

Report of the Joint Inspection of 13 Common Effluent Treatment Plants in Delhi
(In compliance of NGT order dated 2nd and 27th March 2015)

1. Hon'ble National Green Tribunal Order

The Hon'ble National Green Tribunal (NGT) on 13th January 2015 passed the Judgment in the matter of Original Application 6 of 2012 and Original Application 300 of 2013- 'Manoj Mishra Vs. Union of India & Ors', and on 2nd March 2015 passed further Order with directions for effective and expeditious implementation of the said Judgment. A part of the NGT order dated 2nd March 2015 is regarding inspection of the 13 common effluent treatment plants (CETPs) in Delhi, directing the special committee constituted under NGT directions to inspect the 13 CETPs taking care of 17 industrial pockets or cause these CETPs to be inspected by the senior and responsible officers and report status and performance, which is as below:

"(iii) Be that as it may, now we direct the Special Committee constituted under these directions to inspect or cause these CETPs to be inspected by the senior and responsible officer and report their present status and performance. It should be categorically reported upon proper study whether these CETPs are capable and have capacity to treat the quantum and quality of trade effluent that is being discharged by the industries located in that residential/industrial clusters. The samples shall be collected from each CETP and analysis report be submitted before the Tribunal."

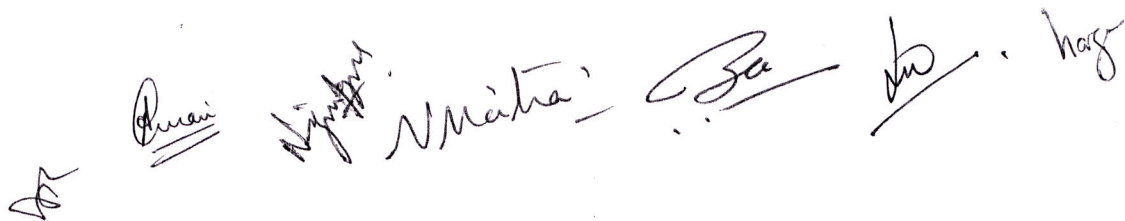
Hon'ble NGT has further directed vide Order dated 27.03.2015 that:

".....The DPCC and CPCB shall submit a report regarding the effluent quality from all the 13 CETPs in Delhi. They shall clearly point out whether they are capable of treating the effluents depending upon the nature of the industries they are serving and the effluent of which they are stated to be treated."

"This team shall also submit a Report particularly in regard to pickling industries in Delhi which are located more particularly in the area of Wazirpur...."

In compliance of the above quoted directions of NGT, DPCC by its Office Order dated 17th March 2015 constituted a Team for inspection of the 13 CETPs in Delhi as below:

1. Sr. Officer nominated by CPCB
2. Mr. B. L. Chawla, SEE, DPCC
3. Mr. T. P. Singh, Dy. Commissioner Industries, Department of Industries, GNCTD
4. Mr. Sharat Kumar, SE, DSIIDC
5. Dr. (Ms) Nigam Agarwal, Sr. Scientific Officer, Department of Environment, GNCTD
6. Dr. (Ms) Nandita Moitra, Sr. Scientist, DPCC



2. Establishment of CETPs in Delhi

In the year 1996 Hon'ble Supreme Court of India took cognizance of PIL filed by Shri M.C. Mehta regarding pollution in Delhi and directed that the Govt. of Delhi should appoint consultant to study and recommend ways and means to handle water pollution in Delhi. Govt. of Delhi appointed NEERI through DPCC as a Consultant. NEERI after detailed survey recommended that 15 CETPs should be set up in Delhi (to cater to 21 industrial estates of the capital). DSIIDC was assigned with the task of construction of these CETPs as deposit work of Delhi Govt. Accordingly, DSIIDC constructed 11 CETPs (covering 15 industrial areas) namely Wazirpur, Mangolpuri, Mayapuri, G.T.K., Badli, S.M.A (covering S.M.A. Ind. Area, S.S.I. Ind. Area and Rajasthani Udyognagar Ind. Area), Okhla Indl. Area, Jhilmil (covering Jhilmil Ind. Area and Friends Colony Ind. Area), Nangloi (covering DSIIDC Nangloi and Udyognagar Ind. Area), Lawrence Road, and Naraina. Besides the 11 CETPs constructed under orders of Hon'ble Supreme Court, DSIIDC has constructed 2 more CETPs at Narela and Bawana for which funds have been met from Narela scheme and relocation scheme respectively. Thus total 13 CETPs have been constructed and operationalised in Delhi which cover 17 industrial areas. Basic information on the 13 CETPs in Delhi, including the type of treatment system, the hydraulic capacity and the industrial areas & industrial estates catered is presented in Table A.

Out of 11 CETPs constructed under Supreme Court order, 10 have been handed over to CETP Societies constituted as per the directions of the Hon' ble Supreme Court of India except for 1 CETP at Lawrence Road which is being run by DSIIDC. The other 2 CETPs constructed at Narela and Bawana are also run by DSIIDC (through PPP Operator). Thus, Out of 13 CETPs, 10 CETPs are being run by respective CETP societies while 3 CETPs are being run by DSIIDC (out of which two are through PPP Operator)

The construction of the remaining 4 CETPs recommended earlier by NEERI at Mohan Co-operative Industrial Estate, Okhla Industrial Estate, Najafgarh Road Industrial Area and Anand Parbat redevelopment area were not taken up as per the recommendation of EPCA. On instructions of EPCA, DPCC engaged IIT Delhi as a consultant to examine the treatment option for 5 CETPs (covering 7 industrial areas), including the above 4 namely, Mohan Co-operative, Okhla Industrial Estate, Najafgarh Road (including Moti Nagar and Kirti Nagar), Anand Parbat and Patparganj during 2013. IIT Delhi report was submitted in October 2013 and it was decided in the meeting on 06.06.2014 held in DPCC with various stakeholders – Industries Department, DSIIDC, IIT-Delhi that CETP is not required in these industrial areas. In view of NGT order dated 2nd March 2015 the response on 11 remaining industrial areas (28-17) shall be filed separately.

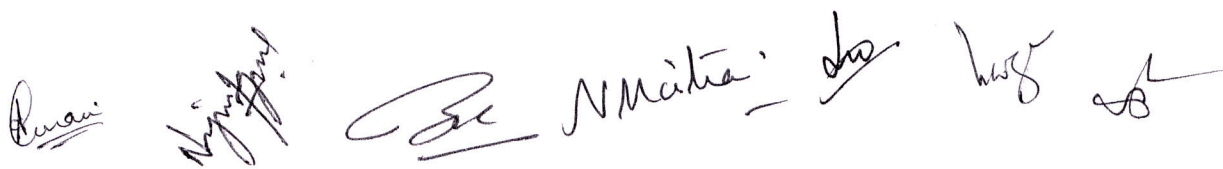
A series of handwritten signatures in black ink, including names like 'Anand', 'Najafgarh', 'M.C. Mehta', and others, written in a cursive style.

Table A: Basic information on the 13 CETPs in Delhi

S. No.	CETP	Type of treatment System	Hydraulic capacity, MLD	S. No.	Industrial Areas catered	Date of handing over to CETP Society
1	Okhla	A	24.0	1	Okhla Ind. Area, Ph-I & Ph-II	01.03.2006
2	Naraina	A	21.6	2	Naraina Ind. Area Phase- I & II	01.06.2011
3	Mayapuri	A	12.0	3	Mayapuri Ind. Area Phase-I & II	27.10.2005
4	Badli	A	12.0	4	Badli Ind. Area	16.03.2006
5	Bawana	B+A	35.0	5	Bawana Ind. Area	Being run by DSIIDC since 16.04.2012 though PPP Operator
6	G.T.K.	A	6.0	6	G.T.K. Road Ind. Area	20.10.2005
7	Lawrence Rd.	A	12.0	7	Lawrence Road Ind. Area	Being run by DSIIDC since 2004
8	Mangolpuri	B	2.4	8	Mangolpuri Ind. Area Ph I & Ph II	25.10.2005
9	Narela	B	22.5	9	Narela Ind. Area	Being run by DSIIDC since 15.03.2012 though PPP Operator
10	SMA	A	12.0	10	SMA Ind. Area	17.02.2007
				11	S.S.I. Ind. Area	
				12	Rajasthani Udyognagar Ind. Area	
11	Wazirpur	A	24.0	13	Wazirpur Ind. Area	31.03.2006
12	Nangloi	A	12.0	14	Nangloi DSIIDC Ind. Area	21.10.2005
				15	Udyog Nagar Ind. Area	
13	Jhilmil	A	16.8	16	Jhilmil Industrial Area	02.01.2006
				17	Friends Colony Ind. Area	
		Total	212.3			

A: Physico-chemical treatment and filtration

B: Plain settling plus aerobic biological treatment and filtration

3. Inspection of 13 CETPs by the Team

The Team constituted by Office Order dated 17th March 2015 of DPCC carried out inspections of the 13 CETPs in Delhi during 18th March 2015 to 1st April 2015 and the effluent samples collected during the inspections by the Team were analyzed by DPCC laboratory. The presence of officers during the inspections is given in Annexure-I. The inspection reports and effluent sample analysis reports of the 13 CETPs are collectively annexed as Annexure-II.

The DPCC collects and analyze effluent samples from the 13 CETPs in Delhi every month and further carries out quarterly inspection of these CETPs to collect other information relevant to performance. The past effluent analyses results and information available in DPCC were also examined by the Team.

[Handwritten signatures and initials]

4. Observations

i) Hydraulic capacity and effluent quantity

The quantity of effluent received at each CETP for treatment from the industrial areas/estates catered as observed in the past inspections by DPCC as well as during the inspection by the team vis-à-vis the hydraulic capacity of the plants are presented in Table B. It is observed that all plants except Mangolpuri have ample unutilized hydraulic capacity. Due to less flow, the physico-chemical treatment based plants are operated during day time.

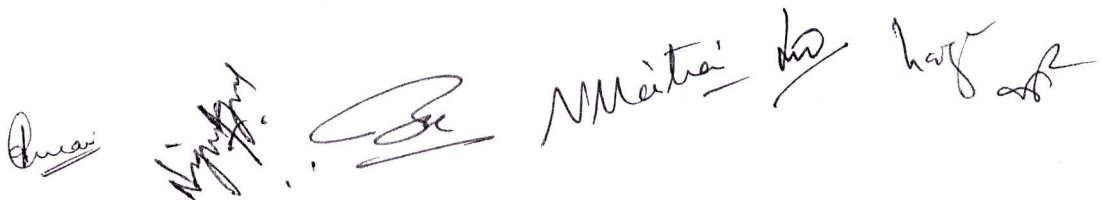
Table B

S. No	Name of CETP	Hydraulic Capacity, MLD	Effluent Quantity received for treatment, MLD						
			Oct, 14	Nov, 14	Dec, 14	Jan, 15	Feb, 15	Mar, 15	Average
1	Okhla	24.0	1.53	1.09	1.23	1.44	1.53	2.1	1.48
2	Naraina	21.6	4.0	4.4	4.45	4.29	4.61	4.38	4.35
3	Mayapuri	12.0	3.22	3.27	3.51	3.36	3.42	3.30	3.34
4	Badli	12.0	0.85	0.83	0.52	0.76	0.87	0.95	0.80
5	Bawana	35.0	10.27	9.42	10.46	10.87	12.09	13.01	11.02
6	G.T.K.	6.0	1.86	2.80	2.56	2.52	2.51	2.41	2.44
7	Lawrence Rd.	12.0	-	-	1.125	1.048	1.167	1.032	1.09
8	Mangolpuri*	2.4	1.75	1.75	1.75	1.75	1.75	1.75	1.75
9	Narela	22.5	5.6	5.57	5.44	4.96	5.7	5.66	5.48
10	SMA	12.0	-	-	1.67	1.70	1.67	1.6	1.66
11	Wazirpur	24.0	-	-	2.87	3.32	3.28	4.5	3.49
12	Nangloi	12.0	2.487	2.469	2.547	2.236	1.209	1.233	2.03
13	Jhilmil	16.8	7.95	8.25	7.98	7.31	7.28	7.38	7.68
	Total	211.8							46.61

ii) Untapped effluent

The Team noticed untapped effluent drains carrying significant quantity of effluent in Okhla, Wazirpur and Lawrence Rd. industrial areas:

- A drain in Okhla Industrial areas Phase I was noticed discharging effluent in Indira Camp drain near Tekhand village backside of FCI godown.
- A drain in Wazirpur Industrial area located between industrial units B-62 and B-64
- Block C of Lawrence Road Industrial area (not connected to CETP due to permission not given by railway to DJB for laying of pipeline under railway track).
- Effluent discharged from the Flatted Factory Complex near Vivek Vihar railway station.



iii) *Raw effluent quality*

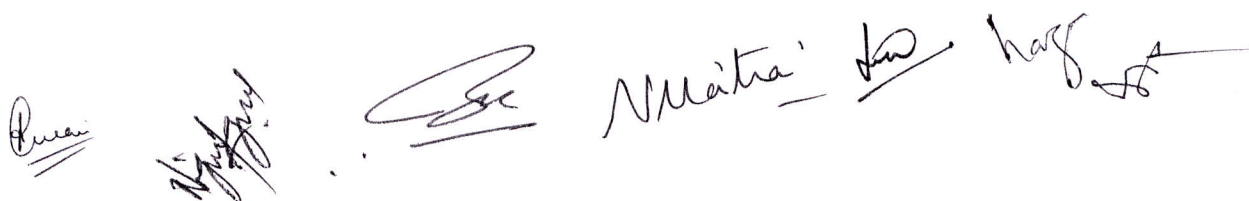
The quality of raw effluent received at each CETP for treatment as observed in the past inspections by DPCC as well as during the inspection by the team are presented in Table C1 to C13 which are collectively annexed as Annexure-III. It is observed that:

- The strength of the raw effluent reaching all 13 CETPs in respect of organic matter (BOD/COD) is moderate, somewhat similar to medium strength domestic sewage. However, all CETPs except for three employ only 'Primary physico-chemical treatment and filtration' based treatment in which the treatment is primarily achieved through coagulant aided settling and wasting of the settled solids as sludge. Only three CETPs at Bawana, Mangolpuri and Narela have primary plus biological secondary treatment based treatment scheme.
- The raw effluent reaching the CETPs at Wazirpur, SMA, and Badli is acidic and contains one or more of the heavy metals - Ni, Cr, and Cu - in concentration more than the prescribed primary standards, indicating that the pickling and electroplating units contributing effluents to these CETPs generally do not operate their individual primary ETPs satisfactorily.

iv) *Performance of the CETPs*

The quality of treated effluent discharged from each CETP as observed in the past inspections by DPCC as well as during the inspection by the team are presented in Table D1 to D13 which are collectively annexed as Annexure-IV. The summary of the performance is presented in Table D.

- The CETPs at Naraina, Mayapuri, Badli, Bawana, GTK, Narela, SMA, Wazirpur and Jhilmil generally comply CETP final effluent quality norms for the general parameters pH, BOD, COD and TSS. The treated effluent samples of these CETPs collected during the inspection by the Team also complied the norms except for Badli CETP where BOD (31 mg/l) slightly exceeded the norms (in GTK CETP also BOD had exceeded in 1 out of 12 inspections by DPCC in the past).
- The CETPs at Okhla, Mangolpuri and Nangloi also generally comply CETP final effluent quality norms for the general parameters pH, BOD, COD and TSS but on few occasions only BOD had exceeded the norm in the past (Okhla: BOD exceeded norms in 2 out of 8 inspections; Mangolpuri: BOD exceeded norms in 2 out of 9 inspections; Nangloi: BOD exceeded norms in 2 out of 8 inspections). The BOD of treated effluent samples of Okhla and Mangolpuri CETPs samples collected during the inspection by the Team exceeded the norms and that of Nangloi CETP complied the norms.



- The CETP at Lawrence Road on 6 out of 7 occasions during the past had not complied CETP final effluent quality norms for BOD. The treated effluent sample collected during the inspection by the team also showed exceeding of BOD (37 mg/l).
- It is observed that due to reliance on physico-chemical treatment to achieve final effluent quality norms, the quantity of sludge generation is high in Delhi CETPs. All CETPs are facing the problem of temporary storage of the sludge as there is no TSDF in Delhi. This is manifested in mismanagement of sludge handling in CETPs as below:

Improper use of equalization tanks

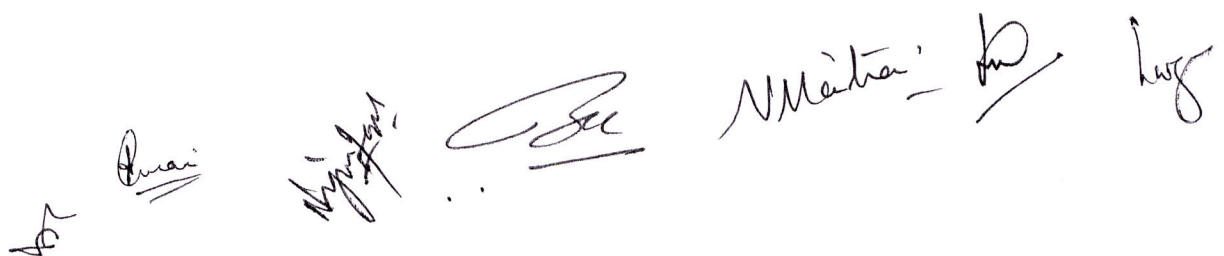
- All CETPs receive effluent quantity much less than their design hydraulic capacity. The total effluent received by all CETP is about one fifth of their combined hydraulic capacity. Therefore, equalization tanks are generally providing hydraulic retention capacity much higher than the designed. Thus, the equalization tanks which are primarily meant to provide an equalized effluent in terms of flow and quality, are serving as huge reservoirs for effluent and sludge. The situation is further aggravated by improper mixing arrangement.

Improper primary and secondary sludge wasting

- The quantity of primary sludge generation in a plant is an indirect indicator of overall performance. In all CETPs the quantity of primary sludge volume to be wasted daily is not assessed nor the sludge zone storage capacity of tube settlers and sludge thickeners is taken into account in deciding the volume of primary sludge to be wasted and the sludge wasting pattern throughout a day. Without these, proper sludge wasting and proper utilization of sludge dewatering facility is not possible and sludge accumulation/overflow and fluctuations in performance are likely.
- In the three CETPs having biological treatment system excess secondary biological sludge is not wasted in a regular manner using Solids Retention Time (SRT) as a controlling parameter, without which the biological system will not function properly.

Concentration of heavy metals – Ni, Cr and Cu in treated effluent

- Concentration of heavy metals – Ni, Cr and Cu were found within limits in the treated effluent.



(6)

Table D

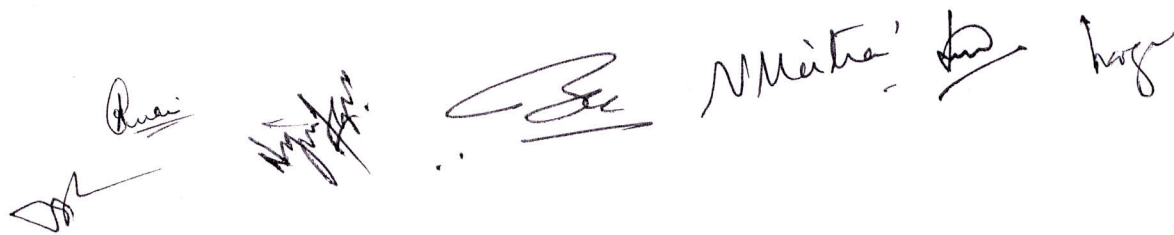
S. No	Name of CETP	Treated effluent quality for general parameters – pH, BOD, COD and TSS		TDSi levels in treated effluent
		Sample collected during past monthly by DPCC	Sample collected during joint inspection by Team	
1	Okhla	Out of 8 samples, BOD exceeded norms in 2 samples (BOD range 27-49)	BOD exceeding norms (BOD: 33 mg/l)	Generally within 2100 mg/l
2	Naraina	All samples complied norms	Complying norms	Generally within 2100 mg/l
3	Mayapuri	All samples complied norms	Complying norms	Generally within 2100 mg/l
4	Badli	All samples complied norms	BOD exceeding norms (BOD: 31 mg/l)	Generally within 2100 mg/l
5	Bawana	All samples complied norms	Complying norms	Out of 10 samples, TDS exceeded 2100 mg/l in 1 samples
6	G.T.K.	Out of 12 samples, BOD exceeded norms in 1 sample (BOD 36 mg/l)	Complying norms	Generally within 2100 mg/l
7	Lawrence Rd.	Out of 7 samples, BOD exceeded norms in 6 samples (BOD range 28-38)	BOD exceeding norms (BOD: 37 mg/l)	Out of 8 samples, TDS exceeded 2100 mg/l in 2 samples
8	Mangolpuri	Out of 9 samples, BOD exceeded norms in 2 samples (BOD range 21-35)	BOD exceeding norms (BOD 31 mg/l)	Out of 10 samples, TDS exceeded 2100 mg/l in 6 samples
9	Narela	All samples complied norms	Complying norms	Generally within 2100 mg/l
10	SMA	All samples complied norms	Complying norms	Out of 12 samples, TDS exceeded 2100 mg/l in 4 samples
11	Wazirpur	All samples complied norms	Complying norms	Out of 11 samples, TDS exceeded 2100 mg/l in 4 samples
12	Nangloi	Out of 8 samples, BOD exceeded norms in 2 samples (BOD range 28-47)	Complying norms	Out of 9 samples, TDS exceeded 2100 mg/l in 1 sample
13	Jhilmil	All samples complied norms	Complying norms	Generally within 2100 mg/l

v) *Quantity of coagulant chemicals addition and primary sludge generation*

The quantity of coagulant chemicals addition and the quantity of actual primary sludge generation, as observed in the past inspection by DPCC as well as during the inspection by the team are given in Table E, and Table-F, respectively, which are collectively annexed as Annexure-V.

vi) *Pickling/Electroplating and Dyeing units in Delhi*

As per records of DPCC, there 348 industrial units of Category 17 (Pickling/Electroplating etc.) and 45 industrial units of Category 7 (Dyeing/Printing etc.) of Seriously Polluting Industries. The Category 17 (Pickling/Electroplating etc.) units are in significant numbers in Wazirpur (116),

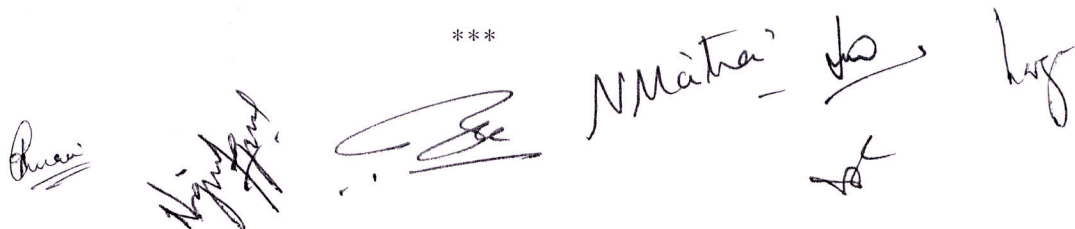
 (7)

Mayapuri (50), Okhla (34), SMA (32), Naraina (30), Jhhilmil (25), and Badli (21). The list of seriously polluting industries is enclosed as Annexure VI.

The Team was informed that considering that due to presence of hazardous waste generating industries in smaller numbers in Delhi the entire CETPs sludge become hazardous which is creating a big problem of hazardous waste storage in Delhi, the State Level Committee has recommended that seriously (water) polluting industries generating hazardous waste such as pickling/ electroplating/ phosphating/ anodizing/ galvanising, dyeing & printing etc. in Delhi should be closed by September 2016.

5. Recommendation

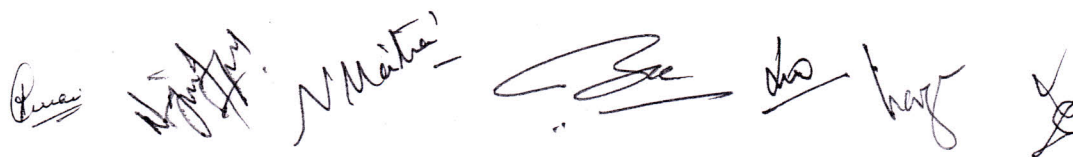
- i) All drains which carry effluent and pass through the 17 industrial areas catered by the 13 CETPs should be connected either to the CETP if they predominantly carry industrial effluent or to the STPs' sewerage if they carry domestic sewage from nearby residential areas. The Govt. of Delhi should take decision on all such untapped drains carrying effluent and issue necessary directions to concerned agencies.
- ii) All CETPs should immediately stop improper use of equalization tanks as a huge reservoir of effluent and sludge and instead restrict only a required portion of equalization tank volume with proper mixing facility for equalization purpose.
- iii) All CETPs should decide the volume of primary sludge to be wasted daily on the basis of proper assessment and decide the sludge wasting pattern throughout a day taking into account the sludge zone storage capacity of tube settlers and sludge thickeners.
- iv) The three CETPs having biological treatment system should decide the quantity of excess secondary biological sludge to be wasted daily using Solids Retention Time (SRT) as a controlling parameter.
- v) All CETPs should assess the capacity of sludge thickening, intermediate storage and dewatering facilities and ensure that all elements of the sludge handling facility are adequate to meet the requirement.
- vi) In view of changed nature of effluents due to closure of seriously polluting industries in Delhi and further planned closure of the remaining seriously polluting industries and in order to address the problem of excessive sludge generation, it may be desirable to incorporate biological treatment process in all CETPs. The spare equalization tanks can be used for incorporating the biological treatment process in the CETPs.

The block contains several handwritten signatures in black ink. From left to right, there is a signature that appears to be 'Ravi', followed by a signature that looks like 'N. Singh', then a signature that is partially obscured but seems to be 'S. Singh', and finally a signature that is clearly 'N. Mitra'. There are also some other smaller, less legible marks and initials scattered around these main signatures.

Annexure-I

Presence of officers during the inspection of 13 CETPs in Delhi

S. No.	Name of CETP	Date of Inspection	CPCB	DPCC	DPCC(Lab)	Deptt. of Inds	GNCTD-Deptt. of Environment	DSIIDC
1	Okhla	19.3.2015	Sh. Nazimuddin, Sc. 'E'	Sh. B.L. Chawla, SEE	Dr. Nandita Moitra, SS	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
2	Naraina	19.3.2015	Sh. Nazimuddin, Sc. 'E'	Sh. B.L. Chawla, SEE	Dr. Nandita Moitra, SS	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
3	Mayapuri	01.04.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Ms. Pallavi, Trainee	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
4	Badli	31.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Sh. Arvind Kumar, Scientist	Busy with other work	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
5	Bawana	31.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Sh. Arvind Kumar, Scientist	Busy with other work	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
6	G.T.K.	01.04.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Ms. Pallavi, Trainee	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
7	Lawrence Rd.	23.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Dr. Nandita Moitra, SS	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
8	Mangolpuri	30.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Ms. Pallavi, Trainee	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
9	Narela	31.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Sh. Arvind Kumar, Scientist	Busy with other work	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
10	SMA	23.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Dr. Nandita Moitra, SS	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
11	Wazirpur	20.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Dr. Nandita Moitra, SS	Sh. Parveen Kumar	Busy with other work	Sh. Sharat Kumar, SE
12	Nangloi	30.03.2015	Sh. Ankush Tewani, Sc. 'C'	Sh. B.L. Chawla, SEE	Ms. Pallavi, Trainee	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE
13	Jhilmil	18.03.2015	Sh. Nazimuddin, Sc. 'E'	Sh. B.L. Chawla, SEE	Dr. Nandita Moitra, SS	Sh. Parveen Kumar	Ms. Nigam Agarwal, Sr. Scientific Officer	Sh. Sharat Kumar, SE



INSPECTION REPORT

1.	Name of CETP with address & telephone no.	Okhla Industrial Area CETP, C-141, Okhla Industrial Area, Phase-I, New Delhi-20
2.	Coordinates	N28°31'25.1508" E77°16'50.3256"
3.	Name of CETP Society President/Secretary Phone No.	Sh. Harish Arora (President) Sh. Y.C. Jain (General Secretary)
4.	Installed capacity of CETP	24 MLD
5.	Catchment Area of CETP	Okhla Industrial Area, Phase-I & Phase-II
6.	Treated Effluent discharge in	Drain
7.	Source of Water Supply	-
8.	a) D.G. Set(s) (if any) b) Whether Acoustic enclosure provided c) Stack height of DG Set	Nil
9.	No. of staff & workers	CETP Society- 6 and Operator - 14
10.	Consent status	Valid upto 31.03.2015. Applied for renewal on 27.02.2015
11.	HW Authorization Status	Valid upto 31.03.2015. Applied for renewal on 27.02.2015
12.	HW Data updated in Display Boards	Yes
13.	Log Book of HW maintained.	Yes
14.	Date of Inspection	19.03.2015
15.	Other Observations	

Sl. No	Components	Total No.	No. of Operational	Remarks
1	Flow Meter	2	2	
2	Screen chamber	2	2	
3	Grit Chamber	3 (2W+1S)	3	Manual grit removal system.
4	Equalisation tank and agitators	2 parts with 2 agitator in each tank	2 in one of the equalization tank.	02 agitators of the other equalization tank sent for repair.
5	Flash Mixer	4	4	
6	Flocculator	2	2	
7	Tube Settler	4 parts	4	
8	Secondary Clarifier	NA	NA	
9	Sludge Thickener	1	1	Not working properly.
10	Sludge Pump	2	2	
11	Decanter (Centrifugal for sludge thickening)	1	1	
12	Pre Chlorination	1	1	
13	Post Chlorination	-	-	
14	Dual Media Filter	24		6 used at a time.
15	Activated Carbon Filter	15	-	Not operated.

16	Effluent Intake	Dec, 14	Jan, 15	Feb, 15	Mar, 15(on 18.03.15)
A	Total intake/month(in ML)	38.013	44.536	42.8	
B	Average Intake /day (in MLD)	1.23	1.44	1.53	2.1

17	Chemical Consumption:	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.) (on 18.03.15)
A	Lime	-	-	-	-
B	Caustic (NaOH)	-	-	-	-
C	Alum	19120	20380	6450 Upto 12.02.2015	-
D	Poly Alumina Chloride (PAC)	-	-	2450 since 13.02.2015	-
E	Poly Electrolyte	73	73	87	-
F	Bleaching Powder	3375	2800	2100	-

18	Details of Sludge	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)
A	Quality of sludge generated(in Kg./month)	12000	13300	12000
B	Total qty of sludge stored in CETP (in Tonne)	1478.030	1491.33	1504.03

Remarks, if any

- (i) The components of CETP i.e. equalization tank, flocculation sections, tube settlers etc. are filled up with sludge.
- (ii) Two agitators in the equalization tank were sent for repair.
- (iii) CCTV system installed.
- (iv) Order placed for Online Monitoring System.

[Signature]

[Signature]

[Signature]

Maitra *[Signature]* *hug*

11

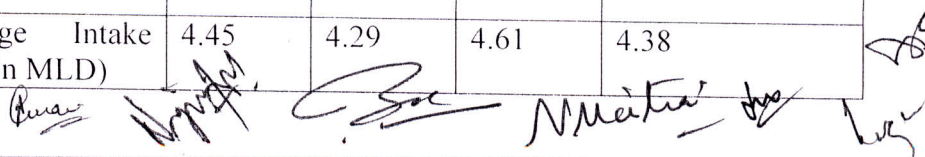
INSPECTION REPORT

1.	Name of CETP with address & telephone no.	Naraina CETP, Near Flyover CB Area, Ring Road, Naraina New Delhi-28 Ph:-011-64661920
2.	Coordinates	N28°37'47.6904" E77°7'54.282"
3.	Name of CETP Society President/Secretary Phone No.	Mr. Kapil Chopra(President) – 9811792342 Mr. Jatinder Singh (Gen. Secretary) - 9811046358
4.	Installed capacity of CETP	21.6MLD
5.	Catchment Area of CETP	Naraina Indl. Area, Phase-I & Phase-II, LohaMandi, Naraina Area
6.	Treated Effluent discharge in	Najafgarh Drain through Kirti Nagar sub drain
7.	Source of Water Supply	Borewell
8.	s) D.G. Set(s) (if any) t) Whether Acoustic enclosure provided u) Stack height of DG Set	Nil
9.	No. of staff & workers	CETP – 5 and Operator - 14
10.	Consent status	Valid upto31.03.2015. Applied for renewal on 02.03.2015
11.	HW Authorization Status	Valid upto31.03.2015. Applied for renewal on 02.03.2015.
12.	HW Data updated in Display Boards	Yes
13.	Log Book of HW maintained.	Yes
14.	Date of Inspection	19.03.2015
15.	Other Observations	

Sl. No	Components	Total No.	No. of Operational	Remarks
1	Flow Meter	1	1	
2	Screen chamber	Nil	-	
3	Grit Chamber	Manual	-	
4	Equalisation tank and agitators	2 sections with 2 in each section	4	
5	Flash Mixer	4	4	
6	Floculator	2	2	
7	Tube Setter	4 parts	4	
8	Secondary Clarifier	NA	NA	
9	Sludge Thickener	1	1	
10	Sludge Pump	4	4	
11	Vaccum Filter	2	2	
12	Pre Chlorination	Nil	Nil	
13	Post Chlorination	1	1	Bleaching Powder
14	Dual Media Filter	22		11 operated at a time.
15	Activated Carbon Filter	14		07 operated at a time.

16	Effluent Intake	Dec, 14	Jan, 15	Feb, 15	Mar, 15(as on 18.03.15)
A	Total intake/month(in ML)	138	133	129	74.47
B	Average Intake /day (in MLD)	4.45	4.29	4.61	4.38

(12)



17	Chemical Consumption:	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.) (as on 18.03.15)
A	Lime	-	-	-	-
B	Caustic (NaOH)	-	-	-	-
C	Alum	40439	35910	34830	20104
D	PAC	-	-	-	-
E	Poly Electrolyte	69	66	65	37.22
F	Bleaching Powder	1380	1330	1290	744

18	Details of Sludge	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.) (as on 18.03.15)
A	Quality of sludge generated(in Kg./month)	11280	10243	10132	6171
B	Total qty of sludge stored in CETP (in Tonne)	1371.017	1381.260	1391.392	1397.563

Remarks, if any

- (i) CCTV installed but not found operational due to renovation work in the office of CETP Society.
- (ii) Online Monitoring System not installed.

Signature *Signature* *Signature* *Maitra' ho* *hary* *Signature*

13

INSPECTION REPORT

1.	Name of CETP with address & telephone no.	Mayapuri Industrial Area CETP, Opp. Govt. of India Press, Mayapuri Industrial Area, Phase-I, New Delhi-64
2.	Coordinates	N28°38'6.6228" E77°7'39.1944"
3.	Name of CETP Society President/Secretary Phone No.	Mr. Dalip Singh Sahi (President) Mr. Neeraj Sehgal (Gen. Secretary)
4.	Installed capacity of CETP	12 MLD
5.	Catchment Area of CETP	Mayapuri Phase-I & Phase-II
6.	Treated Effluent discharge in	Subhash Nagar Drain
7.	Source of Water Supply	Borewell
8.	d) D.G. Set(s) (if any) e) Whether Acoustic enclosure provided f) Stack height of DG Set	Nil
9.	No. of staff & workers	CETP Society – 8 & Operator - 14
10.	Consent status	Valid upto 31.03.2015. Applied for renewal on 30.03.2015
11.	HW Authorization Status	Valid upto 08.09.2015
12.	HW Data updated in Display Boards	Yes
13.	Log Book of HW maintained.	Yes
14.	Date of Inspection	01.04.2015
15.	Other Observations	

Sl. No	Components	Total No.	No. of Operational	Remarks
1.	Flow Meter	1	-	Needs calibration.
2.	Screen chamber	2	2	
3.	Grit Chamber	2	2	
4.	Equalisation tank and agitators	2 parts And 6 mixers	6	
5.	Flash Mixer	2	2	
6.	Flocculator	NIL	NIL	
7.	Tube settler	2	2	
8.	Secondary Clarifier	NA	NA	
9.	Sludge Thickener	1	1	Not working properly.
10.	Sludge Pump	2 (1W+1S)	2	
11.	Vaccum Filter	2	2	One is used at a time.
12.	Pre Chlorination	2	2	-
13.	Post Chlorination	NIL	NIL	
14.	Dual Media Filter	12	12	6 are used at a time.
15.	Activated Carbon Filter	8	8	4 are used at a time.

16	Effluent Intake	Oct, 14	Nov, 14	Dec, 14	Jan, 15	Feb, 15	Mar, 15
A	Total intake/month(in ML)	100.060	98.230	109.010	104.050	95.920	102.270
B	Average Intake /day (in MLD)	3.22	3.27	3.51	3.36	3.42	3.30

[Signatures]

[Signature]

[Signature]

(14)

17	Chemical Consumption:	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A.	Lime	5991	7476	8170	7844	7188	7655
B.	Caustic (NaOH)	4805	3932	4359	4187	3836	4091
C.	Bleaching Powder	13005	12768	14167	13601	12464	13287
D.	PAC	1300	1274	1415	1359	1244	1325
E.	Poly Electrolyte	100	98	108	105	96	103
F.	Other:						

18	Details of Sludge	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A	Quality of sludge generated(in Kg./month)	3720	3870	4335	4130	3640	3905
B	Total qty of sludge stored in CETP (in Tonne)	303.995	307.865	312.200	316.330	319.970	323.875

Remarks, if any

- (i) Sludge accumulation was observed in equalization tank and pre-chlorination tank.
- (ii) Existing shed facility was completely filled with sludge. New sheds are required to be provided for storage of sludge.
- (iii) Treated water of CETP was partially used in chemical preparation, horticulture and backwashing of DMF and ACF.
- (iv) Online effluent monitoring system not installed.
- (v) CCTV system installed and in operation.

Praveen *Nigam* *Secy* *Maitra* *St*

(15)

INSPECTION REPORT

1.	Name of CETP with address & telephone no.	Badli Industrial Estate CETP Society, Behind Suraj Park, Rohini Setor-18, New Delhi-110085 011-27871855
2.	Coordinates	N28°44'33.9576" E77°08'14.2476"
3.	Name of CETP Society President/Secretary Phone No.	Sh. Shiv Agrawal (President) Sh. RavidSood (Secretary) 9868110187
4.	Installed capacity of CETP	12MLD
5.	Catchment Area of CETP	Badli Industrial Area Phase-I, II & III
6.	Treated Effluent discharge in	Bawana drain
7.	Source of Water Supply	Borewell
8.	a) D.G. Set(s) (if any) b) Whether Acoustic enclosure provided c) Stack height of DG Set	Nil
9.	No. of staff & workers	Workers-11 & Admn. Staff-5
10.	Consent status	Valid upto 31.03.2015. Applied for renewal.
11.	HW Authorization Status	Valid upto 08.10.2015
12.	HW Data updated in Display Boards	Yes
13.	Log Book of HW maintained.	Yes
14.	Date of Inspection	31.03.2015
15.	Other Observations	

Sl. No	Components	Total No.	No. of Operational	Remarks
1.	Flow Meter	1	Yes	
2.	Screen chamber	3	3	
3.	Grit Chamber	3	3	
4.	Equalisation tank and agitators	2 and 3 floating mixers	-	Mixers not working
5.	Flash Mixer	4	4	
6.	Flocculator	1	1	
7.	Tube settler	2 parts	2	
8.	Secondary Clarifier	NA	NA	
9.	Sludge Thickener	1	-	Not working
10.	Sludge Pump	2	-	Not working
11.	Vaccum Filter	2	One in working condition.	One not in working condition.
12.	Pre Chlorination	1	-	Not operating.
13.	Post Chlorination	1	-	Not operating.
14.	Dual Media Filter	12	12	3 operated at a time.
15.	Activated Carbon Filter	6	6	2 operated at a time.

16	Effluent Intake	Oct, 14	Nov, 14	Dec, 14	Jan, 15	Feb, 15	Mar, 15
A	Total intake/month(in ML)	26.400	25.000	16.200	23.700	24.480	28.524
B	Average Intake /day (in MLD)	0.85	0.83	0.52	0.76	0.87	0.95

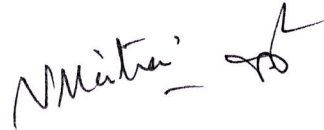


17	Chemical Consumption:	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A	Lime	6499	6310	4442	10407	6133	10231
B	Castic (NaOH)						
	Alum						
	PAC						
	Poly Electrolyte	7.2	7.5	5.4	7.5	6.6	7.5
	Other:						

18	Details of Sludge	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A	Quality of sludge generated(in Kg./month)	7794	7577	5333	12516	7363	12286
B	Total qty of sludge stored in CETP (in Tonne)	649.259	656.836	662.169	674.685	682.048	694.334

Remarks, if any

- (i) Grit chamber, equalization tank, pre-chlorination tank and tube settlers were found completely filled with sludge. Solids overflow observed from the tube settlers.
- (ii) Sludge line from sludge thickener to vaccum filter was choked and sludge pumps were found not working. Also, sludge storage area was found completely filled with sludge.
- (iii) Additional sludge storage area is being constructed.
- (iv) Online Monitoring System not installed.
- (v) CCTV system not installed by CETP.

17

INSPECTION REPORT

1.	Name of CETP with address & telephone no.	Bawana CETP Sector-5, Bawana Industrial Area. Opp. P Block, Delhi
2.	Coordinates	N28°48'31.0068" E77°4'54.1308"
3.	Name of CETP Society President/Secretary Phone No.	Bawana Infra Development Pvt. Ltd.
4.	Installed capacity of CETP	35 MLD
5.	Catchment Area of CETP	Bawana Industrial Area
6.	Treated Effluent discharge in	Bawana Escape drain
7.	Source of Water Supply	Borewell
8.	j) D.G. Set(s) (if any) k) Whether Acoustic enclosure provided l) Stack height of DG Set	Nil
9.	No. of staff & workers	26 workers & 2 staff
10.	Consent status	Valid upto 31.03.2015
11.	HW Authorization Status	Valid upto 31.03.2015
12.	HW Data updated in Display Boards	Yes
13.	Log Book of HW maintained.	Yes
14.	Date of Inspection	31.03.2015
15.	Other Observations	

Sl. No	Components	Total No.	No. of Operational	Remarks
1.	Flow Meter	3	2	1 under replacement.
2.	Oil & Grease Skimmer/ trap (drum type)	2	2	
3.	Screen chamber	2 screens	2 screens	
4.	Grit Chamber	2	2	
5.	Equalisation tank and agitators	2 sections and 4 mixers in each part	8	
6.	Flash Mixer	2: 1 for primary treatment and 1 for tertiary treatment	2	Flash Mixer for primary treatment not used. Plain sedimentation carried out by CETP.
7.	Primary Settling Tank	2	2	
8.	Aeration tank and aerators	2 section with 18 aerators (20 HP each)	17 aerators	1 aerator under repair. 6 aerators used at a time.
9.	Secondary Clarifier	2	2	
10.	Sludge Thickener	2	2	
11.	Flocculator	2: for tertiary treatment	2	
12.	Tube settler	2 sections for tertiary treatment	2	
13.	Sludge Pump	4	4	All used alternatively.

[Signature]

[Signature] *[Signature]*

(18)

14.	Centrifuge	3	2	One used at a time and One under repair.
15.	Pre Chlorination	-		
16.	Post Chlorination	-		
17.	Dual Media Filter	-		
18.	Activated Carbon Filter	-		
19.	Rapid sand gravel filter	6	5	One filter section of rapid sand gravel is under repair.

16	Effluent Intake	Oct, 14	Nov, 14	Dec, 14	Jan, 15	Feb, 15	Mar, 15
A	Total intake/month(in ML)	318.457	282.649	324.267	337.110	338.613	403.401
B	Average Intake /day (in MLD)	10.27	9.42	10.46	10.87	12.09	13.01

17	Chemical Consumption:	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A	Lime	8820	7760	9020	9260	9400	11160
B	Caustic (NaOH)	-	-	-	-	-	-
C	Alum	15940	14110	16230	16830	16960	20140
D	PAC	-	-	-	-	-	-
E	Poly Electrolyte	320	281		336	341	405
F	Other:						

18	Details of Sludge	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A	Quality of sludge generated(in Kg./month)	22293	19784	22700	23597	23703	28420
B	Total qty of sludge stored in CETP (in Tonne)						

Remarks, if any

- (i) Sludge accumulation was observed in the equalization tank.
- (ii) Sludge drain valve of secondary clarifier is under repair resulting in sludge accumulation in the clarifier.
- (vi) Shed facility needs to be provided for the sludge storage areas.
- (iii) CCTV system installed and working properly.
- (iv) Online monitoring system not installed.

[Signatures]

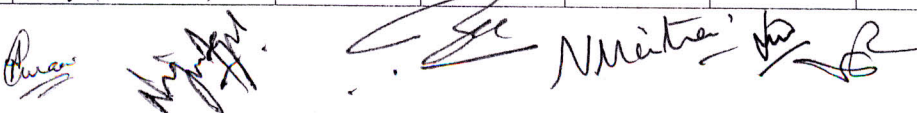
19

INSPECTION REPORT

1.	Name of CETP with address & telephone no.	GT Karnal Road Industrial Area CETP, G.T. Karnal Road Industrial Area, Delhi-33 011-7433005
2.	Coordinates	N28°41'32.7408" E77°11'9.78"
3.	Name of CETP Society President/Secretary Phone No.	Mr. S.P. Gupta (President) - 9910169869 Mr. V.K. Sahi (Secretary)
4.	Installed capacity of CETP	6MLD
5.	Catchment Area of CETP	A, B & GI Block
6.	Treated Effluent discharge in	Open drain (GTK Road)
7.	Source of Water Supply	Borewell
8.	a) D.G. Set(s) (if any) b) Whether Acoustic enclosure provided c) Stack height of DG Set	Nil
9.	No. of staff & workers	20
10.	Consent status	Valid upto 31.03.2015
11.	HW Authorization Status	Valid
12.	HW Data updated in Display Boards	Yes
13.	Log Book of HW maintained.	Yes
14.	Date of Inspection	01.04.2015
15.	Other Observations	

Sl. No	Components	Total No.	No. of Operational	Remarks
1.	Flow Meter	1	-	Needs Calibration.
2.	Screen chamber	4: 2 medium and 2 fine screens	4	
3.	Grit Chamber	2	2	
4.	Equalisation tank and agitators	2 parts 4 agitators	4	
5.	Flash Mixer	2	2	
6.	Flocculator	-	-	
7.	Tube settler	2 parts	2	
8.	Secondary Clarifier	NA	NA	
9.	Sludge Thickener	1	1	Not working properly
10.	Sludge Pump	2	2	
11.	Vaccum Filter	2	Not used	
12.	Filter press (32 plates)	1	1	
13.	Pre Chlorination	-	-	
14.	Post Chlorination	-	-	
15.	Dual Media Filter	6		3 used at a time.
16.	Activated Carbon Filter	4		2 used at a time.

16	Effluent Intake	Oct, 14	Nov, 14	Dec, 14	Jan, 15	Feb, 15	Mar, 15
A	Total intake/month (in ML)	57.660	83.980	79.390	78.200	70.380	74.800
B	Average Intake /day (in MLD)	1.86	2.80	2.56	2.52	2.51	2.41


(20)

17	Chemical Consumption:	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A.	Lime						
B.	Castic (NaOH)						Recently started using it. 23 Kg. used in last week.
C.	Alum						
D.	PAC	358	416	419	397	366	484
E.	Poly Electrolyte	50	52	57	24	45	55
F.	Other:						

18	Details of Sludge	Oct, 14 (in Kg.)	Nov, 14 (in Kg.)	Dec, 14 (in Kg.)	Jan, 15 (in Kg.)	Feb, 15 (in Kg.)	Mar, 15 (in Kg.)
A	Quality of sludge generated(in Kg./month)	3264	3516	3551	3516	3283	3572
B	Total qty of sludge stored in CETP (in Tonne)	1122.560	1126.076	1129.627	1133.193	1136.476	1140.048

Remarks, if any

- (i) CETP has recently started using caustic soda in physico-chemical treatment.
- (ii) Vacuum filter not in use. CETP using filter press for sludge dewatering.
- (iii) Sludge storage area completely filled with sludge. Additional sludge storage area needs to be provided.
- (iv) Types of industrial units contributing wastewater to CETP are Service Station and Banquet Hall.
- (v) Online monitoring system installed and under trial run.
- (vi) CCTV system installed.

Puri

Signature

Signature

Mishra

21