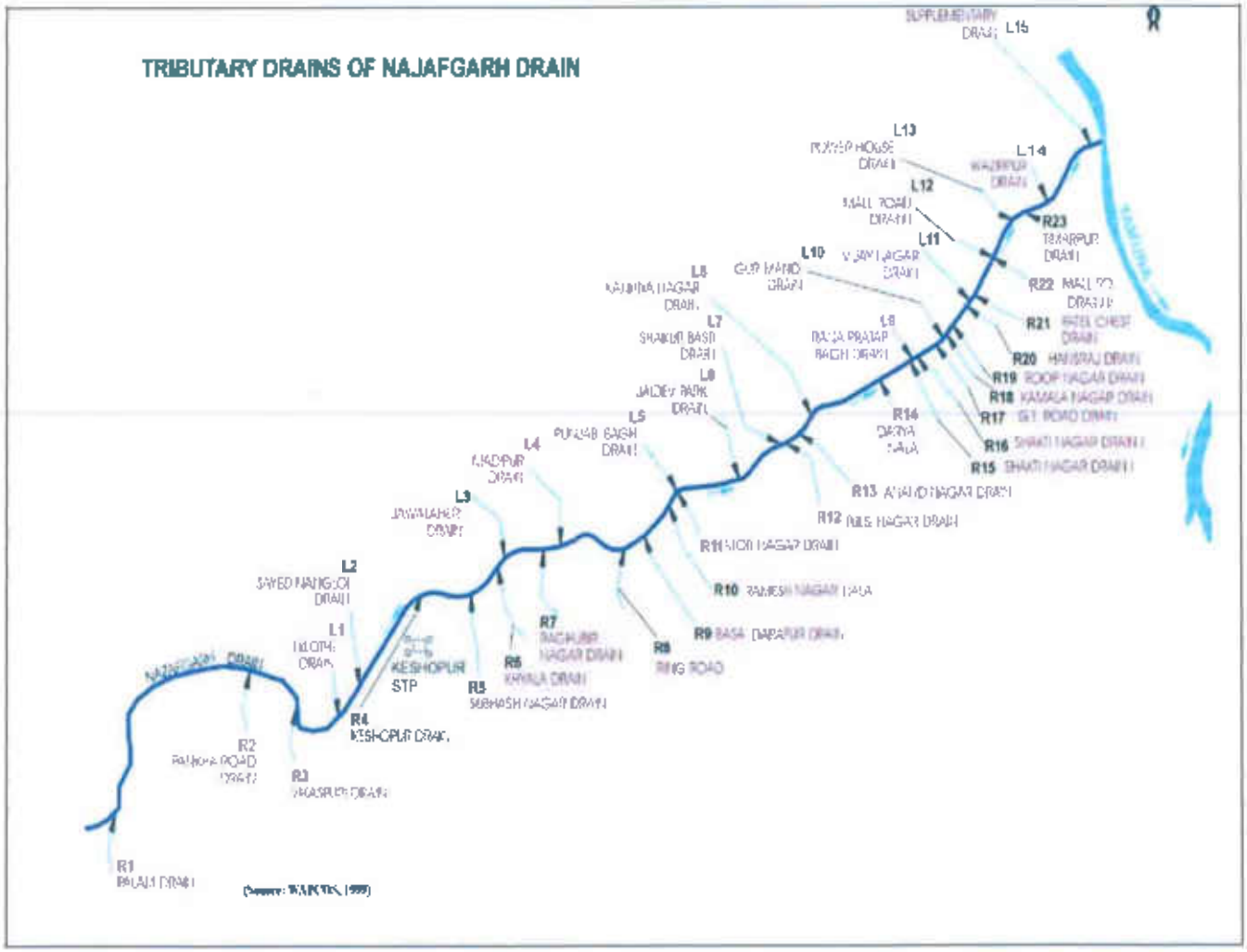
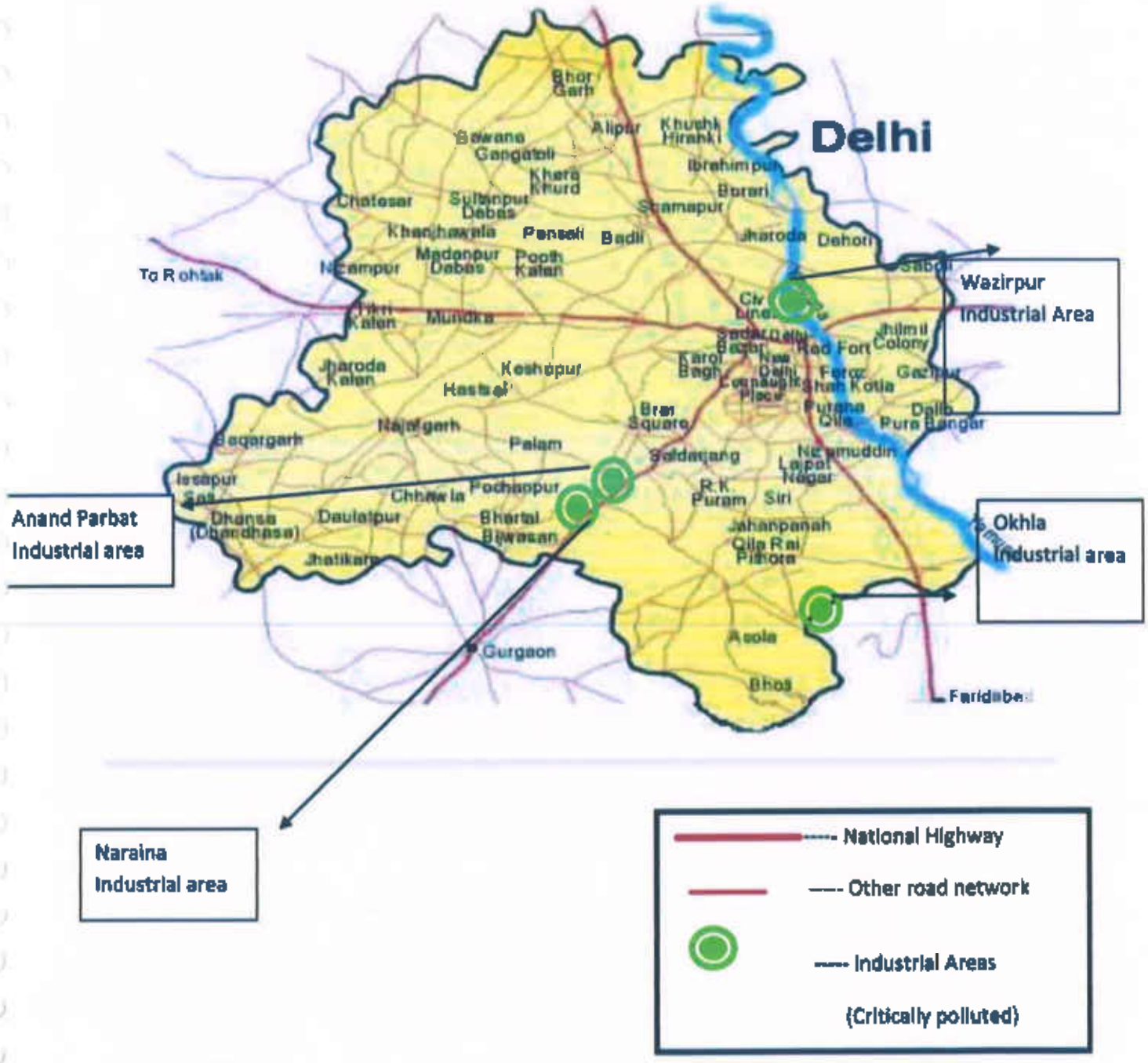


Fig.3: Map showing four industrial areas which are included in CPA



Source: DPCC

As per the Delhi Master Plan 2021and subsequent amendments, 22 new industrial areas have been earmarked for redevelopment considering various factors. Anand Parbat Indl area is one of these industrial areas. Other industrial areas falling in the catchment area of Najafgarh Drain are Samaipur Badli, Sultanpur Mazra, Hastsal Pocket – A, Naresh Park Extension, Libaspur, Peeragarhi Village. Khyala, Hastsal Pocket-D, Shalamar Village, Nawada, Rithala, Swaran Park Mundka, Haiderpur, Dabri, Basai Darapur, Mundka Ind. Area and Pehladpur Bangar. These areas have been approved as industrial areas for redevelopment by Ministry of Urban Development, UOI as per their policy as these areas consists of more than70% industries. Though numbers of industries are in operation, they will be considered authorized/approved only when the areas are redeveloped and notified as industrial areas. The said task has been entrusted with DSIIDC, Govt. of NCT of Delhi. All the units in unauthorized and redevelopment areas shall be allowed to operate with the adequate pollution control systems.

DPCC controls the pollution from industrial units by way of consent mechanism. The industries which are complying with the existing pollution control norms are only given consent. However, consent is not given to those industries which are not complying with the norms and directions of closure are also issued to such industries. The details of consents issued and directions issued by DPCC are given as under.

- Consent under Air &Water Acts has been granted to 1991 units during 01.04.2014 to 31.03.2015.
- Consent under Air &Water Acts has been granted to 762 units during 01.04.2015 to 31.03.2016.
- Consent under Air &Water Acts has been granted to 2405 units during 01.04.2016 to 31.01.2017.
- Directions for Closure u/s 33(A) of the Water (Prevention & Control of Pollution) Act, 1974, u/s 31 (A) of the Air (Prevention & Control of Pollution) Act, 1981 as amended to date and u/s 5 of the

Environment(Protection) Act, 1986,have been issued to 711 units(from 01.04.2015 to 31.01.2017) including the industries closed in pursuance to comply the orders of Hon'ble NGT/ PGC for violations/ non-compliance of the provisions of the Pollution Control Laws.

2.2 POLLUTION CONTROL:-

2.2.1 Water Pollution:

Industrial Waste Water Pollution:

As per report of Central Pollution Control Board, the Cumulative Environmental Pollution Index (CEPI) in respect of water has been calculated as 69 for Najafgarh Drain basin including 4 industrial areas, on the basis of which they said basin has been declared as CPA. Water pollution is being caused by the industries engaged in the activities of pickling, dyeing, electroplating and other miscellaneous water polluting units, etc. in the industrial areas of Wazirpur, SMA, SSI, Rajasthan Udhyog Nagar and Badli and in other industrial areas as well as non industrial areas falling in the catchment area of Najafgarh Drain.

As per the provisions of Delhi Master Plan 2021, certain activities which are highly polluting have been placed in the Prohibited/ Negative List of Industries, which are not permitted to operate in NCT of Delhi after 07.02.2010. By closing these units water pollution can be reduced to very significant extent. Industries department and DDA are required to close down the units engaged in the activities listed in Prohibited/ Negative List of MPD 2021 as ***Annexure-I***. Pickling units use hydrochloric acid for cleaning the surface of the products. In the year 2007, the industry i.e. "Stainless Steel Pickling" activity was placed under the Prohibited/Negative list of industries in Master Plan for Delhi 2021 and was due to be closed down from 7th February, 2010. Accordingly, from January 2010 onwards, DPCC stopped receiving the consent applications from pickling units, refused/revoked the consents existing at that time and wrote to the concerned agencies i.e. DJB, electricity distributers and Deputy Commissioners to

close down the pickling units.

As a reminder, on 22.03.12, DPCC again wrote to the concerned Deputy Commissioner for effectively closing down the pickling units. Consequently, the industrial units approached Hon'ble High Court against orders of DPCC dated 22.03.2012. In its order dated 27/08/12, Hon'ble High Court quashed the letter of DPCC dated 22.03.2012 for effective closure and struck down the provision of placing pickling activity under Prohibited/Negative List of Industry in MPD 2021, reason being that DDA/ Ministry of Urban Development had not followed the due procedure laid down under the statute. In compliance to the order of Hon'ble High Court, the Ministry of Urban Development Govt. of India, after following the due procedure, vide Notification, S.O. 2890(E) dated 23rd September 2013 again placed the "Stainless Steel Pickling" activity in the Prohibited/Negative list of industries in Master Plan for Delhi 2021. After the publication of the notification, as the pickling units were to close down in 2010, DPCC issued letters to concerned Deputy Commissioners on 10/10/2013 to ensure effective closure of pickling units. Apex Chamber of Commerce & Industries of NCT of Delhi challenged the letter of DPCC dated 10.10.2013 before Hon'ble High Court of Delhi. Hon'ble HC of Delhi in its judgment dated 11/11/13 set aside the letter of DPCC dated 10.10.2013 and gave an extension of 3 years to pickling units from the date of notification of the Ministry dated 23/09/13 i.e. upto 22.09.2016. No appeal has been filed by DDA/ Ministry against this judgment. The case was disposed off. Therefore, legally the pickling industry was allowed to operate in Delhi till September, 2016.Subsequently, the representations have been given by the pickling units for allowing them to operate in Delhi. The matter is under consideration by Delhi Government.

Most of the units are equipped with CETPs to treat the waste water generated in these industrial areas but there is no provision for controlling the TDS. By the continuous efforts of DPCC, more than 1700 units have installed individual Effluent Treatment Plants to treat their waste water.

In NCT of Delhi most of the units, looking at the economics, have been using lime as neutralizing chemical to increase the pH which is increasing the sludge generation immensely. This sludge is generally Hazardous Waste (HW) as per the provisions of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 amended to date. Collection, Storage, Transportation, Treatment and Disposal of the HW is becoming tedious and unviable economically. So as to reduce the HW generation, concerned units are required to be compelled to use NaOH in place of lime. This is the case with the CETPs, which are to be educated to use NaOH in place of lime to reduce HW generation. Sincere efforts are required by all the industries and CETPs to switch over to NaOH from lime to achieve significant reduction in HW generation.

Pursuant to the order of Hon'ble Supreme Court of India, 15 CETPs were proposed to cater to the needs of treatment of waste water generated by the 21 industrial areas of NCT of Delhi. However, only 13 CETPs, out of the 15 proposed CETPs, have been constructed so far and are operational at present. Waste water from all the CETPs except for Jhilmil& Friends Colony Indl Area is entering into Najafgarh Drain, which in turn meets the river Yamuna. There are 13 CETPs catering 17 industrial area with total operational capacity of 51.15 MGD for the treatment of industrial effluents as shown in **Table -2**.

Table-2: Name, Location, Capacities of the CETPs

S.No.	Name and location of the CETP	Installed capacity in MLD	Actual average treatment in MLD
1.	Jhilmil& Friends Colony Industrial Area	16.8	6.2
2.	Badli Industrial estate CETP	12	1.6
3.	Mayapuri Industrial Area CETP	12	3.5
4.	Mangolpuri Industrial Area CETP	2.4	2.1
5.	Wazirpur Industrial Area CETP	24	4.0
6.	DSIDC Nangloi & Udhyog Nagar Industrial Area CETP	12	2.45
7.	SMA Industrial Area CETP	12	1.5

8.	Okhla Industrial Area CETP	24	2.5
9.	Narela Industrial Area CETP	22	6.5
10.	Udhyog Vihar (Bawana) Industrial Area CETP	35	12.9
11.	Naraina Industrial Area CETP	21.6	3.9
12.	GTK Industrial Area CETP	6.0	2.5
13.	Lawrence Road Industrial Area CETP	12	1.5
Total		212.2	51.15

Source: DPCC

A study has been got conducted from IIT Delhi during August 2013 for installation of additional 5 CETPs in Delhi for the industrial areas namely Mohan Cooperative industrial area, Okhla Industrial estate, Patparganj Industrial area, Anand Parbat Industrial Area, Najafgarh road Industrial area, Kirti Nagar &Moti Nagar industrial Area. Based on the recommendations of the experts from IIT Delhi as well as decisions taken in the meetings with various departments namely, DSIIDC, Industry Department, DPCC and IIT Delhi, it has been decided not to construct new CETP as the existing CETP are underutilized. Also, the construction of CETPs at industrial areas such as Anand Parbat, Okhla industrial estate and Mohan Co-operative industrial areas have been kept in abeyance by Environmental Pollution Control Authority (EPCA) headed by Sh. Bhure Lal. The construction at Najafgarh Road Indl Area is presently not in progress due to dispute with the contractor of CETP.

DPCC has been collecting samples of waste water at both inlet and outlet of the all the operational CETPs on monthly basis and appropriate action to rectify the deficiencies has been issued from time to time. The parameters at each of the CETP, during the period (December 2016) have been tabulated and the same is enclosed as ***Annexure –II***. The deficiencies are informed to the respective CETP Society and they are directed to remove the same to comply with the norms laid down.

Within a stretch of 22 km between Wazirabad and Okhla, 22 drains falls into river Yamuna, out of which 18 major drains are directly falling into the river and remaining 4 drains are falling indirectly through Agra and Gurgaon Canal. River Yamuna is monitored at 9 locations on monthly basis and

samples are analyzed for 5 parameters as enclosed as ***Annexure III***. 24 major drains are monitored on monthly basis for 4 parameters as enclosed as ***Annexure IV***. Najafgarh Drain is the major polluting drain of Yamuna River in Delhi contributing about 40 % of the total pollution to the river followed by the Shahdara Drain. Total waste water generation in Delhi is about 700 million Gallons per Day (MGD), out of which more than 80% is the domestic sewage followed by industrial waste water. Natural ecological flow of the river is affected as there is no fresh water available for dilution in Yamuna as the entire fresh water from Wazirabad is being used to meet the drinking water needs of Delhi citizens. Consequently, the water quality of River Yamuna at the downstream of Wazirabad barrage after confluence of Najafgarh drain is not meeting desirable/prescribed norms.

Major water polluting activities have been included in the F-27/33 category of units identified by Nodal Agency (Ministry of Urban Development, UOI) and Group of Experts, constituted by GNCTD(polluting category as per Master Plan of Delhi-2001) so as ensure the closure of these units from the non-conforming area, in compliance of Hon'ble Supreme Court Directions. In year 2000-2001 intensive drives have been undertaken by Govt. of Delhi to close down the Polluting industries operating in residential areas of Delhi falling under F-27/33 category of units. In total 3423 units have been closed down by the Govt. of NCT of Delhi. By the continuous efforts of DPCC, about 1191 units were directed to be closed down by SDMs operating in non-conforming/residential areas. Compliance reports for closure have also been received from SDMs in case of most of these 1191 units.

Keeping in view of the indiscriminate throwing/dumping of plastic bags in drain/river Yamuna/sewage system resulting in choking of such systems, Govt. of Delhi has banned Plastic carry bags in NCT of Delhi. Mandatory provision of installation of onsite-decentralized wastewater treatment systems (STP/ETP) by industries, hotels, construction projects etc with treated wastewater reuse in flushing, cooling, horticulture etc is being enforced for implementation. Zero Discharge in building and

Construction projects seeking Environment Clearance (built-up area >= 20000 sq. mt.) is being imposed with installation of STPs/ETPs.

To start with all the 5 star hotels have been asked to install STPs to treat entire waste water generated by them and to reuse the treated effluents so as to have very minimal discharge. MOU were signed between Delhi Govt. and 32 individual hotels in the presence of Hon'ble CM of Delhi to follow Green Hotel Guidelines. The said guidelines detail about rainwater harvesting structure, organic waste converter etc. A Workshop for five star hotels was held on 26.02.2013 by inviting representatives of all the hotels. Guidelines for green hotels were explained to them and six months time was given to them to comply with the said guidelines. Restaurant, Eating House, Sweet Shop, Dhaba and Hotel (RESDH) policy was prepared which was approved by DPCC Board in its meeting held on 06.10.2012. Meeting was held with Associations of Hotels, Restaurants, Banquet Halls, Halwais / Bakers and Market associations of Khan Market and Connaught Place on 23 January, 2013 regarding compliance of RESDH Policy as well as to urge them to apply for Consent. The said policy has been reviewed in the Board meeting held on 22.03.2016 and office order was issued on 04.11.2016.

The quality of waste water flowing in the Najafgarh drain is monitored on monthly basis and the monitoring which is done every month is averaged for period of Apr 2015 to Mar 2016 reveals that the parameters was pH – 7.3, TSS – 157.8 mg/l, COD – 204.4 mg/l and BOD – 63.3 mg/l. Quality of the waste water showing here is not good. For industrial pollution control the matter remains is only to operate the existing ETPs/ECS/CETPs regularly and to keep a vigil to stop new illegal units. For industrial water pollution control, intensive drives were taken up in year 2000 in view of Hon'ble Supreme court orders in IA No 725/94 of Maily Yamuna case due to which industrial units are well sensitized for installation of ETPs. DPCC filed around more than 600 complaint cases under Maily

Yamuna court case in the year of 2000. Out of which, around more than 500 cases have been settled so far. In more than 30 cases DPCC received Rs. 50,000- 60,000/- as a compensation. Also, Najafgarh jheel is located in the village of Najafgarh, starting from Dhandsa basin, which is very near to the border of Haryana state. Najafgarh Jheel is the initial point from where the Najafgarh drain originates. This lake is nearer to Gurgoan which falls in the state of Haryana. Most of the times, it was observed by the joint inspections of CPCB and DPCC that untreated waste water has been coming into the Jheel, which is polluting the jheel to some extent. The quality of the water gets further deteriorated on the downstream stretches of the drain, as significant quantities of domestic waste water is flowing into the said drain. This is due to the fact that the unauthorized residential colonies alongside the drain have not been laid with proper sewerage network leading to Sewage Treatment Plants and so the untreated waste water is contributing to very highly deteriorated water quality. The waste water flowing in this drain finally gets into river Yamuna.

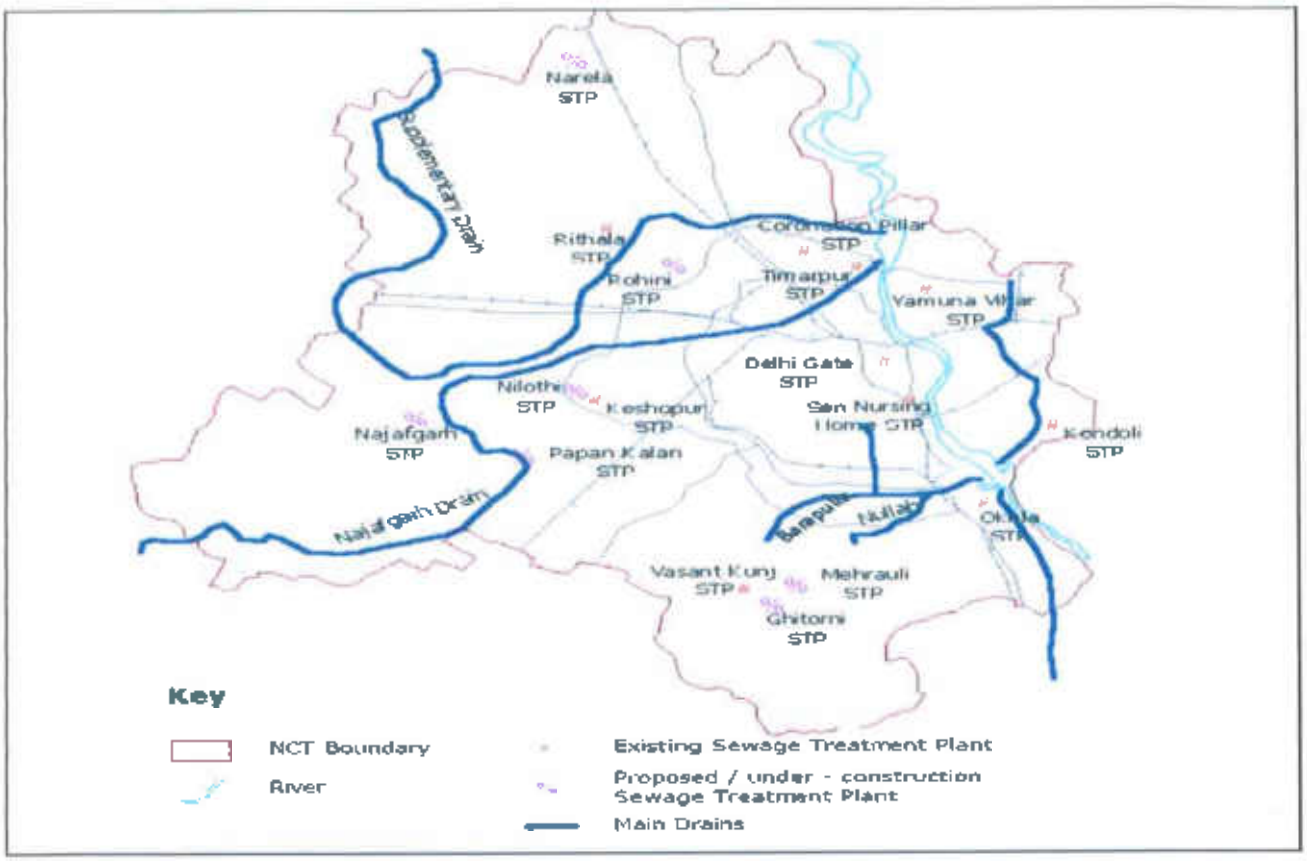
Interceptor Sewage Project is being implemented by DJB in a 59 km length along three major drains (i.e. Najafgarh, Supplementary and Shahdara) to intercept sewage flowing from subsidiary small and convey it to the nearest sewage treatment plants for treatment to ensure that only treated sewage is discharged into drains and Yamuna river. The intention is to prevent untreated waste water from reaching the river, hence abating pollution. Implementation of the planned interceptions as part of the project will achieve a reduction of BOD from 38.9 mg/l to 12 mg/l at the outfall of Najafgarh, Shahdara and Supplementary drains, as worked out through water quantity modeling. To bring the river water up to class C, treated effluent discharges need to achieve a treated BOD of 10 mg/l and sufficient dilution is to be ensured by neighboring states by releasing additional water in river Yamuna. Once the said project, is completed, the waste waters entering into these drains are intercepted and will be treated before its discharge into the river Yamuna. The system includes provision of interceptor sewers along with associated works like interceptor pits, new sewage pumping stations, rising mains etc., along the drains

involving the related Sewage Treatment Plants in the catchment areas. The project is an integrated approach towards zero sewage flows in the drains and the river. The cost of the project is about 1350 crores and is being implemented by Delhi Jal Board. Consent to Establish granted for Interceptor Sewer to trap the untreated waste water.

Domestic Waste Water Pollution:

About 840 MGD of water is required to cater to the needs of the population of NCT of Delhi. Due to consumption of such huge quantity of water by the population, about 672 MGD of waste water is generated. However, the total treatment capacity of STPs as on today is only 604 MGD (37 STPs at 22 locations), which is well below the required capacity, apart from having large number of localities of NCT of Delhi not covered by any sewerage network. The capacity of STPs is being augmented to 732 MGD by 2017. Table 3 gives the details of STPs in CPA. Numbers of steps are being taken by both DPCC and other statutory agencies such as Delhi Jal Board, Department of Industries etc to check the water pollution. Also, these STPs are treating waste water and treated water is being used for cooling tower, horticulture and gardening purposes.DJB and DSIIDC to achieve 100% treatment of sewage/ industrial effluent within three years to ensure that no untreated sewage /industrial effluent enter the river Yamuna.

Fig.4: Map showing STPs in Delhi



Source: DJB

Table -3: List of STPs operational in the catchment area of Najafgarh Drain:-

S.No.	Location of STP	Installed Capacity of STP(MGD)	Actual Treatment (MGD)
1.	Okhla STP	170	137.95
2.	Keshopur STP	72	58.34
3.	Ritbala STP	80	44
4.	Pappankalan STP	40	21.15
5.	Najafgarh STP	5	1.5
6.	VasantKunj	05	4.73
7.	Mehrauli STP	05	3.2
8.	Nilothi STP phase I	40	13.5
9.	Rohini STP	15	1.95
10.	Coronation Pillar STP	40	20.13
11.	Narela STP	10	1.02

Source: DPCC

Ground Water and Rain Water Harvesting

As per the notification of Govt. of NCT of Delhi dated 12.07.2010, for ground water regulation and management in Delhi. In the whole of the National Capital Territory of Delhi, no person, group, authority, association or institution shall draw ground water through bore-well or tube well (both new as well as existing and drawing ground water without permission of Central Ground Water Authority) for domestic, commercial, agricultural and industrial uses without the prior permission of the "Competent Authority" that is to say, the Delhi Jal Board of the New Delhi Municipal Council as the case may be.

- The issue of grant of permission for bore well/tube well shall be dealt by the Competent Authority through the Deputy Commissioners (Revenue) of each Revenue District, GNCTD,

who is hereby appointed as "Authorised Officer" for the purpose of regulation of ground water development and management in the respective revenue areas under the jurisdiction.

- The Deputy Commissioner (Revenue) of each Revenue District, GNCTD, who is the Authorised Officer, are further delegated with the power of dealing with other issues such as checking violation and sealing illegal well, launching of prosecution against offender etc. including grievance redressal related to ground water, based on the recommendations of the Advisory Committee.

Hon'ble National Green Tribunal has also taken up the issue of unauthorised extraction of ground water through bore well and tube well in Delhi. CGWA with a view to protect and preserve the ground water resources of the country from further depletion, has decided to promote technique of rain water harvesting including roof top rain water for ground water recharge.

Accordingly, CGWA vide Public Notice dated 06.01.2010, directed all the residential group housing societies/institution/schools/hotels/industrial establishment falling in the over-exploited and critical areas as specified in the schedule to adopt Roof Top Rainwater Harvesting Systems(RWHS) in their premises. It is also mentioned in the said Public Notice that for any technical guidance, Regional Directors of the Central Ground Water Board or the Ground Water Department of the State/Union territories having jurisdiction over the area may be contacted.

That as per the modifications / additions to the Building by laws, 1983 made vide Gazette Notification dated 28.07.2001 issued by Ministry of Urban Development & Poverty Alleviati on, Govt. of India, water harvesting through storing of water runoff including rain water in all new buildings on plots of 100 sq. meters and above has been made mandatory. The plans submitted to the local bodies shall indicate the system of storm water drainage along with points of collection of rain

water in surface reservoirs or in recharge wells. These provisions will be applicable as per Public Notice(s) of CGWA issued from time to time. This notification, casts responsibility on the Local bodies DDA/MCD to undertake a site inspection to ensure that the rain water harvesting system is made as per plan before issuance of Completion Certificate to the building.

As per the notification of Department of Environment, Govt. of NCT of Delhi, Dated 12.07.2010 regarding ground water regulation and management in Delhi, if the plot size of building is more than 200 Sq. Meter, the permission to draw ground water through bore well or tube well (both new as well as existing and drawing ground water without permission of Central Ground Water Authority) shall be subject to the condition that the occupier or owner of the said plot or building shall install Rain Water Harvesting System in such building. As per the said notification Delhi Jal Board or New Delhi Municipal Council is the "Competent Authority".

Delhi Jal Board (DJB) has a dedicated RWH Cell which was earlier providing financial incentiv es/ subsidy for construction /installation of RWHS in residential complexes of RWAs/ Societies. DJB has now modified the incentives in the form of rebate in water tariff. The aforesaid rebate (10%) can be allowed by DJB in water tariff to the owners/ institutions who install RWH on a plotted area of 200 sq. meters or above.

Hon'ble National Green Tribunal in M.A. No. 825 of 2014 in OA No. 94 of 2013, Vikrant Kumar Tongad Vs DMRC and Ors has passed various orders w.r.t Rain Water Harvesting System in Hospitals, malls, Commercial Complex, Hotel and RWAs and as per the orders of Hon'ble National Green Tribunal 8 Committees have been constituted to conduct site visit to the premises of the said establishments w.r.t their capacity, operational status etc. In case of construction projects in Delhi requiring Environmental Clearance, condition is being imposed for providing Rain Water Harvesting System. Delhi Pollution Control Committee has also directed all the five star hotels and

hospitals having 50 beds and above to install Rain Water Harvesting System.Also, Ground water samples are collected from 34 locations on monthly basis.

2.2.2 Air Pollution:

In Delhi, almost all the industries are of small scale and the statistics have always shown that the vehicular sector is major contributor of air pollution in Delhi. It is a very well known fact that Delhi is getting accumulated with about 1400 vehicles per day and there are more than 1 crore registered vehicles in Delhi apart from vehicles plying from other states. This is mobile source of Air Pollution. Though the increase in the number of vehicles is rapid, the percentage of increase in air pollution levels has been kept under check by taking above cited steps. All commercial vehicles have been converted to less polluting CNG mode and by improving the automotive fuel quality air pollution levels have been kept under check. Further increase in the network of the Metro rail will result in significant reduction in air pollution levels of Delhi.

One of the major contributors towards air pollution in NCT of Delhi is rapidly increasing building activity, one of the stationery sources of pollution which is being taken very seriously and the agencies are being asked to take all the necessary steps to control dust emissions from the excavation stage itself. The same is being specified while issuing Environmental Clearance and Consent to Establish and the same is monitored through periodic inspections. The other main stationary sources of air pollution are the industrial units, which are emitting particulate matter, sulphur di-oxide and oxides of nitrogen etc. But the rate at which the said degradation has occurred has reduced due to various steps taken by DPCC and other agencies to rein in the air pollution levels. Burning of rice and wheat straw by the farmers in the agricultural fields of Neighboring States of Punjab and Haryana is also affecting the ambient air quality of the Delhi.

Ambient Air Quality Monitoring (AAQM) Data of NCT of Delhi:

Six CAAQMs have been installed and are operational at R.K. Puram, Mandir Marg, Punjabi Bagh, Civil Lines, IGI Air Port and Anand Vihar.

The parameters monitored are:

Gaseous: Ammonia, Benzene, Carbon Monoxide, Formaldehyde, Mercury, Nitrogen dioxide, Nitrogen oxide, sulfur dioxide, Ozone, p-xylene and toluene.

Particulate: PM_{10} and $PM_{2.5}$

Meteorological parameters: Ambient air pressure, Ambient Air Temperature, Ambient Humidity, wind Direction and wind speed.

- In order to determine the status of quality of the ambient air in the catchment area of Najafgarh Drain basin, the Board is monitoring the ambient air quality at various locations for the last number of years. The ambient air quality monitoring analysis of last 18 years as given in Table 4 reveals that the annual average concentration of PM10 is in the range of 160 to 301 µg/m3 against annual average prescribed standard of 120 µg/m3 for industrial area, 60 µg/m3 for residential, rural & other area and 50 µg/m3 for sensitive area. So, the concentration of RSPM in ambient air is more than the prescribed limit.

Table: 4 Ambient Air Quality Levels In Delhi: 1997-2016

S. No	Years	Ambient Air Quality ($\mu g/m^3$)			
		SO_2	NO_2	CO	PM_{10}
1	1997	18.7	44.9	4410	--
2	1998	20.4	42.2	5450	--
3	1999	19.5	40.1	4241	--
4	2000	18.0	41.8	4686	191
5	2001	14.1	41.8	4183	150
6	2002	11.3	50.8	3258	192
7	2003	9.5	55.8	2831	170
8	2004	9.3	57.4	2581	160
9	2005	8.8	55.9	2541	168
10	2005	8.8	55.9	2541	168
11	2007	4.0	38.0	2460	161
12	2008	5.0	43.1	2461	201
13	2009	5.0	4703	1768	248
14	2010	5.0	46.0	1937	249
15	2011	15.0	66.0	2020	281
16	2012	18.2	82.4	2020	293
17	2013	20.1	77.5	2100	282
18	2014	16.9	79	1700	318
19	2015	17.6	73.0	1618	268
20	2016	19.90	70.2	2090	290

Source: - CPCB & DPCC

- DPCC presently monitors air quality through 6 online continuous ambient air quality monitoring stations. The stations can be classified in two categories i.e. residential (R. K. Puram, Mandir Marg& Punjabi Bagh) and hot spots (I.G.I Airport and Anand Vihar). Civil Lines is also influenced by traffic emissions. Table 5 shows the annual average of critical pollutants in Delhi.

Table-5: Annual Average of Critical Pollutants in Delhi for Year 2016

Locations	SO2 (µg/m3)	NO_2 ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m3)
R.K. Puram	25.91	72.80	276	138	50.08	2.08
Mandir Marg	16.07	54.76	238	112	27.02	1.47
Punjabi Bagh	19.96	77.10	274	131	51.78	1.67
IGI Airport	16.89	63.40	247	116	65.38	0.53
Anand Vihar	20.10	81.87	423	168	30.24	2.12
Civil Lines	20.42	71.77	282	156	62.25	4.68

Source: - DPCC

- **Sulphur Dioxide (SO_2):** No significant variation was observed in the annual average value between 2011 to 2016. The values monitored were always within the prescribed limits of 50µg/m3at all stations. The minimum value was observed at Mandir Marg and maximum was observed at R.K Puram.
- **Nitrogen Dioxide (NO_2):** Annual average of NO_2 concentration has shown the marginal increase as compared to year 2011. The highest annual average was observed in 2012 (118.2µg/m^3). In 2016, the average value was 70.28 µg/m^3. The minimum value was observed at Mandir Marg and maximum at Anand Vihar. At all the monitoring locations annual average exceeded the prescribed standard of 40 µg/m3.

- **Carbon Monoxide (CO)**: The value of CO in 2016 varied from 0.53 mg/m3 to 4.68mg/m^3. The minimum was observed at IGI Airport and maximum at Civil lines. Except Civil Lines and Anand Vihar at all the locations CO is under the prescribed standard of 2 mg/m3.
- **Particulate Matter (PM_{10})**: The Particulate matter concentration shows an increase when compared to previous year. The values at R.K.Puram, Punjabi Bagh, Mandir Marg, IGI Airport and Civil lines showed a increase except Anand Vihar.
- **Particulate Matter ($PM_{2.5}$)**: Concentration of $PM_{2.5}$ varied from 112 µg/m^3 to 168 µg/m^3. The minimum was observed at Mandir Marg and maximum at Anand Vihar.
- **Ozone (O_3)**: The concentration of ozone varied from 27.08 µg/m^3 to 65.38 µg/m^3 in 2016. The minimum was observed at Mandir Marg and maximum at IGI Airport.
- National Ambient Air Quality Standards fixed by the Central Pollution Control Board are presented in Table 6.

Table-6: National Ambient Air Quality Standards

S.No	Pollutant	Residential, Industrial, Rural & Other Areas	
		24 Hourly Standard*	Annual Standard *
1	SO_2 (µg/m^3)	80	50
2	NO_2 (µg/m^3)	80	40
3	PM_{10} (µg/m^3)	100	60
4	$PM_{2.5}$ (µg/m^3)	60	40
5.	CO (mg/m^3)	04#	02##

Source: Delhi Pollution Control Committee (DPCC)
** Annual Arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.*
*** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.*
 # 1 Hourly, ##8 Hourly.

As summarized, the main factors contributing towards the ambient air quality deterioration are:

i) Rapid increase in the vehicular density due to industrialization and commercialization.

ii) Haphazard growth of the industries in both industrial as well as non industrial areas.

iii) Lack of proper infrastructure such as roads, green belts, buffer zones etc.

Steps taken to control Air Pollution:-

- Use of Coal Fired Boilers is banned in Delhi. Coal based thermal power plant namely IP Power Station was closed (w.e.f. 30.12.2009) and the power plants which are coming up are all gas based ones thereby reducing air pollution. Even the other operational coal based power plants are being pursued to switch over to cleaner fuel to meet stringent emission level of 50 mg/Nm^3. BTPS has now proposed to go for 3x350 MW gas based units for which public hearing, as per the provisions of EIA notification dated 14.9.2006, has been carried out on 25.02.2011. Also, DPCC is regularly conducting the stack monitoring of all the Power Plants. At present the operation of BTPS has been suspended. Further, BTPS has also been directed to achieve the standards of 50 mg/Nm^3 for the particulate emissions, whenever it is given permission to operate. BTPS shall ensure the possibility of converting coal based to gas fired power stations.
- DPCC decided before CWG 2010 to ban coal fired boilers in Delhi. Accordingly, all such units were issued Closure Directions in the year 2010. At present, no coal fired is allowed or permitted in NCT of Delhi and the units using it are being forced by DPCC to convert their boiler on alternate fuel like oil/gas Converting into gas based mode is required to reduce the air pollution caused due to the former fuels. Further, DPCC has also directed five star hotels to convert their oil fired boiler to gas based and subsequently, most of these hotels have compiled with the directions of DPCC. Coal/oil based boilers in Delhi are one of the air pollution sources which are to be addressed in a time bound manner and on priority. Continuous public campaigns such as issuance of Public Notices and subsequent inspections will discourage the units to use coal/oil and other unapproved fuels. Looking at the pollution threat posed by coal based power plants in any urban area, coal based plants are being discouraged and only gas based power plants are being given go ahead to boost up the power generation.

- Insisting all the construction agencies to have proper dust emission control systems during construction. Installations of Emission Control Systems have been made mandatory for all air pollution industrial units in Delhi. For reducing Air Pollution, industries operating in various industrial areas, have installed Emission Control System (ECS) to meet the prescribed standards. Action is taken by Delhi Pollution Control Committee (DPCC) against the units which are found operating in violation of the pollution control laws. More than 600 units have installed Emission Control Systems (ECS) for control of air pollution. Environmental Clearance for new projects is being granted with strict condition to prevent any further degradation of Environment.
- Compressed Natural Gas has been introduced in public transport. The buses, private taxi & autos mandatorily run on CNG in Delhi. At present, we have more than 6000 low floor high capacity CNG buses.
- Introduction of Metro Rail in Delhi of about 210 Kilometer has resulted in reduction of about 58000 vehicles per day on the roads, which in turn has saved fuel costs to the tune of Rs. 115 crores. Reduction in the member of vehicles and vehicle kms on the roads with corresponding reduction in fuel consumption and vehicular emission. Less congestion on the roads with proportionate increase in speed of road vehicles, resulting in further reduction in fuel consumption and vehicular emission. Metro rail projects are thus not only environment friendly by themselves but also assist in reducing environmental pollution caused by other road-based modes of urban transport.
- Widening of roads, construction of large number of flyovers and under passes in Delhi to reduce traffic congestion thereby reducing vehicular pollution etc have been taken.

- Value Added Tax of Diesel cars have been increased to 12.5% with levying an additional tax of 25% of existing tax rate on diesel propelled vehicles specified in schedule 1 of Motor Vehicle Taxation Act, 2004. An Environment Fee (Air Ambience Fund) of Rs. 0.25 on per liter sale of Diesel in Delhi has been introduced from 2008. The initiative is based on POLLUTER PAYS principle. Collected fund have been spent on for providing 29.5% subsidy, VAT refund and Road Tax refund for battery operated vehicles. Till date, more than 35,000 motor bikes and 150Reva cars have been provided subsidy. Upto 50-PPM sulphur content diesel has been made available in the City from April, 2010.Vehicles complying with Euro IV/ Bharat stage IV norms have been introduced since April 2010 in the City. From 1st Feb, 2012 to 30th Nov, 2016, the subsidy amount released was 64.78crore (approx.) to Battery Operated Vehicles and e-rickshaw.

- GNCT of Delhi has taken steps to create awareness about burning of fire crackers and has run the Anti Fire crackers campaign since last 15 years. This is done in association with eco club schools.

- Burning of leaves is banned. All the construction projects have been directed to take measures to control dust emissions during construction.

2.2.3 Noise Pollution:

Noise pollution is one of the important aspects which have escaped attention of policy makers. However, the said noise pollution is one of the major dangers lurking round the corner. As per the noise monitoring carried out by the DPCC as shown in table below, the Noise levels exceeded in most of the locations. Therefore, there is a need to reduce the noise levels and to take precautionary measures in the areas where the noise levels are at the border line.

DPCC is taking necessary action to ensure that D.G. sets operate with acoustic enclosure and necessary noise control measure are put in place by the D.G. Sets by insisting on noise monitoring

report from the D.G. set users. Consent under the air act issued only after the noise monitoring report in respect of D.G. Set.

There are number of DG sets in operation in the four industrial areas and significant number of these DG sets is provided with acoustic enclosures which are causing noise pollution. As per the notification of MoEF, GOI, all the DG sets are required to be provided with acoustic enclosure to reduce noise pollution and all the new DG sets are to be provided with the noise control system by the manufacturer itself. Old DG sets are required to be phased out or provided with sound reducing systems. NDPL/BSES is to ensure sufficient/required power supply in these industrial areas.

2.2.4. Land Pollution:

As per the report of Central Pollution Control Board, the Cumulative Environmental Pollution Index (CEPI) in respect of land has been calculated as 65.25 for Najafgarh Drain basin including 4 industrial areas, on the basis of which this basin has been declared as CPA.

Hazardous Waste:

Delhi Government has been trying its best to set up a TSDF site in Delhi since 2003 on which CPCB has been updated from time to time. Recently, a land measuring 14 acre has been handed over by DDA to DSIIDC for development of TSDF. M/s Arcades India Pvt. Ltd. was appointed by DSIIDC for providing consultancy for the development of TSDF site. The consultant has submitted draft final report to DSIIDC which is under consideration

A letter in this regard was also sent to DSIIDC on 12.07.2016 to submit time bound program for setting up of TSDF site in Delhi. Action taken report has been received from DSIIDC in this regard. DSIIDC has informed on 31/08/16 that after receipt of comments from confederation of Delhi industries and CETP Societies, request for proposals shall be invited through e- tendering for the development of TSDF. It is expected that TSDF shall be completed by July, 2017 subject to statuary clearances to be given by various agencies including Environment clearance. A reminder to

DSIIDC in this regard is being issued.

CPCB had convened a meeting with representatives of Government of Haryana and Delhi on 08.04.2016 to discuss the issue of facilitating disposal of hazardous waste generated in Delhi at TSDF, Pali in Haryana till the Delhi Govt. set up its own facility. In this regard letters were sent to Haryana State Pollution Control Board for allowing Delhi Govt. to dispose of 50,000 tons landfillable Hazardous Waste at TSDF Pali for a period of 02 years only, with a condition that government of Delhi, after commissioning of its own common TSDF, shall reciprocate by receiving 50,000 tons of landfillable hazardous waste generated from Haryana State for disposal at its common TSDF in Delhi. In this regard, DPCC has written various letters to the Member Secretary, Haryana Pollution Control Board on 09/05/2016, 9/06/2016, 14/06/2016 and 01/09/2016. Reply from Haryana Govt. is awaited. Further, a DO letter has been sent by Chief Secretary, GNCT of Delhi to Secretary, MoEF on 07.02.2017, requesting MoEF to convene a meeting of Chief Secretaries of Haryana and Delhi along with Chairman, CPCB regarding sharing of TSDF at Pali.

DPCC has issued 'Authorization' under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 Waste to M/s Uttar Pradesh Waste Management Project (A division of M/s Ramky Enviro Engineers Limited) and M/s Bharat Oil and Waste Management Ltd. for Collection, transportation, reception and transportation of the incinerable hazardous waste generated in NCT of Delhi at their facility in Kanpur duly authorized by U. P. Pollution Control Board

Bio-medical Waste:

Delhi generates about 23.5 tons of bio-medical waste daily. This waste is treated at the treatment facilities established by Common Biomedical Waste Treatment Facilities and in the Health Care Facilities. In Delhi there are 2 authorized Common Bio-Medical Waste Treatment Facilities (CBWTFs) as follow:-

- M/s Biotic Waste Solutions Pvt. Ltd., 46-SSI Industrial Area. GTK Road, Delhi-110033 Telephone No: 011-47528106, Mob No: 09971040506. 09818183921and 9711747477.
- M/s SMS Water Grace BMW Pvt. Ltd, Nilothi Sewage Treatment Plant Complex of DJB. Nilothi, Delhi-41 Phone No. 011-28363691, 28363692, 28363693, 28363079. Fax No: 011-28363690 Mob: 09560521112, 09871222338.

Monitoring reports for the Treatment Equipment are submitted by the CBWTFs to DPCC. DPCC / CPCB also carry monitoring of the CBWTFs in Delhi from time to time. DPCC has recently given directions to all CBWTFs for installation of Online Monitoring System & CCTVs in their facilities. As per the policy of DPCC, hospitals having 51 beds or more are required to install treatment plant to treat the entire wastewater and for recycling of treated effluent for use in horticulture, air conditioning/cooling plants and flushing of toilets, etc. 98 Hospitals have installed have installed STPs till date.

Mercury Waste

"An Exploratory Study of Mercury Exposure in Delhi" was awarded by DPCC to Centre for Occupational & Environmental Health of Maulana Azad Medical College, Delhi, and the report has been received. Letters followed by Reminder have been issued to the Hospitals having 50 beds or more, to phase out Mercury Based Equipments (Thermometers & B.P.Apparatus).Following two agencies have been identified by DPCC for collection of Mercury from the Hospitals/Health Care Establishments in Delhi: (i) M/s Supreme Surgical, 262 / 425, Lane No. 8, Friends Colony Industrial Area, Shahdara, Delhi. (ii) M/s Anita Industries, 29, Bhagat Singh Market, New Delhi.

Municipal Solid Waste and C& D Waste:

About 9620 T/day of municipal solid waste is generated by entire NCT of Delhi and by 2024 the quantity is expected to be around 19100 T/day. Door to door collection of waste has been started in

most of the MCD zones which will facilitate in proper collection, transportation and disposal. Five, Municipal Authorities in Delhi are and respectively waste collection.-

- North Delhi Municipal Corporation 4200 MTD
- South Delhi Municipal Corporation 2850 MTD
- East Delhi Municipal Corporation 2200 MTD
- New Delhi Municipal Council 300 MTD
- Delhi Cantonment Board 70 MTD

Total 9620 MTD

There are 3 landfill sites namely Bhalaswa sanitary land fill site, Gazipur sanitary land fill site, Okhla sanitary land fill site. Bhalaswa landfill site was commissioned in the year 1994 whereas Gazipur in 1984 and Okhla in 1996. These landfill sites are not designed as per the schedule 3 of the MSW rules. DPCC has refused to grant Authorization to all the 3 illegal landfill sites: Bhalaswa sanitary land fill site, Gazipur sanitary land fill site, Okhla sanitary land fill site. In the absence of availability of land for landfill sites, all the 5 MCDs are using these 3 sites for disposal of MSW. Table 7 gives the details of landfill sites in Delhi.

Table-7: Landfill Site in Delhi

Land Fill Site	Location	Area (Hectare)	Start year	Waste received T.P.D	Urban Land Body
Bhalaswa	North Delhi	16.18	1994	2200	NDM Corporation
Gazipur	East Delhi	62	1984	2000	EDMC
Okhla	South Delhi	12.9	1996	1200	SDMC Delhi Cantt. NDM Council

Waste to Energy Plants

There are three Wastes to Energy plants at Okhla, Bawana & Ghazipur. All the three plants are operational. Details are as under:

Table-8: Waste to Energy Plant

S.No.	Name	Capacity of Electricity Generated (MW)	Capacity of Waste processing (MTD)	Status of operation
1	Timarpur-Okhla Waste Processing Company Okhla Compost Site	16	1950	Operational
2	East Delhi Waste Processing Company Pvt. Ltd. Ghazipur	12	1300	Operational
3	Delhi MSW Solutions Ltd. NarelaBawana Road *	24	1550	Operational
	Total	**52**	**4800**	

* Delhi MSW Solutions Ltd, Narela Bawana Road has been granted Environmental Clearance for processing 4000 MT/day of municipal solid waste and has a space earmarked in the land allotted to it by MCD for another WTE plant of the same capacity as the existing one. NDMC has to pursue the case. The details of 2 compost plants are given in Table 9.

Table-9: Details of Compost plants

Sl. No	Name of Corporation	Quantity (TPD)
1.	IL&FS Compost Plant at Okhla	200
2.	Compost plant of Delhi MSW Solutions Ltd. Narela Bawana Road	600 – 700

Construction & Demolition Waste processing plant

IL & FS is already operating two C&D waste processing plants located at Jahangirpuri (500 MT/day) &Shastri Park (500 MT/day). Both these plants have valid Consent to Operate from DPCC.

IL & FS has submitted application for three more plants at Ranikhera. Tikri Border & Libaspur which have been granted Consent to Establish.

E-Waste:

The e-waste is generally generated from dismantling activities of various electrical / electronic appliances / gadgets such as audiovisual components, televisions, VCRs, stereo equipment, mobile phones and computer components. But till date, no inventory of such waste has been prepared.

Numbers of initiatives have been taken by the Delhi Govt. towards the implementation of E Waste guidelines and Rules such as placing of E waste collection bins at various locations in Delhi and E-Waste authorized Recyclers to ensure that the collected E-Waste is recycled in a safe manner. All Delhi Computer Traders Association (ADCTA), Nehru Place, Delhi, was directed to advise their members to send their E-Waste only to the registered recyclers with CPCB. Letters were also sent to different Govt. Departments, IT Companies & Hospitals in Delhi advising to dispose their E-Waste & auction through registered recyclers only.

Table.-10 Approved Common Centers for Collection, Segregation & Storage of e-waste

S. No.	Name	Address	Phone No.

1	V.K Brothers	F-78, Mayapuri Indl. Area,Delhi-110064	9891238053
2	3r Recycler	B-29/1,Jhilmil,Tahirpur Industrial Area Delhi-110095	--
3	R.M International	Plot No.210,Pocket C,Sector 5 , Bawana Ind Area, Delhi-110039	9810222292
4	Green Escape Eco Management	348, Patparganj Indl. Area, Delhi	9810057555
5	Paramount Recycling Company	1/536-I/8,Old No 1/536-I, Friends Colony Industrial Area , Delhi-95	9873716551/ 9967667739
6	N.N. Eco System.	A-294, Ph-I , Okhla Industrial Area, New Delhi-110020	9136261478
7	Jainex Computers	Plot No. 87, Pocket-J ,Sector-1,Bawana Industrial Area, Delhi-110039	9811113617
8	Kanna Recycling Pvt. Ltd.	F-27/2, Phase-Ii, Okhla Indl. Area, New Delhi-110020	9829154321
9	Dildar Plastic	G-139,Sector -5, Dsidc,Bawana Industrial Area , Delhi-110039	9868467080
10	Ms Traders	N0-3357,Sec-J,Dsiidc,Narela Indl. Area , Delhi-40	9212128022
11	Sky Scrapers	E-196,Sec-2,Bawana Indl Area , Delhi-39	9312070919
12	Taj Computer Solution	B-2/28, Mohan Co-Operative Industrial Area, New Delhi -110044	8800097758
13	Global Solution	F-105, Phase-Ii,Mayapuri Industrial Area , New Delhi-110064	9811666606
14	Organisation For Ecocare	C-9, Phase-Ii , Mangolpuri Industrial Area, New Delhi-110034	9811017341
15	Rps Enterprises	Plot No E-52,Pocket D ,Sector-3,Bawana	9871155633/

		Industrial Area ,Delhi-110039	9868054227
16	Society For Quality Edication & Health Protection	26,Arc Wazirpur Industrial Area. Delhi-110052	9810314585
17	Green E-Waste Recycler Pvt. Ltd	A-5/3 . Jhilmil Industrial Area , Delhi-110095	9818730873
18	Auctus E Recycling Solution Pvt Ltd	358 A,Plot No.21,Gali No-3 , Friends Colony Industrial Area , Shadara. Delhi-110032	9958445960
19	Om Sai Ram Communication	Plot No-248,Pocket-B, Sector-3, Dsiidc, Bawana Indl Area , Delhi-110039	9643633043
20	B.S. Chawla & Co	D-1/95, Phase-Ii, Mayapuri Indl. Area,Delhi-110064	9811102355
21	Chintan Environment Research & Action Group	A-14,1st Floor ,Gt Karnal Road.Instl. Area , Delhi-110033	9971605234
22	M.S. Traders	D-1/153, Phase-Ii Mayapuri Industrial Area, New Delhi-110064	9212128022
23	Krishna Trading Co.(Regd)	D-77, Phase-Ii, Mayapuri Industrial Area, New Delhi-110039	9136357960
24	M/S P.S. It Supplies Pvt. Ltd.	H-244, Sector-I Dsiidc, Bawana, Industrial Area, Delhi-110039	9810501714
25	M/S Resources E-Waste Solutions Pvt. Ltd.	489, 2nd Floor, Patparganj Industrial Area, Delhi-110092	9810687897
26	M/S E-Waste Recyclers India	A-46,Phase-I,Okhla Industrial Area,Delhi-110020	9810133388
27	M/S Pom-Pom Recycling Pvt.Ltd.	F-27/2,Phase-Ii,Okhla Industrial Area,New Delhi 110020	9711308506 011-26387091
28	M/S Brp Infotech Pvt. Ltd.	B-11, Dsidc Complex,Fic Patparganj Industrial Area , Delhi-110092	9717393992 011-42420976

29	M/S Attero Recycling Pvt. Ltd.	F-2/B-1, Extension. Mohan Cooperative Industrial Estate.Mathura Road,Badarpur,New Delhi-110044	9810055108
30	H.L. Network Solutions	Bc- 236, Phase-Ii, Mangolpuri Industrial Area, Delhi- 110034	--
31	Zaffy Trading Company	Shop No. 9, Khanna Market, D- Block, Near Balajidharamkanta, Mayapuri Industrial Area, New Delhi-110064	--
32	S K Trading Co.	Plot No 13 Phase Ii Badli Industrial Area, Delhi - 110042	--
33	T.S. Associates	D-197/2, Mayapuri Industrial Arc, Phase - Ii, New Delhi - 110064	--
34	Bargujar Enterprises	Plot No 234, Ground Floor, Sector-5, Dsiidc, Bawana Industrial Area, Dclhi - 110039	--
35	Pa Enterprises	A 15 Phase Iii Badli Industrial Estate, Delhi - 110042	--
36	Aims Technologies Pvt. Ltd.	Plot No.- 1/495/8, Gali No.- 5,Friends Colony Industrial Area, Delhi-110095	--
37	Ganesh Cleaning Services	A-17, Wazirpur Industrial Area, Delhi-110052	--

Plastic Waste Management

Delhi Govt vide its Notification dated **07.01.2009** brought out a notification which includes the following important clauses:-

(i) That the use, sale and storage of all kinds of plastic bags shall be forbidden in respect of the following places in the National Capital Territory of Delhi namely:

a) Five Star and Four Star Hotels.

b) Hospitals with 100 or more beds except for the use of plastic bags as prescribed under Bio Medical Waste (Management and Handling) Rules, 1998.

c) All restaurants and eating places having seating capacity of more than 50seats.

d) All fruit and vegetable outlets of Mother Dairy.

e) All liquor vends.

f) All shopping Malls.

g) All shops in main markets and local shopping centers.

h) All retail and wholesale outlets of Branded chain of outlets selling different consumer products including fruits and vegetables.

(ii) In places other than the aforesaid places and as observed by the Hon'ble High Court of Delhi only Biodegradable plastic bags shall be used.

Ministry of Environment, Forests & Climate Change has notified Plastic Waste (Management & Handling) Rules, 2011 which interalia prescribes specifications with regard to manufacturing of plastic products and stipulates procedures for Plastic Waste Management. In accordance with the Plastic Waste (Management & Handling) Rules, 2011, manufacturing of plastic carry bags having thickness less than 40 micron is prohibited, and so, plastic manufacturers in the NCT of Delhi are required to obtain registration and necessary consent from Delhi Pollution Control Committee (DPCC), and Rule 4(b) of Plastic Waste (Management & Handling) Rules, 2011 stipulates that for enforcement of the provisions of these rules relating to the use, collection, segregation, transportation, and disposal of Plastic Waste, the prescribed authority shall be Municipal authority and So, directions are issued by DPCC to Municipal authorities for identifying such units in their area.

Also Till March, 2013, 317 legal samples were lifted by various implementing agencies/officers in pursuance of the Notification dated 07/01/2009. Three samples in pursuance of the Plastic Waste (Management and Handling) Rules-2011 and 9 legal samples have been lifted in pursuance of Notification dated 23.10.2012. 183 samples of plastic bags were collected by DPCC while 102 samples were collected by SDM, 5 samples by Food Inspector, 33 samples by MCD and remaining 6 samples were collected by the Department of Environment. Out of these 329 samples, complaint cases against 260 violators were filed before the concerned Metropolitan Magistrate of Delhi. One hundred and twenty complaints have been decided so far. Out of these 120 decided, in 119 cases the accused has been convicted with fine and compensation to DPCC and in one case only compensation has been paid to DPCC. A total fine of Rs One Crore seventy seven lakh twenty one thousand (Approx.) has been deposited in DPCC by these defaulters. Issued a Notification prohibiting manufacture and use of plastic bags vide notification dated 23.10.2012.Also, in 2014 DPCC carried out inspections at various sites in Delhi by making 4 teams for collection of samples.

The said Notification dated 23.10.2012 has been challenged in the Hon'ble High Court of Delhi in the matter CWP No. 7012/2012 entitled "All India Plastic Industries Association &Anr. Vs. Govt. of NCT of Delhi &Ors" which is pending.

Hon'ble High Court of Delhi vide its order dated 05.12.2016 has transferred the petition to the Hon'ble National Green Tribunal for further deciding the issue. It was also directed that the respondents shall not take any coercive steps for implementation of Notification dated 23.10.2012 for the period of 08 weeks or till the appropriate order is passed by Hon'ble National Green Tribunal. Meanwhile, MoEF has notified the new rules on 18.03.2016 titled as Plastic Waste Management Rules, 2016. The activities/ issues w.r.t manufacturing and waste management are here under:-

- The manufacture, importer stocking, distribution, sale and use of carry bags, plastic sheets or like, or cover made of plastic sheet and multilayered packaging, shall be subject to the following conditions, namely:-

a) carry bags and plastic packaging shall either be in natural shade which is without any added pigments or made using only those pigments and colorants which are in conformity with Indian Standard : IS 9833:1981 titled as "List of pigments and colorants for use in plastics in contact with foodstuffs, pharmaceuticals and drinking water", as amended from time to time;

b) Carry bags made of recycled plastic or products made of recycled plastic shall not be used for storing, carrying, dispensing or packaging ready to eat or drink food stuff";

c) carry bag made of virgin or recycled plastic, shall not be less than fifty microns in thickness;

d) plastic sheet or like, which is not an integral part of multilayered packaging and cover made of plastic sheet used for packaging, wrapping the commodity shall not be less than fifty microns in thickness except where the thickness of such plastic sheets impair the functionality of the product;

e) The manufacturer shall not sell or provide or arrange plastic to be used as raw material to a producer, not having valid registration from the concerned State Pollution Control Boards or Pollution Control Committee;

f) Sachets using plastic material shall not be used for storing, packing or selling gutkha, tobacco and pan masala;

g) Recycling of plastic waste shall conform to the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time;

h) The provision of thickness shall not be applicable to carry bags made up of compostable plastic. Carry bags made from compostable plastics shall conform to the Indian Standard: IS 17088:2008 titled as Specifications for Compostable Plastics, as amended from time to time. The manufacturers or seller of compostable plastic carry bags shall obtain a certificate from the Central Pollution Control Board before marketing or selling; and

i) Plastic material, in any form including Vinyl Acetate - Maleic Acid - Vinyl Chloride Copolymer, shall not be used in any package for packaging gutkha, pan masala and tobacco in all forms.

CHAPTER 3

ACTION PLAN FOR CPA

3.1 SHORT TERM ACTION PLAN: WATER

S. No.	Action Paints	Proposed Actions	Time limit	Stake Holders
1.	Performance monitoring of STPs and CETPs	The Monitoring of STPs and CETPs shall be done by DPCC to check the compliance with the existing standards once in three months	On Going activity	CETP Societies and DPCC
2.	Cleaning/De-silting of sewers	Directions would be issued to DJB for regular cleaning/ De-silting and maintenance of Sewers.	On Going activity	DJB & DPCC
3.	Compliance of pollution norms for effluents	DPCC Shall ensure the Compliance of environmental norms by industries through regular inspections. **The following monitoring schedule is proposed :** • SPI (not having CETP) water polluting units: **Every06 months**. • SPI (having CETP) water polluting units:**20% SPI units every year** • Non SPI water polluting units : **10% units Every year** • Five & Four Star hotels and Units covered under EIA notifications: **Once in every Year** • Other Hotels and Restaurants: **10% units every year.**	On Going activity	DPCC and Industrial units
4.	Water quality monitoring of River Yamuna.	**Continuous Monitoring:** CPCB is operating two continuous water monitoring Stations namely at Wazirabad and Downstream of Okhla. **Manual collection of Samples and Analysis:** CPCB and DPCC monitor water quality of River Yamuna through manual collection of samples and its analysis at 09 locations on monthly basis.	On Going activity	CPCB and DPCC

5	Installation of Magnetic Flow Meter by the industrial units having water consumption more than 100 KLD.	More than 200 industrial units/Malls/ Hotels etc. are consuming more than 100 KL of water per Day. DPCC shall ensure that all such major water intensive units (consuming more than 100 KLD) shall be directed to install the water meters by 31st Dec. 2017.	December 2017	Industrial units and DPCC.
6.	Installation of online pH meter by the industrial Units.	DPCC shall issue necessary directions to all SPI units to ensure that online pH meters are installed on the ETP by 31st December, 2017	December 2017	Water polluting Industrial units and DPCC
7.	Installation of Online Effluent Quality Monitoring System at STPs and CETPs	DPCC would ensure the installation and commissioning of Online monitoring System at all the STPs and CETPs by 31st December, 2017.	December 2017	DPCC, DJB and CETP societies
8.	Awareness programmes on environmental issues particularly with reference to Water Conservation, Control of Water Pollution by involving NGOs, Industrial Associations and Student Community	DPCC will organize Awareness Programs amongst the Industries ,Civic Authority, Students and Members of Eco-Club particularly with reference to recycle and reuse of effluent, Waste minimization, Water Conservation with the help of NGOs and Industrial Association.	Ongoing activity	DPCC, Env Deptt , NGOs and Industrial Associations.
9.	Closure of polluting units from non-conforming areas	Such units shall be closed by the MCD/ DC as they are not permitted to operate in terms of Supreme Court order.	Ongoing activity	MCD, DPCC and Revenue Deptt

3.2 SHORT TERM ACTION PLAN: AIR

S. No.	Action Points	Proposed Actions	Time limit	Stake Holders
1.	Compliance of air emission norms.	• DPCC will ensure the compliance of norms by industries	On going activity	DPCC and Industrial units
2.	Regular Monitoring of major air polluting industries	• Regular monitoring of all major air polluting industries i.e. Thermal power plants is done by DPCC.	On going activity	DPCC
3.	Installation of Online continuous monitoring by 17 category(I &M) air polluting units and networking of the same With State and National Database.	• DPCC to monitor installation of online continuous stack monitoring by all the units which have been identified as 17 categories of industries and networking the same with State and National Database.	31st March 2017	DPCC and Industrial units
4.	Effective implementation and tightening of PUC norms for all vehicles	• Traffic Police and Transport Department shall intensify challenging the visibly polluting vehicles and non-PUC holders. • PUC centers shall be made more efficient and the pollution check data generated be made reliable by minimizing scope of human interference. • PUC norms shall be made more stringent for old vehicles. • Transport Department shall integrate its PUC database with vehicle registration database and take action against violators on regular basis. • Transport department shall explore the possibility of linking valid PUC certificate with Insurance schemes of vehicles for allowing incentives • Civil Supplies Department shall implement valid PUC requirement as a mandatory precondition for filling up petrol /diesel at pumps.	On going activity	Traffic Police, Transport Deptt.and Civil Supplies Deptt
5.	Prohibiting non-destined vehicles to enter Delhi	• Orders of Hon'ble Supreme Court w.r.t. prohibiting non-destined vehicles to enter Delhi shall be enforced strictly. • Better coordination among MCDs, VAT Department, Traffic Police and Transport Department shall beensured so that strict action is taken as per law against non-destined vehicles. • Municipal Corporations shall be set up RFID system in another 6-8 months in order to check the vehicles at entry and exit points and the database shall be shared	On going activity	Traffic Police, MCDs, VAT Deptt., Transport Deptt. and Municipal Corporation of Delhi

		with other concerned departments for taking action against non-destined vehicles.		
6.	Infrastructure Arrangements	• Widening and increasing road lanes. • Removing encroachment on roads • Overloaded vehicles shall be heavily penalized. • Checking shall be done at all entry points of Delhi and traffic police and transport department shall prosecute offending vehicles. • The mechanism of automatic weighing of such vehicles at entry points shall be implemented. In this regard steps taken by other states such as Gujarat, Bihar, and Madhya Pradesh etc. for setting up integrated check posts with Automatic commercial vehicles records at all entry/exit points (weight, number. etc)shall be studied for adoption.		PWD, Traffic Police, NDMC, MCDs and Transport Deptt.
7.	Parking Policy	• Parking Policy shall be prepared in consultation with the municipal Corporations and Development Department, GNCTD. • Introduction of economic disincentives shall be explored for private vehicle parking. • In the areas where authorized parking is already available, no parking on roads shall be allowed and boards indicating NOPARKINGZONE/NO TOLERANCE ZONE shall be put in such areas. • Corpus fund collected from one time parking charges on vehicles shall be used for developing parking lots for which DDA shall provide the land.		UD, NDMC, MCDs, Traffic Police and Transport Deptt.
8.	Introduction of EURO-VI norms	• Ministry of Petroleum and Natural Gas shall extend EURO-IV norms to entire country by 2017 and EURO VI by 01.04.2020 by skipping Euro V.		'Ministry of Petroleum & Natural Gas' and Transport Deptt.
9.	Promotion of Battery Operated Vehicle	• Transport Department shall formulate Strategies for introduction of more non polluting Battery Operated Vehicles to provide last mile connectivity with Metro/Public Transport.		Transport Deptt. and DMRC
10.	Increasing number of passengers using Metro	• DMRC shall introduce 8 coaches in all metro trains.		DMRC
11.	Illegal burning of garbage / Horticultural waste	• The illegal burning of garbage/horticulture waste has already been banned. It shall be enforced strictly by challenging.		Land owning agencies and SDMs
12.	Converting Horticulture waste to RDF	• The technology for converting organic waste to compost in short time shall be implemented in parks having more		MCDs, NDMC&

		than 1 acre area in order to avoid illegal burning of such waste.		DDA
13	Mechanical sweeping on main roads to suppress dust	• Stretches whereas at other places combination of mechanical and manual sweeping to be opted. • More viable and portable machines shall be used for mechanical sweeping and the matter shall be taken up with to research institutes for suggestions. • Roadside parking shall be stopped by Traffic Police • Roadside (open space) green cover: Suitable Plantation shall be done or increased at central verge, pedestrian way etc. so as to cover all brown patches. • All trucks shall be covered while moving on roads to avoid dust spreading.		MCDs, PWD and Traffic Police
14.	Action Plan for Greening Delhi	• Action Plan for Greening Delhi shall be implemented by Forest Department in order to enhance/protect the Green Cover of Delhi.	On going activity	Forests Deptt.
15.	Special drive to curb burning of Garbage leaves in open.	• Special Drives shall be done by DPCC to curb burning of Garbage, leaves in open.	On going activity	DPCC and MCDs

3.3 LONG TERM ACTION PLAN: WATER

Sr. No.	Action Points	Proposed Actions	Time limit	Stake Holders
1.	Recycling and Reusing treated Effluents.	• DPCC will pursue STPs and CETPs to ensure that treated effluent is reused by various industries / institutions. All the five starts Hotels have already installed STPs with objective to achieve of zero discharge. Others major water polluting units shall also be directed to reuse the treated waste water from the ETPs.	Dec, 2018	DJB, CETP Societies. Industrial units and DPCC.
2.	Action Plan for GPI for zero discharge and its implementation	DPCC has identified four units as Grossly Polluting Industries as per the criteria of CPCB. These industries are 1.Badarpur Thermal Power Station 2.Delhi Milk Scheme 3.Mother Dairy 4.Slaughter House, Gazipur DPCC shall be pursuing all such units specially Mother Diary & Delhi Milk Scheme to take necessary action to ensure zero liquid discharge.	Dec. 2018	Industry DPCC
3.	Renovation of Existing STPs	Under Action Plan –III existing STPs will be rehabilitated to achieve the standards of TSS and BOD 10 mg/l respectively. DJB has planned to rehabilitate Five STPs of Okhla having the capacity of 140 MGD. Three STPs of Kondli having the capacity of 45 MGD and one STP of Rithala having capacity of 40MGD.	Dec. 2018	DJB
4.	Conversion of Existing CETP from physiochemical process to biological process.	A study has been undertaken by GIZ in collaboration with DSIIDC to see the feasibility of conversion of physio-chemical treatment processes in CETPs to biological one. This is undertaken in view of the characteristics of CETP inlet water which has been found to contain more organic content.	Dec. 2019	DPCC, DSIIDC, CETP Societies.
5.	Capacity addition by setting up of new STPs as per gap analysis.	• The present capacity of treatment of Sewage is 604 MGD. Four new STPs namely Yamuna Vihar (25 MGD), Nilothi (20 MGD), Pappankalan (20 MGD), Delhi Gate (15 MGD) are under construction at advance stage having the capacity of 80 MGD. These plants are expected to be commissioned by March 2015.(WMC-II) • Further two more STPs namely Delhi Cantt. (8 MGD) and Coronation Pillar (40 MGD) shall be constructed by 2018. Total sewage treatment capacity shall be increased to 732 MGD by the end of year 2018	Dec. 2018	DJB & DPCC
6.	Connecting the Uncovered Sewer areawith the sewer system and laying ofinterceptors sewer	• DJB has prepared a sewage master plan 2021 Details of the tentative sewerage network, waste water pumping station and waste water treatment plant have been worked out.	May, 2021	DJB & DPCC

3.4 LONG TERM ACTION PLAN: AIR

Sr. No.	Action Points	Proposed Actions	Time limit	Stake Holders
1.	Adoption of Clean Technologies, including use of low sulphur fuel and clean fuel by the industry.	• Coal fired boilers are not allowed to operate except having electrostatic precipitator as per policy decision taken by DPCC. DPCC shall ensure that all the new boiler/thermal fluid heater furnaces installed use cleaner fuel.	Dec. 2017	DPCC and Industrial units
2.	Modernization of BTPS	• At present the operation of BTPS has been suspended. • If it is allowed to operate, BTPS shall comply with standards of 50 mg/Nm3 for the particulate emissions limit. • Further BTPS shall ensure the possibility of converting coal based to gas fired power stations	Dec. 2018	BTPS & DPCC
3.	Prohibiting non-destined vehicles to enter Delhi	• The problem of non-destined vehicles shall only be solved effectively by expediting construction of eastern and western expressways. Ministry of Road, Transport and Highways, Govt. of India shall be intervenient expediting both the projects.	Dec. 2018	Transport Deptt. /PWD
4.	Public Transport Plan	1. The capacity of existing bus Depots is not sufficient to accommodate more and more buses as per the need of the city. Therefore existing bus depots may be considered for developing multilevel parking lots for new buses. 2. In Delhi, 11000 public buses shall to be procured. Delhi Transport Corporation(DTC)has informed that they will achieve the target of about 5500 buses. The gap shall be bridged with cluster buses, which is facing road block due to unavailability of sufficient land for parking. Request be made to DDA/ Revenue Department to make land available for parking the buses. Considering the problem of bus parking in Delhi, cluster buses may look into the feasibility of parking in NCR region. 3. Apart from increasing the number of buses, public transport shall be made more reliable and integrated to improve the last mile connectivity. 4. Optimum Utilization of Public Transport: To start with, Transport Department shall take up Dwarka area and proceed with proper transport need analysis of the Dwarka region. Transport Department should also induct more 10-15 seated mini buses (preferably eco friendly buses) on purchase/hiring basis for ferrying passengers from metro stations. 5. Northern Railways to explore the revival of the existing Ring railway network and its integration with metro and other feeder services. It was informed that Railways want good approach roads for these stations. Letter to be sent to Railways and follow up action to be taken. 6. Cleaning and greening along the railway tracks: Cleaning, greening and fencing on both sides of railway tracks to be taken up by Railways Department.	Dec. 2018	Transport Deptt. DTC, DDA, Revenue Deptt. and Railways

5.	Amendment of CMV Rule	• Transport department shall take up amendment in CMV Rules for reduction of mandatory fitness age of Private vehicles from 15 years to 10 years and also to consider outsourcing of Private vehicle fitness to Private workshops in addition to other amendments.	Dec 2018	Transport Deptt.
6.	Setting up of Electric Crematoriums	• Establish Electric Crematoriums in NDMC area and in each MLA Constituency and to encourage eco friendly crematoriums consuming lesser wood.	Dec 2018	NDMC & MCDs
7.	Setting up Trans-shipment Zone	• Proper facilities for unloading of goods for consumption in Delhi shall be made to avoid Delhi becoming a Trans-shipment zone for other states. • Freight Management Policy & Development of Transport Nagar at entry points of various Highways outside Delhi shall be reframed with the help of NCRTB.	Dec. 2018	Transport Department and NCRPB
8.	Urban Transport Fund	• Urban Transport fund shall be utilized to meet the resource need of public transport on the lines of Air Ambience Fund and to cross subsidize public transport fares to attract more and more people to public transport.	Dec 2018	Env Deptt and Transport Department
9.	Shifting of Inland Container Depot (ICDs)	• ICD sat Tughlaqabad/ Gazipur contribute in a major way for non-destined traffic in Delhi. Steps shall be taken to shift the mout side Delhi in the NCR region at the earliest. • Container Corporation of India Ltd(CONCOR)shall be asked to shift ICDs from Okhla/ Tughlaqabad and Gazipur to the NCR region within a period of two years.	Dec. 2021	CONCOR, Traffic, Police, Env Deptt and Transport Department

ANNEXURES

ANNEXURE-I

PROHIBITED / NEGATIVE LIST OF INDUSTRIES

1. Arc/induction furnace
2. Acids
3. Alkalis
4. Animal & fish oils
5. Aldehydes
6. Acid slurry
7. Acetylides, phridines, iodoform, chloroform, E-nepthol, etc.
8. Ammonium sulphoajanide, arsenic and its compounds, barium carbonate, barium cyanide, barium ethylesulphate, barium acetate cinnabar, copper sulphocyanide,ferrocyanide,hydrocyanideacid, potassium biocalate, potassium, cyanideprussiateofpotashphynigallc acid, , silver cyanide.
9. Aircraft building.
10. Abattoirs, animal blood processing.(except existing and relocation)
11. Bitumen blowing (hot)
12. Brick kiln (using fresh earth as raw material, coal as fuel)
13. B-nepthol
14. Bakelite powder (starting from formaldehyde)
15. Barely malt and extract
16. Bone-grist. bone-meal. salting of bones. storages of bones in open, bone drying
17. Bone charcoal manufacturing
18. Blast furnaces - coal fired
19. Bicycles (integrated plant)
20. Brewery and potable spirits
21. Chlorinated paraffin wax purification
22. Carbon black
23. Cement industry
24. Calcium carbide, phosphorous, aluminum dust paste and powder, copper. zinc, etc. (Electrothermal industries)
25. Cranes, hoists and lifts (excluding assembly).
26. General industrial machinery (such as hydraulic equipments, drilling equipments, boilers, etc.)
27. DOP (Dioctyl Phthalate), DBP & Plasticizer
28. Dry cell battery
29. Dye & dye intermediates
30. Distillation of wood, chemical seasoning of wood (excluding natural seasoning)
31. Explosives, i.e., Fireworks, Gunpowder, Guncotton, etc.
32. Earth moving machinery/equipment (manufacturing of assembly)
33. Electric wires and cables (more than 100 workers, 2000 sq m. plot)
34. Fatty acids
35. Fungicides & pesticides
36. Flexographic ink
37. Fuel oils, illuminating oils and other oils such as stchetic oil, shoal oil, lubricants

38. Foundries (except Pit Furnace)
39. Gas compressors
40. Graphite production
41. Glass furnace (more than 1 ton/day capacity)
42. Gases-carbon-disulphide, ultramarine blue. chlorine, hydrogen, sulphur dioxide, Acetylene, etc. (other than LPG/CNG/Oxygen/medical gases)
43. Glandular/glands extraction
44. Glue and gelatin from bones and flesh
45. Hot mix plant (except those approved by DPCC / CPCB)
46. Hazardous waste processing viz. hospital/medical/industrial waste
47. Polyurethane foam
48. Industrial gelatin, nitro glycerin and fulminate
49. Iron / steel metal forging (using pneumatic hammer).
50. Industrial gelatin, nitro glycerin and fulminate
51. Industrial trucks, trailers, etc.
52. Linear alkyd benzene
53. Lead manufacturing including secondary lead industry (recovery of lead from waste scrap)
54. Lime kiln.
55. Leather tanning and dyeing (raw hides/skins to semi finish)
56. Locomotives and wagons
57. Methanol
58. Methylated spirit
59. Mechanical stone crushers & washing of coarse sand
60. Manufacturing of pulp & paper
61. Melamine resin
62. Mineral salts (which involve use of acids: CuSO4, FESO4, alum. etc.)
63. Manufacturing of diesel engines, generators except assembly
64. Motor cycles, scooters, cars, tempos, trucks, etc.
65. News print manufacturing, pulping, fresh paper making
66. Nitrogenous and phosphatic fertilizers, except mixing of fertilizers for compounding (large scale)
67. Organic solvent, chlorinated minerals, methanol, aldehydes, methylated spirits
68. Petroleum coke processing, not as fuel
69. Potteries/refractories (using coal or furnace oil)
70. Polyethylene polymers including resins
71. Paint industry (nitro Cellulose & Alkyd resin based)
72. Plasticizers manufacturing
73. Pyridines
74. Phenol formaldehyde resin and powder
75. Porcelain product potteries (using coal of production capacity more than 2 tonne per day)
76. Rubber solution and thinner (using naptha and rubber scrap)
77. Roasting of Ore Sulphide Oxides of mixtures
78. Rayon fibre manufacturing

79. Refractories
80. Reclamation of rubber.
81. Production of tyres and tubes (devulcanisation)
82. Saccharine
83. Secondary Zinc industry
84. Synthetic rubber
85. Smelting
86. Sewing machines (integrated units) except assembly
87. Sluice gates and gears
88. Stainless Steel Pickling
89. Steam engines
90. Steel pipes and tubes (continuous welded/seamless)
91. Sugar, khand sari
92. Sodium silicate industry (more than 1 tonne/day)
93. Stone quarrying
94. Textile (more than 100 workers in all shifts, 1 acre of land, 100 LKD of water)
95. Thorium, radium and similar isotopes and recovery of rare earth
96. Turbines
97. Urea & Phenyl Formaldehyde resin
98. Vegetable oil hydrogenated
99. Waste (crude / burnt) oil processing (refinery)

Notes:

(i) A public utility service involving any of the activities referred to above shall be permitted subject to environmental laws.

(ii) Further additions / alterations to the list of Prohibited Industries could be made if considered appropriate and in public interest by the Central Government to do so.

ANNEXURE-II

ANALYSIS REPORT OF CETP (December 2016)

S. No.	Name of CETPs	pH		TSS		COD		BOD (3 days at 27° C)		TDS	
		Inlet Water Quality (5.5-9.0)	Outlet Water Quality (5.5-9.0)	Inlet Water Quality (250)	Outlet Water Quality (100)	Inlet Water Quality	Outlet Water Quality (250)	Inlet Water Quality	Outlet Water Quality(30)	Inlet Water Quality	Outlet Water Quality (2100)
1	BADLI CETP (12 MLD)	5.6	8.4	68	42	160	84	54	27	130	1360
2	BAWANA CETP (35 MLD)	7.4	7.8	188	50	324	92	108	27	3720	2040
3	GTK CETP (6 MLD)	7.5	7.6	244	42	350	76	120	24	1980	1360
4	JHILMIL CETP (16.8 MLD)	7.2	7.6	628	34	584	88	210	28	2010	1140
5	LAWRENCE ROAD CETP (12 MLD)*	7.0	7.6	268	76	340	128	130	42	3330	2020
6	MANGOLPURI CETP (2.4 MLD)	7.2	7.3	184	60	292	92	100	32	2720	3820
7	MAYAPURI CETP (12 MLD)*	7.3	8.1	148	66	220	100	76	28	2120	883
8	NARAYANA CETP (21.6 MLD)*	7.3	7.2	192	48	264	72	92	26	847	883
9	NARELA CETP (22.5 MLD)	7.5	7.8	840	34	384	88	125	29	2440	2480
10	NANGLOI CETP (12 MLD)	7.2	7.5	236	64	304	108	110	33	3270	2480
11	OKHLA CETP (24 MLD)	6.6	6.7	224	36	356	92	115	28	1980	1650
12	WAZIRPUR CETP (24 MLD)	4.5	7.2	228	82	132	64	45	21	5180	3660
13	SMA CETP (12 MLD)	6.7	7.1	164	90	296	64	96	21	3270	3660

EPA Standards-( )

All values are in mg/l except pH

... No Standards

ND- Not Detectable

*These Data are of November 2016

ANNEXURE-III

ANNUAL AVERAGE OF RIVER YAMUNA WATER
APRIL 2015-MAR 2016

S.No	LOCATIONS	pH	COD (mg/l)	BOD (mg/l)	DO(mg/l)
Water Quality Criteria		6.0-9.0	–	3mg/l (max)	4mg/l (min)
1	PALLA	7.4	10.4	2.2	8.9
2	SURGHAT	7.3	21.6	5.6	7.6
3	KHAJURI PANTOOLPUL	7.4	161.2	51.2	Nil
4	KUDESIA GHAT	7.4	124.4	38.7	Nil
5	ITO BRIDGE	7.4	93.2	29.6	Nil
6	NIZAMUDIN BRIDGE	7.3	119.2	34.7	Nil
7	AGRA CANAL OKHLA	7.4	94.4	31.3	Nil
8	SHAHADRA (DOWN STREAM)	7.2	128.0	44.0	Nil
9	AGRA CANAL JAITPUR	7.3	109.2	32.9	Nil

ANNEXURE-IV

DELHI POLLUTION CONTROL COMMITTEE

ANNUAL AVERAGE OF WATER QUALITY OF DRAINS AT DIFFERENT LOCATIONS IN DELHI

APRIL 2015-MAR 2016

	Measure/Drains	pH	TSS	COD	BOD
S.No.	Standards	5.5 9.0	100 (mg/l)	250 (mg/l)	30 (mg/l)
1	Najafgarh Drain	7.3	157.8	204.4	63.3
2	Metcalf House Drain	7.3	48.8	79.2	21.0
3	Khyber Pass Drain	7.2	53.2	99.6	26.4
4	Sweeper Colony Drain	7.4	82.2	137.6	40.8
5	Magazine Road Drain	7.2	191.2	257.6	86.0
6	ISBT Drain	7.5	107.2	228.4	77.5
7	Tonga Stand Drain	7.4	123.0	361.2	125.5
8	Moat Drain	No flow	No flow	No flow	No flow
9	Civil Mill Drain	7.6	150.8	309.2	94.0
10	Power House Drain	7.3	165.6	284.0	88.6
11	Sen Nursing Home Drain	7.5	199.6	313.6	110.0
12	Drain No. 12A	No flow	No flow	No flow	No flow
13	Drain No. 14	7.4	46.4	43.6	10.9
14	Barapulla Drain	7.3	97.4	166.0	51.8
15	Maharani Bagh Drain	7.2	150.8	430.4	153.0
16	Kalkaji Drain	No flow	No flow	No flow	No flow
17	Sarita Vihar Drain (Mathura Road)	7.3	196.0	284.0	94.5
18	Tehkhand Drain	7.3	187.6	423.2	149.5
19	Tuglakabad Drain	7.3	148.0	336.0	104.8
20	Drain Near LPG Bottling Plant	No flow	No flow	No flow	No flow
21	Drain Near Sarita Vihar Bridge	7.3	101.6	132.4	44.8
22	Shahdara Drain	7.3	232.8	392.8	127.5
23	Sahibabad Drain	7.2	379.2	682.0	218.0
24	Indrapuri Drain	7.3	264.0	442.0	148.5