

REPORT ON COMMON EFFLUENT TREATMENT PLANTS (CETPS)

(IN THE MATTER OF W.P.(C) NO.4677 OF 1985; M.C. MEHTA V/S UOI & OTHERS)

APRIL, 2008

**ENVIRONMENTAL POLLUTION (PREVENTION AND CONTROL) AUTHORITY
FOR THE NATIONAL CAPITAL REGION**

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A. Background

This report is being filed in compliance with the Hon'ble Court's order of February 13, 2008 directing the Environment Pollution (Prevention and Control) Authority (EPCA) for the National Capital Region to respond to the following issues:

- a. Status of the work done till now, deficiencies in functioning and remedies or measures to remove deficiencies;
- b. Suggestions of the Delhi government that the plant at Anand Parbat may be continued while the other two will be discontinued
- c. View expressed by the government of Delhi on cost sharing in its affidavit dated October 2007

The Hon'ble court at various occasions in the past, had expressed its unhappiness over the state of CETPs in Delhi. On the directives of the Hon'ble Court EPCA had been reviewing the progress of the CETPs regularly. It has reported on the various issues pertaining to the CETPs ranging from over design, delayed completion, cost and time over runs. EPCA also reported that in all industrial areas the effluent conveyance systems constructed by the Delhi Jal Board were in poor state. The pipelines leading to CETPs were either choked/ silted or the pumping stations were defunct leading to under utilisation of CETPs (less than 10 % capacity was utilised in March 2004).

There were also problems with the technical performance of CETPs. In some cases, the wastewater received by the plant was discharged into the drain outside, without any treatment. There were differences in the incoming effluent characteristics as per NEERI's design and the actual characteristics of the effluents generated in the industrial areas. This has led to faulty performance of some CETPs and they were unable to adequately treat the effluent. The Wazirpur CETP is an example where highly acidic effluents posed difficulty in treatment. As per the NEERIs estimation about 200 part per million (ppm) of lime dosing was required to neutralise this effluent. But this turned out to be grossly inadequate—a dosing of about 2,000 ppm was required to neutralise this highly acidic effluent. Technical problems existed in Nangloi, Lawrence road and some other CETPs. All these plants were constructed with considerable public expenditure and the Hon'ble Court had been giving directions from time to time to improve their performance in public interest to clean the river Yamuna.

Due to several reasons cited above the CETP Societies were hesitant to take charge of the operation and maintenance of the CETPs and Delhi State Industrial Infrastructure Development Corporation (DSIIDC), continued to operate them. It was on April 26, 2005 that the Hon'ble Court directed EPCA to facilitate the handing over of CETPs to the industries. During June -July, 2005, EPCA initiated a joint performance evaluation of all completed CETPs by National Environmental Engineering Research Institute (NEERI), Central Pollution Control Board (CPCB), DSIIDC, Delhi Pollution Control Committee (DPCC) and CETP Societies followed by a month long trial run. Thereafter the identified technical snags were rectified by the DSIIDC before handing over operation and maintenance to CETP Societies. By January 2007, eight out of ten CETPs were handed over. EPCA also facilitated a tripartite memorandum of understanding for operation and maintenance between department of industries, CETP Societies and the Delhi Jal Board.

In February 2006, Hon'ble Court directed EPCA to sort out the issues pertaining to cost sharing. Accordingly EPCA worked with various stakeholders including the Government of NCT Delhi, CETP Societies, DPCC, NEERI and CPCB to sort out the issues of cost liabilities and sharing. Based on this in January 2007 recommendations on cost sharing were put up before the Hon'ble Court along with suggestions for improving the performance of CETPs.

B. Performance of the CETPs: A status report

1. As on March 1, 2008, government of Delhi informed EPCA that nine out of the ten commissioned CETPs, have been handed over to the CETP Societies for operation and maintenance. Lawrence road CETP is yet to be handed over.
2. DPCC monitoring reports for the month of February 2008 shows that about 30 million litres per day (mld) i.e., 22 per cent of the installed capacity is utilised.
3. Not all waste generated in the respective industrial areas is reaching the CETPs. Deficiencies in the conveyance systems and the non-connectivity of industries to the existing CETPs are the major causes of this under utilisation. DPCC informed EPCA that it has initiated regular monitoring and follow up programmes to improve the functioning of the CETPs.
4. DPCC monitoring reports show that in some of the CETPs effluent quality parameters are not complied with. However, DPCC has informed that it brings the deficiencies to the notice of Commissioner of Industries and the CETP Societies for rectification.
5. The treated/partially treated industrial effluents are being dumped into the neighbourhood drain which finally adds more waste before ending up in the river Yamuna. This is done after spending huge sums of money for treatment. It is important that the effluents are treated and then reused.
6. Sludge generated from CETPs are stored in temporary sheds within the CETP premises and most of them have exhausted the storage capacity. The DPCC has not been able to operationalise the Treatment, Storage and/or Disposal Facility (TSDF) site for hazardous waste at Ghuman Hera by February 28, 2007 as promised.
(See Annexure 1 & 2: Capacity utilisation and performance of CETPs during February 2007- January 2008)

C. EPCA's response on construction of CETP at Anand Parbat

In its report to the Hon'ble Court submitted in January 2007, EPCA recommended that the "The three not built CETPs – namely Mohan Cooperative, Anand Parbat and Okhla Industrial Estate – should not be built." The affidavit by the Government of Delhi pointed out that "the EPCA cannot order that the CETPs should not be constructed at Anand Parbat as these were the original orders passed by the Hon'ble Court." The affidavit further stated that in this area there are a lot of industrial activities generating around 17.4 mld waste water.

There are a number of grossly underutilised CETPs which can be considered for evaluation for treating the additional waste water from the Anand Parbat industrial area. Based on the latest reports of DPCC, of the nearest CETPs, Mayapuri is operating at 40 per cent capacity (6.7 mld capacity unused), the GTK road is operating at less than 40 per cent capacity (3.7 mld capacity unused) and the Naraina CETP, which is about to be commissioned is expected to receive 10.7 mld effluent as against the design capacity of 21.6 mld (10.9 mld residual capacity). (see Annexure 3: Capacity available at Mayapuri, GTK and Naraina CETPs).

EPCA is of the opinion that the real picture about total waste water generation in industrial areas and spare treatment capacities available in existing CETPs would emerge only after the long pending task of connecting/conveying the entire waste water to CETPs is accomplished by Government of Delhi. It is important to reassess the quantum of waste water generated in the industrial areas. The report by Shriram Institute for Industrial Research on this aspect should be scrutinised by Government of Delhi through technical experts.

EPCA would reiterate its earlier recommendation not to construct new CETP in Anand Parbat till existing CETPs are optimally utilised. The waste, in this area should be transported to the existing under-utilised CETPs. In this respect, the government of Delhi shall undertake a study to compare the cost for conveying the wastewater from Anand Parbat to the nearby CETPs vis-à-vis cost of erecting a new CETP.

D. EPCA's response to the views expressed by government of Delhi on the cost sharing formula

The Hon'ble Court on February 2, 2006 directed the EPCA, to examine the issue of cost sharing and the liability of the industry and the Government of India. During March-December 2006, the EPCA convened several meetings and interacted with the different stakeholders—the CETP societies, government of NCT Delhi and DSIIDC to resolve the matter. The NEERI, which designed the CETPs, was also called for discussion and clarification. EPCA also set up a committee headed by senior officials of the CPCB to scrutinise and analyse the documents submitted by the government of Delhi.

At that time, issues like over design, time delays, cost over runs and escalation, under utilisation, badly designed, constructed and maintained conveyance infrastructure and technical snags in the CETPs, were point of contention between various stakeholders. Concerns were raised by the CETP Societies on the quality of construction and the degree of treatment that the CETPs offered. The CETP Societies also refused to share the escalated costs on the grounds of over design and time lags. On the other hand, the government of Delhi was of the view that the non-payment of dues by the CETP Societies resulted in time lags and cost over runs. The government opined that the CETP Societies needed to pay for capital costs (including escalation) and operation and maintenance costs for the period when DSIIDC was running the CETPs.

The focus of EPCA, as reported earlier, was to firstly, assess the actual amount spent by the DSIIDC in constructing the ten CETPs, secondly, to assess how much it differed from the estimates prepared by NEERI and if so, what were the reasons for this difference; thirdly, based on this, what is the actual liability of the different stakeholders -- CETP Societies, DSIDC and the Union Ministry of Environment and Forest (MoEF), which has committed funds to pay for the construction of the plants. For this, cost books were called for from the DSIIDC and scrutinised.

EPCA's attempt was to resolve the impasse by arriving at a consensus formula accounting for all the past inefficiencies and to give a new direction to the management of the CETPs. It was after several weeks of intense deliberations a consensus was arrived at by taking into account views of different parties involved. Therefore, a renegotiation process would mean re-opening of the entire matter and reinventing the whole process, which is not needed. In the wake of the above cited reasons EPCA would submit to reiterate the cost sharing formula it submitted to the Hon'ble Court in January 2007.

- a. The infrastructure cost which include the cost of land, feeder electrical line charges (Delhi Vidyut Board (DISCOM) charges) and relaying/repair charges incurred in the conveyance system (DJB charges) should be fully borne by the government of NCT Delhi and should not be considered for sharing by the CETP societies.
- b. The capital cost of the rising mains, excluding the rising mains from the REPS within the CETP premises, should be borne by the government of Delhi.
- c. The 10 per cent departmental charges accounted by the DSIDC in the capital costs and in the O&M costs shall not be passed on to the CETP Societies.
- d. Similarly the expenditure incurred and accounted for as 'miscellaneous', which include boundary wall, insurance, press advertisement and horticulture shall not be passed on to the industries. This will be borne by the government of Delhi.
- e. This expenditure on O & M cost for the period after commissioning/completing of trial run and before handing over to CETP societies shall be borne by the government of Delhi. This will be treated as the compensation for the delays and the related cost escalation.
- f. Over and above this, the government of Delhi shall also bear the DJB charges for the CETPs (Rs 23.28 crore for fifteen CETPs).

- g. It is understood that due to the delay in construction of CETPs, the DSIIDC has earned interest on the share received from the CETP Societies and the Government. The amount should be adjusted against the recoverable on a pro-rata basis of the share received from the all the 15 Societies.
- h. The balance amount after accounting for the interest accrued will be recoverable from industries on the agreed sharing basis of 50 per cent. The balance will have to be paid, based on the agreed formulae.
- i. The sharing of recoverable cost will be done on the agreed ratio of 25:25:50 – between the Delhi government, MoEF and the CETP Societies.
- j. The Comptroller and Auditor General (CAG) of India be directed to investigate the concern over the volume of civil works in the CETPs.

E. Directives sought from the Hon'ble Court

There is a lot of scope for improvement in the performance of CETPs especially in the areas of capacity utilization, improve quality of treated effluents, reuse of treated effluents, sludge management etc. EPCA would request the Hon'ble Court to issue the following directives to the concerned agencies to address the outstanding issues expeditiously:

1. All waste water generated in industrial areas shall be conveyed and treated in the respective CETPs. DPCC shall work with the CETP societies and department of industries to identify the industries not connected to sewers leading to the CETP and take appropriate action. The task of getting industries connected to sewers shall be expedited and completed in a time bound manner. Simultaneously, DPCC and CETP Societies shall point out to the deficiencies in the conveyance system to the Delhi Jal Board and rectify the defects, if any, expeditiously. Government of Delhi may be directed to accomplish this task in three month's time and report on the progress to the Hon'ble Court.
2. DPCC shall continue to periodically and proactively oversee and monitor the performance of CETPs and work with the CETP Societies to ensure compliance with effluent discharge standards.
3. Government of Delhi shall resolve all outstanding technical issues with respect to Lawrence road CETP, in two month's time, and a month long trial run be done and thereafter hand it over to the CETP Society.
4. Government of Delhi shall submit a time bound plan for handing over the Naraina CETP.
5. The CETP society and the department of industries shall in consultation with the DPCC draw up a time bound plan for reuse of treated effluents in all commissioned CETPs.
6. The decision on CETP at Anand Parbat may be taken after considering the submission made in Section C of this report.
7. The DPCC may be directed to file a status report on the Treatment, Storage and/or Disposal Facility (TSDF) site for hazardous waste.

F. Annexure

Annexure I: Capacity utilisation of CETPs during January 2008

S.No.	Name of CETP	Design Capacity in million litres per day (mld)	Status of handing over of O&M to CETP Society as of Jan 2008	Capacity utilisation reported in Jan 2007	Utilisation in Jan 2008	% Capacity utilisation in Jan 2008
1	GT Karnal Road Industrial Area	6	Handed over	2.5-3.0	2.3	38
2.	Mangolpuri Industrial Area	2.4	Handed over	1-1.5	1.5-2.0	62.5 to 83
3	Mayapuri Industrial Area	12	Handed over	5.3	4.0-4.5	30 to 37.5
4.	Nangloi & DSIDC Industrial area	12	Handed over	2-2.5	3.0	25
5	Wazirpur Industrial Area	24	Handed over	4.0	2.0	8.3
6	Jhilmil & Friends Colony Industrial Area	16.8	Handed over	2.5-3.0	3.5-4.0	15-18
7	Badli Industrial Area	12	Handed over	5.0	2.5	20.8
8	Okhla Industrial Area	24	Handed over	0	4.0-5.0	17-20
9	Lawrence Road Industrial Area	12	Not handed over	3.0	3.0	25
10	SMA Industrial Area	12	Handed over	2.0	2.0	16.7
	Total	133	9 out of 10 CETPs handed over	27-29.3	27.8 to 30.3	20.9 to 22.8

Note: mld-million litres per day; Source: Delhi Pollution Control Committee, March 2008

Annexure 2: Performance of CETPs during February 2007- January 2008

S.No.	CETP		BOD		TDS	
			(effluent)	(influent)	effluent	influent
1	GTK Road (6)	07.02.07	33	180	1024	1548
		14.05.07	26	170	3782	3416
		11.07.07	26	130	2090	2210
		13.09.07	26	300	3850	3670
		01.10.07	24	220	1647	1586
		12.11.07	30	170	1562	1482
		31.12.07	24	150	1770	1990
		11.01.08	36	210	2990	3290
2	Mangolpuri (2.4)	12.02.07	36	170	2912	2428
		08.05.07	29	300	9002	9394
		11.07.07	26	180	7260	10760
		13.09.07	16	180	4780	5110
		01.10.07	26	170	6954	3893
		12.11.07	25	310	3946	2782
		24.12.07	16	170	5070	7630
		14.01.08	26	170	3900	4450
3	Mayapuri (12)	12.02.07	40	270	1620	1410
		08.05.07	44	130	4941	4697

		19.07.07	42	210	2570	4020
		21.09.07	36	165	3520	3550
		03.10.07	NO	NO	NO	NO
		20.11.07	40	180	1480	3410
		24.12.07	38	130	2200	2780
		14.01.08	27	160	1890	2010
4	Lawrence Rd (12)	08.02.07	43	140	1544?	2370?
		08.05.07	NO	NO	NO	NO
		11.07.07	40	280	5100	4930
		13.09.07	66	350	2630	3150
		01.10.07	36	140	2257	3599
		12.11.07	NO	NO	NO	NO
		17.12.07	54	170	3250	4050
		18.01.08	33	140	4150	4330
5	SMA (12)	12.02.07	18	120	3620	3200
		10.05.07	30	140	3477	3538
		13.07.07	28	160	3690	5540
		18.09.07	27	140	3140	3960
		09.10.07	33	130	2318	3721
		02.11.07	34	150	3666	4312
		10.12.07	34	120	2990	3900
6	Nangloi (12)	12.02.07	40	280	2200	2620
		08.05.07	40	210	4758	6161
		11.07.07	42	260	3900	5170
		13.09.07	27	180	2630	2200
		01.10.07	33	210	3172	5063
		12.11.07	35	190	3210	3110
		24.12.07	28	150	2510	3340
7	Jhilmil (16.8)	05.02.07	30	100	2512	1086
		04.05.07	27	140	5527	5185
		19.07.07	35	160	2410	4340
		21.09.07	24	130	1940	3900
		05.10.07	34	190	2867	4087
		22.11.07	26	160	1550	2824
		13.12.07	22	155	2250	3440
		21.01.08	34	130	3290	4640
8	Badli (12)	07.02.07	24	72	1716	2104
		10.05.07	26	120	5307	5246
		13.07.07	24	110	1640	1700
		18.09.07	20	110	2120	2310
		12.10.07	22	110	2013	2196
		02.11.07	20	140	1812	1774
		10.12.07	NO	NO	NO	NO
9	Okhla (24)	02.02.07	33	160	2614	2826
		04.05.08	29	230	4410	4514

		12.07.07	36	140	2800	2920
		12.09.07	34	210	2440	2830
		15.11.07	42	240	2294	2180
		18.12.07	28	175	2390	2320
		22.01.08	26	160	1950	2070
10	Wazirpur (24)	07.02.07	23	72	3164	5136
		10.05.07	23	88	6161	5734
		11.07.07	28	130	5160	7370
		13.09.07	36	110	3760	4030
		08.10.07	24	90	2501	1281
		12.11.07	27	120	1896	2294
		24.12.07	22	90	2790	4320
		18.01.08	24	160	4940	5590
	EPA Standards		30		2100	

Annexure 3: Capacity available at GTK, Naraina and Mayapuri CETPs

S No	Name of CETP	Installed capacity (mld)	Flow received/available (mld)	Capacity available (mld)
1	Mayapuri Industrial Area ^a	12	5.3	6.7
2	Naraina industrial area ^b	21.6	10.7	10.9
3	GTK road	6	2.3	3.7
3	Total	39.6	18.3	21.3

Source: a. DPCC monitoring report, January 2008; b. Anon 2007, Assessment of quantity and quality of effluent, Shriram Institute for Industrial Research, New Delhi, *mimeo*