BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

MISC. APPLICATION NO. 5 OF 2021

Asian Paints Ltd …….Applicant / Petitioner

v/s

State of Telangana & Others ……Respondents

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BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI
MISC. APPLICATION NO. 5 OF 2021

Asian Paints Ltd .....Applicant / Petitioner

v/s

State of Telangana & Others .....Respondents

Affidavit of the Applicant / Petitioner in compliance with the Order dated 23rd December 2021 of this Hon'ble Tribunal.

I Sunil S Jaifalkar constituted attorney of the Applicant / Petitioner Company having my office at 6A, Shantinagar, Santacruz (East), Mumbai 400 055 do hereby solemnly affirm and state as under.

I say that this Affidavit is filed by the Applicant / Petitioner in compliance with the directions given by this Hon'ble Tribunal in its order dated 23rd December 2021, wherein the Applicant has been directed to produce the status of Effluent Treatment Plant ("**ETP**") from the day on which the Applicant have installed and its performance and whether the ETP was installed from inception.

(1) The Applicant states that:

(i) The Applicant had installed the ETP in 1985 in its plant at Patencheru near Hyderabad ("**plant**") which has been fully functional.

(ii) The ETP has been fully functional from the day commercial production of the plant commenced and that there has been no discharge of water outside the plant premises thereby causing no pollution. Hence, the Applicant's plant is not a polluting industry.

(iii) The ETP was installed in the Applicants plant in 1985 by one of the leading manufacturer and supplier of the ETP namely Enviro Control Associates at Surat at the cost of Rs.20 lakhs.

(iv) The ETP was designed to treat waste water from various blocks like Solvent Paint Block, Water Paint Block, Industrial Paint block, Resin Production Block, Scrap Yard and Utilities.

(v) The ETP has been upgraded with the latest technology from time to time and the Applicant has expended about Rs.444.65 lacs for this ETP. The ETP consisted of collection tank, Oil and grease trap, equalization tanks, thickener, centrifuge (sludge separation), primary clarifier with a flash mixer, aeration tank, secondary clarifier, sludge drying beds, magnetic flow meters are installed in the ETP.

Hereto annexed and marked **Annexure "A"** is copy of the map of hydraulic of ETP and **Annexure B** is a copy of the layout of the ETP, demonstrating the ETP in the Plant.

(2) Mr. D. Lakshman Rao (ex Manager – quality Assurance) of the Applicant who was in charge of handling ETP operations in the plant during the period 1985 to 2000 has in an Affidavit sworn on oath the facts which demonstrate that the ETP was installed in Applicants the plant from inception i.e. from the day commercial production started in the plant. Hereto annexed and marked **Annexure "C"** is Mr. Rao's Affidavit dated 14th February 2022.

(3) (A) The Applicant had obtained No-Objection certificates dated 15th February 1983 for setting up the ETP from Andhra Pradesh Pollution Control Board ("**APPCB**"). Hereto annexed and marked **Annexure "D"** is a copy of the No-Objection Certificate obtained by the Applicant from APPCB for setting up the ETP.

(3) (B) The Applicant by its letter dated 6th May 1985 to APPCB made an application for issuance of second no-objection certificate of APPCB before commencement of production at their plant. It is pertinent to note that in the said letter dated 6th May 1985, the Applicant had inter alia informed the board that *"We are pleased to inform you that we have completed the construction work of the Effluent Treatment Plant and the same is expected to be ready for commissioning within a week's time. We hereby approach you to issue the 2nd No Objection Certificate to enable us to commence the production."*

Hereto annexed and marked **Annexure E** is a copy of the Applicants letter dated 6th May 1985 to APPCB.

The Applicant respectfully submits that the aforesaid letter clearly establishes that the Applicant had installed the ETP in the plant in 1985.

(4) (A) The Applicant states that Respondent No.2 has been issuing the Consent to Operate to the Applicant for its plant from time to time, since the time the plant commenced commercial production.

(5) (B) By way of illustration, the Applicant hereby places on record two Consents to Operate which dates back to 11th April 1987 and 5th October 1988 respectively issued by Andhra Pradesh Pollution Control Board ("**AP Pollution Control Board**") (now Respondent No.2) in favor of the Applicant. It is pertinent to note that:

(i) The Consent to Operate dated 11th April 1987 ("**CTO 1987**") inter alia clearly states that the AP Pollution Control Board had granted the said CTO 1987 to the Applicant's plant authorizing them to discharge domestic and industrial effluent as per the following description:

Sr. No.	Description of outlet	Point of disposal
1	Domestic effluent	Into septic tank.
2	Industrial effluent	Waste water drains.

(ii) The CTO 1987 stipulated that this CTO 1987 was granted subject to the terms and conditions set out therein. It is pertinent to note that one such condition in the CTO 1987 reads as follows:

"(10) The applicant shall take immediate action to install or modify the treatment plant for treating the effluents to the satisfaction of the Board."

(5) (C) (i) The Consent to Operate dated 5th November 1988 ("**CTO 1988**") inter alia clearly states that the AP Pollution Control Board had granted the consent to the Applicant's plant authorizing them to discharge domestic and industrial effluent as per the following description:

Sr. No.	**Description of outlet**	**Point of disposal**
1	Outlet for domestic effluents	Into septic tank followed bu sub-surface open jointed tile drains.
2	Outlet for trade effluents	On land within the premises for gardening.

(ii) The CTO 1988 stipulated that this CTO 1988 was granted subject to the terms and conditions set out therein. It is pertinent to note that one such condition in the CTO 1988 reads as follows:

"9. The applicant shall take immediate action to install or modify the treatment plant for treating the effluents to the satisfaction of the Board so as to conform to tolerance limits as per Item (8) above."

Hereto annexed and marked **Annexure F** and **Annexure G** are copies of the aforesaid CTO 1987 and CTO 1988.

(5) (D) The Applicant respectfully submits that:

(i) The aforesaid two CTOs which dates back to 1987 and 1988 demonstrates that the Applicant was required to have the ETP installed in their plant.

(ii) AP Pollution Board has been renewing the CTOs from time to time establishes that the Applicant has been complying with the terms and conditions of the CTO which include installation of the ETP in the plant.

(iii) Had the Applicant not been complying with the terms and conditions of the CTOs, AP Pollution Control Board (now Respondent No.2) would not have issued the CTOs from time to time.

(iv) The aforesaid facts at 3 (A) to 3 (D) (i) to (iii) reveals that the ETP was there in the plant in 1987 and 1988.

(6) (A) The Applicant states that they have regularly filed the Effluent Analysis Report issued by the Pollu-tech Laboratory & Consultancy Services with the AP Pollution Control Board. This Pollu-tech Laboratory & Consultancy Services was recognized by the AP Pollution Control Board as an Environmental laboratory. By way of illustration Effluent Analysis Reports dated 27th January 1994, 3rd March 1994 issued by Effluent Analysis Report issued by the Pollu-tech Laboratory & Consultancy Services states as follows:

"SAMPLE PARTICLUARS: EFFLUENTS
SOURCE OF COLLECTION : 1. RAW. 2. TREATED."
DATE OF COLLECTION: 18 01 94 and 26 02 94"

(6) (B) The Applicant submits that the above Pollu-tech Laboratory & Consultancy Services reports inter alia reveal that the samples of Effluents i.e. Raw and **Treated** were collected from the plant on 18th January 1994 and 26th February 1994. This clearly establishes that in 1994 the Effluents were treated in the ETP which was installed within the plant of the Applicant.

Hereto annexed and marked **Annexure H** and **Annexure I** are copies of the Effluent Analysis Reports dated 27th January 1994 and 3rd March 1994 issued by the Pollu-tech Laboratory & Consultancy Services.

(7) (A) The Hon'ble Supreme Court vide its order dated 29th July, 1997 in the Writ Petition No. 1056 of 1990 **inter alia directed the Central Pollution Control Board ("CPCB") to file an independent report** in connection with the status of Common Effluent Treatment Plant (CETP) of Progressive Effluent Treatment Ltd (PETL) as well as Common Effluent Treatment Limited (CETL) **as also of the individual treatment system installed by the individual industries.**

(7) (B) The ETP installed by the Applicant is adequate and meets the compliances and standards of Pollution Control Board. In fact CPCB in its interim report (annexed to the Affidavit dated 15th December 1997 filed before the Supreme Court of India in the Writ Petition No 1056 of 1990 filed by the Indian Council for Enviro –Legal Action & Ors ("**Writ Petition**") (against 224 industrial units in Medak District, Ranga Reddy District, Mahaboobnagar, Nalgonda District and Hyderabad), clearly records that except M/s. Asian Paints and M/s. Voltas Limited all individual Effluent Treatment Plants installed by the industries are not adequate and not meeting the standards. The relevant portion of the interim report of CPCB is quoted below for ease of reference:

> ***"Except M/s. Asian Paints (India) Limited** and M/s. Voltas Limited, all individuals ETPs installed by the Industries are not adequate and not meeting the standards. All such non complying units are required to take measures to comply with the standards. These industries must submit their action plan to CPCB within a month."*
>
> *M/s. Asian Paints (India) Limited should get their effluents analysed regularly for heavy metals through a competent authority like NEERI."*

The above noting is reflected in the (i) report of the CPCB annexed to CPCB's Affidavit dated 15th December 1997 filed before the Hon'ble Supreme Court and (ii) NGT Order dated 24th October 2017 which is annexed as Annexure 6 to the present M.A.5 of 2021 ("**Application**"). Hereto annexed and marked

Annexure "J" is a copy of CPCB's Affidavit dated 15th December 1997 along with the report filed before the Hon'ble Supreme Court.

(7) (C) The Applicant respectfully submits that the above noting of the CPCB in its report annexed to its Affidavit at Annexure J reveals the Applicants' ETP has been meeting the pollution control board standards.

8 (A) The ETP at the Applicants plant is adequate and meet the standards of the Second Respondent. In the status report of the Government of Andhra Pradesh dated 12th November 2002 (**"Govt of AP"**) indicating the measures taken by the Govt of AP submitted to the Hon'ble High Court of Andhra Pradesh (now Telangana), a list of industries complying to the Pollution Control Board Standards is annexed at Annexure I thereto. It is pertinent to note that Applicants name is mentioned at item No.2 in this list of industries complying with the Pollution Control Board Standards.

Relevant portion of the said status report of the Govt of AP along with the relevant page of Annexure I thereto (wherein Applicants name and remarks are mentioned) is annexed hereto as **Annexure "K"**.

(8) (B) The Applicant states that the *"Remarks"* in the aforesaid list of industries complying with Pollution Control Board Standards annexed to the status report of Govt of AP clearly establish that:

(1) The Applicant's plant had its full fledged ETP and the treated effluents are meeting the Pollution Control Board Standards.
(2) The treated effluents are reused and utilized for gardening within the plant premises;
(3) Achieved permissible level of discharge and
(4) The Applicant is an ISO 14001 company.

(8) (C) The Applicant respectfully submits that the status report of the Govt of AP demonstrates that the Applicants plant had a full-fledged ETP coupled with the fact that it has achieved permissible level of discharge. This clearly demonstrates the performance level of the ETP installed in the Applicants plant and consequentially there has been no pollution caused by the Applicants plant.

(9) (A) On 3rd March 2004, the Applicant expanded its manufacturing facility after obtaining the necessary approvals from APPCB. Pursuant to the expansion of its manufacturing facility, the Applicant also applied to APPCB for expanding / upgrading the ETP. This permission was accorded by APPCB to the Applicant on 16th July 2004.

(9) (B) During the period 1997 to 2013 the ETP was upgraded with the addition of equipment comprising of primary thickener, primary settler, tertiary treatment followed by reverse osmosis unit at a cost of Rs.73,00,000/-, Effluent Treatment Plant treatment water grid to gardens at a cost of Rs.94,000/-, Green Belt Development at a cost of Rs.16,79,000/-, Drip Irrigation for Green Belt at a cost of Rs.4,79,000/-, Dust Collectors at a cost of Rs. 27,41,000 and Magnetic Flow Meters at a cost of Rs.5,50,000/-. The Applicant respectfully submits that they have made huge investments in waste minimization and pollution prevention facilities, like bulk storage facilities for liquid raw materials, effluent segregation, wash and water reuse systems etc. The total capital investment for environment management facilities since 2009 till March 2018 is approximately Rs.444.65 Lakhs.

(10) The Applicant's plant has a state of the art Zero Liquid Discharge (**ZLD**) facility in operation and complies with all applicable environment / pollution laws/ rules/ regulations.

(11) The current ETP in the plant is an automated ETP which treats the waste water to make it resuable water. Hereto annexed and marked **Annexure L** is a flow chart of the ETP demonstrating the current process flow. This Applicant respectfully submits that with the current operations of the ETP, entire treated water is used again in the production process and even the treated water is not even used for Gardening purpose within the Plant thereby not causing any pollution whatsoever.

(12) light of the aforesaid facts, the Applicant respectfully says and submits:

(i) The Applicant has the ETP since 1985 in its plant which is fully functional and that there has been no discharge of water outside their plant premises.

SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA * MUMBAI MAHARASHTRA REG. No. 19356 EXPIRE ON 31st JAN 2023

Notary Register Serial No.	678/22
Date:	15 FEB 2022

(ii) The ETP has been fully functional from the day commercial production of the plant commenced.

(iii) The ETP installed by the Applicant is adequate and meets the compliances and standards of the Pollution Control Board.

(iv) The Applicant has expended huge costs and made investments to upgrade the ETP from time to time so as to ensure that there are proper safeguards and measures in place, achieved ZLD and consequently no pollution is caused by the plant.

15 FEB 2022

Dated this 15th day of February 2022.

Identified by me
[BINDIYA RAICHURA]
Advocate, High Court
Bombay

Applicant

S S Jaifalkar

ASIAN PAINTS LIMITED MUMBAI

Constituted Attorney
of Asian Paints Limited

VERIFICATION

I Sunil S Jaifalkar, Senior Manager, Legal Indian Inhabitant, constituted attorney of the Applicant abovenamed having my offices at 6A, Shantinagar, Santacruz (East), Mumbai 400055 do hereby verify that what is stated above is derived from information and records of the Applicant and I believe the same to be true.

Solemnly affirmed at Mumbai)
This 15 FEB 2022 day of February 2022)

S S Jaifalkar

ASIAN PAINTS LIMITED MUMBAI

Before me,

Applicant

Identified by me
[BINDIYA RAICHURA]
Advocate,
High Court,
Bombay

Constituted Attorney
of Asian Paints Limited

BEFORE ME

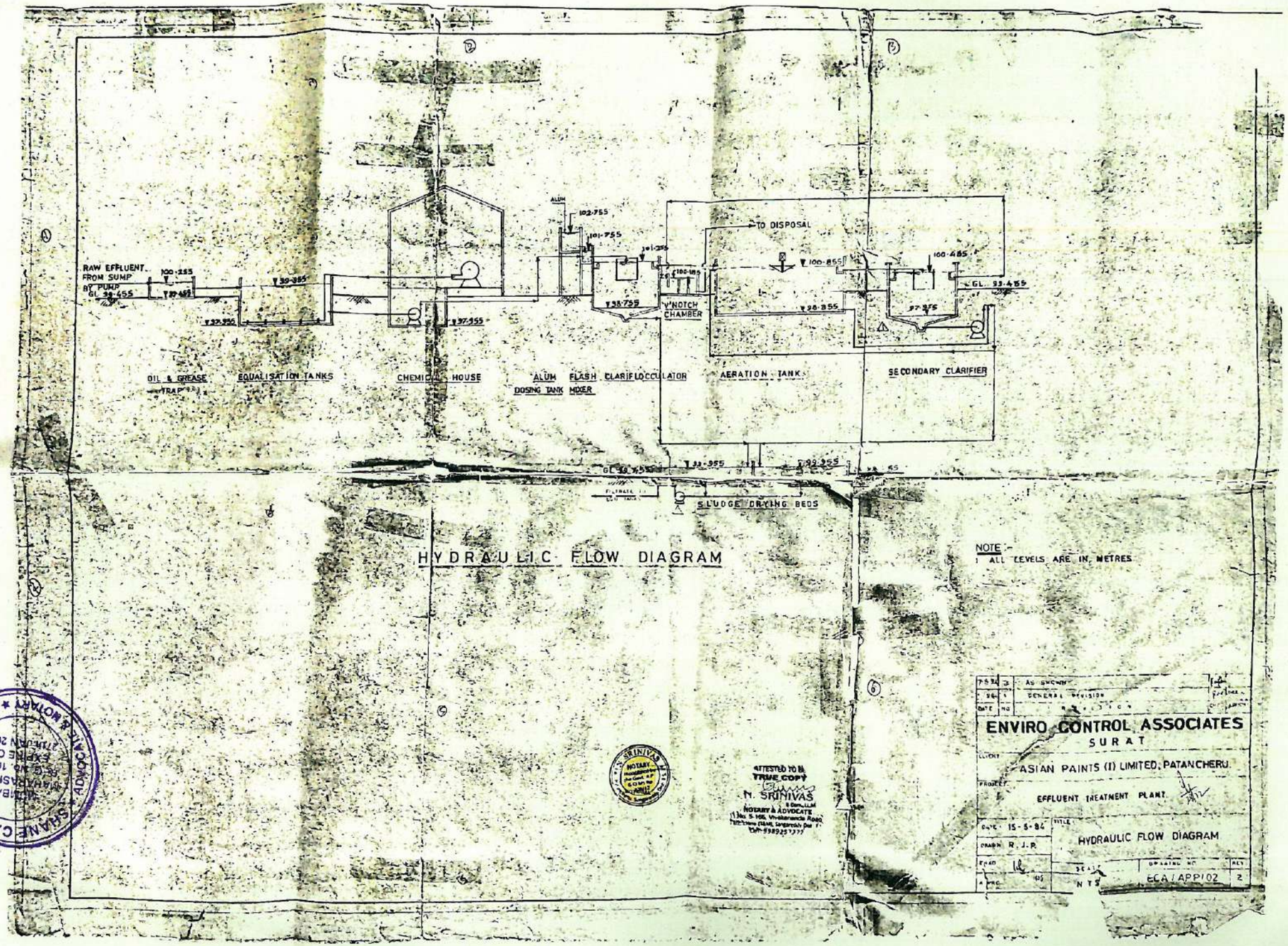
SHANE CARDOZ
Advocate & Notary (Govt. of India)
Reg.No. 16388 B'com, L.L.B.
G3, Clifford House, Kadeshwari Mandir Road,
Next to Ganesh Mandir Chowk Bandra (W),
Mumbai- 400 050. Mob.: 98205 17020

ORIGINALS SEEN & VERIFIED

AADHAAR	PAN	ELECTION ID	DRIVING LICENSE	PASSPORT

5237 2857 2148

SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA * MUMBAI MAHARASHTRA REG. NO. 16388 EXPIRE ON 27th JAN 2025

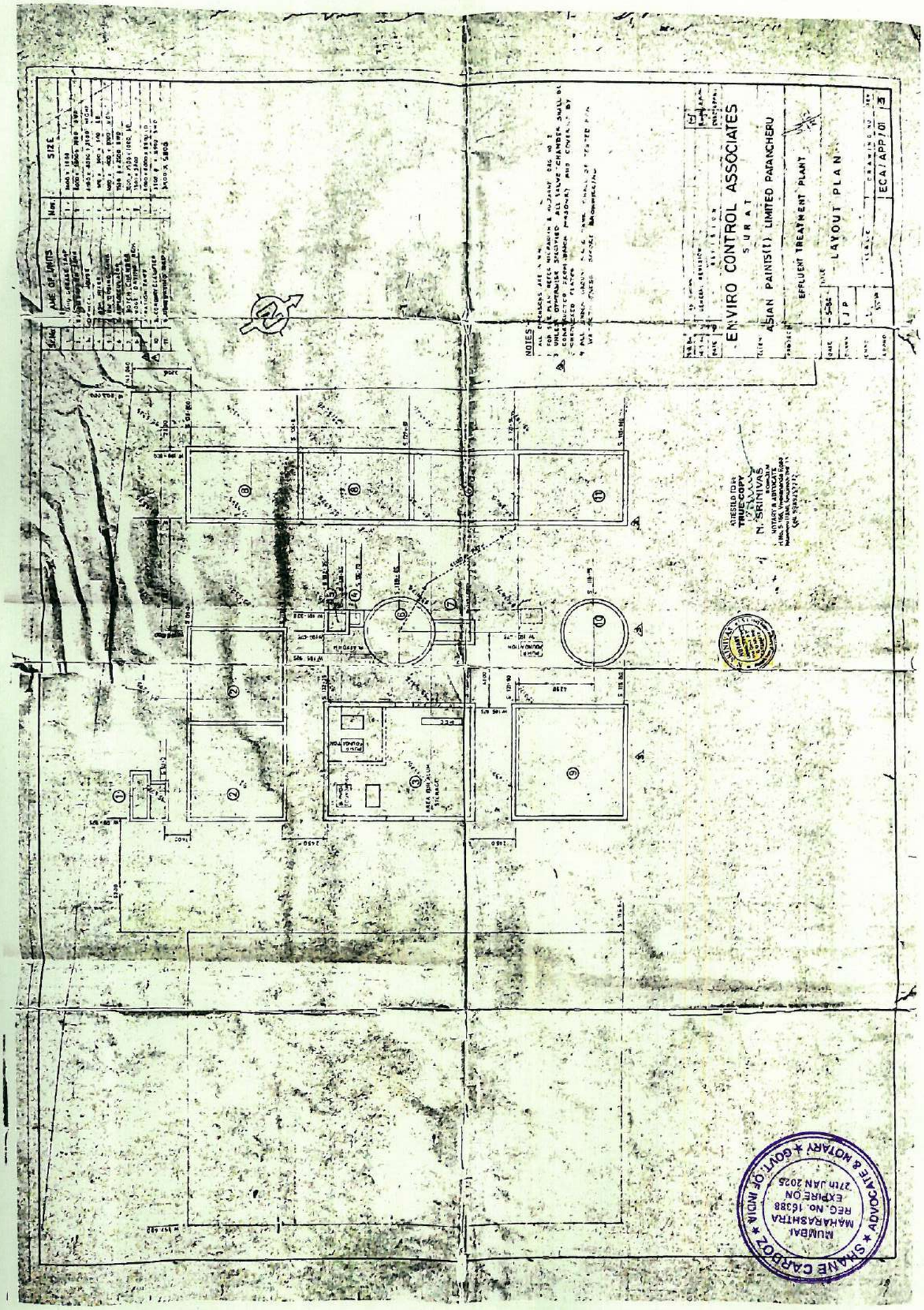


Annexure "A"

10

Annexure "B"

11



Annexure "C"

12

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI
MISC. APPLICATION NO. 5 OF 2021

Asian Paints Ltd .....Applicant / Petitioner

v/s

State of Telangana & Others .....Respondents

Affidavit of Mr. D Lakshman Rao, (ex Manager – Quality Assurance) of the Applicant

I Mr. D Lakshman Rao ex – Manager Quality Assurance of the Applicant / Petitioner Company residing at House Number 2-17-5/6, Dharmapuri Colony, Uppla, Hyderabad - 500039 - do hereby solemnly affirm and state as under:

1. I say that I have read and perused a copy of the Reply dated 5th October 2021 and Additional Reply dated 27th January 2022 of Respondent No. 2 (the said "Replies") to M.A. No. 5 of 2021 (the said "Application").
2. I am filing this Affidavit only for the limited purpose to deal with the incorrect statement in the said Replies that the Effluent treatment plant ("ETP") within the Applicant's plant at Patencheru near Hyderabad ("Plant") became functional only by 1997.
3. I state that I had joined the Petitioner in the year February 1985. I was appointed as the Executive - Production by the Petitioner in the Plant. I state that I was in charge of handling the ETP operations in the Plant from inception i.e. when commercial production was started in the Plant i.e. 1985.
4. I state that the Petitioner had installed the ETP in the Plant in 1985 by one of the leading manufacturer and supplier of the ETP namely Enviro Control Associates - Surat at the cost of Rs.20 lakhs. The ETP has been upgraded with the latest technology from time to time and the Petitioner has expended about Rs.444.65 lacs for this ETP. The ETP consisted of collection tank, Oil and grease trap, equalization tanks, thickener, centrifuge (sludge separation), primary clarifier with

V. SRINIVAS NOTARY Patancheru, Sangareddy Dist T.S. Regd No 108/12

MUMBAI MAHARASHTRA REG. No. 16388 EXPIRE ON 21st JAN 2025 SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA *

// ATTESTED //

a flash mixer, aeration tank, secondary clarifier, sludge drying beds, magnetic flow meters are installed in the ETP. Hereto annexed and marked **Annexure A** is copy of the map of hydraulic of ETP and marked **Annexure B** is copy of the layout of ETP, demonstrating the ETP in the Plant.

5. I was working in the Plant until 2000. I state that the Petitioner has been using the treated water for toilet flushing, floor cleaning, preparation of chemical solutions in the ETP and gardening.

6. Since I was in charge of handling the ETP operations in the Applicants Plant during 1985 to 2000, I state that:

(i) At no point of time any waste water was discharged outside the Plant;

(ii) Since at all times there has been a fully functional ETP in the Plant, no effluents were ever let outside the Plant premises;

(iii) The ETP at the Applicants plant has been adequate and met the standards of the Second Respondent.

(iv) The Applicant has always complied with the conditions laid down in the

(a) consent to operate granted by the Second Respondent (Previously Andhra Pradesh State Pollution Control Board);

(b) Environment Clearance granted by Ministry of Environment Forest & Climate Change

(c) consent / approval granted under the Hazardous Waste (Management and Handling) Rules, 1989 for their Plant.

(v) The Applicant has spent huge costs and investments to upgrade the ETP from time to time so as to ensure that there are proper safeguards and measures in place and thereby no pollution is caused.

(vi) There is no discharge of water outside the plant premises thereby causing no pollution and hence the Applicant is not a polluting industry.

Y. SRINIVAS NOTARY (Appointed by the Govt. A.P. G.O.Ms.No. 108/12) Patancheru, Sangareddy Dist.

// ATTESTED //

SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA * MUMBAI MAHARASHTRA REG. No. 10338 EXPIRE ON 27th JAN 2028

7. In view of the aforesaid facts, I say and submit that this Hon'ble Tribunal be pleased to disregard the incorrect statement in the said Replies of Respondent No.2 that the ETP in the Plant became functional by 1997. I repeat and reiterate that the ETP in the Plant has been operational since the Plant commenced production in the year 1985.

Solemnly affirmed and signed)
On this 14 day of February 2022)

Before me

Deponent

VERIFICATION

I D Lakshman Rao, do hereby verify and declare that the facts stated above are true to my knowledge and on the records available.

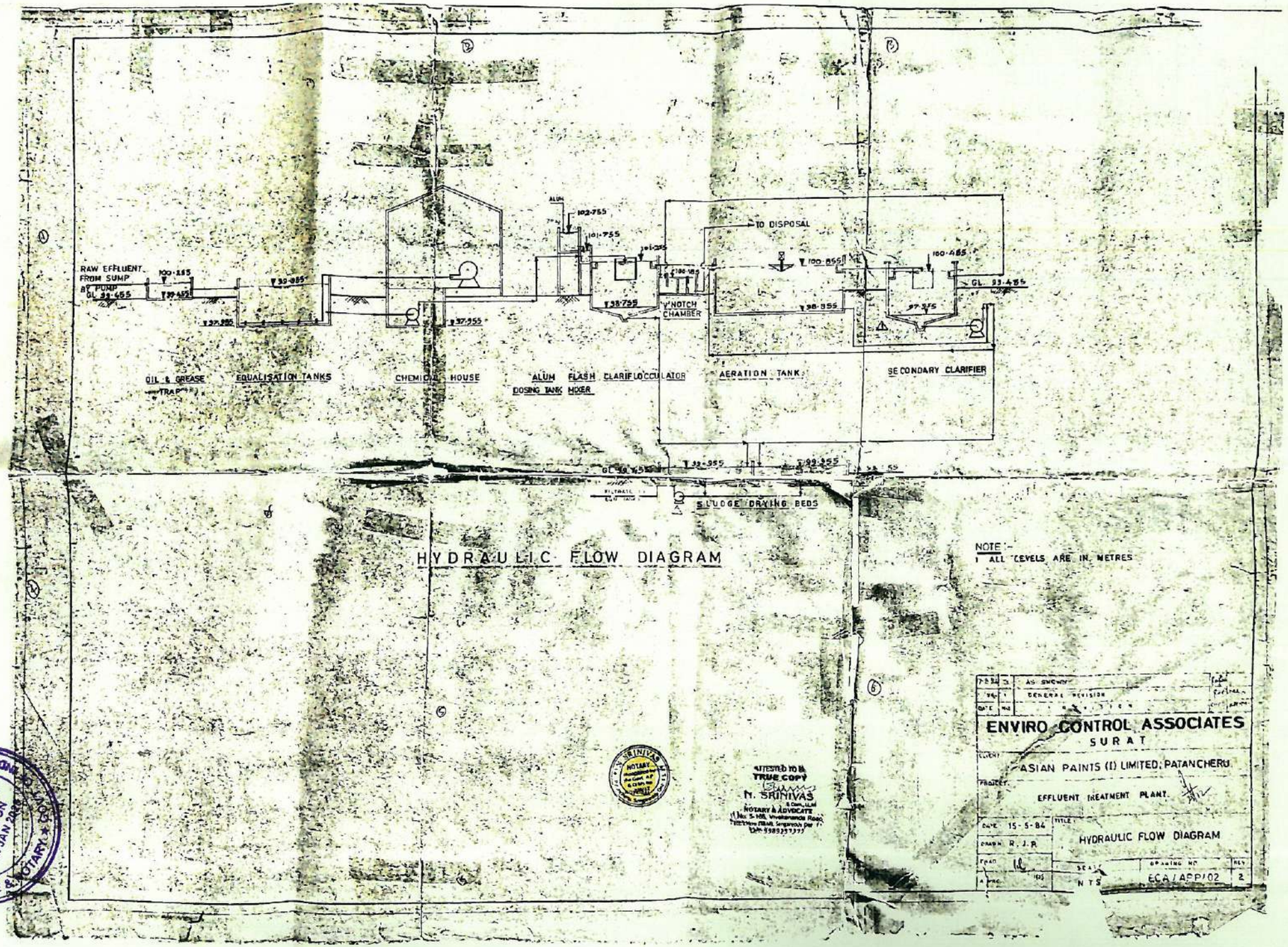
Verified on this 14 day of February 2022 at Hyderabad

Verified and signed before me

Deponent

// ATTESTED //

N. SRINIVAS
B.Com.,LL.M
NOTARY & ADVOCATE
H No: 5-166, Vivekananda Road
Patancheru (T&M), Sangareddy Dist. T.S.
Cell: 9989257272



ATTESTED TO BE TRUE COPY
N. SRINIVAS
NOTARY & ADVOCATE

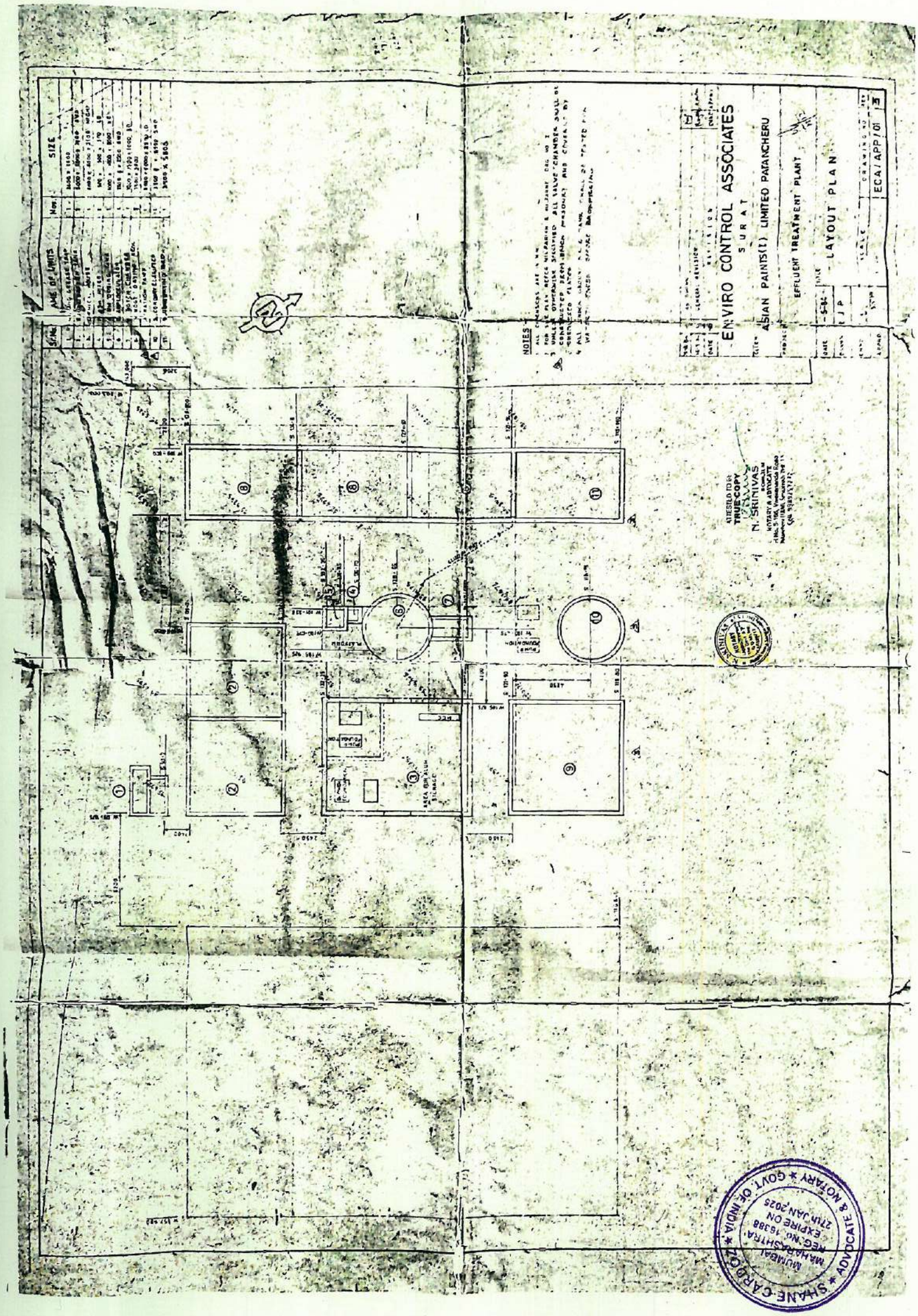
SHANE CARDOZ * VIGIL * NOTARY * GOVT * ADVOCATE & NOTARY * MUMBAI MAHARASHTRA REG. No. 16388 EXPIRE ON 27th JAN 2018

Annexure "A"

15

Annexure "B"

16



Annexure "D"

17

(12)

ANNEXURE-I

003027

Annexure-D

[illegible] STATE BOARD FOR PREVENTION AND CONTROL OF WATER POLLUTION

[illegible] Phone [illegible]
[illegible] 6-3-[illegible]/124,
MEMBER SECRETARY [illegible] Main Road,
Secunderabad-500003, A.P.

L.No. [illegible]/[illegible]/83 [illegible] Dated: [illegible]-2-1983.

To

M/s. [illegible] (India) Limited
[illegible]

Sir,

Sub: No objection certificate of the Board - Issued - Regarding.

Ref: Your Lr. No. [illegible]/P-[illegible], dated 20-1-1983.

*****

With reference to your letter cited, I am to inform that the A.P. State Board for Prevention & Control of Water Pollution has no objection to set up the above unit at Industrial Development Area, Patancheru, Phase II, Medak District, for the manufacture of Paints/Enamels (50 tons/day), Acrylic Emulsion (3 tons/d[illegible] and Synthetic Resin (10 tons/day) subject to the following conditions.

1. The industry shall submit the detailed proposals on effluen[illegible] treatment within two months from the date of issue of this letter.

2. The industry shall construct and commission the effluent treatment works before the factory goes into production.

3. The treated effluents shall conform to the following standards.

pH	-	5.5 - 9.0
B.O.D.	-	30 mg/l.
C.O.D.	-	250 mg/l.
Total Suspended Solids	-	100 mg/l.
Oil and Grease	-	10 mg/l.

4. The quantity of waste water shall not exceed 148 M^3/day.

5. The treated effluents shall be discharged in to Nullah.

(13)

000028

Yours faithfully
Sd/-
MEMBER SECRETARY

Copy to Hyderabad

MEMBER SECRETARY.

Annexure "E"

19

CSF/PAT/10.7/5.06

8th May, 1985

Member Secretary
A.P.State Board for Prevention &
Control of Water Pollution
6-6-115/124, Kavadiguda Main Road
SECUNDERABAD - 500003

Dear Sir :

Sub : Application for issue of Second No Objection Certificate of the Board before commencement of production at our factory on Plot No.50-55, I.D.A., Phase II, Patancheru, A.P.

Ref : N.O.C. of the Board issued vide letter No.190/PCB/83-2481 dated 15/2/1983.

This has reference to the above and the discussions our representatives had with your officials from time to time on the subject.

We are pleased to inform you that we have completed the construction work of the Effluent Treatment Plant and the same is expected to be ready for commissioning within a week's time. We hereby approach you to issue the 2nd No Objection Certificate to enable us to commence the production. We shall shortly be also making an application for regular Consent of the Board as required under Section 25/26 of the Water(Prevention & Control of Pollution) Act, 1974.

We further confirm that based on our experience on the operation of the effluent treatment plant of similar design at our factory at Ankleshwar in the State of Gujarat and as explained in our meeting with your officials on 4th December, 1984, we are quite confident that the treated effluents shall conform to the Board's standards. We have also made necessary arrangements for the discharge of the treated effluents into the Nallah.

Thanking you and awaiting your early action,

Yours faithfully,
For ASIAN PAINTS (INDIA) LTD.

J.H.SHAHANI (MANAGER - ENGINEERING SERVICES)

SHANE CARDOZ ★ ADVOCATE & NOTARY ★ GOVT. OF INDIA ★
MUMBAI SUTRA
REG. No. 15048
EXPIRES ON
27th JAN 2026

Annexure "F"

BY REGISTERED POST WITH ACKNOWLEDGEMENT DUE

(THIS DOCUMENT CONTAINS PAGES)

C O N S E N T O R D E R

ANDHRA PRADESH POLLUTION CONTROL BOARD

(Consent for Existing/~~New~~ discharge of sewage and/ of trade effluents/~~outlet~~ under Section 25/26 of the Act.)

No. C-1276/PCB/87 - 945
Dated: 11-4-87.

CONSENT IS hereby granted under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, (hereinafter referred to as "the Act") and the rules and orders made there under to M/s. Asian Paints (India) Limited, PATANCHERU (hereinafter referred to as "the Applicant") authorising him to continue to discharge domestic and industrial effluent as per the description given below.

Outlet No.	Description of outlet.	Point of disposal
1.	Domestic effluent	into Septic tank
2.	Industrial effluent	Waste water drains.

This is subject to the provisions of the Act and the rules and orders made there-under and further subject to the terms and conditions incorporated in the Schedule annexed thereto.

This CONSENT shall be valid for a period ending with the 30th day of April, 1988.

for and on behalf of the
A.P.Pollution Control Board.

Encl: One schedule.

MEMBER SECRETARY.

To
M/s Asian Paints (India) Limited, 21/4/87
Plot No.50-55, I.D.A. Phase II,
Patancheru 502 319
Medak Dist.

*cvr/-986.

S C H E D U L E

(To accompany Consent No. C-1276/PCB/87 Dt. 11-4-87.

TERMS AND CONDITIONS:

1. The applicant shall make an application for grant of fresh consent at least 30 days before the date of expiry of this consent.

2. Necessary fee, as prescribed for obtaining consent, shall be paid for by the applicant alongwith the consent application.

3. The industry would immediately submit the revised application for consent to this Board in the event of any change in the trade effluent etc.,

4. The applicant shall not change or alter either the quality or the quantity or the rate of the discharge or temperature or the route of discharge without the previous written permission of the Board.

5. The applicant display suitable caution board at the place where the effluent is entering any water body or any other place, to be indicated by the Board, indicating therein that the water body into which the effluents are being discharged is not fit for domestic usage/bathing.

6. The applicant shall either

Not later than 30 days from the date of issue of this consent order, certify in writing to the Member Secretary that the applicant has installed or provided for an alternate electric power source sufficient to operate all facilities installed by the applicant to maintain compliance with the terms and conditions of the Consent.

O R

Not later than 30 days from the date of this consent certify in writing to the Member Secretary that upon the reduction, loss or failure of one or more of the primary sources of electric power to any facilities installed by the applicant to maintain compliance with the terms and conditions of this consent, the applicant shall halt, reduce or otherwise control production and/or all discharges in order to maintain compliance with the terms and conditions of this consent.

7. The quantity of the effluent discharged shall not exceed the figures mentioned below:

Outlet No.	Maximum daily discharge lits/day.
1. Domestic	98,000
2. Industrial	50,000

8. The effluent discharged shall not contain constituents in excess of the tolerance limits as laid down hereunder:

Sl.No.	Parameter	Limiting Standards
1.	pH	5.5 - 9.0
2.	Suspended solid	100 mg/l
3.	B.O.D.	30 "
4.	C.O.D.	250 "
5.	D.S.	2100 "
6.	Oil & grease	10 "

9. In no case, the untreated effluent shall find entry outside the ractory premises due to overflow or percolation.

10. The applicant shall take immediate action to install or modify the treatment plant for treating the effluents to the satisfaction of the Board.

a) By so as to conform to tolerance limits given in item above

.../3

11. The applicant shall at his own cost get the effluent samples collected both before and after treatment and analysed at an approved laboratory every month for the parameters indicated in condition No. 8 and shall submit in duplicate the report thereof to the Board.

12. The applicant shall take immediate action to install mechanical composite sampling equipment and continuous flow measuring/recording devices on the effluent drains of trade as well as domestic effluent within three months from the date of this consent order. A record of daily effluent discharge shall be maintained.

13. The applicant shall not allow the discharge from other premises to mix with the discharge from his premises. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.

The applicant shall submit flow sheet and particular of proposed treatment and disposal system and a time schedule for completing the treatment plant for treating the trade effluent as well as domestic sewage from the factory and colony so as to reach the Board by

14. The following information shall be forwarded to the Member Secretary regularly every month:

a) ~~Progress on the treatment plant.~~

b) Progress on the installation of mechanical composite sampling equipment and continuous flow-recording/measuring devices.

c) Monthly Statement of daily discharge of domestic as well as trade effluents.

d) Analysis reports of domestic as well as trade effluents.

15. a) Meters at the entrance of the water supply connection abstraction so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act, provided that the place where it is affixed shall in no case be at a point before which water has been tapped by the consumer for utilisation for any purposes whatsoever.

b) Seperate meters with necessary pipe-line for assessing the quantity of water used for each of the four purposes mentioned below:

1. Industrial cooling, spraying in mine pits or boiler feed.
2. Domestic purposes.
3. Processing whereby water gets polluted and pollutants are not easily bio-degradable and are toxic.

16. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfication of the Board by:

i) Landfill, in case of inert material, care being taken to ensure that the material does not give rise to lechate which may percolate into ground water or carried away with storm run-off.

ii) Controlled incinceration, whereever possible in case of combustible organic material.

iii) Composting, incase of bio-degradable material.

17. Any toxic material shall be detoxicated if possible otherwise shall be sealed in steel drums and burried in protected areas after obtaining approval of this Board in writing. The permission of detoxication or sealing and burying shall be carried out in the presence of Board's authorised person only.

18. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge and/or result in increased effluent discharge and/or result in violation of the standards mentioned above shall be reported to this Board telegraphically under intimation to the District Health Officer.

19. The applicant shall maintain good house keeping both within the factory and in the premises. All pipes, valves sewers and drains shall be leak-proof. Floor washings shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.

20. The applicant shall comply with and carry out directives/ orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. The applicant shall be liable for such legal action as per provisions of the Laws/Act in case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order.

21. An inspection book shall be opened and made available to the Board's Officers during their visit to the Factory.

22. The applicant shall furnish to the visiting Officer and or the Board any information regarding the construction, installation or operation of the establishment or of effluent control system and such other particulars as may be pertainent to preventing and controlling pollution of water.

23. Not withstanding anything contained in this conditional letter or consent, the Board hereby reserves to it the right and power under Section 27(2) of the Water(Prevention & Control of Pollution)Act, 1974 to review any and/ or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

24. The industry shall exhibit the Consent Order of the Board within the Factory premises at a prominent place for the information of the inspecting officers of the different department.

MEMBER SECRETARY.

21/4/87

Annexure "C"

BY REGD. POST WITH ACK. DUE
This Document contains (4) pages.

CONSENT ORDER
A.P.POLLUTION CONTROL BOARD

(Consent for existing/~~new or altered~~ discharge of sewage & of trade effluents/outlet u/s 25/26 of the Act).

No. 1086/PCB/AEE-I/88- 2807 Date: 5-10-1988.

CONSENT is hereby granted u/s 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, (hereinafter referred to as "the Act") and the rules and orders made there under to M/s. **Asain Paints (India) Limited, Plot No:50-55, Phase-II, Patancheru, Medak District.** (hereinafter referred to as "the applicant") authorising him to continue to **discharge domestic and trade effluents as per the discription below.**

Outlet No.	Description of outlet	Point of Disposal
1.	Outlet for domestic effluents.	Into septic tanks followed by sub-surface open jointed tile drains.
2.	Outlet for trade effluents.	On land within the premises for gardening.

This is subject to the provisions of the Act and the rules and orders made thereunder and further subject to the terms and conditions incorporated in the schedule annexed thereto.

This CONSENT shall be valid for a period ending with the **31st day of October, 1989.**

Encl: One Schedule

for and on behalf of the
A.P.Pollution Control Board.

MEMBER SECRETARY.

To

M/s. Asain Paints (India) Limited,
Plot No: 50-55, Phase-II.
Patancheru,
Medak District. - 502 319.

APPCB Safe file

Shri VM

DII

(To accompany Consent No.1086/PCB/AEE-I/88- Dt. 5-10-88)

TERMS & CONDITIONS:

1. The applicant shall make an application for grant of fresh Consent atleast 30 days before the date of expiry of this Consent, along with compliance report with reference to earlier Consent Order, issued if any.
2. Necessary fee, as prescribed for obtaining Consent, shall be paid for by the applicant along with the consent application.
3. The industry should immediately submit the revised application for Consent to this Board in the event of any change in the trade effluent etc.
4. The applicant shall not change or alter either the quality or the quantity or the rate of the discharge or temperature or the route of discharge without the previous written permission of the Board.
5. The applicant shall display suitable caution board at the place where the effluent is entering any water body or any other place, to be indicated by the Board, indicating therein that the water body into which the effluents are being discharged is not fit for domestic usage/bathing.
6. The applicant shall either

   Not later than 30 days from the date of issue of this Consent Order, certify in writting to the Member Secretary that the applicant has installed or provided for an alternate electric power source sufficient to operate all facilities installed by the applicant to maintain compliance with the terms and conditions of the Consent.

   OR

   Not later than 30 days from the date of this Consent certify in writting to the Member Secretary that upon the reduction, loss or failure of one or more of the primary sources of electric power to any facilities installed by the applicant to maintain compliance with the terms and conditions of this Consent, the applicant shall halt, reduce or otherwise control production and/or all discharges in order to maintain compliance with the terms and conditions of this Consent.
7. The quantity of the effluent discharged shall not exceed the figures mentioned below:

Outlet No.	Maximum daily discharge, lits/day
1. Outlet for domestic effluents.	98,000 lit/day
2. Outlet for trade effluents.	50,000 lit/day

SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA
MUMBAI MAHARASHTRA REG. No. 1898 EXPIRE ON 21st JAN 2025

8. The effluent discharged shall not contain constituents in excess of the tolerance limits as laid down hereunder:

S.No.	Parameter	Limiting Standards
1.	pH	5.5 - 9.0
2.	Suspended solids	100 mg/l.
3.	Dissolved solids	2100 mg/l.
4.	Oil and grease	10 mg/l.
5.	B O D_5 at 20°C	30 mg/l.
6.	C O D	250 mg/l.

All other constituents shall not be in excess of the tolerance limits prescribed for disposal into inland surface waters in IS 2490 (Part-I) 1981 (Second revision)

9. The applicant shall take immediate action to install or modify the treatment plant for the treating the effluents to the satisfaction of the Board, ~~by~~ _____ so as to conform to tolerance limits as per item (8) above.

10. The applicant shall at his own cost get the effluent samples collected both before and after treatment and analysed at an approved laboratory every month for the parameters indicated in condition No.(8) and shall submit in duplicate the report thereof to the Board.

11. The applicant shall take immediate action to install mechanical composite sampling equipment and continuous flow measuring/recording devices on the effluent drains of trade as well as domestic effluent within three months from the date of this Consent Order. A record of daily effluent discharge shall be maintained.

12. The applicant shall not allow the discharge from other premises to mix with the discharge from his premises. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.

The applicant shall submit flow sheet and particular of proposed treatment and disposal system and a time schedule for completing the treatment plant for treating the trade effluent as well as domestic sewage from the factory and colony so as to reach the Board by

13 The following information shall be forwarded to the Member Secretary regularly every month.

a) ~~Progress on the work of treatment plant.~~

b) ~~Progress~~ on the installation of mechanical composite sampling equipment and continuous flow-recording/measuring devices.

a) Monthly statement of daily discharge of domestic as well as trade effluents.

b) Analysis reports of domestic as well as trade effluents.

14. The applicant shall never discharge the effluents outside the premises.

SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA MUMBAI MAHARASHTRA REG. No. 16338 EXPIRE ON 27th JAN 2025

15. a) Meters at the entrance of the water supply connection abstraction so that such meters are easily accessible for inspection and maintenance and for other other purposes of the Act, provided that the place where it is affixed shall in no case be at a point before which water has been tapped by the consumer for utilisation for any purposes whatsoever.

b) Seperate meters with necessary pipeline for assessing the quantity of water used for each of the three purposes mentioned below:

1. Industrial cooling, spraying in mine pits or boiler feed.

2. Domestic purposes.

3. Processing whereby water gets polluted and pollutants are not easily bio-degradable and are toxic.

16. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by:

i) Landfill, in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.

ii) Controlled incineration, wherever possible in case of combustible organic material.

iii) Composting, in case of bio-degradable material.

17. Any toxic material shall be detoxiated if possible otherwise shall be sealed in steel drums and burried in protected areas after obtaining approval of this Board in writing. The permission of detoxication or seeling and burying shall be carried out in presence of Board's authorised person only.

18. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge and/or result in increased effluent discharge and/or result in violation of the standards mentioned above shall be reported to this Board telegraphically under intimation to the District Health Officer.

19. The applicant shall maintain good house keeping both within the factory and in the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washings shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.

20. The applicant shall comply with and carry out directives/orders issued by the Board in this Consent Order and at all subsequent times without any negligence on his part. The applicant shall be liable for such legal action as per provisions of the Laws/Acts in case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order.

SHANE CARDOZ * VIDNI OF INDIA GOVT. * ADVOCATE & NOTARY * MUMBAI MAHARASHTRA REG. No. 16388 EXPIRE ON 27th JAN 2026

21. An inspection book shall be opened and made available to the Board's Officers during their visit to the factory.

22. The applicant shall furnish to the visting officer and or the Board any information regarding the construction, installation or operation of the establishment or of effluent control system and such other particulars as may be pertainent to preventing and controlling pollution of water.

23. Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

24. The industry shall exhibit the consent order of the Board within the factory premises at a prominent place for the information of the inspecting officers of the different departments.

MEMBER SECRETARY

*sn
5x88

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Annexure H.

asian paints (INDIA) LIMITED

gd. Office: 'Nirmal', 5th Floor, Nariman Point, P.B. No. 11701, Bombay-400 021. Tel. 202 45 44, Telex: 011-83288 GATU IN, Cable: ASIANPAINT, Bombay-21.

March 14, 1994.

THE ENVIRONMENTAL ENGINEER
AP POLLUTION CONTROL BOARD
SANGAREDDY

Dear Sir,

SUB : Stack Analysis Report and Effluent Water Report - January 1994 and February 1994

Enclosed please find the Stack Analysis Report and Effluent Water Analysis report for the month of January and February 1994.

Kindly acknowledge receipt of the same.

Thanking You,

Yours faithfully,
for ASIAN PAINTS (INDIA) LIMITED,

D. Lakshmana Rao

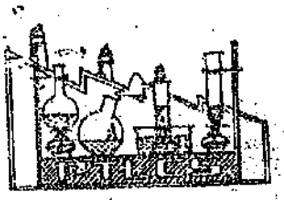
D.LAKSHMANA RAO
MANAGER - QUALITY ASSURANCE

Received
[illegible] 21/3/94
Accts
A.P. Pollution Control Board
SANGAREDDY, MEDAK DIST.

SHANE CAR... GOVT. OF INDIA * MUMBAI MAHARASHTRA REG. NO. 15-28 EXPIRE ON 27TH JAN 2025 * ADVOCATE & NOTARY *

Please reply to:
☐ BHANDUP
☐ ANKLESHWAR
☐ PATANCHERU
☐ KASNA
☐ GOREGAON

PLANT : Lal Bahadur Shastri Marg, P.B. No. 7318, Bhandup, Bombay-400 078, Cable : APCOLITE, Bombay. Telex: 011-71923, Tel: 56441
PLANT : 2602, GIDC Industrial Estate, Ankleshwar-393002. Cable: APCOLITE, Ankleshwar, Telex: 0189-201, Tel: 20218, 20
PLANT : Plot Nos. 50-55, Industrial Development Area, Phase II, Patancheru-502319, Dist. Medak, (A.P.) Telex: 0422-223, Tel: 2
PLANT : A-1, UPSIDC Industrial Area, Kasna II, Kasna Village, Tehsil Sikandarabad, Dist. Bulandshahr, (U.P.) 203207. Tel:
OFFICE: Plot No. 5, Gaiwadi Industrial Estate, S.V. Road, Goregaon (W), Bombay-400 062. Cable: APCODUR Tel: 6881228, Telex: 011-70
OFFICE: Plot No. 5, Gaiwadi Industrial Estate, S.V. Road, Goregaon (W), Bombay-400 062. Telex: 011-86217, Tel: 270516, 270896.



Pollu-tech Laboratory & Consultancy Services

Analysis & Consultants in Pollution Control
Lab : 1-26, Snehapuri, Nacharam, HYDERABAD-501 507.
Office : 12-13-36, St. No. 5, Tarnaka, HYDERABAD-500 017.
Branch : 50-42-17, TPT Colony, Vizag-530 013.
Phones : Lab : 853437 • Off : 869878
Recognised by A.P. Pollution Control Board as an Environmental Laboratory

Ref. PTLCS/EA/ 93-94/253. Date :94 01 27.

NAME AND ADDRESS : M/s.ASIAN PAINTS INDIA LTD.,
Plot nos. 50-55,IDA,Phase-II,
PATANCHERU - MEDAK DT.

SAMPLE PARTICULARS : EFFLUENTS

SOURCE OF COLLECTION : 1.RAW. 2.TREATED.

DATE OF COLLECTION : 18 01 94.

RESULTS :

EXPRESSED IN Milligram / Litre, EXCEPT pH.	(1)	(2)
pH	8.00	7.50
DISSOLVED SOLIDS	2,560	2,020
SUSPENDED SOLIDS	1,840	60
CHEMICAL OXYGEN DEMAND - COD	1,760	220
BIO-CHEMICAL OXYGEN DEMAND - BOD (5 days incubation at 20°C)	640	70
CHLORIDES AS Cl^-	-	-
SULPHATES AS SO_4	-	-
OIL & GREASE	-	-

POLLU-TECH LABORATORY &
CONSULTANCY SERVICES.

VIMTA LABS LTD.
Laboratory: Plots No. 141/2, 142, IDA, Phase II,
Cherlapally, Ranga Reddy Dt., Hyderabad-500 051.
Phone: 824141, 824445-50 FAX: (0842) 823057
Office: 1-1-303/34, "MAYFAIR" Sardar Patel Road,
P.B. No. 2045, Secunderabad-500 003.
Phone: 843388, 843398 Grams: VIMTA

TEST CERTIFICATE*

Issued to :

M/S ASAIN PAINTS INDIA LIMITED
IDA, PHASE II,
PATANCHERU
MEDAK DISTRICT

No. : VLL/APL/94/0330
Date : 1994 01 31
Your ref : NIL
Date : NIL

Sample Particulars : STACK MONITORING

Test Required : Particulates Concentration, SO_2 and NO_x.
Date of sampling : 27 01 94

TEST RESULTS

BOILER DETAILS DURING SAMPLING

	Thermax	Steamax
	Continuous	Continuous
Fuel Feeding	5.6	-
Pump Pressure (Kg/cm^2)	-	5
Steam Pressure (Kg/cm^2)	-	150
Steam Temperature (^oC)	90	92
Fuel Temperature (^oC)		

STACK SAMPLING RESULTS

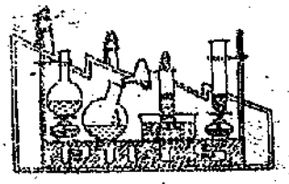
Duct diameter in mts	0.50	0.34
Area of the duct in m^2	0.196	0.0908
Flue gas temperature (^oC)	152	122
Velocity of flue gas (m/sec)	3.79	2.35
Quantity of Flue gas (m^3/hr)	2674	768
Dust mg/Nm^3	110	82
SO_2 mg/Nm^3	324	165
NO_x mg/Nm^3	97	54

SHANE CAR * MUMBAI MAHARASHTRA REG. No. 16...F EXPIRE ON 27th JAN 2025 * ADVOCATE & NOTARY * GOVT OF INDIA

AUTHORISED SIGNATORY

Subject to : 1. Sample/s not drawn by us, unless otherwise stated.
2. The results listed refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
3. Our liability restricted to testing fee charged.
4. Perishable samples will be destroyed after testing, others after one month from the date of issue of Test Certificate.
5. Test Certificate in full or part shall not be used for promotional or publicity purposes.

Annexure I



Pollu-tech Laboratory & Consultancy Services

Analysts & Consultants in Pollution Control
Lab : 1-28, Snehapuri, Nacharam, HYDERABAD-501 507.
Office : 12-13-36, St. No. 5, Tarnaka, HYDERABAD-500 017.
Branch : 50-42-17, TPT Colony, Vizag-530 013.
Phones : Lab : 853437 • Off : 869878
Recognised by A.P. Pollution Control Board as an Environmental Laboratory

Ref. PTLCS/EA/ 93-94/311. Date : 94 03 03.

NAME AND ADDRESS : M/s.ASIAN PAINTS INDIA LTD.,
Plot nos. 50-55, IDA, Phase-II,
PATANCHERU - MEDAK DT.

SAMPLE PARTICULARS : EFFLUENTS

SOURCE OF COLLECTION : 1.RAW. 2.TREATED.

DATE OF COLLECTION : 26 02 94.

RESULTS :

EXPRESSED IN Milligram / Litre, EXCEPT pH.

	(1)	(2)
pH	8.80	7.60
DISSOLVED SOLIDS	2,840	2,060
SUSPENDED SOLIDS	1,660	60
CHEMICAL OXYGEN DEMAND - COD	1,910	240
BIO-CHEMICAL OXYGEN DEMAND - BOD (5 days incubation at 20°C)	660	80
CHLORIDES AS Cl^-	-	-
SULPHATES AS SO_4^{--}	-	-
OIL & GREASE	-	-

POLLU-TECH LABORATORY & CONSULTANCY SERVICES.

35

C

Accredited by National Co-ordination of Testing and Calibration Facilities, Dept. of Science & Technology, Government of India, in the fields of Chemical and Mechanical testing.

VIMTA LABS LTD.

Laboratory : Plots No. 141/2, 142, IDA, Phase II, Cherlapally, Ranga Reddy Dt., Hyderabad-500 051.
Phone: 824141, 824445-50 FAX: (0842) 823057
Office : 1-8-303/34, "MAYFAIR" Sardar Patel Road, P.B. No. 2045, Secunderabad-500 003.
Phone: 843388, 843389 Grams: VIMTA

TEST CERTIFICATE *

Issued to :

M/S ASAIN PAINTS INDIA LIMITED
IDA, PHASE II,
PATANCHERU
MEDAK DISTRICT

No. : VLL/APL/94/6545
Date : 1994 02 28
Your ref : NIL
Date : NIL

Sample Particulars : STACK MONITORING

Test Required : Particulates Concentration, SO_2 and NO_x.
Date of sampling : 26 02 94

TEST RESULTS

BOILER DETAILS DURING SAMPLING

	Thermax	Steamax
Fuel Feeding	Continuous	Continuous
Pump Pressure (Kg/cm^2)	5.6	-
Steam Pressure (Kg/cm^2)	-	5
Steam Temperature (^oC)	-	150
Fuel Temperature (^oC)	90	82

STACK SAMPLING RESULTS

Duct diameter in mts	0.50	0.34
Area of the duct in m^2	0.196	0.0908
Flue gas temperature (^oC)	182	86
Velocity of flue gas (m/sec)	3.26	2.82
Quantity of Flue gas (m^3/hr)	2674	922
Dust mg/Nm^3	102	96
SO_2 mg/Nm^3	265	141
NO_x mg/Nm^3	135	62

SHANE CARDOZ * INDIA * NOTARY & ADVOCATE * GOVT. OF MUMBAI MAHARASHTRA REG. No. 16188 EXPIRE ON 27TH JAN 2025

ANALYST

AUTHORISED SIGNATORY

Subject to : 1. Sample(s) not drawn by us, unless otherwise stated.
2. The results listed refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
3. Our liability restricted to testing fee charged.
4. Perishable samples will be destroyed after testing, others after one month from the date of issue of Test Certificate
5. Test Certificate in full or part shall not be used for promotional or publicity purposes.

Annexure "J"

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IN THE SUPREME COURT OF INDIA
IA NO 289-11
IN
WRIT PETITION (C) NO. 1056 OF 1990

IN THE MATTER OF:

INDIAN COUNCIL FOR ENVIROLEGAL ACTION & OTHERS ……PETITIONER(S)

VERSUS

UNION OF INDIA & OTHERS ……RESPONDENT(S)

AFFIDAVIT OF DR. S.P.CHAKRABARTI, S/O (LATE) SHRI S.K. CHAKRABARTI, MEMBER SECRETARY, CENTRAL POLLUTION CONTROL BOARD, PARIVESH BHAWAN, EAST ARJUN NAGAR, DELHI - 110 032 IN COMPLIANCE OF HON'BLE COURT'S ORDER, DATED JULY 29, 1997, IN THE AFORESAID MATTER

I, Dr. S.P. Chakrabarti, S/o (Late) Shri S.K. Chakrabarti, working as Member Secretary in the Central Pollution Control Board (CPCB), East Arjun Nagar, Delhi, do hereby solemnly affirm and declare as under;

2. That I, in the capacity of Member Secretry of the Central Pollution Control Board, am well conversant with the facts of the case and hence competent to swear this affidavit.

3. That this Hon'ble Court, vide its order, datd July 29, 1997 has inter-alia desired to have an independent report from CPCB, in connection with the status of Common Effluent Treatment Plant (CETP) of Progressive Effluent Treatment Limited(PETL) as well as Common Effluent Treatment Limited(CETL) as also of the individual treatment system installed by the individual industries. It was stated that

……p/2

SHANE ADVOCATE & NOTARY GOVT. OF INDIA MUMBAI MAHARASHTRA REG. NO. 16389 EXPIRE ON 27th JAN 2025

the report shall inter-alia set out the capacity of these plants, their functioning and the extent of treatment, which the effluent received in these plants as also whether the discharges from these plants meet the pollution control standards laid down by the Central Pollution Control Board/ Central Government. The report is also required to set out the extent of the areas around the industries which are damaged as a result of the discharge of effluents and the extent of such damages. It was also ordered that the report shall also indicate the steps which should be taken to restore the affected areas to their non-polluted conditions. The report is also required to state the steps which are required to be taken for proper functioning of PETL and CETL and the time-frame within which this can be done. It was further indicated that the Central Pollution Control Board should deal comprehensively with the entire problem and suggest such measures as they think appropriate for rectifying the situation.

The Hon'ble Court has also directed that CPCB should, in their report, set out the industries which have their own treatment plant, indicating whether it is a complete treatment plant or whether it is only for primary treatment of effluents.

.....p/3

4. That in compliance of the Hon'ble court's order, dated July 29, 1997, CPCB has worked out the modalities to assess the industries located in Patancheru and Bollaram industrial areas in the following terms:

i) Capacity of Common Effluent Treatment Plant(CETP) installated at Patancheru and Bollaram industrial areas;

ii) Functioning of these CETPs;

iii) Extent of treatment carried out;

iv) Whether the discharge from these CETPs meet the pollution control standards of CPCB;

v) Extent of the areas damaged around the industries as a result of discharge of effluents from industries;

vi) Extent of such damage;

vii) Whether individual units have complete treatment plants or only primary treatment is provided to the effluents; and

viii) The quality of effluent discharged from the individual effluent treatment plants belonging to each of these industries and whether they meet the prescribed standards.

5. That for the assessment on functioning of CETPs and the affected areas, the following work plan was formulated :

i) Conducting of preliminary survey for the assessment of work involved and infrastructure support required to carry out the same (during September 11-12, 1997);

.....p/4.

ii) Assessment of status of pollution control in Bollaram Industrial area (during October 6 - 10, 1997) and

iii) Assessment of status of pollution control in Patancheru Industrial Area and performance evaluation of individual industries having their own ETP (during November 3-9,1997).

6. That the investigating team visited both the CETPs and individual industries. Due to constraints of time and the scope of investigative work assigned to the Central Pollution Control Board, an "Interim Report on State of Effluent Treatment by Individual Industries and Common Effluent Treatment Plants at Patancheru and Bollaram Industrial Estates in the State of A.P. has been prepared.

On investigation by the team deputed for the assigned job the observations/findings on industries with individual Effluent Treatment Plant and also of both the Common Effluent Treatment Plants have been given in the Interim Report.

7. Industries with Individual Effluent Treatment Plant

As per the study the individual industries are discharging effluent to natural water bodies at Patancheru and to land at Bollaram. Ten major industries have been taken for the purpose of study and are given in Para 5.0 of the report. Out of these ten industries, the information in respect of two industries, namely M/s Voltas Limited and M/s Standard Organics,were already available with CPCB. In.

the circumstances, in respect of these industries, the study was confined to assess whether the recommendations made earlier in respect of these units have been complied with or not. In respect of other units, the aspects covered for evaluation of the performance of the said industries are in the following terms :

a) Status of house keeping;

b) Status of consent/licences from concerned authorities;

c) Adequancy of effluent treatment system;

d) Performance evaluation of ETP;

e) Solid waste management;

f) Status of emission and pollution control devices installed;

g) Recommendations on pollution control measures required; and

h) Time needed for implementing the recommended measures so as to meet the standards

Observations regarding Common Effluent Treatment Plant

That the investigation team visited the CETPs at Patancheru and also at Bollfram. CETP at Patancheru is not fully stablized and cannot function properly till the equalization tanks are commissioned. The equalization tanks were found to be under construction. The CETP company had reported that they would be in a position to stablize the plant by November, 1997. The issue of bringing sewage to CETP for better treatment of industrial effluent after [illegible] carried out.

The CETP at Bollaram was also not functioning properly, as this plant was not stablized. However, series of lined ponds have been constructed for final polishing treatment and solar evaporation. The company requested for a few months to stablize the system.

8. That the investigating team decided to carry out the study of these areas in a phased manner as follows :

Phase-I : Investorization of CETP member industries at Bollaram Industrial Area

i) To conduct rapid assessment of all the member industries of Progressive Effluent Treatment Plant Bollaram for adquacy of pollution control equipment and to cross-check the suitability and progress of implementation of action plans as submitted to the Andhra Pradesh State Pollution Control Board by CETP to comply with the norms set by Andhra pradesh State Pollution Control Board;

ii) To characterize the effluent brought in tankers to CETP, Bollaram, from various membr industries, to check the compliance status of member industries with the norms of CETP;

iii) To suggest monitoring programme for the performance evaluation of CETP, Bollaram; and

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iv) To conduct dry inventory of all the industries located in Bollaram industrial area for their effluent treatment and disposal by taking the laboratory support of Andhra pradesh pollution control Board (APSPCB) for generation of data base

Phase-II : Inventorisation of CETP member industries for pollution control at Patancheru Industrial Area, programme of action will be similar to Phase-I above

Phase-III :Reconnaissance survey of affected area for collecting the information (study reports) available with reference to impact assessment and collection and analysis of samples of water and soil

Phase-IV : Preparation of comprehensive report which includes

i) Performance evaluation of common effluent treatment plants at Bollaram and Patancheru and impact assessment (proposed in December, 1997)

ii) Assessment of the damaged site (proposed in December, 1997); and

iii) Preparation of comprehensive report alongwith the action plan (proposed in January, 1998)

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9. That in order to carry out the study for the first Phase, the investigating team has carried out the inventory of member industries of CETP at Bollaram, during October 6-10, 1997 and collected information for non-member industries as well. It was observed that the CETP located in Bollarm is still accepting the effluents in tankers which are not complying with the standards of Total Dissolved Solids (TDS) and Chemical Oxygen Demand (COD) which are set by the CETP company as pre-requisite for accepting the tankers for treatment in CETP. Hence the plant was not yet stabilized.

10. The treated wastewater for Patancheru (CETP) is presently discharged into natural drain called Nakkawagu through Iskawagu drain, which finally meets the river Manjira, a tributary of the river Godavari. Sufficient water is not available in these natural drains and also the river Manjira except in the rainy season.

The PETL (CETP) at Patancheru has 72 members. 9 industries are closed and 46 industries discharge their effluent individually. The details of classification of the industries is given in Para 6.2.1 of the report.

11. That there are 110 industries in Bollaram Industrial Area. 19 industries have the membership in CETPs. Out of the 19 units, 17 industries are the members of CETP at Bollaram. However, out of these 17 industries, three are having simultaneous membership in CETP at Patancheru and eight in CETP at Jeedimetla also. Two Units although located at [illegible] Industrial area, are exclusively members of CETP

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at Patancheru. The classification of industries is given in Para 7.2 of the report.

12. That the problem of disposal of effluent from CETPs have been examined in detail as given in Para 8.0 of the report. In the light of the observations/findings, it has been opined that without self-regulation among the industries, there is no possibility of proper operation of CETP both at Patancheru and at Bollaram. The machanism of self regulation among the member industries is given in Para 9.1 of the report

13. That the conclusion of the Interim Report is in the following terms :

"for proper opration of CETPs, it is necessry that member industries pretreat their effluent (including segregation of streams and separate treatment) and meet the norms prescribed before transporting it to CETP. Since the CETPs are not yet stabilized, the performance study to evaluate the adequacy of CETPs could not be conducted. The same is proposed to be carried out in the month of January, 1998, when the impact study of the effluent discharge would also be taken up."

The Interim Report is enclosed as Annexure.

DEPONENT

VERIFICATION

Verified at Delhi on this 15th day of December, 1997 that the contents of the above affidavit are true and correct to the best of my knowledge and nothing has been concealed therein.

DEPONENT

SHANE CARDOZ * ADVOCATE & NOTARY * GOVT. OF INDIA * MAHARASHTRA REG. NO. 16368 EXPIRE ON 27th JAN 2025 MUMBAI

1.0 INTRODUCTION

Pursuant to the order of the Hon'ble Supreme Court, vide TP No. 172/96, dated July 29, 1997, in I.A. No. 2 & 9-11 in W.P. (C) No. 1056/90, the Central Pollution Control Board (CPCB) investigated the matter in respect of following scope of work, assigned through the afore-said order.

2.0 SCOPE OF WORK

A. CPCB is to assess the following:

i) Capacity of Common Effluent Treatment Plants (CETPs) installed at Patancheru and Bollaram;

ii) Functioning of these CETPs;

iii) Extent of treatment carried out;

iv) Whether the discharge from these CETPs meet the pollution control standards of CPCB;

v) Extent of the areas damaged around the industries as a result of discharge of effluent from industries;

vi) Extent of such damage;

vii) Whether individual units have complete treatment plants or only primary treatment is provided to the effluents; and

viii) The quality of effluent discharged from the individual effluent treatment plants belonging to each of these industries and whether they meet the prescribed standards

B. The Hon'ble Court further directed CPCB to suggest:

i) Steps which should be taken to restore the affected areas to their non-polluted conditions;

ii) Steps which are required to be taken for proper functioning of two CETPs, known as "Progressive Effluent Treatment Limited" (PETL), Bollaram and "Patancheru Enviro-Tech Limited (PETL)", Patancheru;

iii) The time frame within which these steps can be done;

iv) CPCB to deal comprehensively the entire problem and suggest some measures as they think appropriate for rectifying the situation; and

v) CPCB, in their report, to mention about the industries which have their own effluent treatment plant, indicating whether it is a complete plant or whether it is only for primary treatment of effluents

3.0 OBJECTIVE

In the light of above scope of work, the objective of the study is to:

i) evolve norms for self-regulation among the industries to attain sustainability in performance of common effluent treatment plant in order to meet the standards;

ii) identify of proper discharge point of treated effluents from both the CETPs to prevent damage to natural water bodies; and

iii) assessment of impact on environment due to discharge of effluents (both treated, untreated and partially treated) from the industries

4.0 METHODOLOGY

i) Conducting of reconnaissance surveys of Bollaram and Patancheru Industrial Development Areas in order to:

- classify industries in terms of product, membership to CETP and relevancy to water pollution;
- characterize effluents of member industries to assess compliance of pretreatment norms and pollution load contributed to the CETP;
- evaluate performance of effluent treatment plant (ETP) of those industries which have already claimed to the Hon'ble Court about their adequacy of ETP to comply with the standards;
- evaluate performance of common effluent treatment plants at Bollaram and Patancheru; and
- identify water polluting units which are not the member of any of the CETP

(ii) Preparation of comprehensive plan for ensuring proper operation of common effluent treatment plants at Patancheru and Bollaram;

(iii) Identification of suitable site for disposal of treated effluent from common effluent treatment plants in order to prevent damage to natural water bodies; and.

(iv) Collection and compilation of information with respect to damaged area for assessment and preparation of remedial action plan

4.1 Work Plan

4.1.1 In order to translate the above methodology into action, following work plan was formulated:

- Conducting of preliminary survey for the assessment of work involved and infrastructure support required to carry out the same (during September 11 - 12, 1997);
- Assessment of status of pollution control in Bollaram Industrial Area (during October 6 - 10, 1997); and
- Assessment of status of pollution control in Patancheru Industrial Area and performance evaluation of individual industries (during November 3 - 9, 1997)

The list of members of the investigating teams who carried out above taks is given in Annexure I.

4.1.2 The following activities are still to be carried out to draw logical conclusion as per programme mentioned below:

- Performance evaluation of common effluent treatment plants at Bollaram and Patancheru and impact assessment (proposed in December, 1997);
- Assessment of the damaged site (proposed in December, 1997); and
- Preparation of comprehensive report alongwith the action plan (proposed in January, 1998)

5.0 INDUSTRIES WITH INDIVIDUAL EFFLUENT TREATMENT PLANT

The matter of treatment of effluent by the individual industries came up for hearing on January 27, 1997 in the Hon'ble Supreme Court. Some of the industries claimed to have their own treatment plant. These industries are:

1. M/s Voltas Limited;
2. M/s Standard Organics;
3. M/s Asian Paints (India) Limited;
4. M/s Saibaba Cellulose Private Limited;

The legal action was taken by APPCB and the Phorate production of M/s Voltas Limited was closed under Section 31 (a) of the Air Prevention and Pollution Control Act, 1981, vide Order no. 73/PCB/TF/96-5193, dated December 3, 1997, in view of odour nuisance due to release of mercaptans from the process, evaporation pond and from the storage yard of the empty drums. In response to the orders, M/s Voltas Limited filed a writ petition in the Hon'ble High Court of Andhra Pradesh. In its order, the Hon'ble Court constituted an Expert Committee comprising representatives from NEERI, IICT and Vimta Labs to examine the adequacy of control measures taken by the industry in controlling of mercaptan emissions. The Expert Committee submitted the report expressing that the control equipment is adequate and mercaptans emissions are well within the limits prescribed under the Material Safety Data Sheet of USA.

The APPCB filed an objection to the Expert Committee's report giving reason that monitoring and statistical data were inadequate. In such a situation, the matter was referred to divisional bench of the Hon'ble High Court of Andhra Pradesh. The Hon'ble High Court constituted a Committee representing the officials from CPCB, the industry and APPCB's. The Committee submitted the report on 10.9.97 to the Member Secretary of APPCB as per the direction of the Hon'ble Court. The Chronological events of legal action are summarized in Table 5.2.1.

The Committee observed that the system was adequate and as such phorate production was suggested subject to compliance of certain recommendations. The present study is focussed on compliance of those recommendations and the performance of pollution control systems.

5.2.2 Liquid Effluent Treatment

The industry has 2 main streams categorized as odorous and non-odorous effluents. In case of odorous effluent, the following treatment system has been provided:

- Equalization followed by two-stage stripping and finally thermal destruction through incinerator. After the second stage stripping, treatment by peroxide oxidation is also provided.

In case of non-odorous stream, after equalization, the first stage stripping has been provided before incineration. In this process, the detoxification alongwith the deodourisation (due to mercaptans and volatile organics) takes place. The CPCB team, therefore, took samples of odorous (OD) stream at the inlet & outlet and also of non-odorous (NOD) stream at the inlet & outlet. The performance of such plant has been given in Table 5.2.2.

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S. No	Action	Reason/Finding	Authority	Complainants	Investigation/ Monitoring Agency
6	APPCB Constituted Committee on 10/1/97 & Voltas started production Phthalate from 10/3/97	Compliance to Court Order	APPCB Lr No. 7/APPCB/ TF/85-3250 dtd.10/1/95 & Voltas started production 10/2/1995		1. NEERI 2. ICT 3. VIMTA LAB
7	Technical Committee submitted report, 7th March, 1997	1. Levels of Mercaptan within permission limit. 2. Adequate controlling equipment including performance of Incinerator 3. Monitoring to be carried out for one year in Patancheru Industrial Area to determine the odour levels	–	–	1. NEERI/ICT/ VIMTA LAB
8	APPCB Filed an Counter Affidavit on 9/4/97	Present report is not conclusive.	–	APPCB	
9	M/s Voltas submitted counter affidavit on 10/4/97	Not satisfied with APPCB, Affidavit dtd. 9/4/97.	–	M/s Voltas Limited	
10	The matter is referred to Division bench on 9/4/97		Hon'ble High Court	–	–
11	Divisional bench - Hon'ble 30/7/97 directs APPCB to constitute three member Committee, represented by APPCB, CPCB, Voltas.	(i) To assess the adequacy of pollution control equipment. (ii) Consideration of earlier Expert Committee opinion. (iii) Submit Report as early as possible	Divisional Bench/ High Court	–	Expert Committee

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S. No	Action	Reason/Finding	Authority	Complainants	Investigating Monitoring Agency
6	APPCB Constitutes Committee on 1/1/97 & Voltas started production Pilot plant from 1/3/97	Compliance to Court Order	APPCB O.No.73/PCB/ IT/96-3280 dt.10/1/98 & Voltas started production 10/2/1998		1. NEERI 2. IICT 3. VIMTA LAB
7	Technical Committee submitted Report - 7th March, 1997	1. Levels of Mercaptan within permissible limit. 2. Adequate controlling equipment including performance of incinerator 3. Monitoring to be carried out for one year in Patancheru Industrial Area to determine the odour levels	–	–	1. NEERI/IICT/ VIMTA LAB
8	APPCB Filed on Counter Affidavit on 9/4/97	Present report is not conclusive.	–	APPCB	
9	M/s Voltas submitted counter-Affidavit on 10/4/97	Not satisfied with APPCB, Affidavit dtd. 9/4/97.	–	M/s Voltas Limited	
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From the afore-referred Table, it is observed that the industry has achieved 98% removal of mercaptans, while COD reduction is more than 50.5%. In case of non-odorous stream, removal of COD is only 35%. These effluents have been collected and sent to the solar evaporation pond. The Committee suggested to install a physico-chemical treatment within 2 months from the date of inspection, i.e. September 10, 1997, which is necessary before sending effluent to solar evaporation pond. It has been observed that the same treatment unit has been installed, but yet to be commissioned which is expected by November 30, 1997.

The industry was also advised to explore the possibility to detoxify the wastewater discharged in ponds, earlier, by using the excess capacity of deodourisation plant. It is observed that a scheme has been made by the industry. For the reduction of TDS by inplant measures and recycling of water, the pilot plant studies have been completed. In case of air pollution control, the initiation and accomplishment by the industry are summarized in Table 5.2.3.

In the light of above, CPCB is under the opinion that since no discharge is made outside their premises by M/s Voltas Limited and the treatment systems for detoxification and deodourisation have been commissioned in addition, and the other recommendations are in the process of implementation, the industry may be allowed to continue production.

5.3 M/s Standard Organics Limited

M/s Standard Organics (SOL) was inspected by CPCB on March 31, 1997. CPCB had given 18 recommendations for pollution control. Accordingly, the industry submitted the time-bound programme on August 26, 1997 through an affidavit. The progress made by the industry and the status of implementation of recommendations are given in Table 5.3.1. However, the data on effluent quality indicate that the present system is inadequate for disposal to natural water body. At present, industry disposes effluent to CETP at Patancheru. The quality of pretreated effluent, sent to CETP, is as follows:

Parameters	Quantity (mg/l)
pH	9.01
COD	6250
TDS	15890

From the afore-referred Table, it is observed that the industry has achieved 98% removal of mercaptans, while COD reduction is more than 50-52%. In case of non-odorous stream, removal of COD is only 35%. These effluents have been collected and sent to the solar evaporation pond. The Committee suggested to install a physico-chemical treatment within 2 months from the date of inspection, i.e. September 10, 1997, which is necessary before sending effluent to solar evaporation pond. It has been observed that the same treatment unit has been installed, but yet to be commissioned which is expected by November 30, 1997.

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Parameters	Quantity (mg/l)
pH	9.01
COD	6250
TDS	15890

TABLE 5.2.3 GASEOUS EMISSION AND CONTROL EQUIPEMENTS

Air Pollutant	Sources	Quantity Kg/Day	Continuous/ Instantaneous	Pollution Control devices	Percentage Expected efficiency	Observed emission level
1 Ammonia *	Phosphine process	500	10 hrs/day	Scrubber with water circulation (2 hs series)	> 99	TRACES
2 Chlorine	(1) Phosphine process	Traces	10 hrs/Day	Caustic Scrubber	> 99	TRACES
	(2) Storage area	-	Instantaneous	Caustic scrubber		
3 Hydrochloric acid	(1) Phosphine process	Traces	Continuous	Caustic Scrubber (1)	> 99	TRACES
4 Hydrogen Sulphide*	1. Phosalone)	260)		Caustic scrubber followed by Incineration/Furnace/ tail gas scrubber with Sodium hydro sulphide recovery as by-product	>99.0	TRACES
	2. Elsan) or	490) or	5 hrs/day			
	3. Phorate)	430)				
	4. Solar Evaporation Ponds**	-	Continuous	-	-	Max.<10ug/N.cu.M Min.Traces Avg.5.3 ug/N.cu.M
5 Ethylene oxide/ Trimethyl Amine	Choline Chloride	15	5 hrs/day	Incineration/ Acid scrubber	> 99.8	TRACES
6 *Solvent	Formulation	-	Continuous	Scrubber with hypo solution followed by carbon adsorption	> 99.5	TRACES
7 Mercaptan	Phorate	17.3 mg/ N.cu.M	15 hrs/Day	Deodourisation followed by Incinerator	99.8	<25 ug/N.cu.M
	Solar Evaporation**	-	Continuous	-	-	Min. Traces Max.14ug/N.cu.M Avg.5.9ug/N cu.M
8 Methyl Chloride*	Monocrotophos	125 Kg/MT	3 hr/day	Incineration & scrubbing	>99.5	TRACES
9 Particulate matter	Boiler (Furnace Oil)	0.73 Kg/hr	Continuous	Stack	-	Below APPCB standards
10 Sulfur dioxide	Boiler(Furnace Oil)	4.0 Kg/hr	Continuous	Stack	-	Below APPCB standards

* Liquid formed in the process
** Quality level

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TABLE 5.3.1 IMPLEMENTATION STATUS OF RECOMMENDED MEASURES AT M/s STANDARD ORGANICS LTD., PATANCHERU

S.No.	Recommendations	Time required for implementation	Remarks
1.	M/s Standard Organics should characterize the liquid effluents in order to segregate high inorganics (TDS) containing effluents from the organic effluents. For the purpose of proper treatment, the company may attempt the combinatorial approach for different effluent streams to categorize them on the basis of three major governing parameters, namely total Dissolved Solids (TDS), Bio-Chemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) with low levels and high levels as explained during inspection.	Completed	1. Product wise and stage wise effluent generated are collected and analyzed at source. 2. Segregation is done as per characteristics of effluent.
2.	The concept of pretreatment should be emphasized after segregation of streams. The high inorganics (TDS) containing effluents should be segregated before giving pretreatment. The pretreatment should consist of collection pit, oil and grease separation (mechanical separation), neutralization cum equalization (for correction of pH and hydraulic stability) before clarification for settling of suspended solids (SS).	OCTOBER, 1997 - DECEMBER, 1997	The segregation work is under implementation and is expected to be completed as per the schedule.

3.	The existing aeration tank may be converted into an activated sludge process in order to reduce the COD load after better trade off with the common effluent treatment Plant (CETP).	- Activated sludge induction - November, 1997 - Stabilization and acclimatization - February , 1998	This will be started after completion of segregation work as listed at Point No. 2. It may also require suspension of production during conversion into activated sludge process.
4.	The ambient air quality and stack monitoring should be carried out by the industry at frequent intervals as prescribed in the consent order. In addition to SPM, SO_2, NO_2, other emissions like chlorine, ammonia and acid mist should be monitored.	From September, 1997	The ambient air quality and stack monitoring have been completed.
5.	The raw material consumption in case of Cephachlor is extremely high (i.e. 629 kgs per kg of final product). If the production is not uniform throughout the year (which is based on demand), the load on EIP fluctuates. Hence, the effluent stream should be collected separately and sent to the effluent treatment plant of the industry at controlled rate.	To reduce the input, study is being done. By september, 1997 new norms can be set.	It has been observes from the actual results that the effluent stream has high total dissolved solids. So it is to be put to solar evaporation ponds.
6.	Possibility for the process optimization should be explored to reduce excess chemical feeding.		This is being worked out by our process development team.
7.	The existing EIP is grossly neglected. It should be immediately augmented. The EIP should be handled by the technical group of the industry.	November, 1997 to February , 1998	Work is progressing as per schedule.

8.	The drains having higher SS (carbon cake etc.) may be preceded by a collection pit nearer to the source of effluent generates, so that problem of chocking of the drain is avoided.	November, 1997	The drains have been cleaned finalized and work is in progress which will be completed as per schedule.
9.	The oil and grease trap is inadequate. It needs immediate modification to enhance oil and grease removal efficiency to desired level.	September, 1997	It has been modified in September, 1997, but needs further modification.
10.	After the segregation of the streams, bio-degradable streams may be separated from others and can be treated in activated sludge process.	November, 1997 to February, 1998	It is linked with Recommendation No.2, which is implementation. After which the action will follow.

11.	The entire ETP needs proper operation and maintenance. The following points need immediate attention for improvement:		
	- Enhancing the capacity of collection pit;	November 15, 1997	
	- Proper storing of collected carbon;	November, 1997	
	- Augmentation of oil and grease trap;	September, 1997	
	- Proper storing of recovered oil and grease;	November, 1997	Work is in progress.
	- Proper frequency of sludge cleaning from collection/buffer tanks;	Quarterly cleaning schedule	
	- Removal of sludge from the primary clarifier;		
	- Operation of return sludge facility;	November, 1997	
	- Levelling of overflow weir in secondary clarifier;	September, 1997	
	- Usage of sludge drying beds; and	December, 1997 regular laying and cleaning	
	- Separate electric meter for power consumption in ETP	Already provided	
12.	The land fill within the premises may be checked immediately by APPCB to ensure that it is free from hazardous waste.	Immediate	Sample collected by APPCB.
13.	A control equipment (Scrubber) is required to reduce the ammonia and to recover. The stack should be 5.m above the roof level.	October, 1997	Order for the equipment is being placed. Expected to be completed as per schedule.

14.	The stacks attached to DG sets should be raised to the required height, i.e. 4.5 m above the roof level for 500 KVA and 3.6 m for 320 KVA generators.	October, 1997 to November, 1997	Work is under progress
15.	The power packing units should be provided with dust collection-cum-suction system followed by bag filters.	Immediate	Completed
16.	The performance of the existing cyclone attached to the coal fired boiler is to be cross checked. If necessary, multiclones may be provided to meet the standards.		Technical audit data from thermax is to be collected.
17.	As the TDS increases, with the addition of chemicals for neutralization in ETP, it is suggested that the existing acidic and alkaline streams may be mixed in such a manner that these mutually get neutralized to the extent possible.		Being taken care of in the existing and proposed schemes.
18.	The carbon cakes, collected oil and grease at ETP and the stored hazardous waste in drums should be properly disposed of as per authorization from the State Board.		Storage has been provided as per authorization of State Pollution Control Board.

6.0 ASSESSMENT OF POLLUTION AND ITS CONTROL AT INDUSTRIAL AREAS AT PATANCHERU & BOLLARAM

6.1 Introduction

The CPCB Team conducted inventory through reconnaissance survey and indepth study of both the industrial areas (Patancheru & Bollaram) in the following manners

- Classification of industries with respect to the product;
- Classification of industries with respect to hydraulic load;
- Classification of industries with respect to membership to various CETPs;

- Characterization of effluent received through tankers at CETPs at Patancheru & Bollaram; and

- Adequacy of individual effluent treatment plant provided by the industries

6.2 Industrial Development Area (IDA) at Patancheru

The Patancheru Industrial Estate was established in the year 1975 by the Andhra Pradesh Industrial Infrastructure Corporation Limited (APIICL), at Patancheru which is a town in Medak District in the State of Andhra Pradesh and situated on Bombay-Hyderabad National Highway No. 9 at a distance of about 15 kms from Hyderabad. The industrial area measuring about 56.176 acres comprises five Phases. Most of the polluting industries are in the Phases I, II and IV. Phases III and V house only non-polluting small-scale engineering industries.

A CETP was commissioned in the year 1990 to treat industrial wastewater from industries in phases I, II and IV. The treated wastewater from Patancheru CETP is presently being discharged into natural drain called Nakkawagu through Iskawagu drain, which finally meets the river Manjira, a tributary of the river Godavari. Sufficient dilution water is not available in these natural drains and also in the river Manjira except in rainy season.

6.2.1 Classification of Industries

Nearly 576 plots in IDA, Patancheru, has been identified and alloted in five Phases. The categorization of industries is presented schematically in Fig. 6.2.1. It is observed that 72 industries are members to PETL at Patancheru, 9 industries are closed and 46 industries discharge their effluent individually. The classification of industries are as follows:

- Many industries located in Patancheru are not members of PETL. Some of them may not be relevant with respect to pollution control under the Water Act, as they may not have any trade effluent;

- Many of the industries are relevant to the water pollution, but not the members of PETL. The list of industries needs to be provided by the A.P. State Pollution Control Board;

- Many of the industries are allotted the land but they are yet to be commissioned;

- Many of the industries, such as M/s Voltas Ltd, are having their own effluent treatment plants. The list of such industries may be provided by the A.P. State Pollution Control Board; and

- Some of the industries are located in Patancheru Industrial Area, but sending their effluent to other CETP. The name of the

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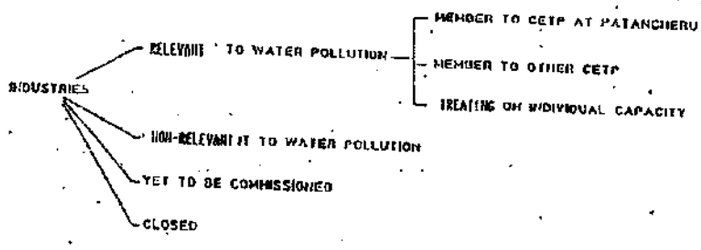

FIG. 6.2.1 POSSIBLE COMBINATION OF INDUSTRIES LOCATED IN INDUSTRIAL AREA AT PATANCHERU

industries may be provided by the A.P. State Pollution Control Board

However, it is pertinent to mention that complete inventory is not available with the concerned agencies of the States.

6.2.2 Member Industries

The list of member industries is given in Table 6.2.2.1. The industries are further classified on the basis of their products (Table 6.2.2.2) Close examination of Table 6.2.2.1, reveals the following facts:

- Out of 72 units, 49 are bulk drug industries which contribute more than 50% of the total hydraulic load;
- Out of the 49 bulk-drug industries, 11 contribute 30% of total hydraulic load. These industries are: M/s Aurbindo Pharma Ltd., having units at Bollaram and Chitkul, M/s Natco Pharma Ltd. at Mehboob Nagar, M/s Neuland Laboratories Ltd. at Bonthapalli, M/s Parks Trade Center and M/s Vorin Industries at Gaddapoddaram, M/s Standard Organics, M/s Tritan Laboratory and M/s Venkat Ram Chemicals at Patancheru, M/s SS Organics at Sada Shib Pet and M/s Sudarashan Drugs at Jinnaram;
- Besides the bulk-drug industries mentioned above, there are 12 industries which generate effluent quantity more than 40 Kl/day and contribute significant amount of hydraulic load. These are M/s Asian Paints, M/s Charminar Papers, M/s Deccan Leather, M/s Reliance Paper and Board, M/s Reliance Cellulose, M/s Sai Baba Cellulose, M/s MSL Limited at Patancheru, M/s ITW Signode at Sagnareddy, M/s Siris India at Gunnadidola village, M/s Surama Strips at Chitkul, M/s Maruthi Text Print and Processors, and M/s Amuliya Petrochemicals; and
- These industries, as mentioned above, need to be observed with respect to concentration of organics (COD) and salts (TDS) parameters

6.2.3 Classification of member industries on the basis of location

Location-wise classification alongwith their loads are depicted in Table 6.2.3.1. Close examination of this Table reveals that the industries located at Patancheru itself are more than 55% of the total, while the remaining are situated in and around Hyderabad and Medak districts.

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TABLE 6.2.2.1 LIST OF MEMBER INDUSTRIES TRANSPORTING EFFLUENTS TO PATANCHERU CETP

S. No.	Name of Industry	Nature of Industry	Wastewater Generation (m^3/d)
1.	M/s Agarwal Rubber (P) Limited	Rubber	15.50
2.	M/s Agni Synthetics (P) Limited	Bulk Drugs	10.00
3.	M/s Almelo Chemicals (P) Limited	Bulk Drugs	20.00
4.	M/s Asian Paints India Limited	Paints	100.00
5.	M/s Aurobindo Pharma Limited (Bollaram)	Bulk Drugs	80.00
6.	M/s Aurobindo Pharma Limited (Chikul)	Bulk Drugs	60.00
7.	M/s Aurobindo Pharma Limited (Pashamylaram)	Bulk Drugs	2.70
8.	M/s Bhagyanagar Oil Ref (P) Limited	Oil Refinery	13.00
9.	M/s Bhavani Leathers ICS Limited	Leather Finishing	2.10
10.	M/s Charminar Papers Limited	Paper	105.00
11.	M/s Cirex Pharmaceuticals (P) Limited	Bulk Drugs	6.50
12.	M/s Cipior Organics (P) Limited	Bulk Drugs	20.00
13.	M/s Coromandal Pharmaceuticals Limited	Bulk Drugs	20.00
14.	M/s Deccan Drugs Limited	Bulk Drugs	16.50
15.	M/s Deccan Leathers Limited	Leather Finishing	135.00
16.	M/s Divis Laboratories Limited	Bulk Drugs	17.00
17.	M/s Everest Organics Limited	Bulk Drugs	30.00
18.	M/s Gayatri Chemicals (P) Limited	Drug Intermediate	1.50
19.	M/s Global Drugs (P) Limited	Bulk Drugs	20.00
20.	M/s Gromor Chemicals (P) Limited	Bulk Drugs	4.76
21.	M/s Gulabchand Silk Mills (P) Limited	Textile	20.00
22.	M/s Harika Drugs (P) Limited	Bulk Drugs	4.00
23.	M/s Herren Drugs (P) Limited	Bulk Drugs	10.50
24.	M/s Hetero Drugs (P) Limited	Bulk Drugs	25.00
25.	M/s Hicel Pharma Limited	Bulk Drugs	35.00
26.	M/s Hitesh Chemicals & Pharma Limited	Bulk Drugs	1.00
27.	M/s Hyderabad Drugs & Intr (P) Limited	Bulk Drugs	4.50
28.	M/s Ion Exchange India Limited	Water Treatment Chemicals	4.00
29.	M/s ITW Signode India Limited	Steel	60.00
30.	M/s Kalpana Chemicals Limited	Bulk Drugs	10.00
31.	M/s Konar Organics Limited - Init-II	Bulk Drugs	3.50
32.	M/s Maruthi Text Print & Processors	Textile	65.00
33.	M/s Medchi Chemicals & Pharmaceuticals Limited	Bulk Drugs	0.70
34.	M/s Medicorp Technologies (I) Limited	Bulk Drugs	20.00
35.	M/s Merven Drug Products Limited	Bulk Drugs	17.00
36.	M/s Mytri Organics Limited	Bulk Drugs	6.30
37.	M/s N S L Limited	Steel	120.00
38.	M/s Natco Pharma Limited	Bulk Drugs	50.00
39.	M/s Neuland Laboratories Limited (Bonthepally)	Bulk Drugs	100.00
40.	M/s Neuland Laboratories Limited (Pasha)	Bulk Drugs	30.00

Contd..

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TABLE 6.2.2.1

Sr. No.	Name of Industry	Nature of Industry.	Wastewater Generation (m^3/d)
41.	M/s Neulife Laboratories Limited	Bulk Drugs	12.30
42.	M/s Nova Resin & Chemicals (P) Limited	Resins & Chemicals	35.00
43.	M/s Novopan India Limited	Particle Board	32.00
44.	M/s Poko Trade Centre	Bulk Drugs	40.00
45.	M/s Parsin Chemicals Limited	Bulk Drugs	10.00
46.	M/s Pennar Steels Limited	Steel	30.00
47.	M/s Piflex Organics Limited	Bulk Drugs	30.00
48.	M/s Polyelectrolyte India Limited	Polyelectrolyte (for water treatment)	5.00
49.	M/s Pragati Organics Limited	Bulk Drugs	2.25
50.	M/s Premier Tubes Limited	Steel	6.00
51.	M/s Proven Chemicals Limited	Bulk Drugs	16.60
52.	M/s Quinn India Limited	Leather Finishing	3.00
53.	M/s Reliable Paper & Board Mills (P) Limited	Paper	75.00
54.	M/s Reliance Cellulose Products (P) Limited	Cellulose Products	200.00
55.	M/s Richline Pharma Limited	Bulk Drugs	23.50
56.	M/s Roopa Industries Limited	Bulk Drugs	25.00
57.	M/s Saraca Laboratories Limited	Bulk Drugs	9.50
58.	M/s Sirio India Limited	Pesticides	150.00
59.	M/s Shri Ambuja Petrochemicals Limited	Chemicals	50.00
60.	M/s SMS Pharmaceuticals Limited	Bulk Drugs	10.00
61.	M/s Sri Sai Baba Cellulose (P) Limited	Cellulose Products	205.00
62.	M/s S.S Organics Limited	Bulk Drugs	64.80
63.	M/s Standard Organics Limited	Bulk Drugs	275.00
64.	M/s Dexo Laboratories Limited	Bulk Drugs	1.50
65.	M/s Sudarshan Drug Intr. Limited	Bulk Drugs	95.00
66.	M/s Surana Strips Limited	Steel	40.00
67.	M/s Triton Laboratories (P) Limited	Bulk Drugs	40.00
68.	M/s Venkata Ram Chemicals Limited	Bulk Drugs	40.00
69.	M/s Vorin Laboratories Limited	Bulk Drugs	50.00
70.	M/s Vivre Labs (P) Limited	Bulk Drugs	2.10
71.	M/s Yag-Nag Labs (P) Limited	Bulk Drugs	4.40
72.	M/s Yonkey Drug & Pharma Limited	Bulk Drugs	11.50
	Total		2858.75

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TABLE 6.2.2.2 CLASSIFICATION OF MEMBER INDUSTRIES (CATEGORY WISE)

S.No.	Name of Products	Number of industries
1.	Bulk-Drugs	49
2.	Chemical	02
3.	Steel	05
4.	Textile	02
5.	Leather Finishing	03
6.	Cellulose Product	02
7.	Edible Oil Refinery	01
8.	Paper (Card Board)	03
9.	Rubber	01
10.	Paints	01
11.	Polyelectrolyte	02
12.	Resticides	01
TOTAL		72

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TABLE 6.2.3.1 LOCATION-WISE CLASSIFICATION OF MEMBER INDUSTRIES AND THEIR EFFLUENT LOADS

S.No.	Location of Industries	No of industries	Effluent Load (kld)	Percentage Contribution
1.	Patancheru	24	1597.06	56.5
2.	Pashamylaram	4	197.2	7.0
3.	Bollaram	3	70	2.0
4.	Gaddapoddaram	9	208.8	7.5
5.	Bonthapalli	4	75	2.5
6.	Chitkul	2	120	4.5
7.	Others	15	559	20.0

6.2.4 Characterization of effluents carried by Tankers at CETP, Patancheru

The results of analysis of effluent received through each tanker, in respect to chemical oxygen demand (COD), total dissolved salts (TDS), chloride and suspended solids are presented in Table 6.2.4.1. Distribution of industries according to COD and TDS contents in effluents have been depicted in the form of a histogram Fig. 6.2.4.1. The histogram reveals the following facts:

a) Out of the 158 samples drawn from 158 tankers (one to one basis), 56 samples (35%) have shown that they are having less than 5000 mg/l of COD. Thirty samples (19%) showed COD between 5000 to 10,000 mg/l, twenty two samples (14%) between 10,000 to 20,000 mg/l and 50 samples (32%) are exceeding 20,000 mg/l of COD. The industries exceeding 20,000 mg/l of COD may be seen from the Table 6.2.4.1.

b) The trend in total dissolved solids indicates that 71 samples (45%) are having TDS more than 20,000 mg/l (between 20,000 and 48,280 mg/l), and 53 samples (33%) are within 10,000 mg/l of TDS (between 400 and 10,000 mg/l). Conversely, it can be concluded that 55% samples are having TDS below 20,000 mg/l. The industries having TDS more than 20,000 mg/l may be seen from the Table 6.2.4.1.

c) It is observed that 40 industries out of 72 industries have sent their effluent to the CETP at Patancheru during the study period.

d) Out of these 40 industries, eight industries have both high TDS and COD (*i.e.* more than 20,000 mg/l). These industries are M/s Neuland at Pashamylaram, M/s Hetro Drugs at Bonthapalli, M/s SS Organics & M/s Aurbindo Pharma at Bollaram, Pashamylaram and Chitkul, M/s Vorin Lab and M/s Medachel.

e) Industry having high COD (more than 20,000 mg/l) and TDS below 20,000 mg/l is M/s Siris India Limited.

f) Industries having low COD (less than 20,000 mg/l) but high TDS (more than 20,000 mg/l) are: M/s ITW Signode and M/s Neuland Laboratories Ltd. at Bonthapalli, M/s Standard Organics Ltd., M/s Venkat Ram Chemicals, M/s Kiran Biscuits, M/s HICEL Pharma and M/s Gromor.

g) Nearly 24 industries have low COD and low TDS (less than 20,000 mg/l).

h) The analysis of para 'd' above when coupled with the hydraulic load, the following combination emerges as depicted in Fig. 6.2.4.2. Hydraulic load of 40 kl/day and above has been considered high as similar exercise can be done by CETP agency for remaining 32 industries.

i) An attempt has been made to analyze statistically the characterization of effluents of 11 major industries with respect to hydraulic load as shown in Table 6.2.4.2.

TABLE 6.2.4.1 ANALYTICAL RESULTS OF TANKER EFFLUENTS COLLECTED AT CETP

S. No.	Name of the industry	Date of sampling	pH	SS	TDS	COD	Chloride
1.	M/s Neuland Laboratories Limited (Pashamylaram)	4.11.97	7.56	900	31270	34100	-
		4.11.97	6.72	1050	24880	8600	13996
		4.11.97	6.77	185	26360	3375	-
		4.11.97	6.84	920	30100	29500	250
		4.11.97	6.78	840	26440	29250	2499
		4.11.97	7.28	740	24250	30000	-
		4.11.97	6.60	390	28330	34250	-
		4.11.97	6.58	795	23520	29500	300
		5.11.97	8.15	-	37230	36250	-
		5.11.97	6.84	-	37140	35000	-
		5.11.97	8.02	-	42440	43500	-
		5.11.97	7.84	-	35280	48250	-
		5.11.97	7.86	-	39570	33625	-
		5.11.97	8.13	-	38810	37250	-
2.	M/s Neuland Laboratories Limited (Bonthapally)	4.11.97	6.55	323	13682	14900	4799
		4.11.97	6.68	256	10532	15125	3999
		5.11.97	6.06	-	22540	14500	6498
3.	M/s Hetero Drugs (P) Limited (Bontapally)	4.11.97	6.06	700	41420	76500	1000
		4.11.97	6.48	214	46048	78750	1499
		5.11.97	7.82	-	-	66000	1000
		5.11.97	7.66	-	48280	115750	7998
4.	M/s ITW Signode India Limited	4.11.97	6.55	323	13682	14900	4799
		4.11.97	5.86	745	22290	4150	1699
		4.11.97	5.62	660	37870	250	-
		5.11.97	5.89	-	32270	1900	-
		5.11.97	5.86	-	19190	650	-
5.	M/s BHEL Sewage	4.11.97	6.72	370	1324	688	150
		4.11.97	6.64	213	608	425	50

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			pH	SS	TDS	COD	Chlorides
		5.11.97	7.62	-	1600	413	-
		5.11.97	7.50	-	1060	763	175
		5.11.97	7.52	-	1170	650	250
6.	M/s Standard Organics Ltd.	4.11.97	6.86	25	21636	8800	2999
		4.11.97	7.32	600	24296	7800	2799
		4.11.97	7.13	395	20128	8700	3399
		4.11.97	7.67	625	21890	7900	3799
		4.11.97	7.64	770	1750	8300	4399
		4.11.97	7.72	1325	24730	7900	2199
		4.11.97	7.43	480	27230	7800	2799
		5.11.97	8.12	-	21490	7500	5598
		5.11.97	7.16	-	20230	6600	2799
		5.11.97	6.86	-	27870	7600	2999
		5.11.97	8.08	-	42510	14600	4399
		5.11.97	8.10	-	27580	11000	2999
		5.11.97	8.23	-	22100	18900	4199
		5.11.97	8.11	-	26930	6750	7498
		5.11.97	8.30	-	32400	6500	3199
7.	M/s S.S. Organics Ltd.	4.11.97	3.34	187	32130	64000	2999
		5.11.97	-	-	-	-	-
8.	M/s NSL Ltd.	4.11.97	6.23	18	6384	650	3199
		4.11.97	6.14	278	10860	4000	2999
		4.11.97	6.56	267	7170	450	2099
		4.11.97	6.02	23	8570	250	3399
		4.11.97	6.36	154	7210	700	3149
		4.11.97	5.87	112	6750	1945	2849
		4.11.97	6.10	830	6530	525	1200
		4.11.97	5.72	355	6940	500	2599
		5.11.97	7.20	-	15290	100	2299
		5.11.97	6.12	-	8310	400	2199
		5.11.97	6.22	-	8420	15550	2499

		Date of Sampling	pH	SS	TDS	COD	Chloride
9.	M/s Asian Paints India Limited	4.11.97	7.46	240	3452	2550	-
		4.11.97	7.26	226	870	900	300
		4.11.97	7.37	66	720	250	100
		4.11.97	7.14	124	1890	600	-
		5.11.97	7.62	-	1600	413	60
		5.11.97	8.26	-	1770	800	200
		5.11.97	7.96	-	2640	1175	250
		5.11.97	7.11	-	3680	2650	1050
10.	M/s Siris India Limited	4.11.97	7.11	820	7830	4500	2249
		4.11.97	6.40	695	12128	14250	5498
		4.11.97	6.23	460	26600	9375	8217
		5.11.97	6.72	-	8540	6300	1799
		5.11.97	7.56	-	14060	20125	4998
		5.11.97	7.50	-	8320	7625	5498
11.	M/s Aurbindo Pharma Limited (Pashamylaram)	4.11.97	6.74	2310	21248	27900	6998
		4.11.97	6.81	510	18048	25700	1198
		4.11.97	6.62	44	11520	17800	3799
		4.11.97	6.19	23	24480	29900	6198
		4.11.97	6.81	740	35860	32125	7498
		5.11.97	7.19	-	13690	20125	5498
		5.11.97	7.78	-	20000	46000	8997
		5.11.97	6.89	-	17270	34375	3749
		5.11.97	7.87	-	29660	32250	3999
		5.11.97	7.82	-	22960	29750	8497
		5.11.97	6.74	-	27470	35800	11796
12.	M/s Aurbindo Pharma Limited (Bollaram)	4.11.97	7.52	210	5224	68000	3249
		4.11.97	7.14	113	23890	31250	11996
		4.11.97	7.79	810	12740	8750	9497
		4.11.97	6.45	985	13730	17500	3999
		4.11.97	7.19	970	13140	19250	6498
		5.11.97	7.11	-	-	34600	5598
		5.11.97	7.06	-	18530	18625	4249

		5.11.97	7.56	-	16980	12125	8747
		5.11.97	6.74	-	25610	35000	9497
		5.11.97	7.27	-	20790	37250	16995
		5.11.97	7.07	-	21090	37000	13496
		5.11.97	6.94	-	31050	32000	10197
13.	M/s Vagu Water	4.11.97	6.89	142	684	173	150
14.	M/s Venkata Ram Chemical Limited	4.11.97	7.32	1580	14180	3225	9397
		4.11.97	6.36	200	8532	6250	1450
		5.11.97	6.17	-	23860	18875	9247
		5.11.97	6.29	-	20160	2575	3199
15.	M/s Surance Strips	4.11.97	5.87	204	5880	550	2299
		4.11.97	5.93	308	4320	750	2299
		5.11.97	5.68	-	10110	6825	2399
		5.11.97	7.62	-	15430	625	1100
16.	M/s Kiran Biscuits	4.11.97	6.03	680	28810	5900	4799
		5.11.97	8.14	-	11140	8750	5248
17.	M/s Aurbindo Pharma Limited (Chiku))	4.11.97	6.64	78	35000	23000	14745
		4.11.97	7.02	104	23770	24500	14645
		5.11.97	6.62	-	31850	2300	14745
18.	M/s HICEL Pharma Ltd.	4.11.97	7.55	493	28810	5900	14799
		4.11.97	6.12	176	22520	6400	4599
19.	M/s Triton Laboratories (P) Limited	4.11.97	6.06	67	11170	4600	2999
		4.11.97	7.11	685	8500	4400	5198
		5.11.97	6.78	-	5550	2050	1999
20.	M/s Deccan Drugs Limited	4.11.97	7.38	258	2430	1400	1899
		4.11.97	7.06	865	4280	11750	2099
		5.11.97	6.94	-	1570	600	850
		5.11.97	8.01	-	2260	100	300
21.	M/s Vorin Laboratories Limited	4.11.97	7.16	860	25440	35250	35489
		4.11.97	7.02	725	25880	37000	8997
		4.11.97	6.66	146	26880	35000	5498
		5.11.97	6.06	-	30300	37000	3999

		5.11.97	6.35	-	26770	37000	4499
		5.11.97	6.07	-	2600	42500	5998
		5.11.97	6.04	-	24840	44000	6498
22.	M/s SMS Pharmaceuticals Limited	4.11.97	6.72	34	2100	2800	1000
		5.11.97	7.68	-	26930	6750	7498
		5.11.97	7.05	-	4940	315	2279
		5.11.97	7.57	-	4420	1100	1300
23.	M/s Apex Drugs	4.11.97	6.52	24	23870	12250	10000
24.	M/s Hyderabad Drugs & Intermediate (P) Ltd.	4.11.97	6.38	120	26080	35000	5498
		5.11.97	8.06	-	17950	10950	1924
25.	M/s Aggarwal Rubber (P) Ltd.	4.11.97	6.05	260	950	975	350
		5.11.97	7.55	-	2420	200	550
26.	M/s Bhagyanagar Oil Refinery (P) Ltd.	4.11.97	8.02	526	3610	3800	1899
27.	M/s Ion Exchange India Limited	4.11.97	7.11	1240	19000	5300	4099
		5.11.97	7.96	-	15680	5700	4799
28.	M/s Everest Organics Limited	4.11.97	6.57	1030	22780	20500	1649
		5.11.97	7.22	-	19190	15250	500
		5.11.97	7.03	-	33670	25875	1500
		5.11.97	7.45	-	3920	24250	1500
29.	M/s Global Drugs (P) Limited	4.11.97	7.33	208	400	1563	7799
		5.11.97	6.58	-	18640	10300	2799
30.	M/s Quinn India Ltd.	4.11.97	7.08	168	620	1425	550
		5.11.97	7.40	-	4580	1200	1450
31.	M/s Pennar Steels Limited	5.11.97	6.22	-	19940	450	5948
		5.11.97	6.88	-	7560	14700	2999
		6.11.97	7.10	452	24390	20000	6500
32.	M/s Natco Pharma Limited	5.11.97	6.78	-	21790	7500	3999
33.	M/s Dexo Laboratories Limited	5.11.97	7.87	-	10180	18000	3749
		5.11.97	7.85	-	13710	4300	1799

34.	M/s Meryan Drug Products Limited	6.11.97	6.46	-	5930	3000	3250
		6.11.97	7.58	-	6900	8125	-
35.	M/s Saraca Laboratories Limited	6.11.97	5.50	2800	242310	47000	3450
36.	M/s Medachel Chemicals & Pharmaceuticals Limited	6.11.97	7.90	244	33560	27625	4750
37.	Biological -E	6.11.97	7.60	380	2580	450	650
38.	M/s Parsin Chemicals Limited	6.11.97	7.27	-	4830	8625	4000
39.	M/s Gromor Chemicals (P) Ltd.	6.11.97	-	1656	33620	6625	12000
40.	M/s Herren Drugs (P) Ltd.	6.11.97	8.34	-	8940	8500	850

Note: *All the value are in mg/l except pH.*

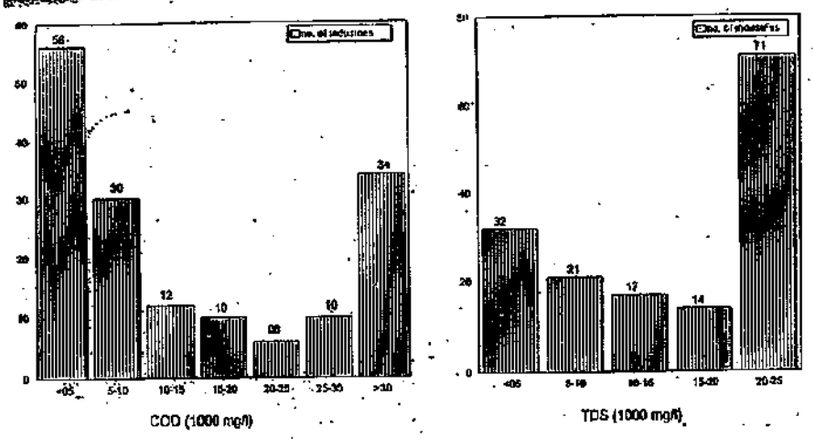

Fig . 6.2.4.1 Patancheru Industrial Estate (CETP)

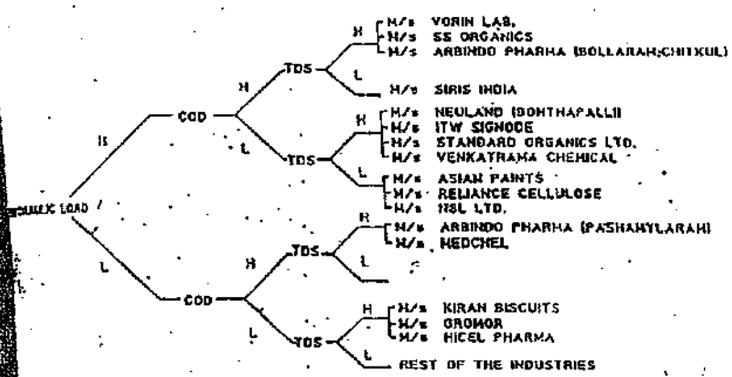

FIG. 6.2.4.2 COMBINATION OF INDUSTRIES (HYDRAULIC LOAD VIS-A-VIS COD AND TDS)

TABLE 4.2.4.3 CHARACTERISTICS OF EFFLUENTS OF MAJOR CONTRIBUTING INDUSTRIES AT [illegible]

S. No.	Name of the Industry	Parameters									Number of samples taken during present study period
		SS			TDS			COD			
		X̄	STD	Range	X̄	STD	Range	X̄	STD	Range	
1	M/s [illegible] Laboratories Limited (Pashamylaram)	727.5	391	105-1090	31932	6361	21520-42740	33058	8544	8500-48250	14
2	M/s [illegible] Laboratories Ltd. ([illegible])	709.5	37.5	254-325	15506	5803	1051-22540	24012	317	14500-15135	3
3	M/s [illegible] Ltd.	576.0	342	123-745	16060	8005	13580-33030	3750	5053	750-14990	5
4	M/s Standard Organics Limited	683.0	396	25-1325	24846	8183	3750-47510	9200	3467	6500-11000	15
5	M/s Aurbindo Pharma Ltd. (Bollaram)	680.0	329	210-905	16524	4029	8050-30050	6660	4003	4749-16985	12
6	M/s Aurbindo Pharma Ltd. ([illegible])	725.0	438	21-1310	22010	6883	17000-46000	6265	3442	2130-41000	11
7	M/s Asian Paints (I) Ltd.	164.0	72.35	65-240	3162	882	250-9650	132	90	413-2650	5
8	M/s [illegible] Ltd.	254.4	245	18-830	8177	2927	4304-85520	2043	507	1900-2390	11
9	M/s [illegible] Lab Ltd.	577.0	509	148-650	27903	9750	2600-30709	10767	11129	4190-15400	6
10	M/s [illegible] Ltd.	517.0	343	214-709	45249	2657	41420-10420	48590	18812	66000-115350	6
11	M/s [illegible] Ltd.	860.0	649	450-830	13921	6532	7830-26000	19812	19950	1735-9317	6

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- It is observed that highest TDS containing effluent with high variation is generated by M/s Standard Organics Limited, M/s ITW Signode and M/s Neuland Laboratories Ltd.

- The same trend is observed with respect to COD.

- It is also observed that all these industries have less than 1000 mg/l of suspended solids in their effluent.

6.2.5 Evaluation of Effluent Treatment Plant

An attempt is made to compare observed values with design parameters of treatment system of PETL effluent treatment plant at Patancheru which is given below:

Treatment System	Parameters	Design Value	Actual Value Observed
UASB			
	COD	4100 mg/l	14,000 mg/l
	Design flow	3000 m^3/day	807 m^3/day
	Retention Time	18 hours	36 hours
	Vol. Loading Rate	10 kg/m^3/hr	10 kg/m^3/hr
Aeration Tank			
	BOD	450 mg/l	6000 mg/l
	F/M ratio	0.15	1.2
	SVI	-	4659
	MLSS	3500	3410

The above result indicates that both BOD, COD loads and F/M ratio are much above the design values. Hence, these are to be controlled. Otherwise, the ETP will not function properly and desired results will not be achieved. Therefore, it is necessary to evaluate pollution control measures for each industry and evolve norms.

6.2.6 Development of Norms

Since COD is a common parameter, the norms can be based with respect to COD. For example:

Requirement of COD = 4000 mg/l in U.A.S.B. System
Volume per day = 1500 m^3/day
Assuming 50% dilution with sewage have COD = 250 mg/l and applying the Summation Rule:

$$QC = Q_1C_1 + Q_2C_2$$
$$3000 \times 4000 = 1500 \times C_1 + 1500 \times 250$$
$$C_1 = (3000 \times 4000 - 1500 \times 250) / 1500$$
$$= 7750 \text{ mg/l}$$

Assuming some COD will be reduced (say 20%), by adopting dissolved air flotation technique and diffused air system in equalization tank, COD of 10,000 mg/l could be treated in CETP. Considering 10,000 mg/l of COD is the average from majority of industries, the range of 5,000-20,000 mg/l of COD may be acceptable at present. The following norms may be adopted by CETP which may be accepted for the time being, provided there is 50% dilution of industrial wastewater with municipal/domestic sewage:

Parameters	Desirable	Maximum allowable
COD	15,000 mg/l	20,000 mg/l
TDS	15,000 mg/l	20,000 mg/l
pH	6.5 - 8.5	6.5 - 8.5

* If further reduction is required, the norms may be made stringent.

7.0 BOLLARAM INDUSTRIAL AREA

7.1 Location

The Bollaram Industrial Area is located close to the Bollaram village which falls under Sangareddy in Medak District of Andhra Pradesh. The site is about 35 kms from Hyderabad main city. A location map of the Bollaram industrial estate is shown in Fig. 7.1.1. The basic infrastructure, like roads, fire fighting stations, off-site emergency plan etc., are absent in this Estate. There are 110 small to medium scale industries in the Estate ranging from coconut coir processing to chemical units.

7.2 Classification of Industries

- There are 110 industries in Bollaram Industrial Area. The break up of industries with respect to their products is given in Table 7.2.1 and percent-wise distribution is shown through pie-chart as given in Fig. 7.2.1. It is observed from the Fig. 7.2.1 that there is a large number of pharmaceutical industries (nearly 34%) comprising both bulk-drugs and formulations. Next to pharmaceutical industries are the engineering industries (22%) followed by plastics (13%),

79

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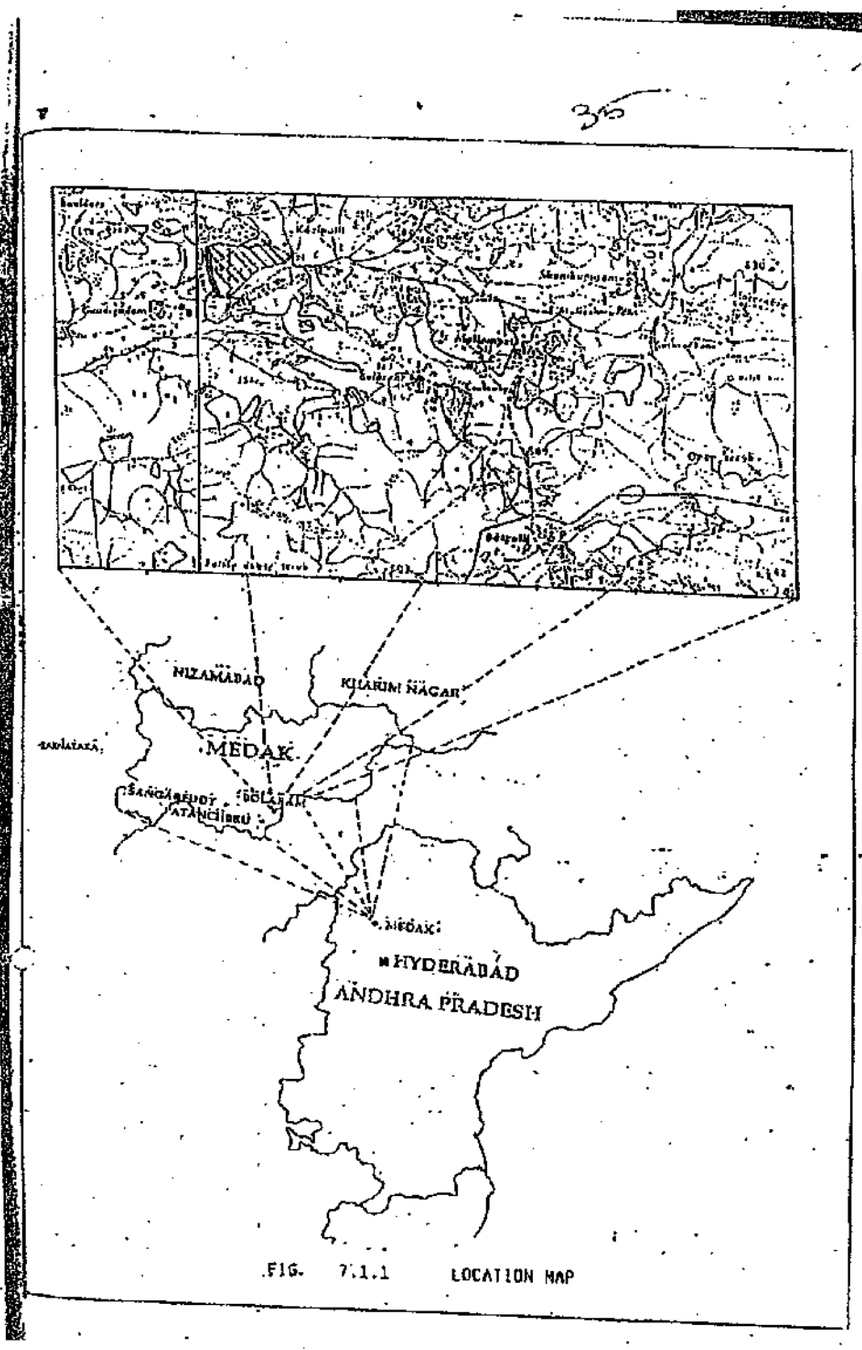

FIG. 7.1.1 LOCATION MAP

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TABLE 7.2.1 CLASSIFICATION OF INDUSTRIES LOCATED IN BOLLARAM INDUSTRIAL AREA

S.No.	Type of industry		Number of industries
1.	Plastics		14
2.	Pharmaceutical	Bulk drugs	29
		Formulations	8
3.	Steel (Casting)		5
4.	Engineering (electricals/electronics, mechanical equipments, diagnosis kits *etc.*)		24
5.	Electroplating		1
6.	Rubber		8
7.	Stains/Printing		3
8.	Asbestos		1
9.	Stone cutting and Polishing		5
10.	Packing (paper & board *etc.*)		4
11.	Pesticides		1
12.	Bricks (refractories)		1
13.	Bakery (food)		1
14.	Confectionery		1
15.	Distillery		1
16.	Fabric		3
TOTAL			110

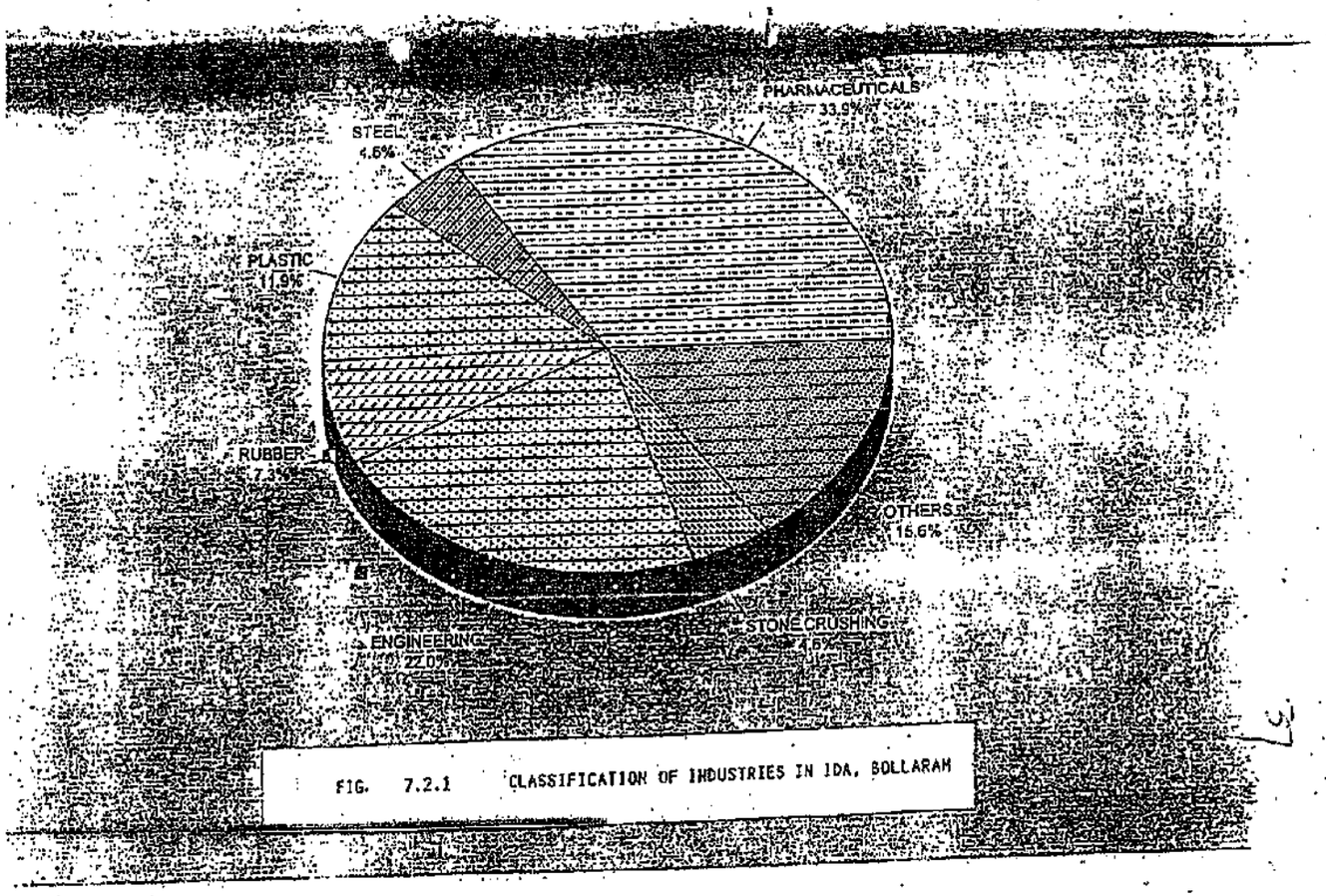

FIG. 7.2.1 CLASSIFICATION OF INDUSTRIES IN IDA, BOLLARAM

rubber (7%), stone crusher (4.5%) and steel (4.5%) industries. Out of these industries, more relevant to water pollution are the bulk-drug industries;

With respect to membership of CETP, the classification is as follows:

a) The CETP at Bollaram is having 25 member industries. Of which, 8 member industries are from out side the Bollaram area. The list of member industries is given in Table 7.2.2.

b) Out of 110 industries in Bollaram, 19 industries have membership in common effluent treatment plant(s).

c) Out of 19 industries, 17 industries are members of the Bollaram CETP and 2 industries are purely members of Patancheru CETP only.

d) Out of 17 member industries of CETP, Bollaram, 3 industries are having simultaneous membership in Patancheru CETP and 8 industries in Jeedimetla CETP.

Out of 91 non-member industries, 29 industries are relevant to water pollution (having potential trade effluent). Category-wise number of member and non-member industries, which are relevant to water pollution is given in Table 7.2.3.

7.3 Relevant information on member industries of CETP at Bollaram

7.3.1 Hydraulic Load

Approximately 340 kl/day of wastewater is generated from 16 member industries (Table 7.3.1.1), out of which, 5 industries have dual membership. Seven industries out of 16, contributes major load (266 m³/day), which are: M/s Plant Organics Ltd., M/s Prasad Drugs, M/s Aurbindo Pharma, M/s IPS Pharma Ltd., M/s Dr. Reddy's Lab (*Unit II*), M/s Parsin Chemicals Ltd., M/s Som Phytopharma and M/s Taurus Chemicals.

7.3.2 Pollution Load

The samples from the member industries were drawn from the tankers. The results of analysis are shown in Table 7.3.2.1. Histogram are also drawn for the parameters COD and TDS as shown in Fig. 7.3.2.1. The results indicate that 12 samples are within 20,000 mg/l of COD, while 16 samples are within 20,000 mg/l of TDS. As 20,000 mg/l is considered as the limiting concentration of TDS and COD as a input to the CETP, a combinatorial approach can be applied for these two parameters at two different levels (high and low). This gives us four combinations as follows:

TABLE 7.2.2 LIST OF THE MEMBER INDUSTRIES OF CETP, BOLLARAM

S. No.	Name of the Industry	Members of CETP		
		Bollaram	Patancheru	Jeedimetla
1	Dr. Reddy's Laboratories Ltd. Unit-II	✓		✓
2	Dr. Reddy's Laboratories Ltd. Unit III	✓		✓
3	Aranby Laboratories Ltd.	✓		✓
4	Prasad Drugs Ltd.	✓		✓
5	Prabhava Organics Private Ltd.	✓		
6	Aurobindo Pharma Ltd.	✓	✓	✓
7	Plant Organics Ltd.	✓		✓
8	S.P.S Pharma Ltd.	✓		✓
9	Kekule Chemicals Pvt. Ltd. *	✓		✓
10	Vishnu Bio-tech Private Ltd.	✓		
11	Taurus Chemicals Pvt. Ltd.	✓	✓	
12	Dr. Couries Labs Ltd.	✓		
13	Nagarjuna Drugs Ltd.	✓		
14	Sreechakra Bulk Drug Pvt. Ltd. *	✓		
15	Som Phyto Pharma (India) Ltd.	✓		
16	Island Veer Chemie Pvt. Ltd.	✓		
17	Pargin Chemicals Ltd.	✓	✓	✓
18	Patis Trade Centre *	✓	✓	✓
19	Hetero drugs Pvt. Ltd. *	✓	✓	
20	Hy-gro Chemicals Pvt. Ltd.	✓		
21	Chemino Drugs Ltd. *	✓		✓
22	Prudential Pharmaceuticals Ltd.	✓		
23	Veer Chemie & Aromatics (P) Ltd.	✓		
24	Arka Laboratories (P) Ltd.	Industry was not in operation		
25	Dr. Reddy's Research Foundation	✓		

Note: * Industries located outside the Bollaram IDA.

TABLE 7.2.3 STATUS OF EMBER AND NON-MEMBER INDUSTRIES AT JALLARAH RELEVANT TO WATER POLLUTION

S. No.	Type of Industry		No. of Industries	No. of Industries having [illegible] in CETP for [illegible]	No. of CETP Non-member Industries	Remarks
1.	Pharmaceuticals /Intermediates	Technical	20	19	11	Two industries providing solar evaporation ponds; Four industries reported only sanitary effluents; One industry provides primary treatment + Reverse Osmosis and Four industries not provided any treatment
		Formulations	3	0	0	Only one industry is having solar evaporation pond. All others are reported to be disposing on land for gardening/plantation
2.	Steel (casting)		5	0	5	One industry closed; and Four industries reported only sanitary effluents
3.	Ink and Ink Printing		1	0	1	Industry has its own ETP
4.	Electroplating		3	0	3	All the industries reported only sanitary effluents
5.	Pesticides		1	1	0	Member of Ballarpur CETP
6.	Distillery		1	0	1	One industry closed
	Total		48	19	29	19 are members, 28 are pharmaceuticals/ intermediate manufacturing industries and one Pesticides industry

85

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TABLE 7.3.1.1 STATUS OF WASTEWATER GENERATION OF MEMBER INDUSTRIES AT CETP, BOLLARAM

S. No.	Name of the industry	Quantity of effluent (kl/day)	Precentage
1.	M/s Prudential Pharmaceuticals Ltd.	6.0	2.0
2.	M/s Island Veer Chemic (P) Ltd.	11.0	3.3
3.	M/s Dr. Curies Lab Ltd.	9.5	2.8
4.	M/s Hy-Gro Chemicals (P) Ltd.	4.0	1.5
5.	M/s Vishnu Bio-Tech (P) Ltd.	6.5	2.0
6.	M/s Prasad Drugs (P) Ltd.	13.0	4.0
7.	M/s Plant Organics (P) Ltd.	35.0	10.0
8.	M/s Aramdy Laboratories Ltd.	25.0	7.6
9.	Dr. Reddy's Laboratories Ltd.	10.0	3.0
10.	M/s Prabha Organics (P) Ltd.	5.0	1.7
11.	M/s Aurbindo Pharma Ltd.	26.8	9.0
12.	M/s SPS Pharma Ltd.	6.0	2.0
13.	Dr. Reddy's Lab, Unit II	80.0	23.0
14.	M/s Parsin Chemicals Ltd.	28.0	8.2
15.	M/s Som Phytopharma Pvt. Ltd.	32.0	9.5
16.	M/s Taurus Chemicals Pvt. Ltd.	40.0	11.0
17.	M/s Arka Laboratories Ltd.	Not in operation	
	Total	339.8 ≈ 340 m^3/day	

TABLE 7.3.2.1 ANALYTICAL RESULTS OF TANKER EFFLUENTS COLLECTED AT CETP

S.No.	Name of the industry	Date of sampling	pH	TSS (mg/l)	TDS (mg/l)	Chloride (mg/l)	COD (mg/l)
1.	Dr. Reddy's Lab. Unit II	07.10.1997	7.15	3548	36122	7819	55680
		07.10.1997	7.51	653	32917	6334	43840
		07.10.1997	7.65	233	31641	6038	36160
		07.10.1997	6.16	153	39007	5939	42880
		08.10.1997	7.56	2932	43020	8512	78080
		08.10.1997	6.70	1874	42926	8215	39680
		08.10.1997	7.43	429	19980	5444	26240
		08.10.1997	6.38	101	23587	4454	36480
		08.10.1997	8.13	218	31952	5840	35200
		08.10.1997	8.70	134	36340	7225	28960
2.	Dr. Reddy's Lab. Unit III	07.10.1997	6.71	132	47378	9601	44800
		08.10.1997	6.80	56	49334	9997	14880
3.	M/s Arandy Lab Limited	07.10.1997	7.85	462	24977	12966	4800
		08.10.1997	8.35	256	47626	12867	9600
4.	M/s Prasad Drugs (P) Limited	07.10.1997	7.65	199	14099	3563	6080
5.	M/s Prabhava Organics (P) Limited	09.10.1997	8.02	1346	70700	33850	20800
6.	M/s Aurbindo Pharma Limited	07.10.1997	6.98	173	23313	11382	20800
		08.10.1997	8.16	134	115142	14352	30400
7.	M/s Plant Organics (P) Limited	07.10.1997	7.08	117	21985	6631	27200
		07.10.1997	8.10	181	31881	7819	36480
		08.10.1997	7.70	186	23726	6829	11840
		08.10.1997	7.67	89	25073	7918	16000
8.	M/s Kekule Chemicals (P) Limited	07.10.1997	7.20	333	10081	3365	3280
		08.10.1997	7.03	1289	9799	3266	49280

9.	M/s Taurus Chemicals (P) Limited	07.10.1997	8.13	51	25077	14253	120
		08.10.1997	7.12	112	16420	8908	192
10.	Dr. Curies Lab, Bolliaram	10.10.1997	7.91	160	9140	3449	312
11.	Nagarjuna Drugs Limited BL-1	09.10.1997	7.90	118	12748	2969	2880
	BL-2	09.10.1997	7.15	50	6378	1782	4160
	BL-3	09.10.1997	7.20	76	7516	2177	3520
12.	M/s Istand Veer Chemie (P) Ltd.	09.10.1997	8.16	117	17867	1683	16000
13.	M/s Parsin Chemicals Limited	08.10.1997	6.73	112	26750	3464	8640
14.	M/s Hetero Drugs (P) Limited	07.10.1997	7.01	57	22805	2177	67200
		08.10.1997	7.28	55	30055	3266	49280
15.	M/s Hygro Chemicals Limited	09.10.1997	6.18	931	20756	13065	3840
16.	M/s Cheminor Drugs Limited	08.10.1997	8.26	94	48768	16727	13440
		08.10.1997	8.01	814	44420	15242	12800
		08.10.1997	7.96	766	46694	15341	10880
17.	M/s Prudential Pharma Limited	08.10.1997	6.68	92	11684	5246	4640
18.	Dr. Reddy Research Foundation	07.10.1997	6.81	102	3198	1089	1920
		08.10.1997	7.28	75	2987	1089	3360

SHANE CARDOZ ★ ADVOCATE & NOTARY ★ GOVT. OF INDIA
MUMBAI MAHARASHTRA REG. NO. 16598 EXPIRE ON 27th JAN 2025

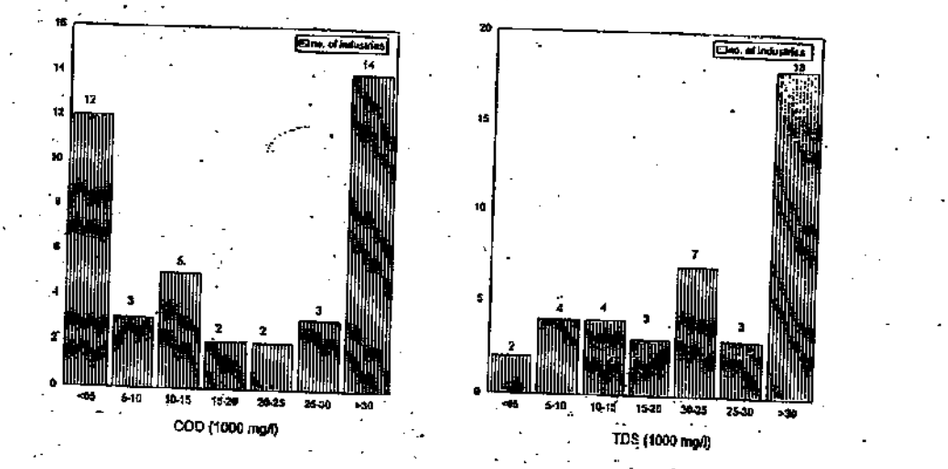

Fig : 7.3.2.1 Bollaram Industrial Estate (CETP)

i) High TDS and High COD;
ii) High TDS and Low COD;
iii) Low TDS and High COD; and
iv) Low TDS and Low COD

The industry falling under these categories and their possible effluent treatment options are given below:

S.No.	Category	Name of the industry	Possible Treatment
1.	High TDS and High COD	Dr. Reddy's Lab Unit II Dr. Reddy's Lab Unit III M/s Prabhava Organics M/s Aurbindo Pharmaceuticals M/s Plant Organics M/s Hetero Drugs	Segregation followed by incineration of high COD (*mother liquor*), and recovery of salt, if possible.
2.	High TDS and Low COD	M/s Cheminor Drugs M/s Hy-gro Chemicals M/s Parsin Chemicals Ltd. M/s Arandy Lab Ltd. M/s Taurus Chemicals (P) Ltd.	Segregation followed by solar evaporation or pretreatment of high TDS stream with physical means.
3.	Low TDS and High COD	M/s Kekule Chemicals Ltd	Mother liquor should be segregated and pretreatment necessary.
4.	Low TDS and Low COD	Dr. Curies Lab M/s Nagarjuna Drugs Ltd. M/s Island Veer Chemicals (P) Ltd. M/s Prudential Pharaa Ltd. Dr. Reddy Research Foundation	Directly come to CETP.

8.0 PROBLEM OF DISPOSAL

8.1 Patancheru Industrial Area

At present the effluent from the CETP is discharged into natural water body, called Iskawagu drain. In order to evaluate the impact of CETP's treated effluent on the surface water through natural drain Iskawagu, the National Environmental Engineering Research Institute (NEERI), Nagpur already conducted an indepth study during January 4-6, 1997. The study revealed that 20,997 - 21,785 m^3/day water is available in the Iskawagu

drain. Therefore, approximately 5-time dilution in the drain is available for treated effluents of CETP. Inspite of such dilution, the CETP effluent has a high impact on Iskawagu drain. The quality of drain water before and after discharge of CETP effluent is given in Table 8.1. Close examination of the analytical results given in Table 8.1 reveals that, in respect of almost all the parameters, the deterioration of water quality is apparent. The data on coliform indicates contamination of drain water due to sewage.

Isakawagu drain after travelling a distance of about 2.0 km meets another natural drain called Nakkavagu. To asses the impact of discharge from Iskwagau via Nakkavagu on river Manjira, the NEERI conducted a study. The results are summarized in Table 8.2 which indicates that there is no observable impact of Nakkavagu drain discharge on river Manjira due to sufficient dilution available in the river in the month of January, 1997.

River Manjira is the tributary of the river Godavari. Requirement of most of the water supply to Patancheru Industrial Area is met from Manjira dam. The Nakkavagu drain which receives contaminated water from Isakawagu drain, meets river Manjira at the downstream of Manjira dam. Therefore, dilution in the river is restricted in the critical months (summer).

There are 15 natural lakes (cherru) and ponds (tanks), situated in and around Bollaram and Patancheru Industrial Estates. The location of these lakes/ponds and possible contamination sources are presented in Table 8.3. These lakes are the source of irrigation water supply to nearby villages. People are under the impression that their livelihood are jeopardized due to contamination of lakes, which need attention.

.2 Bollaram Industrial Area

Bollaram Industrial Area and the area of CETP are land-locked. As a result the treated wastewater has to be discharged either on land or to the solar evaporation ponds (lined). At present, the quality of treated effluent (*since treatment plant is not operating properly*) is not good enough to be discharged safely to any natural water bodies. As such the effluent after treatment in CETP is sent to holding ponds (lined. However, the overflow in rainy season from the ponds cannot be ruled out.

.0 RECOMMENDATIONS

In the light of above observations/findings, the Central Pollution Control Board is of the opinion that without self-regulation among the industries, there is no possibility of proper operation of CETPs both at Patancheru and Bollaram.

TABLE 8.1 AVERAGE WATER QUALITY FROM NATURAL DRAIN - ISKAVAGU

Parameters	Iskavagu Drain		Inland Surface Water Quality (IS:2296-1982) Class				
	Before CETP discharge	After CETP discharge	A*	B*	C*	D*	E*
Colour (Pt Co Units)	BDL	50	10	300	300	-	-
Temp. °C	19	20	-	-	-	-	-
Conductivity, mS/cm	0.78	1.02	-	-	-	-	-
pH	7.1	7.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
Total Alkalinity,	240	200	-	-	-	-	-
TDS	874	1560	500	-	1500	-	2100
TSS	68	80	-	-	-	-	-
DO	BDL	BDL	6	5	4	4	-
COD	412	1800	-	-	-	-	-
$BOD_{5d.\ 20^{o}C}$	90	215	2	3	3	-	-
Total Ammonia Nitrogen	12.4	9.5	-	-	-	1.2	-
TKN	25.6	19.4	-	-	-	-	-
Total Phosphate	5.9	2.6	-	-	-	-	-
Nitrate N	0.9	4.3	20	-	50	-	-
Nitrite N	BDL	BDL	-	-	-	-	-
Chlorides	246	1160	250	-	600	-	600
Sulphates	84	696	400	-	400	-	1000
Sulphides	BDL	BDL	-	-	-	-	-
Phenols	BDL	0.12	-	-	-	-	-
Cyanides	BDL	BDL	-	-	-	-	-
Heavy Metals							
- Iron (Fe)	0.020	0.033	0.3	-	5.0	-	-
- Lead (Pb)	0.002	0.007	0.1	-	0.1	-	-
- Chromium(Cr)	BDL	0.008	-	-	-	-	-
- Zinc (Zn)	BDL	0.006	1.5	-	1.5	-	-
- Nickel (Ni)	BDL	0.004	-	-	-	-	-
- Cobalt (Co)	BDL	BDL	-	-	-	-	-
- Copper (Cu)	BDL	BDL	1.5	-	1.5	-	-
- Manganese (Mn)	BDL	BDL	-	-	-	-	-
- Cadmium (Cd)	BDL	BDL	-	-	-	-	-

* Below Detectable Limit; TKN - Total Kjeldhal Nitrogen
Values except colour, temperature, conductivity and pH are expressed in mg/L
A Drinking water source without conventional treatment followed by disinfection
B Outdoor bathing (organised)
C Drinking water source with conventional treatment followed by disinfection
D Propogation of wild life, fisheries
E Irrigation, industrial cooling, controlled waste disposal

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S. No.	Parameters	Nakkawagu Drain					River Manjara		Inland Surface Water Quality, (IS:2296-1982) Class				
		1	2	3	4	5	6	7	A*	B*	C*	D*	E*
1.	Colour (Pt Co Units)	40	BDL	5	BDL	BDL	BDL	BDL	10	300	300	-	---
2.	Temp. °C	20	20	20	20	20	20	20	-	-	-	-	-
3.	Conductivity, mS/cm	1.58	0.42	0.74	0.70	0.68	0.36	0.35	-	-	-	-	-
4.	pH	7.6	7.2	7.3	7.3	7.3	7.1	7.1	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
5.	Total Alkalinity,	285	260	270	265	260	230	235	-	-	-	-	-
6.	TDS	2540	388	826	804	790	340	358	500	-	1500	-	2100
7.	TSS	64	56	64	59	58	24	28	-	-	-	-	-
8.	DO	0.8	5.4	1.2	2.6	3.0	7.2	6.8	6	5	4	4	-
9.	COD	1746	32	220	186	168	2	10	-	-	-	-	-
10.	BOD_{5d}, 20°C	195	4	32	24	20	BDL	< 2	2	3	3	-	-
11.	Total Ammonia Nitrogen	9.0	0.1	1.8	1.1	0.9	BDL	0.2	-	-	-	12	-
12.	TKN	10.8	0.8	2.7	2.6	2.0	0.2	0.4	-	-	-	-	-
13.	Total Phosphate	2.2	0.3	0.6	0.6	0.5	BDL	0.01	-	-	-	-	-
14.	Nitrate N	4.5	BDL	0.5	0.3	0.1	BDL	BDL	20	-	50	-	-
15.	Nitrite N	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	-	-	-
16.	Chlorides	1118	64	430	400	360	18	50	250	-	600	-	600
17.	Sulphates	690	16	98	90	80	12	26	400	-	400	-	1000
18.	Sulphides	BDL	BDL	BDL	BDL	BDL	BDL	BDL	---	-	-	-	-
19.	Phenols	0.07	BDL	0.01	BDL	BDL	BDL	BDL	-	-	-	-	-
20.	Cyanides	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	-	-	-

Contd.

No.	1	2	3	4	5	6	7	Inland-surface Class A*	B*	C*	D*	E*
20. Heavy Metals												
- Iron (Fe)	0.331	0.085	0.211	0.008	0.009	1.111	0.005	0.3	-	5.0	-	-
- Lead (Pb)	0.006	BDL	0.001	BDL	BDL	BDL	BDL	0.1	-	0.1	-	-
- Chromium(Cr)	0.005	BDL	0.003	0.002	0.002	BDL	BDL	-	-	-	-	-
- Zinc (Zn)	0.005	BDL	0.001	BDL	BDL	BDL	BDL	1.5	-	1.5	-	-
- Nickel (Ni)	0.002	BDL	BDL	BDL	BDL	BDL	BDL	-	-	-	-	-
- Cobalt (Co)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	-	-	-
- Copper (Cu)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.5	-	1.5	-	-
- Manganese (Mn)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	-	-	-
- Cadmium (Cd)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-	-	-	-

1. Isakwagu drain water 200 m before joining Nakkawagu drain
3. Nakkawagu drain water 200 m before meeting Isakwagu drain
3. Nakkawagu drain water 300 m after meeting Isakwagu drain
4. Nakkawagu drain water 15 Km after meeting Isakwagu drain
5. Nakkawagu drain water 200 m before meeting the river Manjira
6. River Manjira water 200 m before meeting Nakkawagu drain
7. River Manjira dwater 300 m after meeting Nakkawagu drain

BDL - Below Detectable Limit; TKN - Total Kjeldhal Nitrogen
All values except colour, temperature, conductivity and pH are expressed in mg/l
A* - Drinking water source without conventional treatment followed by disinfection
B* - Outdoor bathing (organised)
C* - Drinking water source with conventional treatment followed by disinfection
D* - Propogation of wild life, fisheries
E* - Irrigation, industrial cooling, controlled waste disposal

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TABLE 8.3 NAME OF THE LAKES & PONDS WITH LOCATION & DISTANCE FROM PATANCHERU AND POLLUTION CONTRIBUTING SOURCES.

S.No.	Name of the Lake/Pond	Location	Distance from Patancheru	Industry contributes
1.	Saka Cheruvu (Black Liquor)	Patancheru	Patancheru	Sai Baba cellulose
2.	Kishtareddy pet chauvu (reddish colour)	Krishnareddy pet	5 kms	Bollaram Industrial Estate
3.	Khazipalli chauvu (Arsenic tank pollution)	Near Bollaram CETP	10 kms	PKAS trade centre
4.	Asanikunta (Acidic)	Near Bollaram CETP	10 kms	Bollaram Industrial Estate
5.	Kuttangi cheruvu	Near Muttangi	6 kms	Industries located in its catchment
6.	Isnapur cheruvu	Near Isnapur	8 kms	Industries located in its catchment
7.	Lakdaram cheruvu	Neare Lakdaram	10 kms.	From Isnapur cheruvu
8.	Pedda cheruvu	Near Chitkul	8 kms	From Isnapur cheruvu
9.	Yerdanur cheruvu	Near Yerdanur	15 kms	Alkabir and other industries
10.	Gunamidala tanks	Along Narsapur Road	40 kms	Industrial Estate
11.	Gonthepalli tanks	Along Narsapur Road	35 kms	Industrial Estate
12.	Jinnaram cheruvu	Pamulavagu catchment area	30 Kms	Industrial Estate
13.	Kilateal (Toopran) cheruvu	Near Toopran	50 kms	Industrial Estate
14.	Digwal tank	Near Kohir	80 kms	Pharmaceutical Industries
15.	Pasupa yeru (stream)	Near Medak	100 kms	Nizam Sugar Factory (Mombojipalli)

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9.4. Mechanism of Self-regulation among the Member Industries

i) Member industries should ensure that the effluents sent by them do not exceed the limits on various parameters as follows:

pH	-	between 6.5 and 8.5
SS	-	not to exceed 1000 mg/l
COD	-	not to exceed 20,000 mg/l
TDS	-	not to exceed 20,000 mg/l

ii) The industries, such as M/s Vorin Lab, M/s SS Industries, M/s Aurbindo Pharma at Bollaram, Chitkul and Pashamylaram, M/s. Medichel at Patancheru, Dr. Reddy's Lab (Units II and III), M/s Prabha Organics, M/s Plant Organics and M/s Hetero Drugs at Bollaram have high COD and high TDS. Proper segregation followed by COD reduction by adoption of stream stripping, incineration of mother liquor or any other means is essential to ensure that standards are met, as prescribed above, before sending the effluent to CETP.

iii) M/s. Neuland Laboratories Ltd. at Bonthapalli, M/s IIW Signode, M/s Standard Organics and M/s Venkat Ram Chemicals should segregate the high TDS samples and treat the effluents before sending it to the CETP. This is also applicable to M/s Kiran Biscuits, M/s Gromor and M/s HICEL Pharma Ltd, M/s Chemlnor Drugs, M/s Parsin Chemicals, M/s Hy-Gro Chemicals and M/s Arandy Lab Limited at Bollaram.

iv) The said industries may be directed by the Hon'ble Court to submit their action plan for reducing COD and TDS by January 30, 1998 after consultation with CPCB and APPCB. The CPCB and APPCB jointly may give a hearing to these industries for finalizing their programme of action. This hearing should be completed within a month w.e.f. the Orders/directions of Hon'ble Court. The industries shall have to submit affidavits for compliance of the Action Plan within the time-frame decided by the Hon'ble Court.

v) No CETP authority should accept any sample which is exceeding the prescribed limit after March 31, 1998. If the content of any tanker exceeds the limit, CETP authority should cease the tankers and inform to APPCB. The APPCB, after verification may safely dispose the effluent and close down the factory under Section 33 of the Water Act, 1974. They may be allowed to open only when it ensures pretreatment. The action taken by APPCB may be appraised to CPCB.

vi) No new industries should be given membership by any CETP till the CETP performance is stabilized and the treated effluent comply with the standards.

vii) It is observed that there is one more CETP at Jeedimetla, in the nearby area. It is apprehended that any action to members of CETP at Bollaram and Patancheru may encourage the industry to transport their effluent to CETP at Jeedimetla. Therefore, CPCB is of the view that the norms as stated above may also be made applicable to the industries and CETP at Jeedimetla. This is necessary for

9.2 Regulatory Requirements

It is also observed that the information on inventory of industries at Patancheru is not complete with the State agencies. Hence, the APPCB should complete the inventory of the industries located at the industrial area of Patancheru. Non-member industries, relevant to the water pollution (i.e. discharging trade effluent), must comply with the standards, prescribed by the State Board, prior to discharge. It is observed that there are CETP non-member industries located at Bollaram as well which are relevant to water pollution. They must also meet the standards prescribed by APPCB. The APPCB may take legal samples of wastewater effluent from those industries immediately to take further course of action.

9.3 Industries having individual ETP

The ten industries which submitted to have their own ETPs, before the Hon'ble Court, have been investigated by the CPCB team. The observations have already been discussed. The recommendations are as follows:

i) Except M/s Asian Paints and M/s Voltas Ltd., all individual ETPs installed by the industries are not adequate and not meeting the standards. All such non-complying units are required to take measures to comply with the standards. These industries must submit their action plan to CPCB within a month.

It is pertinent to mention that the matter related to M/s Voltas Ltd. is in the Hon'ble High Court of Andhra Pradesh.

ii) M/s Voltas Ltd. has provided advanced treatment of effluent (stream stripping followed by incineration and H_2O_2 Oxidation). M/s Asian Paints has provided secondary treatment plant.

iii) M/s Voltas should commission, the newly-built physico-chemical treatment plant, after the commissioning of deodourisation plant, by December 15, 1997. M/s Voltas Ltd. should also install the biological treatment plant for the said effluent, by December 31, 1997. The present practice of holding the effluent in lagoons, after deodourisation & incineration, need to be discontinued after commissioning of the biological treatment plant. The effluent kept in solar evaporation pond (before commissioning of deodourisation-detoxification plant should be brought back to the deodourisation plant for treatment. The matter is also discussed in the Hon'ble High Court.

iv) M/s Asian Paints should get their effluent analyzed regularly for heavy metals through a Competent Authority, like NEERI.

9.4 Disposal of effluent

Since the individual industries are discharging effluent to natural water bodies at Patancheru and to land at Bollaram, the chances of contamination is not ruled out. CPCB needs some more time to finalize the disposal point so as to prevent further damage to the natural water bodies. Hon'ble Court may kindly grant at least one month's time for this purpose.

10.0 CONCLUSION

It is concluded that for proper operation of CETPs, it is necessary that member industries pretreat their effluent (including segregation of streams and separate treatment) and meet the norms prescribed before transporting it to CETP.

Since the CETPs are not yet stabilized, the performance study to evaluate the adequacy of CETPs could not be conducted. The same is proposed to be carried out in the month of January, 1998, when the impact study of the effluent discharge would also be taken up.

Annexure I

The investigating Team:

A. Preliminary survey relating to Patancheru and Bollaram Common Effluent Treatment Plant during September 11-12, 1997

Sh. N.K. Verma	-	Additional Director, CPCB, Head Office
Dr. D.C. Sharma	-	Zonal Officer, CPCB, Banglore
Dr. D.D. Basu	-	Senior Scientist, CPCB, Head Office

B. Assessment of Status of Pollution Control in Bollaram Industrial Area (October 6 -10, 1997)

Sh. Sandeep Shrivastava	-	Env. Engineer, CPCB, Head Office
Sh. N.S. Babu	-	Astt. Env. Engineer, CPCB, Head Office
Sh. S.K. Singh	-	Astt. Env. Engineer, CPCB, Banglore
Dr. Rani	-	Scientist B, CPCB, Banglore
Sh. Iqbal	-	Sr. Scientific Assistant, CPCB, Banglore

C. Assessment of Status of Pollution Control in Patancheru Industrial Area (November 3-9, 1997)

Dr. D.D. Basu	-	Senior Scientist, CPCB, Head Office
Dr. Sanjeev Paliwaal	-	Scientist B, CPCB, Head Office
Sh. K. Madhusudan	-	Scientist, CPCB, Banglore
Dr. T.K.R. Balajee	-	Scientist B, CPCB, Banglore
Sh. Jeypal	-	Sr. Scientific Assistant, CPCB, Banglore

The above programmes were performed under the overall co-ordination and guidance of Sh. N.K. Verma, Addl. Director, CPCB, Delhi.

5.	M/s [illegible] Laboratories	Bulk drug (R)	1. Dedicated land use is there. 2. House keeping is satisfactory.	Applied under Water/Air Act on 19.11.96	Not adequate	Disposal to CETP at Patancheru	Not adequate	Process and ETP sludge sent to incineration	Emission from process which is incinerated. Boiler stack fitted with bag filter.	1. Stream more than 50,000 mg/l COD need to be incinerated after stripping. 2. High TDS stream need to be segregated and subjected to evaporation.	1 months w.e.f. the date of direction/Order
6.	M/s MC Ferro Alloys Pvt. Ltd.	Ferro chrome ferro silicon	Not satisfactory and no dedicated land use.	Valid upto 30/6/99 under Water/Air Act	Not relevant to water pollution	Not applicable.	Not applicable	Sludge 10 T/year dumped within the area.	Adequate arrangement for emission from furnace.	1. Poor house keeping causes dust pollution. House keeping should be improved as roads should be made pucca, dedicated land use & stack monitoring/ambient air quality station need to be provided. 2. Ore drying process need to be done in covered area.	3 months w.e.f. the date of direction/order
7.	M/s Deccan Leathers Ltd.	Leather processing (O) R	Company was closed difficult to assess on house keeping. However, dedicated land use is there.	Applied	Not adequate	On land for irrigation	Not observed since it is closed.	ETP Sludge 30 kg stored	In process emission boiler (1/2 t)	The company should built a proper biological treatment plant.	Before recommissioning
8.	M/s [illegible] Fluorocarbon	Polytetra fluoro ethylene (Industrial Plastic) (O)	House keeping near ETP is poor, it deserves serious attention.	Valid upto 31/12/98 under Water/Air Act upto 31.10.99	Not adequate	Disposal to land for irrigation	Not adequate although effluent kept in solar evaporation.	HCl scrubber sludge CaF2 [illegible], 7 T/year stored at present	Boiler and process emissions are controlled	1. Incineration after detoxification of process residue for fluorinated. 2. Biological treatment of effluent.	3 months w.e.f. the date of direction/Order

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SHANE CARDOZ MUMBAI MAHARASHTRA REG. No. 16385 EXPIRE ON 27th JAN 2025 ADVOCATE & NOTARY GOVT. OF INDIA

Annexure V Kn D 115 190

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IN THE HON'BLE HIGH COURT OF ANDHRA PRADESH

W.P.No. 19661 of 2002

W.P. (C) No. 1056/1990

(Before the Hon'ble Supreme Court of India)

STATUS REPORT INDICATING THE MEASURES TAKEN BY GOVERNMENT OF ANDHRA PRADESH

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CONTENTS

1. INTRODUCTION

The government of Andhra Pradesh submitted a status report to the Hon'ble High Court on 12-11-2002 indicating various measures taken in pursuance of Hon'ble Supreme Court Orders dt. 06.02.2001. The matter was heard on 12.11.2002. A meeting was held by the Chief Secretary to review the action taken on the issues pertaining to the case on 18-11-2002. The present status on details of Pollution Control measures implemented in 168 industries, the background details and clarification on the proposed 18 Km pipeline project, salient features of Treatment, Disposal and Storage Facility (TSDF) established for safe disposal of Hazardous Solid Waste, Progress on remediation of polluted lakes, Performance of Common Effluent Treatment Plant (CETP) and Ground water quality assessment reports is submitted hereunder:

The APPCB is regularly monitoring the ground water quality in and around Patancheru since 2001 on the same lines of CPCB and NGRI to assess the improvement in the ground water quality. The Common Effluent Treatment Plant (CETP) of Patancheru is also being monitored by collecting effluent samples thrice in a week and penalties are being levied to the CETP whenever the treated effluent exceeds the norms standards as per the orders of the Hon'ble Supreme Court. The Treatment Storage and Disposal Facility (TSDF), a scientifically designed landfill facility, has become operational at Dundigal, R.R. District since September, 2001. The TSDF received a total hazardous waste of 58,000 MT as on October, 2002 which has been land filled. The TSDF project has been taken up under the assistance and supervision of Australian Government.

To avoid discharge of treated effluents into Nakkavagu, the APPCB based on the directions of the Hon'ble Supreme Court proposed to lay 18 Km. Pipeline from CETP to K & S Main Balanagar. The treated effluents join the comestic sewage and gets diluted to the required concentrations before being discharged into river Musi.

The APPCB submitted Joint Action Plan on laying of 18 Km. pipeline to Hon'ble Supreme Court of India in the status report dt: August, 2000. The State Govt., has taken action through HMWS & SB to lay the pipeline and the work on the project has started on 05.08.2002.

2. Status on Payment of Compensation :

As per the decisions taken [illegible] Chambers of Chief Secretary to the Govt. [illegible] constituted 12 teams consisting of Mamlatdar, Panchayatraj Secretary of the concerned [illegible] are yet to receive the compensation for [illegible]

The teams have visited in [illegible] with the help of agriculturists of [illegible] According to the verification done by the amount spell wise is as shown below:

1st spell 1989-90:

Amount deposited in Rs	Amount disbursed in Rs.	Balance in Rs.
1,38,09,245-00	1,38,13,250-00	[illegible]

2nd spell 1990-90 :

Amount deposited in Rs.	Amount disbursed in Rs.	Balance in Rs.
72,08,471-25	45,73,090-75	26,35,[illegible]
		Total:

The lists of identified victim [illegible] being sent to the District & Sessions [illegible] distribute the relief amount to the [illegible]

For the balance amount of Rs.32 [illegible] have to be reconciled with the [illegible] Corporation.

3. ACTION OF POLLUTION CONTROL MEASURES IMPLEMENTED IN RESPECT OF INDUSTRIES:

The Joint Action Plan submitted by the APPCB & CPCB to Hon'ble Supreme Court states certain short, medium and long term measures. As per the short term measures of Action Plan the industries shall reduce hydraulic load of effluents by 20%, which shall be pretreated to the standards of pH-6.5 to 8.5, COD-15000 mg/l, TDS-15000 mg/l, SS-1000 mg/l, along with the segregation of inorganic and organic wastes. In order to achieve the short term measures stated above, concerned industries have made necessary arrangements to achieve the above standards by installing forced evaporation systems/ liquid incineration systems and waste minimization procedure / technologies such as recovery of by products. In this process, some industries are solidifying the high inorganic effluent streams thereby reducing TDS levels before lifting effluents to CETPs.

The A.P. Pollution Control Board has been insisting that all the polluting industries practice waste minimization procedures to achieve zero level discharge / permissible level of discharge and to reduce loads on the CETPs since 1997. The industries have made some efforts to achieve permissible level of discharge by adopting optimization of reactions, employing efficient washing and rinsing methods, using tighter control of reacting temperature, installation of high pressure spray wash system, spill basins, substituting solvents/ bleaching agents with water, use of counter current washing operations, segregation of rinse waters for reuse, reuse of all equipment of non-contact cooling water, use of boiler blow down and preheated water. Apart from the above, industries have also provided forced evaporation systems such as Multiple Effect Evaporators to evaporate water content in high inorganic effluent and residue material is stored within their premises as per APPCB authorizations for disposal to treatment, Storage and Disposal Facility (TSDF).

The Condensate water generated is reused back in process or for washing purposes. Similarly the low TDS and organic effluents are incinerated at high temperatures to ashes. The off gases are scrubbed with alkali / water and after saturation this scrubbed liquid is again subjected to forced evaporation to bring down to zero level of discharge. Similarly from the mother liquors, the low value products are recovered to reuse in the process or to sell as bye products.

Some of the industries [illegible] ... [illegible] gypsum which is a ... [illegible] ... the processes. [illegible] ... processed and [illegible] ... [illegible] bringing them to zero level discharge [illegible]

In compliance to the [illegible] ... segregation of high TDS and [illegible] ... The high TDS effluents are [illegible] ... Evaporation System (MES/FE) [illegible] ... factory for disposing to TSDF. [illegible]

Due to segregation of high TDS [illegible] ... waste water discharge, which has [illegible] ... going to the CETPs. The improved performance of the [illegible] ... a direct [illegible] ... reduction in concentration of toxic [illegible] ... going into [illegible] ... treatment. The low TDS effluents [illegible] ... treatment to CETPs. The CETPs [illegible] ... the member units.

The status on Pollution Control [illegible] ... of 169 listed in order dated 19-09-20[illegible] ... The industries have been categorised [illegible] ... non complying to the standards, [illegible] ... industries under Closure/not in operation [illegible]

[illegible]	[illegible]	Type of industry	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	M/s Aurobindo Pharma Ltd., Unit-VI, Chitkul (R-95)	Sterile Bulk drugs & formulations	Effluent collection and neutralization tanks, Psychrometric evaporator, triple effect evaporator.	pH-7.04 TSS-350, TDS-3420 Cl-1164 COD-1496 BOD-521	[illegible] TSS – 1000 TDS – [illegible] COD – 15000	a. 2x5 TPH oil fired boilers provided with 30 m stack. b. 8 TPH coal fired boiler provided with dust collector & 37 M stack.	[illegible] salts, ETP sludge & spent carbon is sent to TSDF. Organic waste is disposed by own incinerator located at unit-V	The industry is segregating low & high TDS effluents. Low TDS effluents after pre treatment lifted to CETP, Patancheru. High TDS effluents disposed by forced evaporation.
[illegible]	[illegible] Ltd., [illegible], [illegible], (R-67)	Paints & resins	Primary, Secondary & Tertiary effluent treatment plant.	pH-7.2, TSS-20, TDS-680, Cl-125, COD-70, BOD-21 mg/l.	[illegible]	[illegible] [illegible] [illegible] filters provided at powder handling [illegible]	They have [illegible] to TSDF. Organic waste is disposed by own incinerator	The industry is having full fledged ETP and the treated effluents are meeting Board standards. The treated effluents are reused and utilized for gardening with in the premises. Achieved permissible level of discharge. This is also an ISO 14001 company.

SHANE CARDOZ ★ INDIA
MUMBAI MAHARASHTRA
REG. No. 16388
EXPIRE ON 27th JAN 2025
ADVOCATE & NOTARY GOVT. OF INDIA

[illegible]	M/s. [illegible] Belmax Ltd., [illegible] Patancheru [illegible]	[illegible]	Bar screen, Oil & Grease trap, equalization tank, aeration tank, Secondary clarifier & Sludge drying beds.	pH-7.22, TSS-140, TDS-3090, COD-263, BOD-97 mg/l.	Ph - 5.5 – 9.0 SS - 200 TDS – 2100 BOD 100	2x2 TPH Oil fired boilers are provided with a stack height of 35 M		Effluents are treated in their own ETP and utilized for gardening with in the premises. Achieved permissible level of discharge.
	[illegible]	[illegible]	[illegible] proof lined collection and neutralization tanks.	pH-7.15, TSS-210, TDS-2020, CL-560, COD-250, BOD-85 mg/l	Ph - 5.5 – 9.0 TSS – 200 TDS 2100 BOD 100	1 TPH & 2 TPH coal fired boilers provided with [illegible]	ETP sludge is stored at [illegible] area for further disposal to TSDF	The effluents are sent to the ETP of their group company M/s. [illegible] Industries Ltd., Patancheru for treatment and disposal.
[illegible]	[illegible]	[illegible]	[illegible] tanks, [illegible]	pH-7.15, TSS [illegible], TDS [illegible], CL [illegible]	Ph [illegible] 9.0 [illegible]	5 TPH coal fired boiler [illegible]	[illegible]	Effluents are treated in their own ETP [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	Industry [illegible] treated effluents	[illegible]	[illegible] boiler [illegible] cyclone [illegible]	[illegible]	[illegible] recycled back to process

EFFLUENT TREATMENT PLANT – CURRENT PROCESS FLOW

Annexure "L"