BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

APPEAL NO.31 OF 2023

Arunkumar Sermakkani
S/o. Shri. Sermakkani
& 8 others

... Applicants

Versus

Union of India
Ministry of Environment, Forest & Climate Change
and 3 others

...Respondents

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DRAWN AND FILED BY

CHENNAI

DATE: 31.08.2024

COUNSEL FOR RESPONDENT NO.4

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

APPEAL NO.31 OF 2023

ArunkumarSermakkani
S/o. Shri.Sermakkani
& 8 others

... Applicants

Versus

Union of India
Ministry of Environment, Forest & Climate Change
and 3 others

...Respondents

REPLY FILED ON BEHALF OF THE 4TH RESPONDENT

The 4th respondent above named respectfully submits as follows:

1) The fourth respondent viz., MeenakshiUdyog (India) Pvt Ltd., is a manufacturing company with decades of experience in producing most premium, reliable, high-quality steel construction materials such as TMT bars and Structural steel. The product that are manufacturing includes TMT bars, Corrosion Resistant Steel TMT bars (CRS), Billets and structural steel.

2) The fourth respondent is operating their Steel Rolling Mill at Kalugondapalli, DenkanikotaTaluk, Krishnagiri District, Tamil Nadu. The industry originally had a production

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

capacity of 30,000 TPA of MS Billets and 60,000 TPA of TMT rods totally amounting to 90,000 TPA. The industry proposed to increase their production capacity of MS ingots to billets from 30,000 TPA to 1,91,000 TPA and TMT rods from 60,000 to 1,80,000 TPA.

3) It is submitted that the industry had been established as early as in the year 2006 and due Consent to Establish and Operate have been obtained on 27.03.2006 both under Air and Water Act**(Annexure-1)**. The consent order had been renewed periodically from time to time. The consent order dated 17/04/2017 **(Annexure-2)** was granted for production of 5000 T/M of MS Rods Channels Angles and 2500 T/M for MS Ingots with validity up to 31/03/2020.

4) It is further submitted that well before the EIA notification prescribing the threshold limit of 30000 TPA under Entry 3(a), this respondent had obtained consent for production of 5000 T/M which is about 50000 TPA vide Consent order dated 05/03/2008 issued by the TNPCB. **(Annexure-3).** The Consent has been periodically renewed thereafter.

5) As stated already the industry proposed to expand their production capacity and accordingly submitted an application on 09.09.2020 **(Annexure-4)** to Ministry of Environment, Forest and Climate Change in Form-I and

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

sought for Terms of Reference (ToR). The project falls under item 3 (a) -"Metallurgical industries(ferrous and non ferrous) in the schedule of EIA notification dated 14.09.2006.

6) The project falls under category B. However since the interstate boundary is falling within 5Km radial distance from the proposed project site, the project is required to be considered as category A for which Environmental Clearance is necessary from MOEF &CC.

7) After due consideration of the application, the EAC issued ToR on 22.10.2020 **(Annexure-5)**regarding the above proposal directing the project proponent to prepare EIA report and complete the process of public consultation for the purpose of processing their application further.

8) Accordingly the industry prepared a detailed Environmental Impact Assessment Report **(Annexure-6)**through their NABET Accredited Environmental Consultant M/s. ABC Techno Labs India Private Limited in respect of the proposed expansion of the existing steel rolling mill at 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A & 292/5B of

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

Kalugondapalli Village, DenkanikottaTaluk, Krishnagiri District. Public hearing was conducted in respect of the project for the proposed expansion on 11.08.2022**(Annexure-7)**. After submission of the EIA report, based on the deliberations made by EAC, the industry submitted various clarifications by their letter dated 30.05.2023.

9) After obtaining certified compliance report from the Tamil Nadu Pollution Control Board vide their letter dated 17.03.2023 **(Annexure-8)**regarding compliance of all conditions of consent to operate by the project proponent, there were furtherdeliberations by the committee after which the committee recommended grant of environmental clearance to the project vide proceedings of the 33rd EAC meeting held on 30.05.2023**(Annexure-9)**. Pursuant to the same MOEF & CC granted environmental clearance for the project by proceedings dated 19.07.2023 **(Annexure-10)**for the proposed expansion of the industry. A corrigendum was also issued on 01.09.2023 **(Annexure-11)**correcting the unit configuration and capacity as 1,91,000 of TPA of MS billet and 1,80,000 TPA of TMT rods.

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

10) The fourth respondent submits that the aforesaid environmental clearance granted by MOEF and CC has been now challenged by the applicants who claim to be permanent resident of Kalugondapalli Village and alleged to be affected by the proposed expansion.

11) At the outset it is submitted the above appeal itself is motivated and intended to stall industrial expansion of the fourth respondent industry who has been operating since the year 2006 in full compliance of all statutory norms. It is important to note that after filing this appeal on 25.09.2023, the same set of applicants have also filed O.A.No.56/2024 on 07.12.2024 as though the project proponent is undertaking production without environmental clearance. The very fact that the applicants are taking diametrically opposite stand in the application in comparison to the appeal, it is clear that the appeal as well as the applications are motivated and intended to harass the unit in order to make unfair gains.

12) The above appeal proceeds on the basis as through prior Environmental Clearance is mandatory in respect of the fourth respondent industry. The appeal itself is filed on the misconceived notion that when the industry with the existing capacity has no Environmental clearance it is not open to the MOEF&CC to consider expansion.

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

13) The fourth respondent industry applied for grant of Environmental Clearance in the year 2018 as falling under item 3 (a) of the schedule to the EIA notification 2006 dealing with Metallurgical industries (ferrous and non ferrous).

14) It is submitted that the question as to whether the steel rolling mills would fall under the secondary metallurgical industries whereby the EIA notification as above would become applicable was itself undecided for a long time. while many steel rolling mills including the fourth respondent industry were operating all over India after obtaining necessary consent order from the concerned State Pollution Control Board, the issue as to whether a prior Environmental Clearance is requi4ed was not clear. The issue relating to interpretation of item 3 (a) vis-a-vis the definition of "Metallurgical industries" directly arose for consideration in the case of GajubhaJesarJadejaVs Union of India and others.

15) In the above case the Hon'ble National Green Tribunal (WZ) Bench was concerned with an industry manufacturing cold rolled stainless steel without Environmental Clearance. The Joint Committee appointed by the Bench filed a report stating that opinion on

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

applicability on Environmental Clearance to the aforesaid process can be given only by MOEF with reference from EIA Notification 2006 as amended on 01.12.2009 and definition of Secondary Metallurgical Processing Industries as given in EIA guidance manual prepared by IL &FS Eco smart Ltd.,

16) A letter dated 14.08.2019 issued by MOEF to SEIAA Chhattisgarh was also produced where it is stated that Re rolling would be classifiable as a Secondary Metallurgical Industry as per technical EIA guidance manual. At the same time those projects involving operation of various types of furnaces with capacity of more than 30,000 tons P/A (TPA) would require Environmental Clearance. The Hon'ble Bench also sought for further clarification from MOEF in this regard.

17) The minutes of reconstituted EAC was placed before the Hon'ble Bench which stated that there is a scope and need for further clarification in the following issues:

a) Definition of Secondary Metallurgical units for the purpose of EIA process
b) Classification about the types of Furnaces
c) Clarifying Re-rolling Vs Cold Rolling.

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

18) The report further stated that considering many similar units are established or operating under CTE/CTO obtained from the respective SPCB's a period of one year may be allowed for conversion to Environmental Clearance. The EAC recommendations were accepted by MOEF through its affidavit filed on 07.02.2020 before the Hon'ble Bench which agreed for a period of one year to be allowed to the units, ministry will also constitute an expert committee other than having EAC having metallurgical expert for their recommendations. Recording this, said original application viz., O.A.No.55/2019 (Western Zone) was disposed of by order dated 12/02/2020 **(Annexure-12)**.

19) The above order of the Hon'ble Tribunal was taken up to Hon'ble Supreme Court in Civil Appeal No.3116/2020 by the applicant before the Tribunal stating that NGT had no jurisdiction to grant any time for obtaining Environmental Clearance. It was brought to the notice of the Hon'ble Supreme Court during the hearing of the appeal that Ministry had issued a notification viz., S.O.3250 (E) dated 20.07.2022 **(Annexure-13)**wherein MOEF stated that Re-Rolling operation would fall under the purview of Secondary Metallurgical Processing Industry and as such would require environmental clearance. By the same notification MOEF granted time of

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

one year from the date of notification to the industries to apply for grant of ToR.

20) The Hon'ble Supreme Court after noting that there are about 1689 similar re-rolling/cold rolling in the country which have been set up without obtaining prior environmental clearance has there was an ambiguity whether such rolling steel mills are required to obtain prior Environmental Clearance. The Hon'ble Supreme Court concluded that there was no error in the order passed by the NT (WZ) and further observed that only because an ambiguity earlier which was removed by MOEF notification dated 20.07.2022 the Hon'ble Tribunal had granted time to the project proponent therein to comply with an requirement of Environmental clearance. After referring to various judgments of Hon'ble Supreme Court itself, the Hon'ble Supreme court upheld the order of the Hon'ble Tribunal and dismissed the Civil Appeal by judgment dated 10/08/2022 **(Annexure-14)**and also held that the order of closure issued in respect of that unit cannot be sustained.

21) In the instant case the fourth respondent industry had applied for Environmental Clearance as early as on 30.07.2018 itself, resubmitted on 30.06.2020 and again

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

resubmitted on 19.05.2023. After various clarifications and deliberations the MOEFfinally granted Environmental Clearance to the fourth respondent industry on 19.07.2023 which is impugned in the present appeal.

22) As already stated the ambiguity relating to requirement of prior environmental clearance for re-rolling mills such as the fourth respondent was finally settled only by the notification dated 20.07.2022 issued by MOEF which itself granted one more year's time to apply for Environmental Clearance to enable all relevant industries to come within the regulatory regime. Under such circumstances, it is not correct on the part of the appellant to contend that the fourth respondent ought to have obtained Environmental Clearance in the year 2017 itself and therefore there is violation. Such a contention cannot be accepted in the light of the MOEF notification dated 20.07.2022 and also the judgment of the Hon'ble Supreme Court in C.A.No.33116/2020 dated 10.08.2022.

23) In fact, subsequently, the MoEF has further amended the S.O.3250(E) dated 20/07/2022 by way of another Notification in S.O.3372(E) dated 26/07/2023 **(Annexure-15)**whereby the period granted for application for grant of ToR stands extended as "One year

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

and six months" instead of "One year" as originally prescribed.

24) In respect of other allegations made in the application it is submitted as follows:

a) there is no question of any concealment of information in Form 1 as alleged in the appeal.

b) thejudgments referred to with respect of obtaining Environmental Clearance are irrelevant to the facts and circumstances in view of the judgment of the Hon'ble NGT (WZ) and the Hon'ble Supreme Court on the issue on hand as stated supra.

c) the OM dated 07.07.2021 has no application to the instant case and at any event the same has been challenged before the Hon'ble Supreme Court and interim stay of the operation of the said OM has been granted by the Hon'ble Supreme Court.

d) Pages 37-38 point out the details of other industries present within 10 kms.

e) Pages 31-32 of the EIA report give details of the water bodies.

f) cumulative assessment of impact of pollution has been done taking into account all factors within 10 km. radius. The methodology adopted would testify this position.

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

25) It is submitted that the Appeal has been filied on imaginary grounds without ascertaining the factual position and on deliberatemisreading and mis-interpretation of the EIA report and the deliberations of the EIA report and the recommendations of the EAC before granting the Environmental Clearance to this respondent.

It is therefore prayed that this Hon'ble Tribunal may be pleased to dismiss Appeal No.31 of 2023 with costs and thus render justice.

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

Counsel for 4th Respondent

4th Respondent

VERIFICATION

I, Jayesh Agarwal Director, Authorized Signatory of M/s. MeenakshiUdyog (India) Private Limited, the 4th Respondent herein do hereby verify that what are all stated above are true and correct to the best of my knowledge, information and belief.

Verified at 31st on this the day of August 2024

For MEENAKSHI UDYOG (INDIA) PVT. LTD.,

Director

4th Respondent

Annexure - I

Air

TAMIL NADU POLLUTI

By Registered Post with
Acknowledgement Due
(This document contains 0 Pages)

TAMILNADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. : 16600 Dated 27/03/2006

Proceedings No. : T7/TNPCB/F022895/KGI/RM/A Dated 27/03/2006

Consent for Existing / New operation of the plant under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended.

Sub : TAMIL NADU POLLUTION CONTROL BOARD - CONSENT -
MESSERS MEENAKSHI UDYOG (INDIA) PVT. LTD.,
S.NO.292/4A,4B, 291/3, 292/5, 291/1,
292/2A, 291/2B, KALUKONDUPATTI VILLAGE,
DENKANIKOTTAI TALUK,
KRISHNAGIRI DISTRICT.
for the existing/new operation of the plant under Section 21
of the Air (Prevention and Control of Pollution) Act.1981
as amended.

Ref : 1.YOUR APPLICATION NO.61164 DT.26.7.2004
2.PROC.NO.T5/TNPCB/F022895/RM/KGI/A/2004 DT.5.10.04
3.IR NO.BEE/TNPCB/HSR/F21/RM/2006 DT.6.1.06

Board Resolution No : dated / /

CONSENT is hereby granted under Section 21 of the Air (Prevention and Control of Pollution Act, 1981 (Central Act 14 of 1981) as amended (hereinafter referred to as 'The Act') and the rules and orders made thereunder to

THE DIRECTOR,
M/s. MEENAKSHI UDYOG (INDIA) PVT. LTD.,
S.NO.292/4A,4B, 291/3, 292/5, 291/1,
292/2A, 291/2B, KALUKONDUPATTI VILLAGE,
DENKANIKOTTAI TALUK,
KRISHNAGIRI DISTRICT.
(hereinafter referred to as 'The Applicant') authorising him/her/them to operate his/her/their industrial plant in the Air Pollution Control Area as notified by the Government and to continue to make existing discharge of emission/make new discharge of emissions from the stacks/chimneys.

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 Special and General Conditions annexed.

This CONSENT is valid for a period ending with the 31st day of March 2007
(Thirty first day of March Two Thousand Seven)

For ~~MEMBER SECRETARY~~ Chairman
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

N CONTROL BOARD

To

THE DIRECTOR,
M/S.MEENAKSHI UDYOG (INDIA) PVT. LTD.,
NO.19, III FLOOR, ALSAMALL,
4, MONTIETH ROAD, EGMORE,
CHENNAI-600 008.

Copy to : The District Environmental Engineer, Tamil Nadu Pollution Control Board
HOSUR
for information and necessary action

Copy to : The Joint Chief Environmental Engineer, Tamil Nadu Pollution Control Board

Copy to : The Commissioner/~~Executive Officer/District~~ Collector
THENI PANCHAYAT UNION, KRISHNAGIRI DISTRICT.

TAMIL NADU POLLUTI

SPECIAL CONDITIONS

1. Details of the products manufactured

SL.NO.	DESCRIPTION	QUANTITY/MONTH
(1)	(2)	(3)
1.	M.S. INGOTS	2500 MT/M

This consent is valid for the manufacture of Products and the rate of production mentioned above. Any change in the quantity or quality of the products has to be brought to the notice of the Board and fresh Consent has to be obtained.

2. Emission is permitted through the following chimneys/stacks and shall not exceed the figures indicated :

Chimney / Stack Number	Description of Chimney / Stack	Maximum discharge in m3/hour	Point of discharge (Height) in mts.
(1)	(2)	(3)	(4)
01.	ATTACHED TO INDUCTION FURNACE-I	-	17.0M
02.	ATTACHED TO INDUCTION FURNACE-II	-	17.0M

N CONTROL BOARD

3(a) The emissions shall not contain constituents in excess of the tollerance limits as laid down hereunder,

Serial Number	Para-meter	Unit	Tolerance Limits					
			CHIMNEY / STACK NUMBER					
(1)	(2)	(3)	(4)					
			(i)	(ii)	(iii)	(iv)	(v)	(vi)
1.	SO2		THE UNIT SHALL ADHERE TO THE STANDARDS					
2.	CO		PRESCRIBED BY THE BOARD FROM TIME TO					
3.	NOx		TIME					
4.	SPM							
5.	CL2							

3(b) The ambient air in the industrial plant area shall not contain constituents in excess of the tolerance limits prescribed below :

Serial Number (1)	Pollutant (2)	Time Weighted average (3)	Unit (4)	Tolerance Limits (5)
1.	Sulphur Dioxide (SO2)	Annual average	microgram / m3	60
		24 Hours	microgram / m3	80
2.	Oxides of Nitrogen as NOx	Annual average	microgram / m3	60
		24 Hours	microgram / m3	80
3.	Suspended particulate Matter (SPM)	Annual average	microgram / m3	140
		24 Hours	microgram / m3	200
4.	Respirable particulate Matter size less than 10 micron (RPM)	Annual average	microgram / m3	60
		24 Hours	microgram / m3	100
5.	Lead (Pb)	Annual average	microgram / m3	0.75
		24 Hours	microgram / m3	1.0
6.	Carbon monoxide (CO)	8 Hours	microgram / m3	2000
		1 Hour	microgram / m3	4000

3(c). The ambient noise level in the industrial plant area shall not exceed the limits prescribed below.

Limits in dB(A)	Day Time (6 A.M. to 10 P.M.)	Night time (10 P.M. to 6 A.M.)
	55	45

4. All units of the air pollution control equipment required to achieve the quality of the emissions to the tolerance limits prescribed above shall be completed within months from the date of this order or before or along with the commissioning of production.

5. The applicant shall provide port holes for sampling the emission & access-platform for carrying out stack sampling and provide electrical outlet points and other arrangements for Chimneys / stacks and other sources of emissions so as to collect samples of emission by the Boar or the applicant at any time in accordance with the provisions of the Act or Rules made therein

6. The applicant shall at his own cost get the samples of emission collected and analysed by the TNPC Board Laboratory every month for the parameters indicated in conditions No.3(a) and shall furnish in triplicate the report thereof to the Board by the 10th of succeeding month.

7. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished, in the application will also be ground for review/variation/revocation of the Consent Order under Section 21 of the Act to make such deviation as deemed fit for the purpose of the Act.

8. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without previous written permission of the Board.

9. The applicant shall provide and maintain at his own cost one/two/three ambient air quality monitoring stations for monitoring suspended particulate matter, Sulphurdioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-monoxide and monitor the same all in a day, once in a week/ fortnight/month. The data collected shall be maintained in a register and a monthly extract furnished to the Board.

10. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily readings shall be recorded and the extract sent to the Board once in a month.

11. The applicant shall forward the following information to the Member Secretary, Tamil Nadu Pollution Control Board, Madras regularly before 10the of every month.

(a) Progress on the installation of Air Pollution Control equipments.
(b) Progress on the procurement and installation of equipments for monitoring ambient air quality, stacks, chimneys and meteorological data.

(c) Monthly extract of daily discharge of emission through each chimney/stack.
(d) Report of Analysis of stack monitoring, ambient air quality monitoring, meterological data as required under Conditions.....
(e) Progress on planting of trees and plants as referred to under General Conditions No.8.

12. Any upset conditions if any of the plant/plants of the factory which is likely to result in increased emissions and/or result in violation of the standards mentioned above shall be reported to the Head Quarters and District Environmental Engineer's Office/Regional Joint Chief Environmental Engineer's Office of the Board telegraphically.

ION CONTROL BOARD

13. The applicant shall furnish to the Visiting Officer of the Board any information regarding the stack monitoring system / or operation of the plant or any other particulars as may be pertinent in preventing and controlling of pollution of Act.

14. The Applicant shall submit process flow sheet and particulars of proposed control equipments, monitoring equipments and time schedule for completing the installation of the same so as to reach the Board within 30 days from the date of receipt of this order.

15. The conditions imposed as above shall continue in force until revoked under Section 21 of the Act.

(Continued in Annexure)

TAMIL NADU POLLUT

GENERAL CONDITIONS

1. The applicant shall make an application for grant of fresh consent atleast 60 days before the date of expiry of this Consent Order.

2. The necessary fee, as prescribed for obtaining consent, shall be paid for by the applicant along with the application for consent.

3. The industry shall immediately submit the revised application for Consent to this Board in the event of any change in the quantity / quality of raw material, manufacturing process, rate of emissions, air pollution control equipment etc.

4. The applicant shall either :
   (a) 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.

   (b) 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 productions and/or all emissions in order to maintain compliance with the terms and conditions of this Consent.

5. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.

6. The liquid effluent arising out of the operation of the air pollution control equipment shall also be treated in a manner and to the satisfaction of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 as amended.

7. The solid waste, such as sweepings, wastage, package, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plant shall be disposed off scientifically to the satisfaction of the Board, so as not to cause fugitive emission, dust problems, or water pollutions problem through leaching etc of any kind.

8. The applicant shall plant a minimum of three varieties of trees (Eucalyptus, Subabul and any other suitable variety) at the density of not less than 1,000 trees per acre of land. The plantation is stipulated over and above the bulk plantation of trees on that areas and maintain them.

9. The applicant shall provide all facilities for collection of sample to the Board staff.

10. The stack monitoring system employed by the applicant shall be open for inspection of this Board at any time.

11. There shall not be any fugitive or episodal discharge from the premises.

12. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in special conditions No.3(a).

13. The applicant shall at all times maintain in good working order and operate as efficiently as possible all pollution control facilities to achieve the terms and conditions of the Consent.

14. The issue of this Consent does not cover any property right in either real or personal property or any exclusive privileges nor does it authorise any injury to private property or any invasion of personal rights, or any infringement of Central, State Laws or regulations.

15. The applicant shall keep the premises of the industrial plant and air pollution equipments clean and make all hoods, pipes, valves stacks / chimneys leak proof. The air pollution control equipments, location inspection chambers, sampling port holes shall be made easily accessible at all time.

16. The applicant shall display this Consent granted to him in a prominent place for perusal of the inspecting officers of this Board.

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

18. If due to any technological improvements or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall, after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

19. The applicant, his/her/their legal heirs/representatives or assignees shall have no claim whatsoever to the continuation or renewal of this Consent after the expiry of the period of this consent.

20. The Board reserves the right to review, impose additional conditions or conditions, revoke change or alter the terms and conditions of this consent.

For ~~MEMBER SECRETARY~~ Chairman
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI-32

TAMIL NADU POLLUTION CONTROL BOARD
76 Mount Road, Guindy, Chennai 600 032

CONSENT TO OPERATE UNDER AIR (P&CP) Act, 1981,

AS AMENDED CONSENT ORDER NO.16600, Dated 27-3-2006.

ANNEXURE-I

SPECIAL CONDITIONS

16.The unit shall maintain and operate the APC measures effectively and continuously.

17.the unit shall adhere to the Ambient Air Quality/emission standards prescribed by the Board.

for CHAIRMAN
TNPC BOARD-CHENNAI-32.

Water

TAMIL NADU POLLUT

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TAMILNADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. : 20567 dated 27/03/2006

Proceedings No. : T7/TNPCB/FO22895/KGI/RM/W dated 27/03/2006

Consent for Existing/New or Altered outlet/discharge of sewage and/or trade effluent under Section 25/26 of the WATER (Prevention and Control of Pollution) Act, 1974 as amended.

Sub : TAMIL NADU POLLUTION CONTROL BOARD - CONSENT
MESSERS MEENAKSHI UDYOG (INDIA) PVT. LTD.,
S.NO.292/4A,4B, 291/3, 292/5, 291/1,
292/2A, 291/2B, KALUKONDUPATTI VILLAGE,
DENKANIKOTTAI TALUK,
KRISHNAGIRI DISTRICT.

for the discharge of sewage and/or trade effluent under Section 25/26 of the WATER (Prevention and Control of of Pollution) Act, 1974 (Central Act, 6 of 1974) as amended.

Ref : 1.YOUR APPLICATION NO.61164 DT.26.7.2004
2.PROC.NO.T5/TNPCB/FO22895/RM/KGI/W/2004 DT.5.10.04
3.IR NO.DEE/TNPCB/HSR/F21/RM/2006 DT.6.1.06

Board Resolution No : DATED : / /

CONSENT is hereby granted under Section 25/26 of the WATER (Prevention and Control of Pollution Act, 1974 (Central Act 6 of 1974) as amended (hereinafter referred to as 'The Act') and the rules and orders made thereunder to

THE DIRECTOR,
M/s. MEENAKSHI UDYOG (INDIA) PVT. LTD.,
S.NO.292/4A,4B, 291/3, 292/5, 291/1,
292/2A, 291/2B, KALUKONDUPATTI VILLAGE,
DENKANIKOTTAI TALUK,
KRISHNAGIRI DISTRICT.

(hereinafter referred to as 'The Applicant') authorising him/her/them to continue to or bring into make new discharge or use new/altered outlet for discharge of sewage and/or trade effluent.

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 Special and General Conditions annexed.

This CONSENT is valid for a period ending with the 31st day of March 2007
(Thirty first day of March Two Thousand Seven)

For ~~MEMBER SECRETARY~~
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

5/4/06

CONTROL BOARD

To

THE DIRECTOR,
M/S.MEENAKSHI UDYOG (INDIA) PVT. LTD.,
NO.19, III FLOOR, ALSAMALL,
4, MONTIETH ROAD, EGMORE,
CHENNAI-600 008.

Copy to : The District Environmental Engineer, Tamil Nadu Pollution Control Board
HOSUR
for information and necessary action

Copy to : The Joint Chief Environmental Engineer, Tamil Nadu Pollution Control Board

Copy to : The Commissioner/~~Executive Officer/District~~ Collector
THENI PANCHAYAT UNION, KRISHNAGIRI DISTRICT

TAMIL NADU POLLUT

SPECIAL CONDITIONS

1. Details of the products manufactured

SL.NO.	DESCRIPTION	QUANTITY/MONTH
(1)	(2)	(3)
	1. M.S. INGOTS	2500 MT/M

This consent is valid for the manufacture of Products and the rate of production mentioned above. Any change in the quantity or quality of the products has to be brought to the notice of the Board and fresh Consent has to be obtained.

2. Discharge of effluent is permitted from the following outlets. The quantity of effluent discharged shall not exceed the figures mentioned below :

Outlet Number	Description of Outlet	Maximum daily discharge (in lit./day)	Point of Disposal (Height) in mts.
(1)	(2)	(3)	(4)
	1.SEWAGE	600	ON UNIT'S LAND
	2.TRADE EFFLUENT	20	SOLAR EVAPORATION

CONTROL BOARD

3. The effluent discharge shall not contain constituents in excess of the tolerance limits as laid down hereunder.

Serial Number	Characteristics	Unit	Tolerance Limits						
			Outlet No.						
(1)	(2)	(3)	(4)						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	pH.	Number	5.5 - 9			5.5 - 9			
2.	Temperature	C				40 DEG.C AT THE POINT OF DISCHARGE			
3.	Particles size of total Suspended solids.	mm/micron				SHALL PASS 850 MICRON IS SIEVE			
4.	Total suspended solids	mg/l	30			100			
5.	Total dissolved solids (Inorganics)	mg/l				2100			
6.	Chloride as (Cl)	mg/l				1000			
7.	Sulphide as (S)	mg/l				2			
8.	Sulphate as (SO4)	mg/l				1000			
9.	Fluoride as (F)4)	mg/l				2			
10.	Ammoniacal Nitrogen as(N)	mg/l				50			
11.	Sodium	%				-			

Serial Number	Characteristics	Unit	Tolerance Limits						
			Outlet No.						
(1)	(2)	(3)	(4)						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
12.	Copper as (Cu)	mg/l				3			
13.	Zinc as (Zn)	mg/l				1			
14.	Phenolic Compounds as (C6 H5 OH)	mg/l				1			
15.	Oil and grease	mg/l				10			
16.	Boron as (B)	mg/l				2			
17.	BOD 5 days @ 20 C	mg/l	20			30			
18.	COD	mg/l				250			
19.	Total Residual Chlorine	mg/l				1			
20.	Arsenic as (As)	mg/l				0.2			
21.	Cadmium as (Cd)	mg/l				2			
22.	Total Chromium as (Cr)	mg/l				2			
23.	Chromium as (hexavalent Cr+6)	mg/l				0.1			

Serial Number	Characteristics	Unit	Tolerance Limits						
			Outlet No.						
(1)	(2)	(3)	(4)						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
24.	Lead as (Pb)	mg/l				0.1			
25.	Selenium as (Se)	mg/l				0.05			
26.	Mercury as (Hg)	mg/l				0.01			
27.	Pesticides					ABSENT			
28.	Alpha emitters	micro Curie/ml				TEN TO THE POWER OF-7			
29.	Beta emitters	micro Curie/ml				TEN TO THE POWER OF-6			
30.	Free Ammonia as (NH3)	mg/l				5			
31.	Dissolved Phosphates as (P)	mg/l				5			
32.	Total Kjeldahl Nitrogen as (N)	mg/l				100			
33.	Cyanide as (CN)	mg/l				0.2			
34.	Nickel as (Ni)	mg/l				3			
35.	Residual Sodium Carbonate	mg/l				-			

TAMIL NADU POLLUT

4. All units of the sewage/trade effluent treatment plant to achieve the quality of the effluent according to the tolerance limits prescribed above shall be completed within months from the date of this order or before or along with the commissioning of production

5. Meters must be affixed at the entrance of the water supply connection 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.

6. Separate meters with necessary pipe - line for assessing the quantity of water used for of the purposes mentioned below :

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

   b. Domestic purpose.

   c. Process.

   d.

   e.

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

8. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice, from the particulars furnished in the application will also be ground for review/variation / revocation of the Consent Order under section 27 of the Act and to make such variation as deemed fit for the purpose of the Act.

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

10. The applicant shall comply with and carryout directives/orders issued by the Board in this Consent Order and at all subsequent times without any negligence on his/her/their part. The applicant shall be liable for such legal action as per provisions of the Law/ 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.

11. The following information shall be forwarded to the Member - Secretary regularly on or before 10th of every month :

    a. Progress on the installation of effluent treatment plant :

    b. Progress on the installation of Mechanical compost sampling equipment and continuous flow recording/measuring devices.

    c. Monthly Statement of daily discharge of sewage as well as trade effluent.

ON CONTROL BOARD

12. 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 violation of the standards mentioned above shall be reported to the Head Quarters and District Environmental Engineer's office/ Regional Joint Chief Environmental Engineer's Office of the Board telegraphically.

13. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment plant and any other particulars as may be pertinent to preventing and controlling pollution of water.

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

15. The conditions imposed as above shall continue in force until revoked under section 27(2) of the Act.

16. The industry has to ensure that minimum three varieties of trees (Eucalyptus, Subabul and any other suitable variety) are planted at the density of not less than 1,000 trees per acre of land. The trees may be planted along the boundaries of the industry of industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area and maintain them.

(Continued in Annexure-I)

GENERAL CONDITIONS

1. The applicant shall make an application for grant of fresh consent atleast 60 days before the date of expiry of this Consent Order.

2. The industry would immediately submit revised application for Consent to this Board in the event of any change in the quantity and quality of raw material/end products/ manufacturing process or quantity/quality of the effluent, etc.

3. 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 area into which the effluents are being discharged is not fit for the domestic use/bathing.

4. The applicant shall either :
   a. 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.

   b. Not later than 30 days from the date of this Consent, certify in writing to the Member Secretary that upon the retuction, loss or failure of any 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.

5. The applicant shall not allow the discharge from other premises to mix with the discharge from his/her/their premises.

6. Storm water shall not be allowed to mix with the sewage and/or trade effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.

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

   (i) Land fill, 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 biodegradable material.

8. Any toxic material shall be detoxified otherwise be sealed in steel drums and burried in protected areas after obtaining approval of this Board in writing. The detoxification or sealing and burying shall be carried out in the presence of Board's authorised persons only.

9. 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.

10. The applicant shall provide all facilities to the Board staff for collection of samples.

11. The applicant shall at all times maintain in good working order and operate efficiently all treatment or control facilities or systems installed or used by him to satisfy the terms and conditions of the Consent.

12. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorise any injury to private property or any invasion of personal rights nor any infringement of Central. State laws or regulation.

13. This Consent does not authorise or approve the construction of any physical structures or facilities or the undertaking of any work in any natural water course.

14. Non - compliance with effluent limitations.
(a) If for any reason the applicant does not comply with or will be unable to comply with any effluent limitations specified in this Consent, the applicant, shall immediately notify the Consent issuing authority by telephone and provide the Consent issuing authority with the following information in writing within 5 days of such notifications:

i) Cause for Non - compliance.
ii) A description of the non-complied discharge including its impact upon the receiving waters.
iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration of period of non-compliance.
iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
v) Steps taken by the applicant to prevent recurrence of condition of non-compliance.

(b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this Consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

(c) Nothing in this Consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his/her/their control, such as break-down, electric failure, accident or natural disaster.

15. The diversion or by-pass of any discharge from facilities utilised by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except :
i) Where unavoidable to prevent loss of life or severe property damage or
ii) Where excessive storm damage or run off would damage any facilities necessary for compliance with terms and conditions of this Consent. The applicant shall immediately notify the Board in writing of each diversion or by-pass in accordance with procedure specified as under item No.14.

16. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approved Laboratory of the Board every month for the parameters indicated in Special condition No.3 and shall submit in duplicate the report there of to the Board.

17. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Curde practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilising poles for stirring etc., should not be resorted to.

TAMIL NADU POLLUT

18. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not to utilise as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.

19. The utilisation of treated effluent on factory's own lands, if any, should be complete and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or indirectly or by overflow.

20. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.

21. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.

22. The sludge from treatment units shall be dried in slude drying beds and the drained liquid shall be taken to equalisation tank.

23. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for :
(i) Rotation of crops.
(ii) Change of point of application of effluent on land.
(iii) A portion of land kept fallow.

The adoption of these would avoid soil becoming sick or stale. The industry may ensure this in consultation with the Agricultural Department.

24. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the ryots in the surrounding areas as a result of discharge of sewage or trade effluent.

25. The effluent treatment units and disposal measures, shall become operative at the time of commencement of production.

26. The fact of commissioning of the industry shall be intimated to this office within one week of commissioning.

27. The unit has to ensure that the agency to whom the disposal of solid waste/sludge arising from the process/treatment is entrusted, shall obtain the permission of Tamil Nadu Polluti Control Board under Section 24 of the Water (Prevention and Control Of Pollution) Act, 1974 before the disposal.

28. The unit has to putup Effluent Treatment Plant within the specified period indicated in Special Condition No.4 by engaging any one of the consultants approved by the Board and operate and maintain the Effluent Treatment Plant continuously and efficiently so that treated effluent satisfies the standards by the Board.

29. The applicant shall display this Consent granted to him in a prominent place for perusal of the inspecting officers of this Board.

For ~~MEMBER SECRETARY~~ Chairman
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

TAMIL NADU POLLUTION CONTROL BOARD
76 Mount Road, Guindy, Chennai 600 032

CONSENT FOR OPERATION UNDER WATER (P&CP) Act, 1974

AS AMENDED-CONSENT ORDER NO.20567, Dated 27.3.2006.

ANNEXURE-I

SPECIAL CONDITIONS

17.The unit shall dispose the sewage generated from the unit through the septic tank followed by dispersion trench arrangement.

18.The unit shall dispose the scrubber wastewater on impervious solar evaporation pan for achieving zero discharge of trade effluent The unit shall ensure that no trade effluent shall be generated from the process.

19.The unit shall dispose the solid waste like slag, spent ceramic as land fill

Note: Sl.No.4 to 7,11 of Special conditions and
Sl.No.4, 16,18 to 21, 23 of General conditions are not applicable.

for CHAIRMAN
TNPC BOARD, CHENAI-32

Consent: Air & Water
Period: 2007 - 2008

Annexure - 2

TAMIL NADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. 170528826199 DATED: 17/04/2017.

PROCEEDINGS NO.F.0715HSR/OL/DEE/TNPCB/HSR/A/2017 DATED: 17/04/2017

SUB: Tamil Nadu Pollution Control Board –CONSENT TO OPERATE –DIRECT -M/s. MEENAKSHI UDYOG (INDIA) PVT LTD , S.F.No. 291/1,2A, 2B&3A & 292/4A, 4B&5A, KALUGONDAPALLI villageDenkanikottai Taluk and Krishnagiri District - Consent for operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) –Issued- Reg.

REF: 1. Your Application for CTO No: 8826199 dated. 10/04/2017.
2. IR.No : F.0715HSR/OL/AE/HSR/2017 dated 11/04/2017.
3. Minutes of the 35th ZLCCC meeting dated. 12/04/2017 [Item No. VLR 35-12].

CONSENT TO OPERATE is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Managing Director,
M/s . MEENAKSHI UDYOG (INDIA) PVT LTD
S.F No.291/1,2A, 2B&3A & 292/4A, 4B&5A,
KALUGONDAPALLI Village,
Denkanikottai Taluk,
Krishnagiri District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2020

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

To
The Managing Director,
M/s.MEENAKSHI UDYOG (INDIA) PVT LTD,
RS No.291/1,2A, 2B&3A & 292/4A, 4B&5A , Kalukondapalli Village,Thali Panchayat Union , Denkanikottai Taluk, Krishnagiri District.,
Pin: 635114

Copy to:

1.The Commissioner, THALI-Panchayat Union, Denkanikottai Taluk, Krishnagiri District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Vellore for favour of kind information.
4. File

SPECIAL CONDITIONS

1. This consent to operate is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	M.SRods Channels Angles	5000	T/M
	Intermediate Product Details		
1.	MS Ingots	2500	T/M

2. This consent to operate is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

I	**Point source emission with stack :**			
Stack No.	**Point Emission Source**	**Air pollution Control measures**	**Stack height from Ground Level in m**	**Gaseous Discharge in Nm3/hr**
1	Induction Furnace-2 Nos	Common bag filter house and stack	18	
2	Reheating Furnace	Wet scrubber with stack	18	
0	Coal Pulveriser	Dust Collector with cyclone separator	0	
3	D G Set 65 KVA	Acoustic enclosures with stack	10	
II	**Fugitive/Noise emission :**			
Sl. No.	**Fugitive or Noise Emission sources**	**Type of emission**	**Control measures**	
1.	D.G set	Noise	Acoustic Enclosure	

3(a). The emission shall not contain constituents in excess of the tolerance limits as laid down hereunder :

Sl.	Parameter	Unit	Tolerance limits	Stacks

Annexure enclosed if applicable. :-

3.(b) The Ambient Air in the industrial plant area shall not contain constituents in excess of the tolerance limits prescribed below.

Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
1.	Sulphur Dioxide (SO2)	Annual 24 hours	microgram/m3 microgram/m3	50 80	20 80
2.	Nitrogen Dioxide (NO2)	Annual 24 hours	microgram/m3 microgram/m3	40 80	30 80
3.	Particulate Matter (Size Less than 10 micro M) or PM10	Annual 24 hours	microgram/m3 microgram/m3	60 100	60 100
4.	Particulate Matter (Size Less than 2.5 micro M) or PM2.5	Annual 24 hours	microgram/m3 microgram/m3	40 60	40 60
5.	Ozone (O3)	Annual 24 hours	8 Hours 1 Hour	100 180	100 180

Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
6.	Lead (Pb)	Annual 24 hours	microgram/m3 microgram/m3	0.5 1.0	0.5 1.0
7.	Carbon Monoxide (CO)	8 Hours 1 Hour	miligram/m3 miligram/m3	02 04	02 04
8.	Ammonia (NH3)	Annual 24 hours	microgram/m3 microgram/m3	100 400	100 400
9.	Benzene (C6H6)	Annual	microgram/m3	5	5
10.	Benzo(O) Pyrene (BaP) –particulate phase only	Annual	nanogram/m3	01	01
11.	Arsenic (As)	Annual	nanogram/m3	06	06
12.	Nickel (Ni)	Annual	nanogram/m3	20	20

3(c) The Ambient Noise Level in the industrial plant area shall not exceed the limits prescribed below:

Limits in L.eq.-dB(A)	Day Time	Night Time
ResidentialArea	**55**	**45**

4. All units of the Air pollution control measures shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl. No.3 above.
5. The occupier shall not change or alter quality or quantity or the rate of emission or replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in change in quality and/or quantity of emissions without the previous written permission of the Board.
6. The occupier shall maintain log book regarding the stack monitoring system or operation of the plant or any other particulars for each of the unit operations of air pollution control systems to reflect the working condition which shall be furnished for verification of the Board officials during inspection.
7. The occupier shall at his own cost get the samples of emission/air/noise levels collected and analyzed by the TNPC Board Laboratory once in every 6 months/once in a year/periodically for the parameters as prescribed.
8. Any upset condition in any of the plants of the factory which is likely to result in increased emissions and result in violation of the standards mentioned in Sl.No.3 shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
9. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.

Additional Conditions:

1. The unit shall operate and maintain the APC measures efficiently and continuously so as to achieve the AAQ/emission standards prescribed by the board.
2. The operation of the unit shall not evoke complaint from neighbours.
3. The unit shall continue to develop green belt within the premises by planting 2m tall tree saplings.
4. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in production quantity and emission.
2. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished, in the application will also be ground for review/variation/revocation of the Consent Order under Section 21 of the Act.
3. The conditions imposed shall continue in force until revoked under Section 21 of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Air (Prevention and Control of Pollution) Act, 1981 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Air Pollution Control measures sufficient to ensure continuous operation of all pollution control equipments to ensure compliance.
7. The occupier shall provide all facilities to the Board officials for collection of samples in and around the factory at any time.
8. The applicant shall display the flow diagram of the sources of emission and pollution control systems provided at the site.
9. The liquid effluent arising out of the operation of the air pollution control equipment shall also be treated in a manner and to the satisfaction of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 as amended.
10. The air pollution control equipments, location of inspection chambers and sampling port holes shall be made easily accessible at all time.
11. In case of any episodal discharge of emission, the industry shall take immediate action to bring down the emission within the limits prescribed by the Board.
12. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
13. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poromboke lands.
14. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.
15. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
16. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
17. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Air (Prevention and Control of Pollution) Act, 1981, as amended in Form-I alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
18. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.
19. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

** This consent order is computer generated by OCMMS of TNPCB and no signature is needed**

TAMIL NADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. 170518826199 DATED: 17/04/2017.

PROCEEDINGS NO.F.0715HSR/OL/DEE/TNPCB/HSR/W/2017 DATED: 17/04/2017

SUB: Tamil Nadu Pollution Control Board –CONSENT TO OPERATE – DIRECT -M/s. MEENAKSHI UDYOG (INDIA) PVT LTD , S.F.No. 291/1,2A, 2B&3A & 292/4A, 4B&5A, KALUGONDAPALLI villageDenkanikottai Taluk and Krishnagiri District - Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

Ref: 1. Your Application for CTO No: 8826199 dated. 10/04/2017.
2. IR.No : F.0715HSR/OL/AE/HSR/2017 dated 11/04/2017.
3. Minutes of the 35th ZLCCC meeting dated. 12/04/2017 [Item No. VLR 35-12].

CONSENT TO OPERATE is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Managing Director,
M/s . MEENAKSHI UDYOG (INDIA) PVT LTD
S.F No.291/1,2A, 2B&3A & 292/4A, 4B&5A,
KALUGONDAPALLI Village,
Denkanikottai Taluk,
Krishnagiri District.

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2020

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

To
The Managing Director,
M/s.MEENAKSHI UDYOG (INDIA) PVT LTD,
RS No.291/1,2A, 2B&3A & 292/4A, 4B&5A , Kalukondapalli Village,Thali Panchayat Union , Denkanikottai Taluk, Krishnagiri District.,
Pin: 635114

Copy to:

1.The Commissioner, THALI-Panchayat Union, Denkanikottai Taluk, Krishnagiri District .

2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.

3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Vellore for favour of kind information.

4. File

SPECIAL CONDITIONS

1. This consent to operate is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	M.SRods Channels Angles	5000	T/M
	Intermediate Product Details		
1.	MS Ingots	2500	T/M

2. This consent to operate is valid for operating the facility with the below mentioned permitted outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	Sewage	3.5	On Industrys own land
Effluent Type : Trade Effluent			
1.	Trade Effluent	0.5	Recycling to process

3. The effluent discharge shall not contain constituents in excess of the tolerance Limits as laid down hereunder.

Sl. No.	Parameters	Unit	TOLERANCE LIMITS - OUTLETS -Nos			
			Sewage	Trade Effluent		
			1	1		
1.	pH	-	5.5 to 9	5.5 to 9		
2.	Temperature	oC	-	shall not exceed 5°C above the receiving water temperature		
3.	Particle size of Suspended solids	-	-	shall pass 850 micron IS sieve		
4.	Total Suspended Solids	mg/l	30	100		
5.	Total Dissolved solids (inorganic)	mg/l	-	2100		
6.	Oil & Grease	mg/l	-	10		
7.	Biochemical Oxygen Demand (3 days at 27oC)	mg/l	20	30		
8.	Chemical Oxygen Demand	mg/l	-	250		
9.	Chloride (as Cl)	mg/l	-	1000		
10.	Sulphates (as SO4)	mg/l	-	1000		
11.	Total Residual Chlorine	mg/l	-	1		
12.	Ammonical Nitrogen (as N)	mg/l	-	50		
13.	Total Kjeldahl Nitrogen (as N)	mg/l	-	100		
14.	Free Ammonia (as NH3)	mg/l	-	5		
15.	Arsenic (as As)	mg/l	-	0.2		
16.	Mercury (as Hg)	mg/l	-	0.01		
17.	Lead (as Pb)	mg/l	-	0.1		
18.	Cadmium(as Cd)	mg/l	-	2		
19.	Hexavalent Chromium (as Cr+6)	mg/l	-	0.1`		
20.	Total Chromium (as Cr)	mg/l	-	2		
21.	Copper (as Cu)	mg/l	-	3		
22.	Zinc (as Zn)	mg/l	-	1		
23.	Selenium (as Se)	mg/l	-	0.05		
24.	Nickel (as Ni)	mg/l	-	3		
25.	Boron (as B)	mg/l	-	2		
26.	Percent Sodium	%	-	-		
27.	Residual Sodium Carbonate	mg/l	-	-		
28.	Cyanide (as CN)	mg/l	-	0.2		
29.	Fluoride (as F)	mg/l	-	2		
30.	Dissolved Phosphates(as P)	mg/l	-	5		
31.	Sulphide (as S)	mg/l	-	2		
32.	Pesticides	mg/l	-			
33.	Phenolic Compounds (as C6H5OH)	mg/l	-	1		
34.	Radioactive materials a) Alpha emitters	micro curie/ml	-	10-7		
35.	Radioactive materials b). Beta emitters	micro curie/ml	-	10-6		

4. All units of the sewage and Trade effluent treatment plants shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl No.3 above or to achieve the zero liquid discharge of effluent as applicable.

5. The occupier shall maintain the Electro Magnetic Flow Meters/water Meters installed at the inlet of the water supply connection for each of the purposes mentioned below for assessing the quantity of water used and ensuring that such meters are easily accessible for inspection and maintenance and for other purposes of the Act.
   a. Industrial Cooling, Spraying in mine pits or boiler feed.
   b. Domestic purpose.
   c. Process.
6. The occupier shall maintain the Electro Magnetic Flow Meters with computer recording arrangement for measuring the quantity of effluent generated and treated for the monitoring purposes of the Act.
7. Log book for each of the unit operations of ETP have to be maintained to reflect the working condition of ETP along with the readings of the Electro Magnetic Flow Meters installed to assess effluent quantity and the same shall be furnished for verification of the Board officials during inspection.
8. The occupier shall at his own cost get the samples of effluent/surface water/ground water collected in and around the unit by Board officials and analyzed by the TNPC Board Laboratory periodically.
9. Any upset condition in any of the plants of the factory which is, likely to result in increased effluent discharge and result in violation of the standards mentioned in Sl. No.3 above shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
10. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.
11. The occupier shall develop adequate width of green belt at the rate of 400 numbers of trees per Hectare.
12. The occupier shall provide and maintain rain water harvesting facilities.
13. The occupier shall ensure that there shall not be any discharge of effluent either treated or untreated into storm water drain at any point of time.
14. In the case of zero liquid discharge of effluent units, the occupier shall adhere the following conditions as laid under.

    i). The occupier shall ensure zero liquid discharge of effluent, thereby no discharge of untreated / treated effluent on land or into any water bodies either inside or outside the premises at any point of time.

    ii) The occupier shall operate and maintain the Zero liquid discharge treatment components comprising of Primary, Secondary and tertiary treatment systems at all times and ensure that the RO permeate/Evaporator condensate shall be recycled in the process and the final RO reject shall be disposed off with the reject management system ensuring zero liquid discharge of effluents in the premises.

    iii) The occupier shall operate and maintain the reject management system effectively and recover the salt from the system which shall be reused in the process if reusable or shall be disposed off as ETP sludge.

    iv) In case of failure to achieve zero discharge of effluents for any reason, the occupier shall stop its production and operations forthwith and shall be reported to the Member Secretary/Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.

    v) The occupier shall restart the production only after ascertaining that the Zero discharge treatment system can perform effectively for achieving zero discharge of effluents.

Additional Conditions:

1. The unit shall treat and dispose the sewage through septic tank, Dispersion trench / Soak pit arrangement.
2. The unit shall ensure that the wet scrubber bleed off is recycled back in the scrubber system after filtration.
3. The unit shall dispose the solid waste for further beneficial purpose only without accumulation within the unit premises.
4. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in Production quantity and change in sewage/Trade effluent.
2. This Consent is issued by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be ground for review/variation/revocation of the Consent Order under Section 27 of the Act and to make such variation as deemed fit for the purpose of the Act.
3. The consent conditions imposed in this order shall continue in force until revoked under Section 27(2) of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Water (Prevention and Control of Pollution) Act, 1974 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Effluent Treatment Plant sufficient to ensure continuous operation of all pollution control equipments to maintain compliance.
7. The occupier shall provide all facilities to the Board officials for inspection and collection of samples in and around the factory at any time.
8. The occupier shall display the flow diagram of the sources of effluent generation and pollution control systems provided at the ETP site.
9. The solid waste such as sweepings, wastage, package, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plant shall be collected in an earmarked area and shall be disposed off properly.
10. The occupier shall collect, treat the solid wastes like food waste, green waste generated from the canteen and convert into organic compost.
11. The occupier shall segregate the Hazardous waste from other solid wastes and comply in accordance with Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.
12. The occupier shall maintain good house-keeping within the factory premises.
13. All pipes, valves, sewers and drains shall be leak proof. Floor washings shall be admitted into the trade effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The occupier shall ensure that there shall not be any diversion or by-pass of trade effluent on land or into any water sources.
15. The occupier shall ensure that solar Evaporation pans shall be constructed in such a way that the bottom of the solar pan is at least 1 m above the Ground level (if applicable).
16. The occupier shall furnish the following returns in the prescribed formats to the concerned District office regularly.
    a) Monthly water consumption returns of each of the purposes with water meter readings in Form-I on or before 5th of every month.
    b) Yearly return on Hazardous wastes generated and accumulated for the period from 1st April to 31st March in Form–4 before the end of the subsequent 30th June of every year (if applicable).
    c) Yearly Environmental Statement for the period from 1st April to 31st March in Form –V before the end of the subsequent 30th September of every year(if applicable).
17. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
18. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poromboke lands.
19. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.
20. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
21. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.

22. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Water (Prevention and Control of Pollution) Act, 1974, as amended in Form-II alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.

23. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.

24. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

** This consent order is computer generated by OCMMS of TNPCB and no signature is needed**

TAMIL NADU POLLUTION CONTROL BOARD

By Registered Post with
Ack/Acknowledgement Due
(This document contains 4 Pages)

TAMILNADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. : 4317 DATED : 05/03/2008

Proceedings No. : T7/TNPCB/F.32382/RL/ERE(A)/2008 DATED : 05/03/2008

Consent for Establishment under Section 21 of the AIR (Prevention and control of Pollution) Act,1981, as amended in 1987.

Sub : TNPC Board - Consent for establishment
MESSERS Meenakshi Udyog (India) Pvt.Ltd.,
SF No.291/1,2A,2B &3A,292/4A,4B&5A,
Salukondapatti Village,
Denkanikottai Taluk,
Krishnagiri District

for the establishment or take steps to establish the industry under Section 21 of the AIR (Prevention and Control of Pollution) Act 1981 as amended in 1987

Ref : 1.Your Application No.11908, dt.29.10.2007
2.Lr.No.SEE/TNPCB/HSR/F.21/Par/2007,dt.30.10.07
3.Technical Sub Committee resolution vide TSC-II, Item No.28-9, dt.26.2.2008

BOARD RESOLUTION NO : DATED : / /

Consent to establish or take steps to establish is hereby granted under Section 21 of the AIR Prevention and Control of Pollution) Act, 1981 as amended in 1987 and the Rules and Orders made there under to
The Director,
M/s.Meenakshi Udyog (India)Pvt.Ltd.,

(hereinafter referred to as 'The Applicant') authorising him/her/them to establish or take steps to establish the industry in the site mentioned below)
SF No.291/1,2A,2B &3A,292/4A,4B&5A,
Salukondapatti Village,
Denkanikottai Taluk,
Krishnagiri District

This Consent to establish is valid for two years, or till the industry obtains consent to operate under Section 21 of the AIR (Prevention and Control of Pollution) Act, 1981 as amended in 1987 whichever is earlier.

19/3/08

For MEMBER SECRETARY
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

19/3/08

To

The Director,
M/s.Meenakshi Udyog (India)Pvt.Ltd.,
No.19, IIIrd Floor,Ahanali,
4, Nooltoth Road, Egmore,
Chennai-600 008

Copy to : The District Environmental Engineer, Tamil Nadu Pollution Control Board
Hosur

For information and necessary action.

Copy to : The Joint Chief Environmental Engineer, TNPCB.

Copy to : The Commissioner / Executive Officer,
Thally Panchyat Union,
Krishnagiri District

Spare :

Annexure - 5

TAMIL NADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS

1. Details of the products manufactured

SL.NO.	DESCRIPTION	QUANTITY/MONTH
(1)	(2)	(3)
1.	MS Rods: Channels/Angles	5.000T/M
Intermediate product: 1.	MS ingots	2500 T/M

This consent is to establish is valid for the manufacture of Products and the rate of production mentioned above. Any change in the quantity or quality of the products has to be brought to the notice of the Board.

2. The height of following chimneys/stacks shall not be less that the figures indicated below for the discharge of emissions.

Chimney/Stack Number	Description of Chimney / Stack	Point of discharge in Metre (Above ground level)
1.	Attached to Induction Furnace	18
2.	Attached to Induction Furnace	18
3.	Attached to Heating Furnace	18
4.	Attached to D.G.Set 63 KVA	10

3. The Unit shall install the following Air Pollution Control equipments / measures for the Control of emissions generated from the various sources of the plant.

a. For suspended particulate emission

Sl.NO.	SOURCE	DETAILS OF CONTROL OF EQUIPMENT
1.	Induction furance	Cyclone separation & next scrubber
2.	Induction furance	Cyclone separation & next scrubber
3.	Heating furnace	Wet scrubber

b. For Gaseous Emission :

Sl.NO.	SOURCE	DETAILS OF CONTROL OF EQUIPMENT
1.	Induction Furance	Cyclone separator & wet scrubber
2	Induction furnace	Cyclone separator & wet scrubber
3.	Heating furnace	Wet scrubber

TAMIL NADU POLLUTION CONTROL BOARD

C. For Fugitive Emissions :

SL.NO.	SOURCE	DETAILS OF CONTRO.

3. The Unit shall provide sensors connected with the Alarm System for the following locations in the plant.

Sl. No.	Location of the Sensor	No.of Sensor	Parameters

4. The Unit shall procure Number of equipments for Continuous monitoring of Ambient Air Quality in respect of the parameters

5. The unit shall procure Number of equipments for carrying out stacks monitoring for the SPM, SO2 Parameters and keep ready.

6. The unit shall provide on line / automatic continuous stack monitoring unit for the stacks mentioned below :

SL.NO.	SOURCE	STACK	PARAMETERS

8. The Unit shall provide port holes and sampling facilities for the following stacks as per the Central Pollution Control Board guidelines.

SL.NO.	SOURCE	STACK

9. For all the stacks as under special Condition No.2

TAMIL NADU POLLUTION CONTROL BOARD

9. The unit shall provide sufficient acoustic measures for the following equipment.

SL.NO.	SOURCE	TYPE OF MEASURES
1	Plant operation	Adequate acoustic measures

10. The unit shall install separate energy meter for the operation of the following Air Pollution Control equipments.

SL.NO.	SOURCE	AIR POLLUTION CONTROL MEASURES

(Continued in Annexure-I)

For MEMBER SECRETARY
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

GENERAL CONDITIONS

1. The above consent to establish cannot be construed as consent to operate.

2. The applicant shall make a request for grant of consent to operate atleast sixty days before the commissioning of trial production.

3. The unit shall carryout Ambient Air Quality Survey atleast for stations for seasons for the collection of baseline data on the existing Ambient Air Quality level within the plant Outside the plant

4. The applicant shall provide a meteorological station to collect the data on wind velocity, direction, temperature, rainfall etc.

5. The applicant shall prepare and submit a detailed Risk Assessment Report alongwith on site and off-site Emergency preparedness plan for within the premises of the plant as required under the Rules 13 and 14 of the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended.

6. The unit shall install KVA Capacity generator exclusively for the operation of Air Pollution Control measures in case of power failure.

7. The unit shall also establish laboratory for analysis of gaseous / particulate emissions.

8. Any change in the details furnished in the conditions has to be brought to the notice of the Board and got approved by the Board, before obtaining consent to operate under the said Act.

9. The unit has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings / other living creatures/plants and properties while handling and storage of hazardous substances.

10. Consent to operate will not be issued unless the unit complied with the conditions of consent to establish, otherwise the order of consent to establish already issued will be revoked with immediate effect.

For MEMBER SECRETARY
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

Annexure-I (Air Act)
(M/s. Meenakshi Udyog (India) Pvt. Ltd.,
Kalukondapalli Village, Krishnagiri District.)

11. The unit shall provide wet scrubber for the proposed heating furnace with stack of suitable height to control emission so as to achieve the ambient air quality/ emission standards prescribed by the Board. The unit shall meet the particulate matter standards of 150 mg/NM^3 for induction furnaces.
12. The unit shall ensure development of 25% of the land acquired as green belt with trees having thick canopy cover. Green belt of 2m depth should be provided along the periphery of the unit to attenuate air and noise pollution.

for MEMBER SECRETARY
TNPC Board

19/3/08.

Water

TAMIL NADU POLLUTION CONTROL BOARD

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Acknowledgement Due
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TAMILNADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. : 4373 [FOR EXPANSION] DATED : 05/03/2008

Proceedings No. : T7/TNPCB/F.32382/RL/KRI/W/2008 DATED : 05/03/2008

Consent for Establishment under Section 25 of the WATER (Prevention and control of Pollution) Act,1974, as amended in 1988.

Sub : TNPC Board - Consent for establishment
MESSERS Meenakshi Udyog (India) Pvt.Ltd.,
SF No.291/1,2A,2B 83A,292/4A,4B4SA,
Kalukondapatti Village,
Denkanikottai Taluk,
Krishnagiri District

for the establishment or take steps to establish the industry under Section 25 of the WATER (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 53 of 1988).

Ref : 1.Your Application No.5793, dt.29.10.2007
2.Lr.No.DEE/TNPCB/HSR/F.21/Pmr/2007,dt.30.10.07
3.Technical Sub Committee resolution vide TSC-II, Item No.28-9, dt.26.2.2008

Board Resolution No : DATED : / /

Consent to establish or take steps to establish is hereby granted under Section 25 of the WATER (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 53 of 1988) (hereinafter referred to as 'The Act') and the Rules and Orders made there under to
The Director,
M/s.Meenakshi Udyog (India)Pvt.Ltd.,
(hereinafter referred to as 'The Applicant') authorising him/her/them to establish or take steps to establish the industry in the site mentioned below:
SF No.291/1,2A,2B 83A,292/4A,4B4SA,
Kalukondapatti Village,
Denkanikottai Taluk,
Krishnagiri District

This Consent to establish is valid for two years, or till the Industry obtains consent to operate under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 whichever is earlier.

For MEMBER SECRETARY
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

To

The Director,
M/s.Meenakshi Udyog (India)Pvt.Ltd.,
No.19, 1[Ied Floor,Ahamail,
4, Montieth Road, Egmore,
Chennai-600 008

Copy to : The District Environmental Engineer, Tamil Nadu Pollution Control Board
Hosur

For information and necessary action.

Copy to : The Joint Chief Environmental Engineer, TNPCB,

Copy to : The Commissioner / ~~Executive Officer~~,

Thally Panchyat Union,
Krishnagiri District

Spare :

TAMIL NADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS

1. Details of the products manufactured

Sl.No.	DESCRIPTION	QUANTITY/MONTH
(1)	(2)	(3)
1	MS Rods, Channels, Angles Intermediate product i. MS ingots	5,000T/M 2500 T/M

This consent to establish is valid for the manufacture of products and the rate of production mentioned above. Any change in rate of and the quantity or quality of the products has to be brought to the notice of the Board.

2. The unit shall install Effluent Treatment Plant as proposed, to ensure that the effluents to be discharged shall satisfy the standards prescribed by the Board for disposal of effluents into inland surface waters/public sewers/marine coastal areas/on land for irrigation, as indicated in the Annexure-I.

3. The unit shall install sewage treatment systems for the treatment of waste water arising out of the sanitary facility and waste water generated from canteen as proposed in the Annexure-I.

4. The unit shall construct effluent drains/cable drains/storm water drains separately and provide different colour, sign boards along with alignment of various drains as indicated in the site plan furnished by the industry.

5. Each vessel/reactor should have its own catch pit for the collection of spills and each pump in the process section must be mounted on its own catch pit with the suction line of the pump connected to pit to empty it periodically/regularly/continuously.

6. It has to be ensured by the unit that the floors with the expanded metal, slotted angle stool slabs, steel grates shall be built to the maximum possible to avoid floor washings.

7. In the plant layout it demands that the vessels should be installed in open floor, it shall provide suitable system to minimise spill/leakages and also to collect and drain the spillages into effluent drain leading to the Effluent Treatment Plant by providing suitable gradient to the properly lined notice floor.

8. The unit shall construct tank or lagoon of adequate capacity with compatible impervious material for the storage of hazardous/solid wastes.

9. The unit shall ensure that the corrosion prone areas and construction material liable to atmospheric and process induced corrosion shall be given special attention for immediate replacement with least preventive maintenance.

10. The unit has to provide facilities separately outside the main production plant for carrying out detoxification operations if any.

11. In order to collect spills from a particular vessel before the spilled materials get a chance for contamination with spills from another vessel, the two vessels must be installed at sufficient distance to ensure that intercontamination cannot take place.

12. Flange joints in the pipelines should be avoided wherever possible.

13. The unit shall establish laboratory with adequate analytical equipments for analysing the trade effluent/sewage as well as samples of water collected from the wells nearby if any.

14. The unit shall construct compound wall around the boundary of the unit to a height of metres from ground level.

15. The unit shall appoint an Environmental Engineer with experience of minimum three years in maintenance of waste water treatment plants, before commissioning, along with supporting staff, chemist, technician and operators.

TAMIL NADU POLLUTION CONTROL BOARD

16. Following location specific conditions must be satisfied :

17. The following process specific conditions must be satisfied :

(Continued in Annexure-II)

For MEMBER SECRETARY
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI

19/3/08

GENERAL CONDITIONS

1. The above consent to establish cannot be construed as consent to operate.

2. The industry shall make a request for grant of consent to operate atleast sixty days before the commissioning of trial production.

3. 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 in to the effluent collection system only and shall not be allowed to find their way to storm water drains or open areas.

4. The unit has to provide sludge and silt traps and manholes along the effluent drains for periodical desilting and desludging operation.

5. All places of storage of solid/liquid material are to be dyked with bunding facilities and the flooring within the dyked and bunding area shall be lined with impervious materials depending upon the nature of the solid/liquid to be stored.

6. As the unit proposes to utilise the treated trade effluent on inland for irrigation, the land has to be made fit for irrigation in consultation with the agricultural scientist to avoid more percolation.

7. Samples of water from the wells or any other nearby water sources have to be taken by the unit and get them analysed by the Board Laboratory to develop base line data to assess the existing water quality.

8. The unit shall provide separate power connection for the Effluent Treatment Plant and install separate energy meter for the Effluent Treatment Plant as well as for aerators if any.

9. The unit shall provide an alternate power source sufficient to operate all the facilities to be installed in Effluent Treatment Plant by the applicant.

10. The consent does not authorise or approve the construction of any physical structures or facilities, or the undertaking of any work in any natural water course.

11. Any change in the details furnished in the conditions has to be brought to the notice of the Board and got approved by the Board, before obtainng consent to operate under the said Act.

12. The unit has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.

13. Consent to operate will not be issued unless the unit complied with the conditions of consent to establish, otherwise, the order of consent to establish already issued will be revoked with immediate effect.

For MEMBER SECRETARY
TAMIL NADU POLLUTION CONTROL BOARD
CHENNAI.

19/3/08

Annexure-I (Water Act)
(M/s. Meenakshi Udyog (India) Pvt. Ltd.,
Kalukondapalli Village, Krishnagiri District.)

Details of Effluent Treatment Plant :

Sl.No.	Description	Dimensions
Sewage		
1.	Septic tank	3.57x2x2mts
2.	Dispersion trench	3.05x1.83x1.53mts
3.	Soak pit	1.5m dia x 2m
Trade Effluent		
1.	Collection tanks	1x1x1mts -2Nos.
2.	Sand filters	1x1x1mts -2Nos.

19/3/08

for MEMBER SECRETARY
TNPC Board

Annexure-II (Water Act)
(M/s. Meenakshi Udyog (India) Pvt. Ltd.,
Kalukondapalli Village, Krishnagiri District.)

18. The unit shall ensure that adequate septic tank and dispersion trench/ soak pit arrangements are provided for the disposal of sewage.
19. The unit shall ensure that the scrubber wastewater is reused after sand filter recycling system.
20. The unit shall properly store/ landfill the solid wastes of slag and scales and ensure that ash is sent to brick industry for beneficial use.

19/3/08

for MEMBER SECRETARY
TNPC Board

19/3/08

Annexure - 4.

APPENDIX I

(See Paragraph-6)

FORM 1

Note : If space provided against any parameter is inadequate, Kindly upload supporting document under 'Additional Attachments if any' at the last part of the Form1. Please note that all such Annexures must be part of single pdf document.

(I) Basic Information

S. No.	Item	Details
	Is your project Comes under Notified Industrial Area	No
	Whether proposal involved violation of EIA notification	N/A
	Weather Consent to Establishment Obtained	N/A
	Upload copy of CTE	N/A
1.	Name of the Project/s	Meenakshi Udyog (India) Pvt Ltd - Proposed expansion of existing steel rolling mill
	Brief summary of project	Annexure-Brief summary of project
	Proposal Number	IA/TN/IND/156666/2020
	Project Cost	2500 lacs
2.	S. No. in the schedule	3(a) Metallurgical industries (ferrous & non ferrous)
	Project Sector	Industrial Projects - 1
3.	Proposed capacity/area/length/tonnage to be handled/command area/lease area/number or wells to be drilled	1,80,000 T/A ha.
4.	New/Expansion/Modernization	New
5.	Existing Capacity/Area etc.	4.87 ha.
6.	Category of project i.e. 'A' or 'B'	A
7.	Does it attract the general condition? If yes, please specify	Yes
	d)	Inter-State boundaries and international boundaries
8.	Does it attract the specific condition? If yes, please specify	No
9.	Location of the project	Hosur
	Shape of the project land	Block (Polygon)
	Uploaded GPS file	Annexure-GPS file
	Uploaded copy of survey of India Toposheet	Annexure-Survey of india toposheet
	Plot/Survey/Khasra No.	291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A & 292/5B
	Town / Village	Kalugonda palli
	State of the project	Tamil Nadu

Details of State of the project

S.no	State Name	District Name	Tehsil Name

(1.)	Tamil Nadu	Krishnagiri	Hosur

10.	Nearest railway station along with distance in kms	Hosur railway station, 11.6 km
	Nearest airport along with distance in kms	Bangalore airport, 61 km
11.	Nearest Town/City/District Headquarters along with distance in kms	Housr , 11 km
12.	Village Panchayats, Zila Parishad, Muncipal Corporation, Local body (Complete postal address with telephone nos. to be given)	Denkanikottai Town Panchayat, D.NO.36, Panchayat office street, Denkanikottai, Krishnagiri District. Ph: 04347-235056
13.	Name of the Applicant	Salil
14.	Registered Address	Meenakshi Udyog (I)Pvt Ltd Kapakkal Village Roa-Via Ullivernapalli Hosur ,Thally Road,Krishnagiri District
15.	**Address for correspondance:**	
	Name of the Company	MEENAKSHI UDYOG (INDIA)PVT LTD
	Name of the Applicant	Salil
	Designation (Owner/ Partner/ CEO)	Director
	Pin code	635110
	E-mail	meenakshiudyog18@gmail.com
	Telephone No.	44-26823190
	Fax No.	44-
	Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency .	Annexure-Uploaded Copy of documents in support of the competence/authority
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a toposheet	No
17.	Whether part of Interlinked projects?	No
18.	Whether separate application of Interlinked project has been submitted?	N/A
19.	If Yes, MoEF file number	N/A
	Date of submission	N/A
20.	If No, Reason	N/A
21.	**Whether the proposal involves Approval/ Clearance under: if yes, details of the same and their status to be given**	
	(i) Whether the proposal involves approval/clearance under the Forest (Conservation) Act,1980?	No
	(ii) Whether the proposal involves approval/clearance under the wildlife (Protection) Act,1972?	No
	(iii) Whether the proposal involves approval/clearance under the C.R.Z notification, 2011?	No
22.	Whether there is any Government Order/Policy relevant/relating to the site?	No
23.	Whether any Forest Land Involved?	No
	Area of Forest land Involved (hectares)	N/A
24.	Whether there is any litigation pending against the project and/or land in which the	No

	project is proposed to be set up?	
	(a) Name of the Court	N/A
	(b) Name of the Sub court	N/A
	(c) Case No.	N/A
	(d) Orders/directions of the court, if any and relevance with the proposed project	N/A

(II) Activity

1 Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. No	Information/Checklist confirmation	Yes/No	Details there of (with approximate quantities/rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	The proposed expansion is located in the same premises of the existing manufacturing plant of Meenakshi Udyog (India) Pvt Ltd. There will not be any major change in the land use. The land is classified as "unclassified land" by the DTCP.
1.2	Clearance of existing land, vegetation and buildings?	No	The expansion activity will be carried out in the existing industrial premises. Hence no major clearance activities will be carried out.
1.3	Creation of new land uses?	No	The manufacturing plant will be constructed in 4.87 ha. There will be no creation of new land uses.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Pre-construction investigation of soil testing done in the existing manufacturing plant. The results of soil investigation are found satisfactory.
1.5	Construction works?	Yes	The construction activities will be confined within the project site.
1.6	Demolition works?	No	No demolition works will be carried out.
1.7	Temporary sites used for construction works or housing of construction workers?	No	Inside the proposed site, a small area will be utilized temporarily for construction of sheds. No housing facility for construction workers is planned. Construction workers will be deployed from local area only.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations and fill or excavations	Yes	Excavation works will be carried out for constructing the civil structures. Cut and fill will be required to the minimum extent.
1.9	Underground works including mining or tunnelling?	No	No underground works including mining or tunneling is required.
1.10	Reclamation works?	No	No reclamation work required.
1.11	Dredging?	No	No dredging involved in this proposed project.
1.12	Offshore structures?	No	No offshore structures required for the proposed project.
1.13	Production and manufacturing processes?	Yes	Enclosed in the Pre-Feasibility Report
1.14	Facilities for storage of goods or materials?	No	A complete, fully operational and safe manufacturing unit with all associated equipment and environmental controls shall be provided.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	1.Biodegradable waste - 0.025T/day - Disposed through OWC. 2.Non-biodegradable waste -

			0.016T/day Disposed to authorized recyclers. 3.STP Sludge - 0.5 kg/day - Utilized as a manure for green belt development.
1.16	Facilities for long term housing of operational workers?	No	It is a manufacturing facility and hence there is no housing facilities provided for operational workers.
1.17	New road, rail or sea traffic during construction or operation?	No	All existing roads will be utilized. No new roads envisaged in this project.
1.18	New road, rail, air water borne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Existing facilities would be adequate, and it will be utilized.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	As construction works will be within a specified area. There will be no closure or diversion of existing transports routes due to this project.
1.20	New or diverted transmission lines or pipelines?	No	Existing transmission lines or pipe lines will be used without any diversion.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	There are no changes to the hydrology of watercourses or aquifers.
1.22	Stream crossings?	No	No streams are crossing the Project Site.
1.23	Abstraction or transfers of water from ground or surface waters?	No	No abstraction or transfer of water from ground or surface water.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	There are no changes in water bodies or the land surface affecting drainage.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Transportation of personnel or construction materials during operation and construction phase will be through existing roads only.
1.26	Long-term dismantling or decommissioning or restoration works?	No	Not envisaged in the project
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Since it is an expansion project in the same industrial premises, there will be no decommissioning works.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	During construction period workers deployed will be from surrounding localities. And workers will be accommodated during operational hours of plant.
1.29	Introduction of alien species?	No	No introduction of alien species.
1.30	Loss of native species or genetic diversity?	No	As the site is vacant and devoid of any vegetation, there will be no loss to any native or significant species.
1.31	Any other actions?	Yes	Eco-friendly activities like tree plantation will be undertaken.

2 Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	Total extent of site Area is 4.87 Ha. Site for expansion is within the existing unit and is classified as "unclassified" area by DTCP. No existing activity or agricultural activities in the land extent.

2.2	Water (expected source & competing users) unit: KLD	Yes	Source : Local Panchayat Entire Raw Water consumption for the unit after expansion will be 25 KLD in total.
2.3	Minerals (MT)	Yes	Raw materials after expansion: For MS Billets making): MS Scrap (1,26,000 T/A), MS Graded Scrap (50,400 T/A) Sponge iron (31,500 T/A) and Ferro Alloy (2,100 T/A) For MS Rods: MS Ingots (191000 T/A) and Outsource Ingots (33,000 T/A)
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	Construction materials like steel, cement, crushed stones; sand etc. required for the project shall be procured in the vicinity of the project site.
2.5	Forests and timber (source – MT)	No	Use of timber will be minimum during construction phase for scaffolding etc if at all required.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT),energy (MW)	Yes	Fuel : 1. DG - HSD Oil – 50 Litres/day 2. Power requirement – 13000 KW
2.7	Any other natural resources (use appropriate standard units)	No	Only raw materials mentioned in Section.2.3 will be used. No natural resources will be employed in the process.

3 Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies	No	No such hazardous substance will be used.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Suitable drainage and waste management measures will be adopted in both the construction and operation phase, which will restrict stagnation of water or accumulation of waste. This will effectively restrict the reproduction and growth of disease vectors.
3.3	Affect the welfare of people e.g. by changing living conditions?	No	Expansion project will improve the welfare of nearby village people by raising the living standards. The project will provide employment to skilled, unskilled and professional work force including temporary and permanent employees during the construction and operation periods.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	No	There are no vulnerable group people who could be affected by the project e.g. hospital patient, children etc.
3.5	Any other causes	No	Not applicable

4 Production of solid wastes during construction or operation or decommissioning (MT/month)

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Not Applicable

4.2	Municipal waste (domestic and or commercial wastes)	Yes	All municipal solid waste will be disposed off through Authorized Recyclers.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Used/spent oil from DG Set operation.
4.4	Other industrial process wastes	Yes	Waste will be generated from process like, • Furnace Slag (12600 T/A) • Waste Scrap (6511 T/A) • Mill scale (1910 T/A) • STP Sludge (1 kg/day)
4.5	Surplus product	No	Not applicable
4.6	Sewage sludge or other sludge from effluent treatment	Yes	Sewage is being discharged to the STP of 10 KLD capacity.
4.7	Construction or demolition wastes	Yes	Construction waste will be used in land filling in the surrounding low lying areas.
4.8	Redundant machinery or equipment	No	Most of the equipment's during construction phase will be hired for the period of requirement.
4.9	Contaminated soils or other materials	No	There is no source for contamination of soils or other materials. Apart from this a provision of soil quality monitoring shall be kept in the pre-construction, construction and post construction stage and suitable measures shall be taken if any contamination observed.
4.10	Agricultural wastes	No	Since no agricultural activities are envisaged, there will be no agricultural wastes.
4.11	Other solid wastes	Yes	Domestic waste arising during operation phase will be disposed off to Municipal Authorities. And the slag from furnace will be used for land filling, road making & civil construction.

5 Release of pollutants or any hazardous, toxic or noxious substances to air(Kg/hr)

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	No	Fossil fuels are not used at project site.
5.2	Emissions from production processes	Yes	• Emissions generated from Induction furnace of capacity 12 MT (2 No.s) is attached with a stack of height 33 m. • Reheating furnace 18 TPH (1 No) has a stack of height 33m. • DG sets (2 nos.): o 320KVA with stack o 185KVA with stack
5.3	Emissions from materials handling including storage or transport	No	There will be minimum emission arises from the material handling process.
5.4	Emissions from construction activities including plant and equipment	No	Maximum construction works will be done manually and with well-maintained equipment's.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	No	Dust is likely to be generated during construction, this will be mitigated by water sprinkling and likewise tarpaulin cover will be provided over stored raw material to minimize any dust emission. Sewage generated will be discharged through Sewage Treatment Plant. No odour will be generated at source.
5.6	Emissions from incineration of waste	No	There will be no incineration of waste in this project.
5.7	Emissions from burning of waste in open air	No	No such activities will be permitted.

	(e.g. slash materials, construction debris)		
5.8	Emissions from any other sources	Yes	Emissions will mainly be from Induction Furnace, reheating furnace.

6 Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	No	Equipments used in the process are designed optimally ensuring minimal noise and no vibration.
6.2	From industrial or similar processes	No	All process section, if any which will generate noise and vibration, will be in closed condition.
6.3	From construction or demolition	No	Due to the various construction activities, there will be short term noise impacts in the immediate vicinity of the project site. The construction activities will include the following noise generation activities • Operation of DG gets, Concreting and mixing • Operation of machine tools such as welding, cutting etc. • Excavation etc activities • Construction plant and heavy vehicle movement.
6.4	From blasting or piling	No	Not Applicable
6.5	From construction or operational traffic	No	During operation, transportation will be done in the existing roads and traffic projected is within the limit of transportation.
6.6	From lighting or cooling systems	No	No emissions are envisaged from lighting or cooling systems
6.7	From any other sources	No	Not applicable.

7 Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	No such Hazardous wastes are involved in this project.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	The sewage is being disposed to septic tank and dispersion trench arrangement. Treated sewage is then disposed on Industry's own land.
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	Emission in the ambient air will be well below the SPCB limit.
7.4	From any other sources	No	No other polluting sources exist.
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	There will not be any long term build up of pollutants in the environment from these sources.

8 Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	Nil
8.2	From any other causes	No	No such causes.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The area under study falls in Zone II, according to the Indian Standard Seismic Zoning Map.

9 Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: ◦ Supporting infrastructure (roads, power supply,waste or waste water treatment, etc.) ◦ housing development ◦ extractive industries ◦ supply industries ◦ Other	Yes	Supporting and ancillary development will take place. Which in turn will improve environment (e.g.) Plantation of trees
9.2	Lead to after-use of the site, which could have an impact on the environment	No	No impact will be seen due to proposed project activity.
9.3	Set a precedent for later developments	No	This project will enhance the Social Welfare of the surrounding villages. This expansion will provide job opportunities to 200 workers in total.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	The mitigation measures and regular monitoring will be done in and around the project site as per PCB norms.

(III) Environmental Sensitivity

S.No	Areas	Name/Identity	Aerial distance (within 15km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Nil
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	No	water bodies: 1.Thally Lake - 12.09 km - SW. 2.Vannama Lake - 12.44 km - SSW. 3.Chandramkudi Lake - 11.98 kkm - NE. Forest: 1.Thalli Reserved Forest - 14 km - WSW.

3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Nil
4	Inland, coastal, marine or underground waters	No	Nil
5	State, National boundaries	No	The Tamil Nadu – Karnataka state boundary is 4.1 Km from the site
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	Nil
7	Defence installations	No	Nil
8	Densely populated or built-up area	Yes	Hosur – 11 Km Population –262,527 (As per CENSUS 2011)
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	Schools: 1.Govt Union primary school - 1.02 km - WNW. 2.Govt School, Ulliveranahally - 2.76 km - SSW. 3.Our Lady's Primary School - 3.21 km - SSW. 4.Anekal Public School - 8.19 km - WNW. Hospitals: 1.Govt. Hospital, Thally - 12.70 km - ENE. 2.Kauvery Hospital - 11.93 km - NE. 3.Govt. Hospital, Hosur - 12.05 km - NE.
10	Areas containing important, high quality or scarce resources.(ground water resources,surface resources,forestry,agriculture,fisheries,tourism,minerals)	No	• Hosur and Thally blocks fall under Safe zone as per Categorization of blocks based on the assessment of dynamic ground water resources as on March 2009. • District Live Stock Farm is about 8 Km from the site.
11	Areas already subjected to pollution or environmental damage.(those where existing legal environmental standards are exceeded)	No	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No	Nil

(IV) Proposed Terms of Reference for EIA studies

1	**Uploaded Proposed TOR File**	Annexure-TOR file
2	**Uploaded scanned copy of covering letter**	Annexure-scanned copy of covering letter
3	**Uploaded Pre-Feasibility report(PFR)**	Annexure-PFR
4	**Uploaded additional attachments(only single pdf file)**	Annexure-Additional attachments

Additional Attachments, if any
Attached File
Annexure- Additional Attachment File
EDS reply Letter

Essential Detail Sought:			
S.no.	EDS Letter	Remarks	Date of EDS
1.	NA	The correction have been made as per the instruction received	09 Sep 2020
2.	NA	Proposal is returned due to the following shortcomings: 1. In form 1, document in support of the competence/authority of the person making this application shall be furnished. 2. Reasons for not obtaining Environment Clearance for the existing unit shall be furnished. • Proposed ToR inter-alia including the study area map earmarking baseline monitoring locations for all the parameters shall be furnished along with the frequency to be monitored.	17 Jun 2020

Additional Detail Sought : NIL

(V) Undertaking

I hereby give undertaking that the data and information given in the application and enclosures are true to be best of my knowledge and belief and I am aware that if any part of the data and information found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost.

V. (i)	**Name of Applicant**	Salil
	Designation	Director
	Name of Company (Applicant Name should not be given here)	MEENAKSHI UDYOG (INDIA)PVT LTD
	Address	Meenakshi Udyog (I)Pvt Ltd Kapakkal Village Roa-Via Ullivernapalli Hosur ,Thally Road,Krishnagiri District

Annexure - 5

F. No. J-11011/199/2020-IA. II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi – 110003
E-mail: dirind-moefcc@gov.in
Tel: 011-24695368

Dated: 22nd October, 2020

To

Shri. Salil,
Director,
M/s. Meenakshi Udyog (India) Pvt Ltd,
Kapakkal Village Roa-Via Ullivernapalli Hosur,
Thally Road, Krishnagiri District,
Tamil Nadu.
Email: meenakshiudyog18@gmail.com; Tel: 044-26823190

Subject: Expansion of capacities of MS Ingots to Billets from 30,000 MT/Annum to 1,91,000MT/ Annum and TMT Rods from 60,000 MT/Annum to 1, 80,000 MT/ Annum by **M/s. Meenakshi Udyog (India) Private Limited** located at Kalugondapalli Village, Denkanikotta Taluk, **Krishnagiri District, Tamil Nadu – Prescribing of Terms of Reference** - regarding.

Sir,

1. This refers to the online application of M/s. Meenakshi Udyog (India) Private Limited made vide online proposal no. IA/TN/IND/156666/2020 dated 09/09/2020 along with the application in prescribed format (Form-I), copy of pre-feasibility report, proposed ToRs and sought for Terms of Reference (ToR) for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 3(a) Metallurgical industries (ferrous & non-ferrous) under Category "B" of the schedule of the EIA Notification, 2006. However, due to the applicability of general condition i.e., existence of inter-state boundaries within 5km radius of the project site (Tamil Nadu & Karnataka), the project is being appraised at Central Level as Category 'A'.

2. The proposal cited above was considered during the 23rd meeting of Re-Constituted Expert Appraisal Committee [EAC] (Industry-1) held on 28-30th September, 2020. The EAC proceedings of the proposal cited above is given as below.

Details submitted by the project proponent

3. M/s. Meenakshi Udyog (India) Private Limited proposes to install an expansion of existing manufacturing unit for the manufacturing of MS Ingots 30,000 MT/Annum (Intermediate) & TMT Rods of 60,000 MT/Annum (Final Product). It is proposed to set up the plant for expansion of capacities of MS Ingots to Billets from 30,000 MT/Annum to 1,91,000MT/Annum (Intermediate product) and TMT Rods from 60,000 MT/Annum to 1,80,000 MT/ Annum (Final product) based on Thermo Mechanical Treatment technology.

4. The existing project was accorded Consent to Operate by Tamil Nadu Pollution Control Board vide Consent Order no. 170528826199 validity of CTO is up to March 31, 2020.

PP has applied for Renewal of Consent vide Application No. 32025776 on Online Consent Management & Monitoring System and it is in progress.

5. The proposed unit will be located at S.F.No. 291/1,291/2A, 291/2B, 291/3A, 291/3B, 291/4A,292/4A, 292/4B,292/5A,292/5B Village: Kalukondapalli, Taluka: Denkanikottai, District: Krishnagiri, State: Tamil Nadu.

6. No land Acquisition has been made, Existing land of 4.87 ha will be used after the expansion). Land breakup details are as follows:

Sl. No.	Land Use	Area (In Hectares)			Percentage (%)
		Existing	Expansion	After Expansion	
1.	Plant Area, Office Area (All covered area).	1.49	Same building will be used for expansion also	1.56	32.14%
2.	Paved Area (Road & Corridor).	0.50		0.50	10.27%
3.	Green Belt Area	1.65		1.65	33.88%
4.	Parking Area	0.02		0.02	0.25%
5.	Open area	0.70		0.63	13.00%
6.	Solid Waste Storage	0.51		0.51	10.47%
Total		**4.87**		**4.87**	**100.00%**

7. The Thally Reserved Forest is located at a distance of 14 KM from the site. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna.

8. Total project cost is approx Rs. 25 Crore rupees. Proposed employment generation from proposed project will be 50 direct employment and 55 indirect employment.

9. The targeted production capacity of the TMT Rods is 1,80,000 TPA. The ore for the plant would be procured from local market based on the requirement. The ore transportation will be done through Road.

10. The existing and proposed product details are furnished as below:

S. No.	Name of Product	Capacity (MT/Annum)		
		Existing	Proposed addition	Total after expansion
1	MS Billets	30,000	1,61,000	1,91,000 (Intermediate)
2	TMT Rods	60,000	1,20,000	1,80,000 (Final)

11. The electricity load of 13000 KW will be procured from TANGEDCO and also proposed to install DG Set 320 KVA (1 No.) & 185 KVA (1 no.)

12. Proposed raw material and fuel requirement for project are given in the following table. The requirement would be fulfilled by local market as well as from Scrap Traders. Fuel consumption will be mainly for operation of Diesel generator.

FORMS BILLET MANUFACTURING(Intermediate)				
S.No.	Name of Raw material	Capacity (MT/Annum)		
		Existing	Proposed	Total after expansion
1	MS Scrap	19,800	1,06,200	1,26,000
2	MS Graded Scrap	11,760	38,640	50,400
3	Sponge Iron	3,900	27,600	31,500
4	Ferro Alloy	300	1,800	2,100
Total		**35,760**	**1,74,240**	**2,10,000**
FOR TMT ROD MANUFACTURING (For Final Product manufacturing)				
1	MS Billets (In house)	30,000	1,61,000	1,91,000
2	Ingots (Outsource)	33,000	----	----
Total		**63,000**	**1,61,000**	**1,91,000**

13. Water Consumption for the proposed project will be 119 KLD and wastewater generation will be 8.1 KLD. Water requirement will be met through ground water. Domestic waste water will be treated through Sewage Treatment Plant and no industrial waste water will be generated. The Treated sewage will be utilized for gardening.

14. The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

15. Name of the consultant: Pridhvi Enviro Tech Pvt Ltd [S.No. 133, List of ACOs with their Certificate / Extension Letter no. Rev. 02, Sep. 07, 2020].

Observations of the Committee

16. The Committee noted the following:

i. Total land available is 4.87 ha with green belt developed in 1.65 Ha.
ii. 125 KLD Ground water shall be used.
iii. Project cost is 39.55 Cr (Rs. 25 Crores for expansion).

Recommendations of the Committee

17. After deliberations, the Committee recommended the project proposal for prescribing following specific ToRs for undertaking detailed EIA and EMP study in addition to the generic ToR enclosed at Annexure-1 read with additional ToRs at Annexure-2:

i. 100% Hot charging shall be adopted and RHF shall not be used.
ii. PM emissions shall be maintained less than 30 mg/Nm^3.
iii. Plant shall operate on ZLD.
iv. 100 % Solid waste generated shall be reused.
v. All plant roads shall be paved and cleaned regularly using industrial vacuum

cleaners. Dust collected from roads and shop floors shall be recycled.

vi. 100% RWH and recharge with measuring arrangement

vii. Green Belt in 40 % of the plant area shall be developed within one year.

viii. Traffic study shall be conducted for village road leading to plant site.

ix. Village road construction shall be supported by PP including avenue plantation and maintenance of the same.

Decision of MoEF&CC

18. The undersigned is directed to inform that Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1) hereby decided to accord above-said specific ToRs, in addition to the standard ToRs and Sector Specific ToRs as enclosed at Annexure I read with additional ToRs at Annexure-2 for carrying out detailed EIA/EMP for the above project.

19. It is requested that the draft EIA Report may be prepared in accordance with the above mentioned specific ToRs and enclosed generic ToRs and additional ToRs and thereafter further necessary action including conduct of public consultation may be taken for obtaining Environment Clearance in accordance with the procedure prescribed under the EIA Notification, 2006 as amended.

20. The ToRs are valid for a period of four years from today i.e., 22/10/2020 and will expire on 21/10/2024 as per the Ministry's Notification S.O. 751 (E) dated 17/02/2020.

21. This issues with the approval of the Competent Authority.

(A.K. Agrawal)
Director

Copy to:-

1. Secretary, Department of Environment, Government of Tamil Nadu Secretariat, Chennai.
2. Regional Officer, Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), Ist and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34.
3. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
4. Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai- 600 032, Tamil Nadu.
5. Member Secretary, Central Ground Water Authority, West Block –II, Wing -3, Sector I, R.K.Puram, New Delhi – 110086.
6. District Collector, District Krishnagiri, Government of Tamil Nadu.
7. Guard File/Record File/Monitoring File.
8. MoEF&CC Website

(A.K. Agrawal)
Director

ANNEXURE – I

GENERIC TERMS OF REFERENCE (ToR) IN RESPECT OF INDUSTRY SECTOR

1. Executive Summary
2. Introduction
   - i. Details of the EIA Consultant including NABET accreditation
   - ii. Information about the project proponent
   - iii. Importance and benefits of the project
3. Project Description
   - i. Cost of project and time of completion.
   - ii. Products with capacities for the proposed project.
   - iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
   - iv. List of raw materials required and their source along with mode of transportation.
   - v. Other chemicals and materials required with quantities and storage capacities
   - vi. Details of Emission, effluents, hazardous waste generation and their management.
   - vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)
   - viii. The project proponent shall furnish the requisite documents from the competent authority in support of drawl of ground water and surface water and supply of electricity.
   - ix. Process description along with major equipment and machineries, process flow sheet (Quantitative) from raw material to products to be provided.
   - x. Hazard identification and details of proposed safety systems.
   - xi. Expansion/modernization proposals:
     - a. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MoEF&CC/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment, Forest and Climate Change as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing /existing operation of the project from SPCB/PCC shall be attached with the EIA-EMP report.
     - b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.
4. Site Details
   - i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.

ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)
iii. Co-ordinates (lat-long) of all four corners of the site.
iv. Google map-Earth downloaded of the project site.
v. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.
vi. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.
vii. Landuse break-up of total land of the project site (identified and acquired), government/private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (not required for industrial area)
viii. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area
ix. Geological features and Geo-hydrological status of the study area shall be included.
x. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)
xi. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
xii. R&R details in respect of land in line with state Government policy

5. **Forest and wildlife related issues (if applicable):**

i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable).
ii. Land use map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (*in case of projects involving forest land more than 40 ha).*
iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.
iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon.
v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area.
vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife.

6. **Environmental Status**

i. Determination of atmospheric inversion level at the project site and site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.

ii. AAQ data (except monsoon) at 8 locations for PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.

iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with – min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.

iv. Surface water quality of nearby River (60m upstream and downstream) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.

v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC.

vi. Ground water monitoring at minimum at 8 locations shall be included.

vii. Noise levels monitoring at 8 locations within the study area.

viii. Soil Characteristic as per CPCB guidelines.

ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.

x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.

xi. Socio-economic status of the study area.

7. Impact Assessment and Environment Management Plan

i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.

ii. Water Quality modelling – in case, if the effluent is proposed to be discharged in to the local drain, then Water Quality Modelling study should be conducted for the drain water taking into consideration the upstream and downstream quality of water of the drain.

iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.

iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.

v. Details of stack emission and action plan for control of emissions to meet standards.

vi. Measures for fugitive emission control

vii. Details of hazardous waste generation and their storage, utilization and disposal. Copies of MOU regarding utilization of solid and hazardous waste shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.

viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.

ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.

x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.

xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

xii. Action plan for post-project environmental monitoring shall be submitted.

xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

8. Occupational health

i. Details of existing Occupational & Safety Hazards. What are the exposure levels of above mentioned hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,

ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre-designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analysed data of abovementioned parameters as per age, sex, duration of exposure and department wise.

iii. Annual report of health status of workers with special reference to Occupational Health and Safety.

iv. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.

9. Corporate Environment Policy

i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.

iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.

iv. Does the company have system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report

10. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

11. Corporate Environment Responsibility (CER)

i. To address the Public Hearing issues, an amount as specified under Ministry's Office Memorandum vide F.No. 22-65/2017-IA.III dated 1st May 2018 amounting to Rs. .....crores, shall be earmarked by the project proponent, towards Corporate Environment Responsibility (CER). Distinct CER projects shall be carved out based on the local public hearing issues. Project estimate shall be prepared based on PWD schedule of rates for each distinct Item and schedule for time bound action plan shall be prepared. These CER projects as indicated by the project proponent shall be implemented along with the main project. Implementation of such program shall be ensured by constituting a Committee comprising of the project proponent, representatives of village Panchayat & District Administration. Action taken report in this regard shall be submitted to the Ministry's Regional Office. No free distribution/donations and or free camps shall be included in the above CER budget

12. Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.

13. A tabular chart with index for point wise compliance of above ToRs.

14. The ToRs prescribed shall be valid for a period of three years for submission of the EIA-EMP reports along with Public Hearing Proceedings (wherever stipulated).

<u>The following general points shall be noted:</u>

i. All documents shall be properly indexed, page numbered.
ii. Period/date of data collection shall be clearly indicated.
iii. Authenticated English translation of all material in Regional languages shall be provided.
iv. The letter/application for environmental clearance shall quote the MOEF&CC file No. and also attach a copy of the letter.
v. The copy of the letter received from the Ministry shall be also attached as an annexure to the final EIA-EMP Report.
vi. The index of the final EIA-EMP report must indicate the specific chapter and page no. of the EIA-EMP Report

vii. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MOEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry shall also be followed.

viii. The consultants involved in the preparation of EIA-EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA-EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. Name of the Consultant and the Accreditation details shall be posted on the EIA-EMP Report as well as on the cover of the Hard Copy of the Presentation material for EC presentation.

ix. ToRs' prescribed by the Expert Appraisal Committee (Industry) shall be considered for preparation of EIA-EMP report for the project in addition to all the relevant information as per the 'Generic Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. Where the documents provided are in a language other than English, an English translation shall be provided. **The draft EIA-EMP report shall be submitted to the State Pollution Control Board of the concerned State for conduct of Public Hearing. The SPCBshall conduct the Public Hearing/public consultation, district-wise, as per the provisions of EIA notification, 2006. The Public Hearing shall be chaired by an Officer not below the rank of Additional District Magistrate.** The issues raised in the Public Hearing and during the consultation process and the commitments made by the project proponent on the same shall be included separately in EIA-EMP Report in a separate chapter and summarised in a tabular chart with financial budget (capital and revenue) along with time-schedule of implementation for complying with the commitments made. The final EIA report shall be submitted to the Ministry for obtaining environmental clearance.

****

ANNEXURE-2

ADDITIONAL ToRs FOR

METALLURGICAL INDUSTRY (FERROUS AND NON-FERROUS)

1. Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs & outputs (material and energy balance).
2. Emission from sulphuric acid plant and sulphur muck management.
3. Details on installation of Continuous Emission Monitoring System with recording with proper calibration system
4. Details on toxic metals including fluoride emissions
5. Details on stack height.
6. Details on ash disposal and management
7. Complete process flow diagram describing process of lead/zinc/copper/ aluminium, *etc.*
8. Details on smelting, thermal refining, melting, slag fuming, and Waelz kiln operation
9. Details on Holding and de-gassing of molten metal from primary and secondary aluminium, materials pre-treatment, and from melting and smelting of secondary aluminium
10. Details on toxic metal content in the waste material and its composition and end use (particularly of slag).
11. Trace metals in waste material especially slag.
12. Plan for trace metal recovery
13. Trace metals in water

*****

Executive Summary

Executive summary of the report in about 8-10 pages incorporating the following:

i. Project name and location (Village, Dist, State, Industrial Estate (if applicable)
ii. Products and capacities. If expansion proposal, then existing products with capacities and reference to earlier EC.
iii. Requirement of land, raw material, water, power, fuel, with source of supply (Quantitative)
iv. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes. Materials balance shall be presented.
v. Measures for mitigating the impact on the environment and mode of discharge or disposal.
vi. Capital cost of the project, estimated time of completion
vii. Site selected for the project – Nature of land – Agricultural (single/double crop), barren, Govt/private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest, eco-sensitive zones, accessibility, (note – in case of industrial estate this information may not be necessary)
viii. Baseline environmental data – air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
ix. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
x. Likely impact of the project on air, water, land, flora-fauna and nearby population
xi. Emergency preparedness plan in case of natural or in plant emergencies
xii. Issues raised during public hearing (if applicable) and response given
xiii. CSR plan with proposed expenditure.
xiv. Occupational Health Measures
xv. Post project monitoring plan

******

Ann - 6 final EIA Report Submitted

ENVIRONMENTAL IMPACT ASSESSMENT

ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROPOSED EXPANSION OF MEENAKSHI UDYOG STEEL ROLLING MILL AT KALUGONDAPALLI, DENKANIKOTTA TALUK, KRISHNAGIRI DISTRICT, TAMIL NADU.

FINAL EIA REPORT FOR EC APPLICATION

Project Proponent

MEENAKSHI GROUP

MEENAKSHI UDYOG (INDIA) PVT LTD
#3, 2ND FLOOR, ALSA MALL,
NO.04, MONTIETH ROAD,
EGMORE,
CHENNAI – 600 008

Prepared by

NABET Accredited Environmental Consultant

ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO:14001:2004 & OHSAS:18001:2007 Certified Company

(Accrediated by NABL, NABET, MoEF)

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Branches: Delhi, Mumbai, Kolkata, Jaipur, Hyderabad, Banglore, Cochin, Coimbatore

PROJECT DETAILS					
Name of Project	*Environmental Impact Assessment Report for proposed expansion of Existing steel rolling mill at 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B,292/5A & 292/5B of Kalugondapalli Village, Denkanikotta Taluk, Krishnagiri district, Tamil Nadu.*				
Project Number	*ABC/EIA/2022-23/18*	*Version*	*5*	*Released*	*February 2023*

CONTACT DETAILS

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DISCLAIMER

ABC Techno Labs has used information provided to it by the Client and governmental registers, databases, departments and agencies in the preparation of this report. ABC Techno Labs does not know, nor does it have any reason to suspect, that the information provided to it was false, inaccurate, incomplete or misleading at the time of its receipt.

This report is supplied on the basis that while ABC Techno Labs believes all the information in it is deemed reliable at the time of publication, it does not warrant its accuracy or completeness and to the full extent allowed by law excludes liability in contract or otherwise, for any loss or damage sustained by any person or body corporate arising from or in connection with the supply or use of the whole or any part of the information in this report through any cause whatsoever.

ABC Techno Labs also believes that the facts presented in this report are accurate as on date it was written. However, it is impossible to dismiss absolutely, the possibility of errors or omissions.

ABC Techno Labs therefore, specifically disclaim any liability resulting from the use or application of the information contained in this report. The information is not intended to serve as legal advice related to the individual section.

DECLARATION BY EIA CONSULTANT

This EIA report has been prepared by ABC Techno Labs India Private Limited in line with EIA Notification, dated 14th September 2006, seeking prior Environmental Clearance from the Ministry of Environment, Forests and Climate Change, New Delhi.

This work has been undertaken in accordance with ISO 9001:2008 Quality Management System with all reasonable skill, care and diligence within the terms of the contract with the client, incorporating our General Terms & Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

Further, this report is confidential to the client and the use of this report by unauthorized third parties without written authorization from ABC Techno Labs shall be at their own risk.

For and on behalf of **ABC Techno Labs India Private Limited**

Approved by : **G.Murugesh**

Sign :

Designation : Chairman & Managing Director

Date : 08th February 2022

DISCLOSURE AS PER NABET /QCI	
Details as per Schedule of EIA Notification 2006, as amended till date	
Name of Publication	*Environmental Impact Assessment Report for proposed expansion of Existing steel rolling mill at 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B,292/5A & 292/5B of Kalugondapalli Village, Denkanikotta Taluk, Krishnagiri district, Tamil Nadu.*
Schedule as per EIA notification 2006	*3(a)*
Category	*B*
NABET Sector No.	*8 - Metallurgical Industries(ferrous & non- ferrous)*

DECLARATION:

Declaration by experts contributing to the Environmental Impact Assessment Report for proposed expansion of Existing steel rolling mill at 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B,292/5A & 292/5B of Kalugondapalli Village, Denkanikotta Taluk, Krishnagiri district, Tamil Nadu.

I hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA/EMP.

EIA Co-ordinator

Name : **Dr. S. Veezhinathan**

Signature :

Period of Involvement : August 2022 – Till date

Contact Information : abc@abctechnolab.com

Functional Area Experts:

S.No	Functional Areas	Name of the Expert/s	Involvement (Period)	Signature
1.	GEO	Mr.M.S.Bhaskar	June 2021 – Till date	
2.	AQ	Mrs.K.Vijayalakshmi	June 2021 – Till date	
3.	RH		June 2021 – Till date	
4.	NV		June 2021 – Till date	
5.	AP	Mr. Muttaiah Mariappan	June 2021 – Till date	
6.	EB	Abhik Saha	June 2021 – Till date	
7.	SW & HW			
8.	LU	Dr. R.K.Jayaseelan	June 2021 – Till date	
9.	WP		June 2021 – Till date	
10.	HG		June 2021 – Till date	
11.	SC	RatnaKumar V. Mudliar	June 2021 – Till date	
12.	SE	Sushil Meshram	June 2021 – July 2022	

Revision Control Sheet

REVISION NO	R0	R1	R2	R3	R4
DATE OF ISSUE (MONTH/YEAR)	August 2022	September 2022	October 2022	December 2022	February 2023
TOTAL NO. OF PAGES (Including cover sheets)	266	269	272	229	236

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ABBREVIATION & ACRONYMS:

AAQ	:	Ambient Air Quality
ABC	:	After Burner Chamber
APCD	:	Air Pollution Control Devices
BCR	:	Benefits Cost Ratio
BACT	:	Best Available Control Technology
BAT	:	Best Available Technology
BHEL	:	Bharat Heavy Electricals Ltd.
BIS	:	Burean of Indian Standards
BLT	:	Bell Less Top
BOD	:	Biochemical Oxygen Demand
BOF	:	Basic Oxygen Furnace
BQ	:	Bill of Quantities
BOT	:	Build Operate Transfer
BOOT	:	Build Own Operate Transfer
CCA	:	Conventional Cost Accounting
CDQ	:	Coke Dry Quenching

CEA	:	Central Electricity Authority
CER	:	Corporate Environmental Responsibility
CTE	:	Consent to Establishment
CAGR	:	Compounded Annual Growth Rate
CO	:	Carbon Monoxide
COG	:	Coke Oven Gas
CPCB	:	Central Pollution Control Board
CPWD	:	Central Public Works Department
CRZ	:	Coastal Regulatory Zone
DE	:	Design for Environment
DMP	:	Disaster Management Plan
DRI	:	Direct Reduced Iron
DSC	:	Dust Settling Chamber
EAC	:	Expert Appraisal Committee
EAF	:	Electric Arc Furnace
ACI	:	Environmental Condition Indicators
ECE	:	Economic-cum-Environmental
EIA	:	Environmental Impact Assessment
EIS	:	Environmental Information System
MoEF	:	Ministry of Environment & Forests
NAAQ	:	National Ambient Air Quality Monitoring
NGO	:	Non-Government Organizations
O&M	:	Operation and Maintenance
PCI	:	Pulverized Coal Injection
PM	:	Particulate Matter
QA/QC	:	Quality Assurance/Quality Control
QRA	:	Quantitative Risk Assessment
RHF	:	Rotary Hearth Furnace
SEAC	:	State Level Expert Appraisal Committee
SEIAA	:	State Level Environment Impact Assessment Authority
SEZ	:	Special Economic Zone
SIA	:	Social Impact Assessment
SMS	:	Steel Melting Shop
SPCB	:	State Pollution Control Board
SPM	:	Suspended Particulate Matter
VD	:	Vacuum Degassing
WHRB	:	Waste Heat Recovery Boilers

ToR COMPLIANCE MATRIX:

In order to assess, the environmental impacts due to the proposed expansion project for existing steel rolling mill for Meenakshi Udyog (India) Pvt. Ltd. Environmental Impact Assessment (EIA) & management plan report has been prepared.

As a part of the process, the application (Form-1 & PFR) submitted for the proposed expansion project was considered by the Expert Appraisal Committee (EAC) in its meeting held on 28th – 30th September 2020 for issuing Terms of Reference (ToR). The Committee has suggested specific Terms of Reference (ToR) for preparation of the EIA report vide its file No. J-11011/199/2020-IA. II (I) dated 22.10.2020

The various ToR condition stipulated by MoEF&CC and its status of compliance are as follows;

Sl. No.	ToR Conditions	Compliance
	SPECIFIC ToR	
1	100% hot charging shall be adopted and RHF shall not be used.	Complied. RHF is not envisaged for the expansion.
2	PM emissions shall be maintained less than 30mg/Nm^3.	Complied, the new generation of bag filters are proposed to install in the plant for PM control. The proposed Induction furnace will have state-of-the-art technology like new generation bag filters (made of Polyester, Polypropylene, Polyamide, and Acrylic) with PM emission less than 30mg/Nm^3.
3	Plant shall operate on ZLD.	Complied. On expansion the total water requirement for the project activity will be about 125 m^3/day out of which 25m^3/day will be fresh water requirement, about 100 m^3/day will be recirculated on primary treatment. Recirculation of water will be from Quenching, Process of cooling and domestic wastewater will be re-used post treatment within the plant for GB development, hence no discharge is expected from the plant to ensure zero discharge.
4	100% Solid waste generated shall be reused.	Complied. There are two types of solid waste is expected namely MSW, Process solid waste. Process solid waste – Slag after recovery of iron will be used for road pavement, filling of low lying area by the locals (Supplied at free of cost) and sold to cement brick manufacturers.

Sl. No.	ToR Conditions	Compliance
		Proposed OWC takes care about the MSW generated from the plant. The details of solid waste generation and disposal is given section 2.7.4 chapter- 2.
5	All plant roads shall be paved and cleaned regularly using industrial vacuum cleaners. Dust collected from roads and shop floors shall be recycled.	Complied. About 850 m of the road is paved using slag. Vacuum cleaners are planned to be deployed for expansion. Currently magnetic picking is practiced for roads.
6	100% RWH and recharge with measuring arrangement.	Estimated total volume of rainwater run-off will be about 683.43 m^3. It is proposed to have 2 underground storage tanks of capacity of 550 m^3. The details of Rain water harvesting arrangements/recharging are given in Section 10.6 of Chapter 10.
7	Green Belt in 40 % of the plant area shall be developed within one year.	The greenbelt all around the plant is covered and shown in general layout. Area details are given in section 10.5 of Chapter - 10.
8	Traffic study shall be conducted for the village roads leading to the plant site.	The traffic study reveals that an increase of 70 PCU is expected due to expansion activity. Traffic circulation details are given in Section 3.8 of Chapter 3. Additional traffic details due to the proposed project and the impact are provided in Section 4.4.6 of Chapter 4.
9	Village road construction shall be supported by PP including avenue plantation and maintenance of the same.	Complied. The slag is supplied to villages for laying roads and filling the low lying areas at free of cost. Avenue plantation is planned to be carried out under CER on the reach of plant to village road.
STANDARD TERMS OF REFERENCE (TOR)		
1	Executive Summary.	Enclosed after the EIA report and separately under enclosures of online uploading forms (Part – C) of sl.no.18.2.
2	**Introduction** i. Details of the EIA Consultant including NABET accreditation.	**EIA Consultant** M/s ABC Techno Lab India Pvt Ltd, Certification no: NABET/EIA/1922/RA 0155. & other details are given in Chapter – 12.

Sl. No.	ToR Conditions	Compliance
	ii. Information about the project proponent. iii. Importance and benefits of the project.	Project proponent: Meenakshi Udyog (I) Pvt.Ltd. and other details are given in Section 1.2.2 of Chapter – 1. Importance: The project will be using the waste steel scrap from the industries and the products offset the requirement of raw material for production of steel along with this employment generation will be major benefits of the project and other details are given in chapter 8.
3	**Project Description**	
i	Cost of project and time of completion	Cost of the project is Rs. 25 Cr. Expected period for completion of project is six months from the time of all statutory clearances & other details are given in section 2.5 of Chapter – 2, Page – 21.
ii	Products with capacities for the proposed project.	The present production capacity of the unit is MS billets of 30,000 TPA & TMT rods of 60,000 TPA amounting to 90,000 TPA. MUIPL has proposed to increase the production capacity either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods. In detail of products are given in Section 1.2.1 of Chapter – 1.
iii	If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.	Existing production capacity of the unit is MS billets of 30,000 TPA & TMT rods of 60,000 TPA amounting to 90,000 TPA, product details are given in Section 1.3.3 of Chapter – 1. Total area occupied for the existing plant is 4.89 ha and post expansion the plant equipment area occupies about 1.565 ha, land use break up is detailed in table 1.2 of section 1.3.4 under chapter 1 of EIA report. Type of land will be "Unclassified area", there is no land conversion involved as the possession of land under MUIPL. The land requirement details are given in Section 2.4.1 of Chapter – 2. As the project is categorized B and the operation of existing unit is from 2004, there is no EC is available.
iv	List of raw materials required and their source along with mode of transportation.	List of raw materials required for the production of MS Billets & TMT rods are MS Scrap, Graded Scrap, Sponge Iron, Ferro Alloy etc., The raw materials are being brought in to the plant

Sl. No.	ToR Conditions	Compliance
		through trucks by road. All the raw materials are either sourced locally or imported. Other details are provided in Section 2.4.2 of Chapter – 2.
v	Other chemicals and materials required with quantities and storage capacities.	It is metallurgical industry no chemicals are required, however storage details of material requirements are given in Section 2.4.2 of Chapter – 2.
vi	Details of Emission, effluents, hazardous waste generation and their management.	Emission, effluents, hazardous waste generation details and their management are provided in Section 2.7 of Chapter – 2 & section 4.4.2 & 4.4.4 of chapter 4. Solid waste details are described in section 4.4.5 of chapter 4.
vii	Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract).	Water requirement – 125 m^3/day post expansion from local Panchayat, Power – 13, 000 kVA from TANGEDCO, Man power – 200 nos post expansion of direct employment and 231 nos of indirect employment. Other details are provided Section 2.4.3 – 2.4.5 of Chapter – 2. Water balance diagram is given in Figure – 4.5 - of Chapter – 4.
viii	The project proponent shall furnish the requisite document from the competent authority in support of drawl of ground water and surface water and supply of electricity.	Copies of Water Supply Letter & Power Supply Approval Letter is enclosed as Annexure 8 & 9.
ix	Process description along with major equipment's and machineries, process flow sheet (quantative) from raw material to products to be provided.	Process Description is covered under Section 2.6 of Chapter – 2.
x	Hazard identification and details of proposed safety systems.	Only hazard material used in the plant is HSD for DG sets which will be stored within the threshold limit and details are covered under Section - 7.2.2 of Chapter – 7.

Sl. No.	ToR Conditions	Compliance
xi	**Expansion/modernization proposals:**	
a.	Copy of all the Environmental Clearance(s) including Amendments there to obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing existing operation of the project from SPCB shall be attached with the EIA-EMP report.	No, EC has been obtained the existing capacity was less than the threshold limit required to obtain EC. In addition, compliance of Consent to Operate for the ongoing existing operation of the project has been attached as Annexure – 6B.
b.	In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.	No EC has been obtained as the existing capacity was less than the threshold limit required to obtain EC. Copies of CTE, CTO and its compliance reports are enclosed as Annexure – 5, 6A & 6B.
4)	**Site Details**	
i	Location of the project site covering village, Taluka/Tehsil, District and State. Justification for selecting the site, whether other sites were considered.	The project site is situated at 12°38'49.33"N latitude & 77°45'10.13"E longitude of Kalugondapalli village, Denkanikotta taluk, Krishnagiri district of Tamil Nadu. Since the proposed expansion activity will be carried out within the land under possession with MUIPL, no alternative site applicable.

Sl. No.	ToR Conditions	Compliance
		Location of the project site is detailed in Section 1.3.4 of Chapter – 1.
ii	A topo sheet of the study area of radius of 10 km and site location on 1:50,000 / 1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)	A top sheet of the study area provided in Figure - 1.2 of Chapter – 1.
iii	Co-ordinates (lat-long) of all four corners of the site.	The co-ordinates of the project site is 12°38'49.33"N, 77°45'10.13"E & other details are given in Figure 1.3 of Chapter – 1.
v	Google map - Earth downloaded of the project site.	The Google Earth Map of the project site is given in Figure 1.3 of Chapter – 1.
vi	Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area / Estate / Complex, layout of Industrial Area indicating location of unit within the Industrial area / Estate.	Layout map showing existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. are given in Figure 2.1 of Chapter – 2. The proposed MUIPL unit is operating in its fully owned land.
Vii	Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.	Photographs of the existing plant site is provided in Figure – 1.4 of Chapter – 1 & greenbelt photos are enclosed in Annexure – 13.
viii	Land use break-up of total land of the project site (identified and acquired), government / private - agricultural, forest, wasteland, water bodies, settlements, etc. shall be included. (Not required for industrial area).	Total area occupied for the existing plant is 4.89 ha and post expansion the plant equipment area occupies about 1.565 ha. The land use breakup of the total project site is detailed in Section 2.4.1 of Chapter – 2, Page – 16.
ix	A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area.	The project site is located along with industries cluster. List of major industries with name and type within study area (10 km radius) is enclosed as Annexure – 10.
x	Geological features and Geo-hydrological status of the study area shall be included.	The geological features of the project site area is mainly covered by charnocite group of Precambrian rocks. Geo-hydrological status of the study area is comprised of hard rock water table and further it is detailed in Section 3.3.1 & 3.3.4 of Chapter 3.

Sl. No.	ToR Conditions	Compliance
xi	Details of Drainage of the project up to 5 km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)	The dendritic pattern of drainage prevails in the area and no major river within a 1 km, project is located at 950 amsl in a deccan plateau and drainage details of the study area are given in Section 3.3.5 of Chapter 3.
xii	Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.	The entire land is already under the possession of the proponents. The ownership document is enclosed as Annexure - 2.
xiii	R&R details in respect of land in line with state Government policy.	Not Applicable as no additional land is proposed for expansion.
5	**Forest and wildlife related issues (if applicable):**	
i	Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable)	Not Applicable as no forest land is propose to use.
ii	Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)	Not Applicable as no forest land is propose to use.
iii	Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted	Not Applicable as no forest land is propose to use.
iv	The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon	There is no National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals are found in 10 km radius of the project site.

Sl. No.	ToR Conditions	Compliance
v	Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area	Not Applicable. There is no schedule 1 fauna found in the study area.
vi	Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife	Not applicable as there is no Eco Sensitive sites are found in 10 km radius of the project site.
6)	**Environmental Status**	
I	Determination of atmospheric inversion level at the project site and site-specific micrometeorological data using temperature, relative humidity, hourly wind speed & direction and rainfall.	The site-specific micro-meteorological data is provided in Section 3.2 of Chapter 3. Atmospheric Inversion level are detailed under section 3.2.4 of chapter 3.
ii	AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.	AAQ data generated in 8 locations in and around the project site are found to be well within the limit and other details are provided in Section 3.5 of Chapter 3.
iii	Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with - min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.	Raw data of all AAQ measurement for 12 weeks of all stations are enclosed as Annexure - 15.
iv	Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.	There is no river found within study area. Surface water quality of Bynahanakalli Kere, MathukurKere & Nagandahally Lake is given in Table 3-14 of Chapter 3.

Sl. No.	ToR Conditions	Compliance
v	Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.	The site does not falls near to polluted stretch of river.
vi	Ground water monitoring at minimum at 8 locations shall be included.	The ground water monitoring details are given in Section 3.7 of Chapter 3.
vii	Noise levels monitoring at 8 locations within the study area.	The noise level monitoring details are given in Section 3.6 of Chapter 3.
viii	Soil Characteristic as per CPCB guidelines.	The soil characteristics are detailed in Section 3.8 of Chapter 3.
ix	Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.	The traffic study reveals that an increase of 70 PCU is expected due to expansion activity. The traffic circulation details are given in Section 3.10 of Chapter 3. Additional traffic details due to the proposed project is provided in Section 4.4.6 of Chapter 4.
x	Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule- I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.	The flora & fauna of the study area is detailed in Section 3.9 of Chapter 3. There is no schedule I fauna are found within the study area.
xi	Socio-economic status of the study area.	As per the census 2011, the total population found within study area 10 km is 7,22,946. The detailed socio-economic status of the study area is given in Section – 7.3 of Chapter 7.
7)	**Impact & Environment Management Plan**	
i	Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model	The additional concentration expected from the GLC for PM is 3.3 and SO_x is 5.27 $\mu g/m^3$ respectively and the resultant is well within the limit. Other air quality modeling details are given Section 4.4.2 of Chapter 4.

Sl. No.	ToR Conditions	Compliance
	used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.	
ii	Water quality modelling - in case of discharge in water body	Not Applicable as no wastewater is proposed to discharge into water body.
iii	Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor cum- rail transport shall be examined.	Options for transport of raw materials, finished products and wastes by means of road. The impact of proposed transport on surrounding environment is given in Section 4.4.2 of Chapter 4.
iv	A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E (P) Rules.	The expected wastewater generation by sewage will be 8.1 m^3/day from the plant and around 8 m^3/day will be recycled and used for gardening purpose. Other treatment details are provided in Section – 2.7.3 of Chapter – 2. Trade effluents are not generated from the plant.
v	Details of stack emission and action plan for control of emissions to meet standards.	The expected major stack emission is from furnace. Action plan proposed for controlling the emissions are bag filters followed by 30m height stack. Other details are given in section – 2.7.1 of Chapter – 2. The details about the proposed air pollution control measures are given in section – 2.7.2 of Chapter – 2.
vi	Measures for fugitive emission control.	The fugitive emission control measures for internal roads are white topped and apart from this development of green belt, water sprinkling etc., Indetail control measures are detailed in section 4.4.2.4 of Chapter 4.
vii	Details of hazardous waste generation and their storage, utilization and management. Copies of MOU	The hazardous waste is not generated from the process baring the DG set operation waste oil. Solid waste generated within plant site will be

Sl. No.	ToR Conditions	Compliance
	regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle / reuse / recover techniques, Energy conservation, and natural resource conservation.	utilized for filling low lying in the project site, considering bio-degradable waste it will be treated in OWC and non-biodegradable waste will be disposed sent to authorized recyclers. Details are given in Section – 2.7.4 of Chapter -2. Recover techniques to be covered in section 4.4.6 of chapter 4.
viii	Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.	Not Applicable as no fly ash generated from this plant.
ix	Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.	The greenbelt area details are given in section 10.5 of Chapter - 10.
x	Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources	Estimated total volume of rainwater run-off will be about 683.43 m^3. It is proposed to have 2 underground storage tanks of capacity of 550 m^3. The Rain water harvesting details are given in section 10.6 of Chapter 10.
xi	Total capital cost and recurring cost / annum for environmental pollution control measures shall be included.	The proposed capital cost on environmental management will be Rs. 125 Lakhs and recurring cost will be Rs.20 Lakhs/Annum for environmental management. The Environmental pollution control measures cost details are given Table 10.5 of Chapter 10.
xii	Action plan for post project environmental monitoring shall be submitted.	The environmental monitoring program with online continuous monitoring program is detailed in Chapter – 6.
xiii	Onsite and Offsite Disaster (natural and Man-made) Preparedness and	The Disaster Management Plan details are given Section 7.4 of Chapter 7 as per the site

Sl. No.	ToR Conditions	Compliance
	Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.	requirement. Offsite emergency plan is not applicable for this unit, however a brief about off-site emergency management plan is covered under 7.4.7 of chapter 7.
8	**Occupational Health**	
i	Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL)? If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved.	It is primary metallurgical unit and does not have any occupational hazardous material. However OSHAs standards will be followed like providing PPE and proper medical camp for the employers. The Occupational & Safety Hazards details are covered in Section – 7.5 of Chapter – 7.
ii	Details of exposure specific health status evaluation of worker. If the workers health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise.	The health status of workers is covered in Section – 7.5.1 of Chapter - 7.
iii	Annual report of health status of workers with special reference to Occupational Health and Safety.	The Occupational & Safety Hazards details are covered in Section – 7.5.1 of Chapter – 7.
iv	Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.	Occupational Health & Safety plan details with fund allocation of Rs.2 Lakhs/annum is earmarked in EMP are covered in Section – 7.5 of Chapter – 7.
9	**Corporate Environment Policy**	
i	Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.	Yes, the unit not have well laid down Environment Policy approved by its Board of Directors.

Sl. No.	ToR Conditions	Compliance
ii	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.	
iii	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.	Hierarchical Structure dealing with Environmental issues for ensuring compliance with the environmental clearance conditions is detailed in section 10.2.2 of Chapter 10.
iv	Does the company have system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.	Hierarchical Structure dealing with Environmental issues for ensuring compliance with the environmental clearance conditions is detailed in Section 10.2.2 of Chapter 10.
10	Details regarding infrastructure facilities such as sanitation, fuel, restroom, etc. to be provided to the labor force during construction as well as to the casual workers including truck drivers during operation phase.	Details about infrastructure facilities to be provided to the labour force are covered in Section – 2.4.6 of Chapter – 2.
11	**Corporate Environment Responsibility (CER)**	
i	To address the Public Hearing issues, an amount as specified under Ministry's Office Memorandum vide F. No. 22-65/2017-IA-III dated 1st May 2018 amounting to Rs. ..... Crores, shall be earmarked by the project proponent, towards Corporate Environment Responsibility (CER). Distinct CER projects shall be carved out based on PWD schedule rates for each distinct item and schedule for time bound action plan shall be prepared. These CER projects as indicated by the project proponent	As a part of CER around Rs.25 Lakhs has been allotted which is part of EMP. Details about CER are provided in Section – 10.8 of Chapter – 10.

Sl. No.	ToR Conditions	Compliance
	shall be implemented along with the main project. Implementation of such program shall be ensured by constituting a Committee comprising of the project proponent, representatives of a village panchayat & District Administration. Action taken report in this regard shall be submitted.	
12	Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.	No litigation pending against the project and / or any direction / order passed by any Court of Law against the project.
13	A tabular chart with index for point wise compliance of above TOR.	TOR Compliance report is enclosed.
B	**SPECIFIC TERMS OF REFERENCE FOR EIA STUDIES FOR METALLURGICAL INDUSTRIES (FERROUS & NON FERROUS)**	
1	Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs & outputs (material and energy balance).	Process flow chart is provided in figure 2-4 under Section 2.6 of Chapter – 2.
2	Emissions from sulphuric acid plant and sulphur muck management.	Not Applicable
3	Details on installation of Continuous Emission Monitoring System with recording with proper calibration system.	The online monitoring system for APC measures is enclosed as Annexure – 11. On expansion activity of the plant, online continuous monitoring management system will be installed.
4	Details on toxic metals including fluoride emissions.	Usage of toxic metals is not expected inside the plant. Hence, it is not applicable.
5	Details on stack height.	There are two stacks related to process one is existing and another one is for proposed with

Sl. No.	ToR Conditions	Compliance
		30m height each. The stack emission details are given in Section – 2.7.1 of Chapter – 2.
6	Details on ash disposal and management.	Not Applicable
7	Complete process flow diagram describing production of lead / zinc / copper / aluminium, etc.	Not Applicable
8	Details on smelting, thermal refining, melting, slag fuming, and Waelz kiln operation.	Not Applicable
9	Details on Holding and de-gassing of molten metal from primary and secondary aluminum, materials pre-treatment, and from melting and smelting of secondary aluminum.	Not Applicable
10	Details on toxic metal content in the waste material and its composition and end use (particularly of slag).	TCLP test was conducted and no toxic metal was observed and their details are provided in Annexure – 16.
11	Trace metals in waste material especially slag.	Trace metal content of waste material (slag) is provided in Annexure – 16.
12	Plan for trace metal recovery.	Iron (Fe) content in the slag are recovered from the slag grinding unit.
13	Trace metals in water.	Water analysis report is given in Section – 3.5.2 of Chapter – 3 and there is no trace metals.

1 INTRODUCTION

Meenakshi Udyog (India) Private Limited, a pioneer in the global steel market, was established by group of young entrepreneurs of family Agarwal & Bansal. The company has rewritten the rules and ushered in a new era of manufacturing, marketing and distribution of infrastructure related steel products. The aim of the company is to stay ahead with its promise of delivering high quality in each product. M/s Meenakshi Udyog (India) Private Limited, has achieved success by manufacturing & marketing the premium TMT rods, angles, channels towards achieving the widening demand of construction related infrastructure materials.

Meenakshi Udyog Group a reckoned manufacturer of a wide range of construction related products and believe in the concept of 'Approachable Branding' and thereby built-up a very functional distribution & marketing network to make its entire product range available across the country.

1.1 PURPOSE OF THE REPORT

As per Environmental Impact Assessment Notification dated 14th September 2006, the expansion of a secondary metallurgy industry falls under **Activity-3(a)** - "Metallurgical Industries (Ferrous and non-Ferrous)". The project fall under **'Category B'**, however, due to the applicability of general condition no. iv. Interstate boundary falling within 5 km radial distance from the proposed project site, thus the project is considered as **'Category-A'**, for which Environmental Clearance (EC) from Ministry of Environment and Climate Change (MoEF&CC) is necessary. In order to assess, the environmental impacts due to the proposed expansion project, Environmental Impact Assessment (EIA) & management plan report has been prepared.

As a part of above process, the application (Form-1 & PFR) submitted for the proposed expansion project was considered by the Expert Appraisal Committee (EAC) in its meeting held on 28th – 30th September 2020 for issuing Terms of Reference (ToR). The Committee has suggested specific Terms of Reference (TOR) for preparation of the EIA report vide its file No. J-11011/199/2020-IA. II (I) dated 22.10.2020 which is enclosed as **Annexure – 1**. This EIA report is prepared to adhere all the conditions specified in ToR.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT

1.2.1 PROJECT

Meenakshi Udyog (India) Private Limited (Meenakshi Udyog), is operating the steel rolling mill at Kalukondapalli village, Denkanikotta taluk, Krishnagiri district of Tamil Nadu. The present production capacity of the unit is MS billets of 30,000 TPA & TMT rods of 60,000 TPA amounting

to 90,000 TPA. Meenakshi Udyog has proposed to increase the production capacity either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods.

1.2.2 PROJECT PROPONENT

Company Name	M/s Meenakshi Udyog (India) Pvt. Ltd.
Owners Name	Mr Shailesh Agarwal & Mr Salil Bansal
Contact Information	+ 91 98410 17540 & 98410 12201 E-mail id: udyog@meenakshigroup.in
Correspondence Address	Meenakshi Udyog India Pvt.Ltd. #3, 2nd Floor, Alsa mall, No. 4: Montieh Road, Egmore, Chennai – 600 008

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 NATURE OF THE PROJECT

The proposed project involves expansion of production capacity of existing rolling mill based on the manufacture of MS rods, channels, angles along with MS billet. The project falls under secondary metallurgy industry classified as **'Category-B'** as per the EIA Notification dated on 14th September, 2006 and its subsequent amendments. As the project attracts general condition no.iv. Interstate boundary falling within 5 km radial distance from the proposed project site and hence the project is considered as **'Category-A'**.

1.3.2 STATUTORY CLEARANCES

The list of statutory clearances as obtained are given in Table 1-1

Table 1-1 : List of statutory clearances obtained

Approvals	Reference & Date of Approval
TNPCB - Consent to Establish & Consent to Operate	
Consent order under Air & Water act from TNPCB	Consent order No.166600 dated 27.03.2006 under Air act & Consent order No. 20567 dated 27.03.2006 under Water act.
Renewal of Consent to Operate under Air & Water act.	Consent order No.2008232025776 dated 05.10.2020 under Air act & Consent order No. 2008132057776 dated 05.10.2020 under Water act.
Compliance of Consent to Operate under Air & Water act.	Compliance Report of Consent to Operate under Air & Water act is enclosed as **Annexure - II**
MoEF&CC – Environment Clearance	
Terms of Reference - Expansion of capacities of MS Ingots to Billets from 30,000 TPA to 1,91,000 TPA and TMT rods from 60,000 TPA to 1,80,000 TPA.	File No. J-11011/199/2020-IA. II (I) dated 22.10.2020

1.3.3 SIZE OF THE PROJECT

The production capacity of the present unit is 30,000 TPA of MS billets & TMT rods of 60,000 TPA. The production is proposed to increase production capacity either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods.

1.3.4 LOCATION OF THE PROJECT

The project site is located at 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A,292/4B, 292/5A & 292/5B of Kalugondapalli village, Denkanikotta taluk, Krishnagiri district of Tamil Nadu. Geographically, the site is situated at 12°38'49.33"N latitude & 77°45'10.13"E longitude and is located at 950- 956m above the MSL. The plant site area is covered by Survey of India Toposheet No – 57H/9, 57H/10, 57H/13, 57H/14. The details of environmental setting are given in Table 1-2. The index map of the project site and topographical feature of the study area within 10km radius is depicted in Figure 1-2 & Figure 1-3 respectively. The google image showing the plant site is given in Figure 1-3. The live photographs showing the existing steel mill unit is provided in Figure 1-4.

Table 1-2 Details of Environmental Setting

Sl. No.	Particulars	Details
1	Latitude	12°38'53.21"N- 12°38'45.66"N
2	Longitude	77°45'8.19"E- 77°45'16.64"E
3	Coordinates of project site	12°38'49.33"N, 77°45'10.13"E
4	Elevation above MSL	950-956m
5	Land use	Industrial Estate
6	Nearest Highway	NH 948 A - Hosur - Thally road- 1 km, WNW SH 17 A – Hosur - Denkanikottai road - 3 km, ESE
7	Nearest Railway Station	Hosur Railway Station - 11 km, NE
8	Nearest Air Port	Kempegowda International Airport, Bengaluru- 61 km, N
9	Nearest Habitation	Malugundapalli- 1.19 km, WNW
10	Nearest Town	Hosur - 11 km, NE
11	Nearest Harbour	Chennai Port - 279 km, ENE
12	Reserve Forests	No reserve forest within 10 km. Other reserved forest are as stated below, Thally Reserved Forest - 14.54 km, WSW Sanamavu Reserved Forest - 15.83 km, E Denkanikotta Reserved Forest - 17.20 km, SSE Perandapalli Reserved Forest - 17.92 km, ENE Jowlagiri Reserved Forest - 21.56 km, SSW Ulibandu Reserved Forest - 22.75 km, SSW Ragihalli State Forest - 23.03 km, NW Gullatty Reserved Forest - 30.03 km, SSE Manchi Reserved Forest - 30.63 km, S
13	Nearest Water Bodies	Uliveeranahally Kere- 0.84 km, NW

Sl. No.	Particulars	Details
		Mathukur Kere- 1.31 km, S Kabanka Pond- 1.33 km, S Bynahanakalli Kere- 2.11 km, SSW Vasa Kere- 2.81km, E Nagandahally Lake- 3.56 km, NE Nagandahally Lake- 3.58 km, NE Kempatti Lake- 4.85 km, NW Muthagatti Lake- 6.67 km, NNW Dodda Ubbanuar Lake- 9.10 km, WSW Kothagondapalli Lake- 9.31 km, NNE
14	Ecologically sensitive	Cauvery North Wildlife Sanctuary- 23.89 km, SW Bannerghata National Park- 25 km, NW
15	Defence Installation	Nil within 10 km radius
16	Historical places	Nil within 10 km radius
17	Socio-economic factors	No Resettlement and Rehabilitation issues are involved

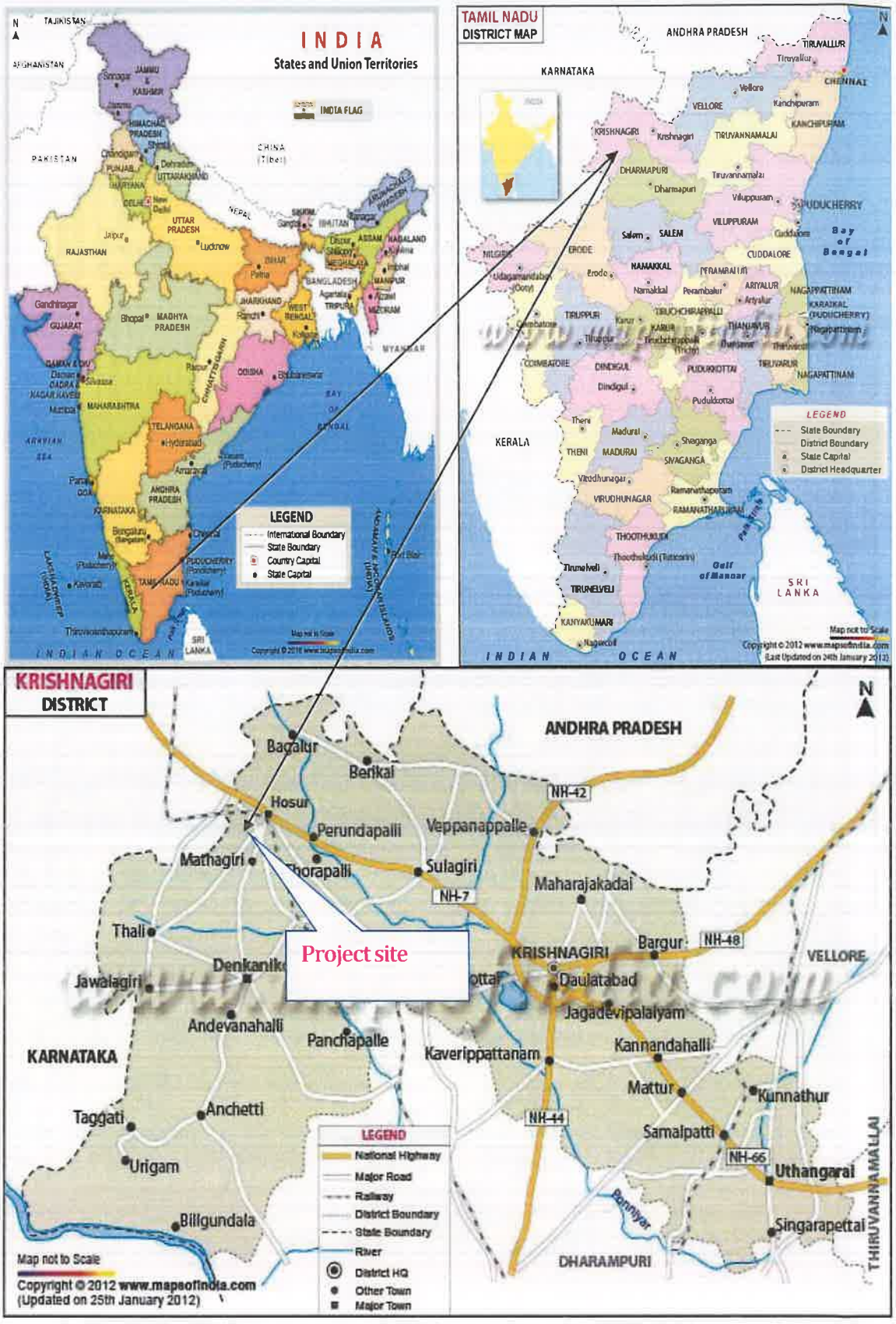


Figure 1-1 Index map of the project site

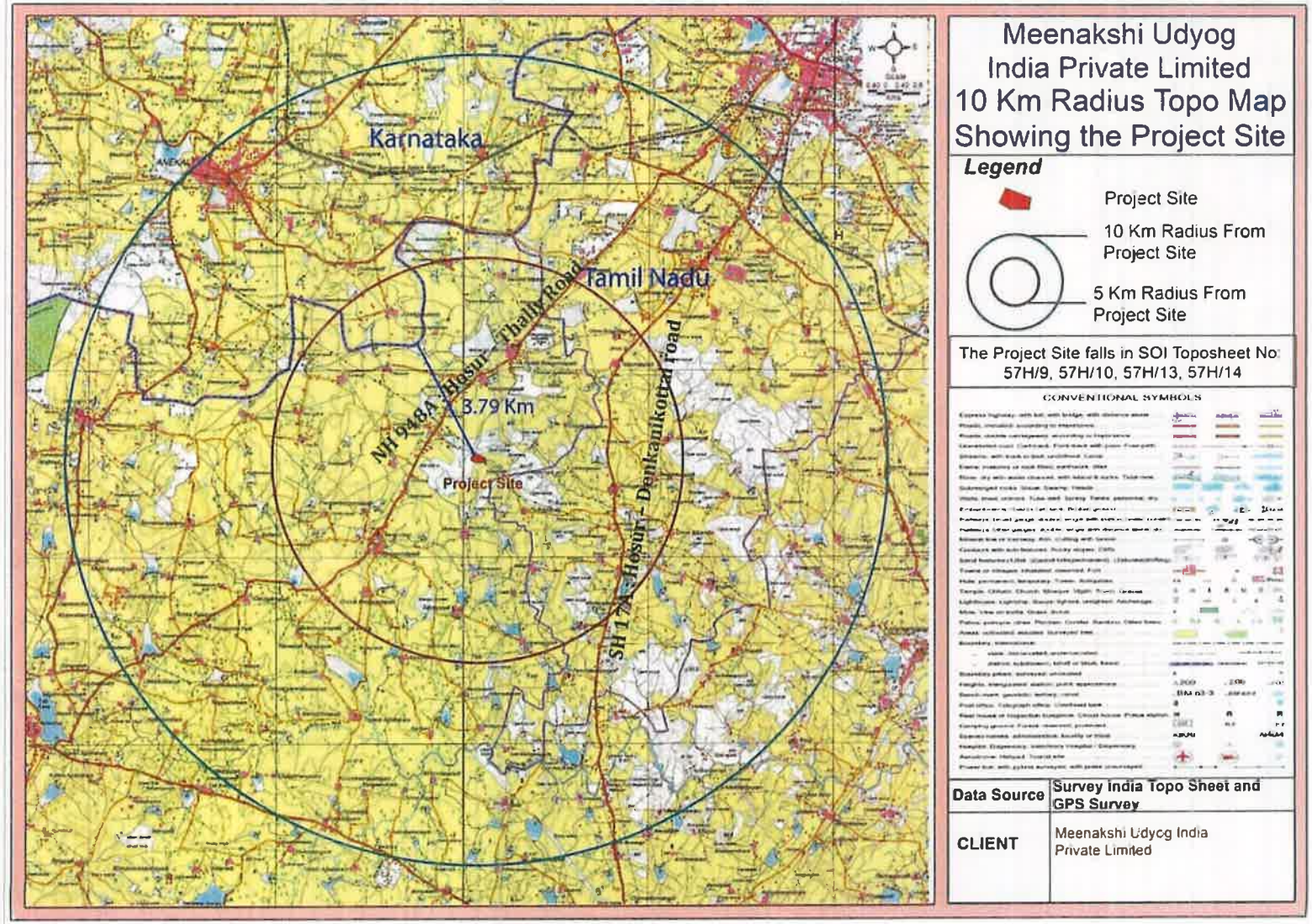


Figure 1-2 Topographical map of 10 km radius



Pt	Latitude	Longitude
1	12°38'53.21"N	77°45'8.19"E
2	12°38'51.81"N	77°45'10.32"E
3	12°38'49.55"N	77°45'16.80"E
4	12°38'48.84"N	77°45'17.07"E
5	12°38'45.66"N	77°45'16.64"E
6	12°38'45.74"N	77°45'9.85"E
7	12°38'47.85"N	77°45'6.15"E



Figure 1-3 : Google image showing project site and surroundings



Induction Furnace Area



View of the plant from west



Rolling mill



Bar mill area

Figure 1-4 Live Photographs of the plant

1.3.4.1 LIST OF INDUSTRIES IN 10 KM RADIUS

The project site is located within the hosur industrial area of Tamil Nadu. The various industrial units located near the project site is given in below Table 1-3.

Table 1-3 List of industries

Sl .No.	Name of the Industry	Type of the Industry
1	TVS Industries	Light vehicle manufacturing unit
2	DLV Surface technology	Service Providers
3	Del Monte Foods Pvt Limited	Food industry
4	Meenakshi Steel re Rollers	Ferrous and Non Ferrous
5	Field fresh Private Limited	Food industry
6	Green Vision Technologies	Ferrous and Non Ferrous
7	Alfa PEB Limited	Building material manufacturers

Sl .No.	Name of the Industry	Type of the Industry
8	FIEM Industries	Automobile
9	Minda Private Limited	Automobile and components
10	RV Industries	Ferrous and Non Ferrous
11	Hema Engineering industries Limited	Ferrous and Non Ferrous
12	Sowbagya Brick Industries	Brick Manufacturer
13	Vikram Brick Industries	Brick Manufacturer
14	Indus TMT Industries	Ferrous and Non Ferrous
15	Prime Gold International Pvt Ltd	Ferrous and Non Ferrous
16	Sakthi Agro Industries	Ferrous and Non Ferrous
17	Vinir Engineering Pvt Ltd	Ferrous and Non Ferrous
18	Duroflex Pvt Ltd- Spring Division	Spring Manufacturers
19	Jamna Auto Industries Ltd	Ferrous and Non Ferrous
20	GEM Industries	Ferrous and Non Ferrous

1.3.5 IMPORTANCE TO THE COUNTRY AND REGION

India's steel industry has grown by leaps and bounds, especially in recent times with Indian firms are buying steel companies from overseas. The scope for steel industry is huge and industry estimates indicate that the industry will continue to grow reasonably in the coming years with huge demands for steel in infrastructure development.

In terms of actual steel consumption, India is far behind from the other major steel producing countries. In 2010 our per capita consumption of steel was only 51.7 kg as against the world average of 202.7 kg. This augurs well for expansion of steel consumption in the economy. A rough estimate of incremental demand for steel in the country, works out to be about 40 million tonnes in infrastructure alone. Hence, it is likely to raise intensity of steel consumption in the country measured in terms of Gross Domestic Product (GDP) per unit.

The Indian steel industry has entered into a new development stage from 2007, riding high on the resurgent economy and rising demand for steel. Rapid rise in production has resulted in India becoming 3rd largest producer of crude steel in 2015 and the country continues to be largest producer of sponge iron or DRI (Direct Reduced Iron) in the world.

As per the report of the working group on steel for the 12th Five Years Plan, there exist many factors which carry the potential of raising the per capita steel consumption in the country. These include among others, an estimated infrastructure investment of nearly a trillion dollars, a projected growth of manufacturing from current 8% to 11-12%, increase in urban population to 600 million by 2030 from the current level of 400 million. Emergence of the rural market for steel, currently increased due to rapid implementation of various projects

like Bharat Nirman, Pradhan Mantri Gram Sadak Yojana, Rajiv Gandhi Awaas Yojana and others.

At the time of National Steel Policy release in 2005 had envisaged steel production to reach 110 Million Tonnes (MT) by 2019-20. However, based on the assessment of the current ongoing projects both in greenfield and brownfield, the working group on Steel for the 12th Five Years Plan has projected that domestic crude steel capacity in the country is likely to be increased to about 145 MT if all requirements are adequately met.

1.4 SCOPE OF THE STUDY

Meenakshi Udyog (India) Private Limited has entrusted the services of M/s. ABC Techno Labs India Pvt Ltd, Chennai to carry out EIA study and preparation of Environmental Impact Assessment (EIA) report to assess the anticipated impacts of the proposed expansion project on the environment and suggest suitable mitigation measures for likely adverse impacts due to the expansion activities. The EIA/EMP report has been prepared for the expansion project following the generic structure specified in the EIA Notification, 2006.

An EIA study is useful to understand and mitigate the impact of the proposed expansion project on various parameters of environment. Therefore, the scope of the EIA study includes detailed characterization of the existing status of the land, water, air, biological and socio-economic environment in the project area. It also includes identification of the potential environmental impacts of the project and formulation of an effective Environmental Management Plan (EMP) and monitoring plan. The scope of EIA study includes,

- Literature review and collection of data relevant to the study area.
- Collection of data related to the project activities.
- Establish the baseline environmental aspects in and around the proposed project.
- Collection of secondary data including socio-economic from published literature/government publications.
- Identify various existing pollution loads due to the proposed activities.
- Predict incremental levels of pollutants in the study area due to the proposed expansion operations;
- Evaluate the predicted impacts on various environmental attributes in the study area by using scientifically developed and widely accepted environmental impact assessment methodologies;
- Preparation of cost effective and appropriate Environmental Management Plan (EMP) encompassing strategies for minimization of potential adverse impacts on various

environmental components along with budgetary provisions for implementation of pollution control measures;

- To delineate measures for human health and safety during operational of proposed expansion project; and
- Delineation of post-study Environmental quality monitoring programme.

The scope also includes all the conditions given in ToR prescribed by MoEF&CC for the expansion of steel rolling mill. Baseline studies were carried out for the period of three months from December 2020 to January 2021, representing winter season. Field studies have been conducted to determine existing conditions of various environmental attributes as outlined in Table 1-4

Table 1-4 Environmental attributes and frequency of monitoring

Sl. No.	Environmental Component	Sampling Locations	Sampling Parameters	Sampling Period	Sampling Frequency
1	Meteorology	One central location	Temperature, Relative Humidity, Wind Speed, Wind Direction & Rain fall	3 months	Hourly / Rainfall – Daily
2	Ambient Air Quality	8 Locations	PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, O_3, Pb, NH_3, C_6H_6, BaP, As, Ni	Two days per week for 12 weeks	24 hourly
3	Water Quality	GW 8+ SW 3 Locations	As per IS:10500-1991	Grab sampling	Once during study period
4	Noise	8 Locations	Leq_{day}, Leq_{night} & Leq_{dn}	24 hourly	Once during study period
5	Soil	8 Locations	Soil profile & Chemical constituents	Composite sample	Once during study period
6	Terrestrial Ecology	Study area	Flora and fauna	Field observations	Once in study period
7	Land Use	Study area	Land use data based on recent satellite data	Based on availability	Once in study period
8	Demography aspects	Study area	Demographic profile	Based on data collected from secondary sources	
9	Geology & Hydrogeology	Study area	Geological history, Drainage area and pattern, nature of streams, aquifer characteristics, recharge and discharge areas.	Based on data collected from secondary sources	

Since, ABC Techno Labs has been carrying out the EIA studies for the similar projects earlier, the points mentioned in the TOR were contemplated beforehand and the same were included in the study. Hence, even though the TOR letter was not awarded, the baseline data generation for this project was initiated inline to the MoEF&CC guidelines.

1.5 METHODOLOGY

Environment Impact Assessment report has been prepared with the following steps:

1.5.1 ESTABLISHMENT OF BASELINE ENVIRONMENTAL STATUS

A comprehensive database on the baseline environmental status of the study area has been established through review, compilation & analysis of

- Existing published secondary data/literature/information, and
- Primary data generated/collected through initial site surveys and field study

The field monitoring has been carried out as per the guidelines of CPCB and requirement of the MoEF&CC for one complete season. Field study/monitoring has been carried for:

- Ambient Air Quality.
- Ambient Noise Quality.
- Water Quality.
- Soil Quality.
- Ecological studies.
- Land Use Pattern and
- Socio- Economic status.

1.5.2 ENVIRONMENTAL IMPACT ASSESSMENT

The project data/activities has been analysed & linked with the existing baseline environmental conditions in order to list out the affected environmental parameters and assess the likely impacts on such parameters. Compliance of the project with national standards has been duly checked.

1.5.3 PREPARATION OF ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan (EMP) is the key to ensure a safe and clean environment. The desired results from the environmental mitigation measures existing in the project may not be obtained without a management plan in order to assure its proper implementation & function. The EMP envisages the plans for the proper implementation of mitigation measures to reduce the adverse impacts arising out of the project activities. EMP has been prepared addressing issues such as:

- Details of management plan.
- Pollution control/mitigation measures for abatement of the undesirable impacts caused during operational activities.
- Optimization of water resources and water quality.
- Identification of Environmental cell for implementation of the EMP.
- Post project environmental monitoring programme.

2 PROJECT DESCRIPTION

2.1 TYPE OF THE PROJECT

The proposed project involves the capacity enhancement of production of MS Billets casting from 30,000 TPA to 1,91,000 TPA or production of TMT rods 60,000 TPA to 1, 80,000 TPA. As the project falls under secondary Metallurgy Industry classified under **'Category-B'** as per the EIA Notification dated on 14th September, 2006. Since the project attracted under general condition no.iv. Interstate boundary falling within 5 km radial distance from the proposed project site, the project is considered as 'Category-A'.

2.2 NEED OF PROJECT

Steel is a basic commodity for all industrial activity and its consumption marks industrial prosperity. The steel industry has tremendous forward and backward linkages in terms of material flow, income and employment generation.

Steel is a core industry and thus its demand is strongly linked to the overall economic activity of the nation. Given the inherent long-term potential of the Indian economy and its cyclical nature, the long-term prospects of the steel industry are fairly comfortable. The demand and production has been growing at a healthy rate for the last few years and the forecast for the next decade and half is also very promising.

M/s. Meenakshi Udyog (India) Private Limited has drawn up a growth plan with the objective of increasing its market share in Indian steel industry. Keeping all these in mind, the company has plan to set up the proposed expansion steel plant for production of MS Ingots to Billets and TMT rods in a more environment friendly way at Kalugondapalli village, Denkanikotta taluk, Krishnagiri district of Tamil Nadu.

2.3 PROJECT LOCATION & LAYOUT

The project site is located at 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A & 292/5B of Kalugondapalli village, Denkanikotta taluk, Krishnagiri district of Tamil Nadu. Geographically, the site is situated at 12°38'49.33"N latitude & 77°45'10.13"E longitude and is located at 950- 956m above the MSL. The map showing the general and specific location of the plant is shown in Figure 1-1 & Figure 1-2 of Chapter – 1. The detail of environmental setting is also given in Table 1-2 of Chapter – 1. The layout map showing the plant site with boundaries is shown in Figure 2-1. The google image showing the project site is given in Figure 1-3 of Chapter - 1.

2.4 SIZE OR MAGNITUDE OF OPERATION

Taking into an account, reliability of equipment and matching capacities between the different sections of the plant, the type of equipment/ installation system and the departmental capacities at the plant, have been arrived. A condensed description of existing utilities and major equipment is given in the following sections.

2.4.1 LAND REQUIREMENT

The total area of the existing plant is 4.89 ha and post expansion the plant equipment area occupies about 1.565 ha which is 0.75% more than the pre-expansion plant equipment area. The land use break-up of the existing and after expansion is tabulated below in Table 2-1. The proposed expansion proposal does not require any additional land area.

Table 2-1 Land Use breakup of the project site

Sl. No.	Description	Before Expansion		After Expansion	
		Area (Ha)	Percentage (%)	Area (Ha)	Percentage (%)
1	Built-up area	1.490	30.59	1.565	32.14
2	Internal Road	0.500	10.27	0.500	10.27
3	Green belt	1.650	33.88	1.650	33.88
4	Parking Area	0.012	0.25	0.012	0.25
5	Open area	0.708	14.54	0.633	13
6	Solid Waste storage	0.510	10.47	0.510	10.47
	Total	**4.87**	**100**	**4.87**	**100**

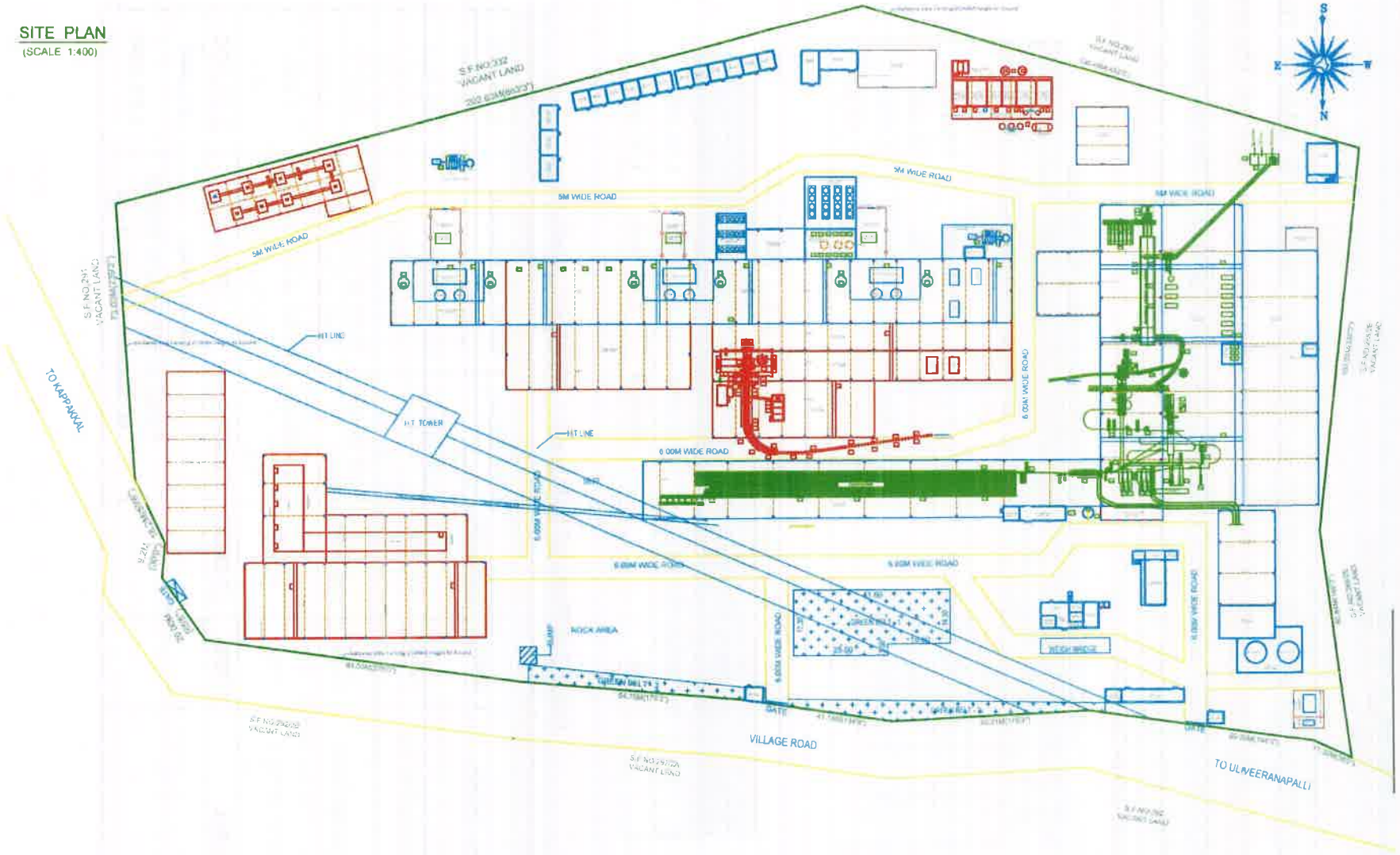


Figure 2-1 Plant Layout

2.4.2 Raw Material Requirement

The raw materials required for the production of MS Ingots, TMT rods, Billets including its quantity before and after expansion are tabulated in Table 2-2 to Table 2-3. The material balance for MS Billets & TMT Rods is shown in Table 2-4 & Table 2-5. The raw materials are being brought in to the plant through trucks by road. All the raw materials are either sourced locally or imported. The characteristics of raw materials are tabulated in Table 2-6 & Table 2-7.

Table 2-2 Raw material requirement for MS Billets

Sl.No.	Name of Raw material	Capacity (MT/Annum)		
		Existing	Proposed	Total
1	MS Scrap	19,800	1,06,200	1,26,000
2	MS Graded Scrap	11,760	38,640	50,400
3	Sponge Iron	3,900	27,600	31,500
4	Ferro Alloy	300	1,800	2,100
Total		**35,760**	**1,74,240**	**2,10,000**

Table 2-3 Raw material requirement for TMT rods

Sl.No.	Name of Raw material	Capacity (MT/Annum)		
		Existing	Proposed	Total
1	MS Billets (In house)	30,000	1,61,000	1,91,000
	Total	**30,000**	**1,61,000**	**1,91,000**

Table 2-4 Material balance for MS Billets production

Input			Output		
MS Scrap	60%	1,26,000	MS Billets	92 % of 126000	1,15,920
			Slag	8 % of 126000	10,080
Graded Scrap	24%	50,400	MS Billets	96 % of 50,400	48,384
			Slag	4 % of 50400	2,016
Sponge Iron	15%	31,500	MS Billets	80% of 31500	25200
			Slag	20% of 31500	6300
Ferro Alloys	1%	2,100	MS Billets	71.24 % of 2100	1496
			Slag	28.76 % of 2100	604
Total	**100%**	**210000**	**Total**	**100%**	**2,10,000**
			Total of Slag		**19,000**
			Total of MS billets (total MS Ingots – total slag)		**1,91,000**

Table 2-5 Material balance for TMT rod production

Input		Output		
MS Billets	1,91,000	TMT Bars	94.24%	1,80,000
		End cuttings	2%	3,820
		Mill Scale	1%	1,910
		Heat losses	1.9%	3,629
		Misrolls	0.86%	1,641
Total	**191000**	**Total**	**100%**	**1,91,000**
		Total amount of loss		11,000
		TMT Bars		**1,80,000**

Table 2-6 Constituents of MS Scrap/Turnings/Ci Scrap/Borings

Sl.No.	Constituent	Percentage
1	Carbon	0.2 – 1.0 %
2	Manganese	0.4 – 0.9 %
3	Silicon	0.2 – 0.6 %
4	Sulphur and Phosphorous	Max 0.15 %
5	Alumina	0.0015 %
6	Fe	97 %

Table 2-7 Composition of sponge iron

Sl.No.	Constituent	Values
A	**Chemical**	**Composition**
(i)	Fe, Total	90 – 92 %
(ii)	Fe, Metallic	78 – 84 %
(iii)	Metallization	88 – 90 %
(iv)	Sulphur	0.06 % max
(v)	Phosphorous	0.08 % max
(vi)	Carbon	0.10 % (approximately)
(vii)	Gangue content	5.00 % (approximately)
B	**Physical (Size)**	
(i)	Lump	+3 mm
(ii)	Fines	0 – 3 mm
(iii)	Bulk Density	1.9 – 2.2 MT/m^3

2.4.3 MAN POWER REQUIREMENT

The manpower requirement of the existing plant is about 75 nos. which will be increased to 200 nos. after the proposed expansion. The proposed expansion will provide direct

employment to about 125 persons and indirect employment to about 231 persons. The additional man power requirement is mostly fulfilled by the region of 10 – 15 km radius.

2.4.4 POWER AND FUEL REQUIREMENT

The sanctioned power by TANGEDCO for the existing plant is about 9,900 kVA. After the proposed expansion, it will be increased to 12,950 kVA and the same will be sourced from TANGEDCO through a dedicated line. However, to meet the emergency power requirement during the grid failure, a DG set having capacity of 65 kVA is available and is proposed to install two additional DG sets having capacity of 185 kVA & 320 kVA. The HSD is the only fuel used in the plant, which is used for DG sets.

2.4.5 WATER REQUIREMENT

The water requirement after the proposed expansion will be increased from existing requirement of 20 m^3/day to 125 m^3/day. Water requirement for the plant is met through existing bore well and after expansion, water will be sourced through local Panchayat. The requirement details are tabulated below in Table 2-8. The details of domestic water requirement is given in Table 2-9.

Table 2-8 Water requirement

Description	Existing in m^3/day	Proposed in m^3/day	After Expansion in m^3/day
Process-Billet cooling in induction furnace	7	43	50
Process for quenching in Rolling mill	8	52	60
Scrubber	2	5	6
Domestic	3	6	9
Total water requirement (One Time Use)	**20**	**105**	**125**

Table 2-9 :Water requirement for domestic purpose

Component	Total Occupancy (Nos.)	Water Consumption Rate (LPCD)		Total water requirement (m^3/day)	
		Domestic	Flushing	Domestic	Flushing
Workers	200	20	25	4	5
Total Domestic Water Requirement				**9 m^3/day**	

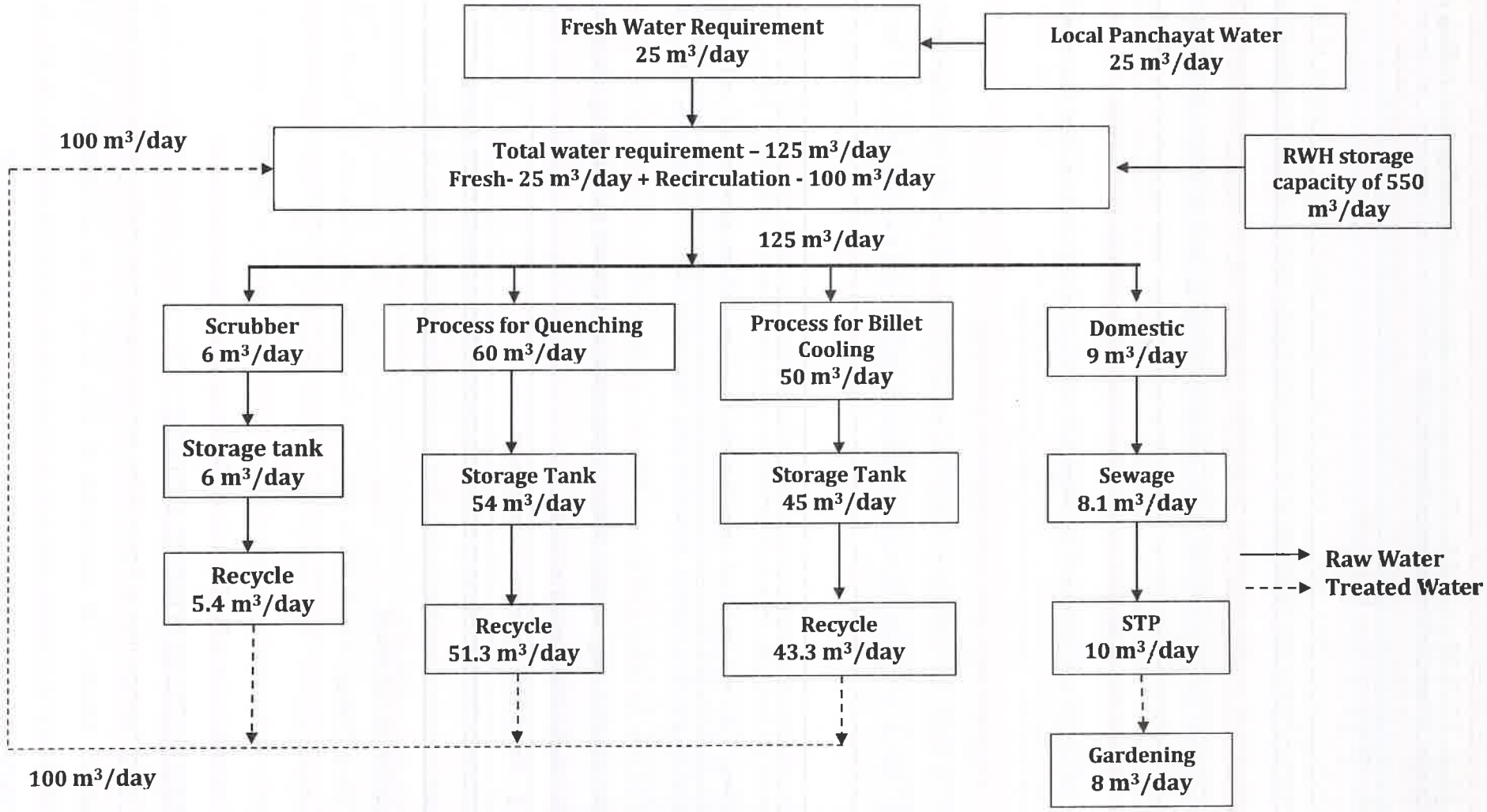


Figure 2-2: Water balance diagram

2.4.6 INFRASTRUCTURE FACILITIES

Infrastructure facilities such as toilets & bathrooms facilities are proposed to be provided within the site for the construction workers during the entire period of construction phase as temporary. It is also proposed to provide adequate no of toilets, bathrooms, dining hall facilities and workers rest hall to the workers including contract labors during the operation phase. This facility will also be extended to truck drivers near unloading area of the plant.

2.5 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION

The expansion activities will be completed within a period of six (6) months from the date of receipt of all the approvals from statutory authorities.

2.6 TECHNOLOGY AND PROCESS DESCRIPTION

The raw materials with the pre-determined composition are melted in induction furnace the liquid hot metal is transferred into pouring ladle. From pouring ladle the liquid metal is transferred into billet moulds. The billet moulds are placed on the bottom plate at the correct position. Billet moulds are CI Moulds placed with larger cross section at bottom.

The central trumpet, which receives the liquid metal in line with brick inside. Billet moulds are clean from rust and dust from the inner surface with compressed air and suitable coating of graphite powder is given inside for easy removal of billet from moulds. After the hot metal is solidified, the billet moulds are removed by crane. Billets are knocked out and transferred to cooling area. Any surface defect is observed is removed by grinding, chipping etc. then billets stocked for further process.

2.6.1 PROCESS DESCRIPTION OF MS BILLETS

The manufacturing process of MS Billets involves the following steps in sequence. The details of each step are described below. The process flow chart is shown in Figure 2-2.

Preparation of Charge

MS Scrap, Sponge Iron & Ferro Alloy are the major raw materials for steel making in the induction furnace. The conversion of iron scrap in to castings does not require any sophisticated technology. Selected raw material of consistent and ideal quality is used. The raw material selected is clean shredded scrap of low carbon content.

Melting the Charge in Induction furnace

MS Scrap, Sponge Iron & Ferro Alloy are the major raw materials for steel making in the induction furnace. The conversion of iron scrap in to castings does not require any sophisticated technology. Selected raw material of consistent and ideal quality is used. The raw material selected is clean shredded scrap of low carbon content.

Melting the Charge in Induction furnace

The furnace crucible is charged with the requisite quantity of scrap and sponge iron and the lid is put on. As the power is introduced, current starts flowing at a high rate and a comparatively low voltage through the induction coil of the furnace, producing an induced magnetic field inside the central space of the coils where the crucible is located. The induced magnetic fluxes thus generate cut through the packed charge in the crucible. As the magnetic fluxes cut through the scraps and complete the circuit, they generate an induced current in the scrap. This induced current, as it flows through the highly resistive path of the scrap mix, generates tremendous amounts of heat and melting of scrap starts.

As soon as the charge has melted completely, any objectionable slag is skimmed off, and the necessary alloying elements are added. When these additives have melted completely, the power input may be increased to bring the temperature of metal up to the point most desirable for pouring. The current is then turned off and the furnace is tilted for pouring into a ladle. As soon as pouring has ceased the crucible is cleaned completely from any slag or metal droplets adhering to the wall of the crucible and the furnace is now ready for charging again.

Billet manufacturing through continuous cast machine

Liquid Metal from Induction Furnace is carried in a ladle over the Continuous - Cast Machine (CCM). The liquid metal flows from the ladle through a slide gate system underneath it into water-cooled copper mould tubes, which solidifies the liquid metal into a square shaped mould, thus producing MS Billets. From the considered casting cycle time, the number of strands required to cast 100 sq.m and 110 sq.m billets is worked out to be two (2). Based on the above, 2 strand billet casting machine suitable for casting up to 160 mm sq. billets have been selected.

Hot Charging of Billets from Continuous Casting Machine

Continuous casting of steel is now the method of choice by all steel producers replacing the old method of ingot casting. Continuous casting of steel billets is one of the type of continuous casting adopted in steel industry, by which, steel billets are produced continuously and simultaneously.

Continuous casting has evolved to achieve improved yield, quality, and productivity and cost efficiency. It allows lower-cost production of metal sections with better quality, due to the inherently lower costs of continuous, standardized production of a product, as well as providing increased control over the process through automation.

Further to the Continuous Casting Machine to save the fuel, time and faster the production instead of reheating the billets, it is planned to implement the system of Hot Charging. Hot charging is a system of passing the produced billets through motor operated conveyer directly to feed the billets into roughing mill to produce HSD TMT bars.

Re-heating furnace will be kept as stand by and will be used only in case of any breakdowns of Hot charging process. This system helps to avoid reheating the materials and to save the fuel consumption and increase the production at lesser cost.

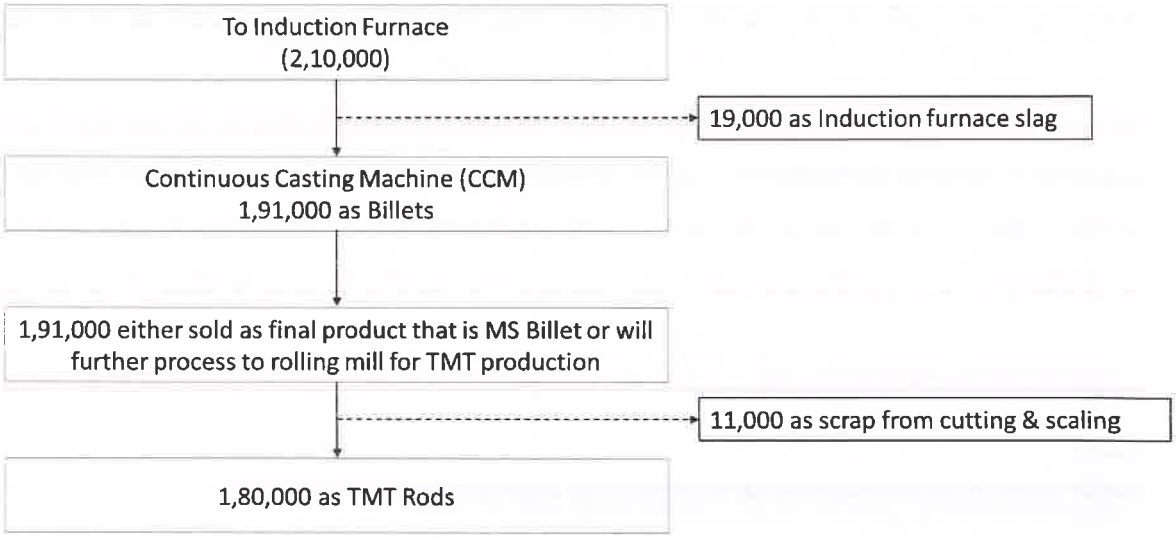


Figure 2-3 Process flow of MS Billets & TMT roads along with material balance

2.6.2 PROCESS DESCRIPTION OF HSD TMT FROM MS BILLETS

On receipt of the raw materials they are segregated, classified and lab analysed to various qualities. Then the various composition of Scrap with a required percentage classification are charged in to the furnace.

The duration of the melting process is around 3 to 3 ½ hours inclusive of the duration taken for slag removal. On attaining the desired melting temperature of about 1600°C to 1640°C. The bath sample is chemically analysed. Then based on the result of the bath sample the required alloys are charged into the furnace. Now the molten metal on attaining a temperature of 1660°C final sample is chemically analysed and poured into the ladle. Then the ladle is carried to the continuous casting machine for billet casting.

The duration of the casting process is about 45 minutes to pass the liquid metal through the copper mould tube with the required sizes of 100 x 100mm. During the process, the billets are cut to the required lengths using PLC system. The produced billets transferred in

motorized conveyer system for a distance of 45 meters with a temperature of about 550°C to the feed material into the roughing mill for further process to produce TMT bars.

Random samples are drawn from each heat for analysis to confirm with the IS: 2830 by quality assurance department.

The following facilities are maintained to control the quantity and quality of MS billet

- Temperature Indicator to identify and control of temperature.
- Counter machine to identify the number of pieces passed and arrived the quantum of production using size, length and density of billets.
- Chemical composition of billet obtained by analysis of one sample from each heat shall conforms to the requirements laid down in clause 6 of IS: 2830. Product analysis shall also be carried out on each cast.
- The sub-standard or defective materials, which do not conform to the specification, shall be disposed of as scrap.

2.6.3 MANUFACTURING PROCESS IN ROLLING MILL

The process involves converting the shape stock viz. MS Billets to desired finished section in hot condition by way of passing the material between a pair of grooved rolls and providing suitable draft at various stages. The whole operation is conducted at a particular temperature range and within a limited time span. The stages of rolling operation are comprised of heating of feed stock to rollable temperature, rolling the feed in different mill stands, cropping the hot bar during process of rolling between stands as applicable and subsequently finishing in the form of hot rolled deformed bar in straight length.

The hot bar coming out of last pass is then conveyed through TMT Box and then to a cooling bed after shearing. The bars at almost ambient temperature are sheared to commercial length stored and kept ready for dispatch. In TMT process hot bars are subjected to quenching by means of an intense cooling installation (cooling installation specially designed water spray system). This step hardens the surface layer to marten site while the core structure remains austenite. When the bar is free of water chamber, heat flows from core to surface and surface gets tempered to structure called marten site. In the cooling bed due to atmosphere cooling, the hardened zone is tempered by temperature homogenization in the cross section and the austenite core is transferred to ductile-ferrite-pearlite core.

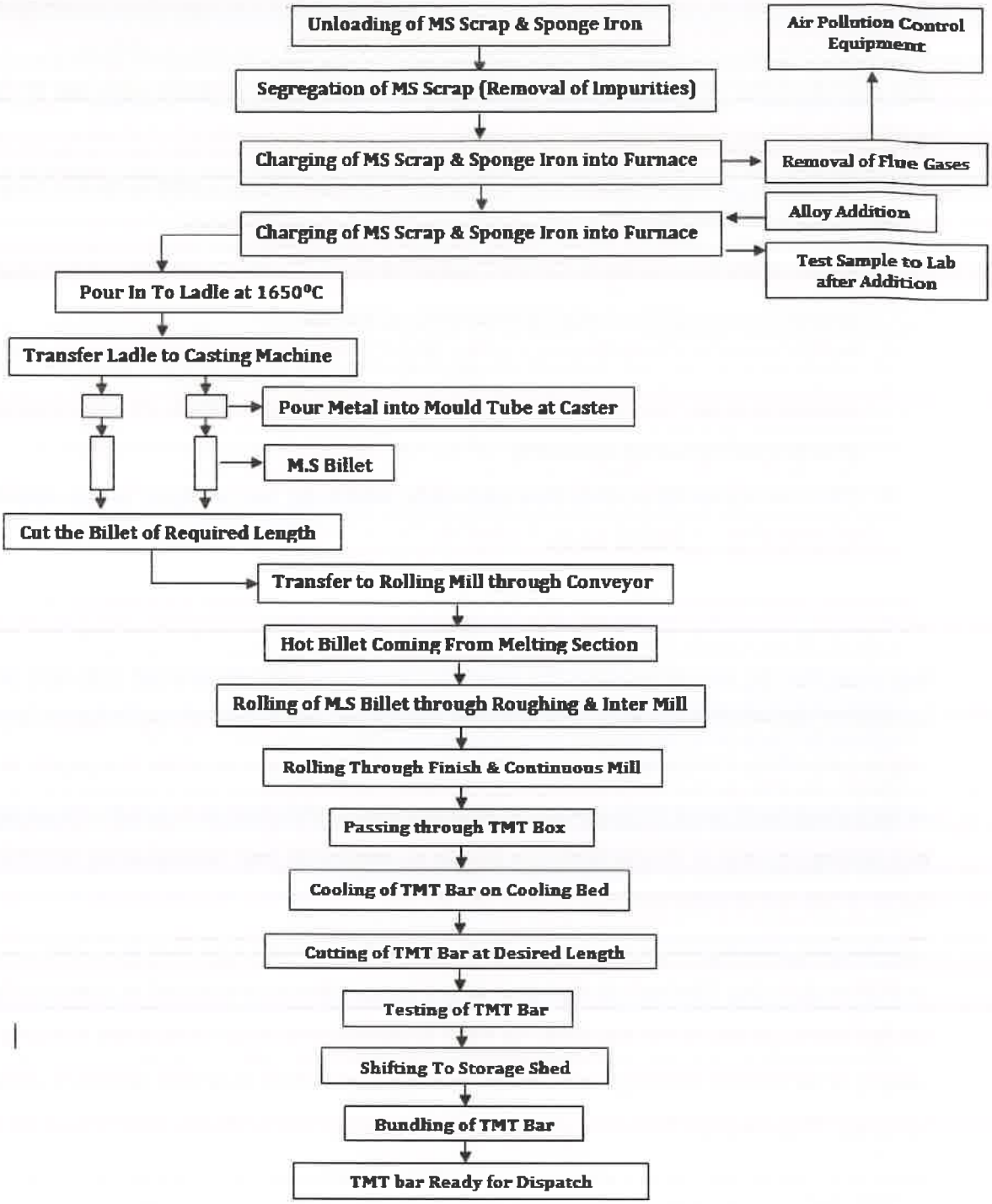


Figure 2-4 Block diagram for manufacturing process of MS Billets & TMT Rods

2.6.4 EQUIPMENT USED IN STEEL MELTING SHOP

2.6.4.1 INDUCTION FURNACES

Induction Furnace is a device to melt the charge material using electrical power. It consists of Crucible lined with water cooled induction coils, electrical system to give controlled power to induction coil, hydraulic tilting system, Heat exchanger to cool the circulating water, water

softener for generating soft water, furnace transformer, power factor improvement system and surge suppressor. The technical details of proposed induction furnace is given in below Table 2-10

Table 2-10 Technical description of proposed induction furnace

Sl.No	Description	Make
1	6000 KW / 12 Mt x 2 – 2 Set Induction Furnace Consisting of Control Panel , Crucible , DM Unit , Hydraulic Unit, MF Capacitor & Copper Bus bar	Oritech Make
2	Cooling Tower – 4500 LPM – 2 nos (aircooled)	--
3	Plate Type Heat Exchanger for coil cooling water - 2 No	--
4	Furnace Transformer 7200 KVA, 33 KV / 500 V x 4 – 2 NOS	--
5	Furnace Auxiliary Transformer – 1600 KVA, 33 KV / 433 V	Kirloskar Make
6	33KV,25KA,800A, Outdoor Type, Furnace Transformer Feeder Type VCB – 2 Nos	Megawin Make
7	33KV,25KA,800A, Outdoor ,Point Of Supply VCB – 1 No	Megawin Make
8	33KV,25KA,800A, Out Door Type ,Incomer at sub station VCB – 1 No	Megawin Make
9	33KV,25KA,800A, Outdoor Type, Furnace Auxiliary Transformer Feeder Type VCB – 1 No	Megawin Make
10	Coil Cooling Pump 50 HP - 4 Nos	--
11	DM Heat Exchanger Cooling Pump 20 HP -4 Nos	--
12	Furnace Heat Exchanger Cooling Pump 40 HP – 4 Nos	Kirloskar Make
13	Scrap Bundle Machine , (Jumbo Machine)	Jain Hydraulics
14	Pollution Equipment (1,00,000 m3/hour) Swivelling Arrangement, Spark Arrestor, Bag Filter, ID Fan with Motor	2 Set
15	Cooling Tower – 15 HP x 2 for TMT Cooling	Paltech make
16	Laboratory Equipment – Carbon & Sulphur Apparatus, Muffle Furnace, Combustion Furnace, Temperature Controller, Hot Plate, Pulveriser for sponge iron.	Kishore Scientific

2.6.4.2 LADLES

Ladles are pots with refractory lining inside to withstand 1600^{0}C temperature. It has side arms so that can be lifted with the help of crane. Ladles are used to store the liquid steel from Induction Furnace and take it for further processing. Ladles are with bottom nozzle and pneumatically operated gate for discharge of liquid.

2.6.4.3 CRANES

Electric Over-Head Travelling (EOT) cranes of various capacities are used to carry the ladles/materials at different places. Cranes are used in melting hall to charge melting scrap, further to place it over the Tundish of the Continuous Caster, to remove billets from the cooling bed and store at designated places. Accordingly the sizes, capacity and numbers of cranes are decided. EOT Crane proposed for 2 No's of 12 TPH Induction Furnace includes 12.5 MT (3 Nos), 20/10 MT (1 No), 7.5 MT (1 No) & 15 MT (3 Nos). In addition to that EOT Crane proposed for Rolling Mill 10 MT (1 No), 7.5 MT (3 Nos), 3 MT (1 No).

2.6.4.4 CONTINUOUS CASTING MACHINE (CCM)

CCM is used to continuously cast the liquid steel in required cross section and in length. It consists of tundish, mould, bow with withdrawal mechanism, straightening mechanism and cooling bed, hydraulic system for withdrawal mechanism. Dummy bar is provided to start the casting. Tundish is a rectangular vessel, lined with refractory and having discharge nozzle with pneumatically operated gate. A stand is erected over it where the ladle is stationed for discharging the liquid in it. Mould is of copper with water cooled jackets its cross section in the bottom is of the size of which billet is to be drawn.

Water spray nozzles are installed to spray water over the just drawn billet to cool it further and to harden the skin of the drawn billet. The withdrawal rolls are used to provide motoring action to the billet to come out and travel further for cooling. The billet is either manually cut or a travelling gas cutter is provided which cuts the billets automatically as desired size. Cooling bed is of steel rolls driven by electric motor. Water spray is done from the top till the temperature of billets comes down to desired level. Cooling Tower is provided to cool the water collected from the cooling bed for cooling and re-use.

2.6.4.5 FUME EXTRACTION SYSTEM- FES

The Induction Furnace will be provided with an advanced highly efficient gas cleaning system. Dust loaded fumes, generated in the Induction Furnace during operation, and are extracted directly from the furnace roof canopy provided on furnace. Fumes that escape during the charge time would be extracted through secondary ducting placed at higher elevation of shed. Gases from both from primary and secondary ducts will be passed through spark arrestor and then enter into bag filters. Bag filters cleans the dust and leave the clean air into environment. The dust collected from bag filters would be disposed off along with Slag as it is inert dust.

2.6.4.6 SCRAP & SLAG HANDLING

Processed & sized scrap will be brought into the scrap storage yard from outside plant or the scrap preparation area. The properly weighed scrap will be transported to the Induction furnace by means of EOT Cranes for direct charging.

Slag generated from the plant is send to slag crusher for crushing and recovery of iron. On recovery of iron the balance material as solid waste of the slag is used for road laying and for filling low lying areas.

2.7 GENERATION OF POLLUTION

In the process as well as in the auxiliary plants, along with the useful product several waste materials will also be generated. These waste materials includes gaseous emissions, liquid and solid wastes generation. By volume, gaseous waste is the largest waste source from steel mills. However, most of the gaseous metal emissions are captured in the emissions control systems attached to furnaces.

The quantities and the composition of the gaseous and solid waste that are generated in the plant will be regulated such that their final disposal into the environment meets all the statutory requirements and the environmental impacts are minimized.

- The sources of particulate emissions are induction furnaces and an insignificant amount from standby DG sets.
- The sources of effluent are domestic usages whereas water used for cooling purpose is completely recycled.
- The solid wastes generated from the plant are furnace slag, used sand and dust from dust collectors.

2.7.1 GASEOUS EMISSIONS & MITIGATION MEASURES

Generally, in all Induction Furnaces, steel scrap is the basic raw material, which is melted by induction heating, and required Ferro - alloying elements are added. During heating of scrap, all the material like dust, oil, grease, rust etc. adhered to it will receive the heat and subsequently undergo combustion process. This combustion may or may not be complete resulting in fumes, which emanate from the furnace. Fume will comprise of unburnt soot, completely burnt ash and iron oxide, oxides of alloying elements.

Dust/fume collection system on Induction Furnace consists essentially of semi closed type moving Dust Collection Hood, Air Duct, Gas to Air Heat Exchanger, Dilution Air Mix Valve, Bags filtration unit, an ID (Induced Draught) fan for creating the desired level of suction from the furnace and fume suction points, a chimney, dampers for flow and pressure/temperature

control. While passing through the suction points the fumes are made to pass through suitable steel fabricated Ducts, Air to Gas Heat Exchanger, and ingress of ambient air to dilute the fumes. The combination of above three results in the lowering of fume temperatures which suit the filter fabrics. Due to process variations, there is a possibility of exceeding the inlet gas temperature beyond the permissible limit of filter fabric under such circumstances the bag house will be bypassed. Dilution Damper are provided in the system, which will operate on temperature signal to protect the fabric bags.

Fugitive Emissions are generated from vehicular movements for transporting the raw material and end products to and from the plant premise. The emission generated by the diesel generator set is released into the atmosphere through a stack (stack height as per CPCB). The details of Emission Source & Stack height are given in Table 2-11.

Table 2-11 Source of Emission and Stack Height Details

Sl.No.	Emission Source	Stack height	Stack Top Diameter
Existing			
1	Induction furnace – 2 no's of 7 Tonne & 1 no of 10 TPH	30	0.4
2	Reheating Furnace 18 MT – 1 no	30	0.4
3	DG Set 65 kVA	12	0.1
Addition Due to Expansion			
4	Induction Furnace – 12 MT- 2 nos	30	0.4
5	DG Set 350 kVA	12	0.2
6	DG Set 185 kVA	15	0.3

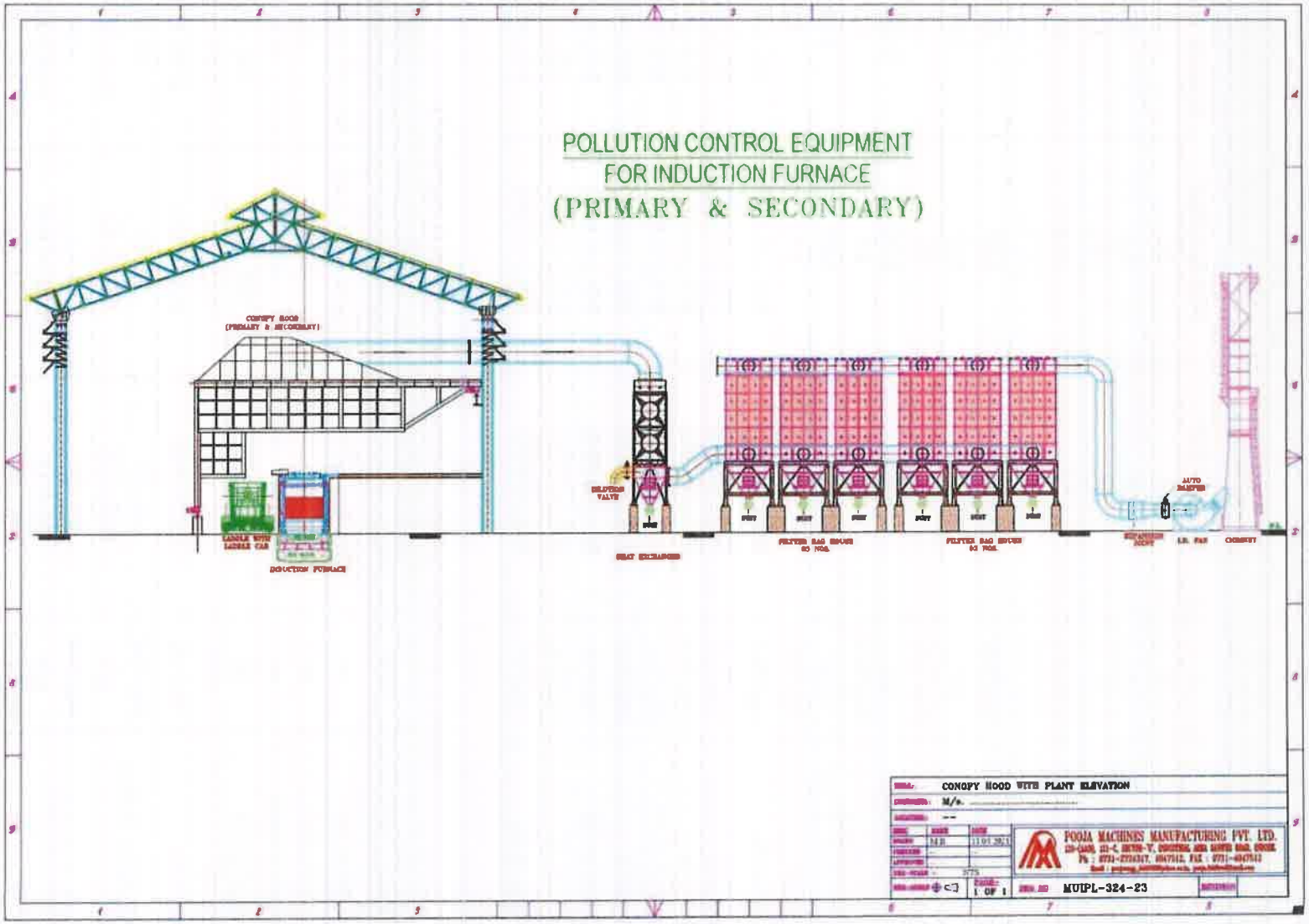


Figure 2-5 Fume extraction system for proposed induction furnace (12 TPH Furnace)

Table 2-12 Stack emission details (Existing)

Stack Attached to	Unit -	Induction Furnaces (2 No's - 7 Tonne & 1 No – 10 Tonne)	Reheating Furnace (1 No - 18 TPH)	DG set (65 kVA)
APC Measure	---	Dry Bag Filter	Wet Scrubber	Acoustic with Stack
Stack Height	m	30	30	12
Stack diameter	m	0.4	0.4	0.1
Temperature	°K	342	353	412
Velocity	m/s	12.8	14.3	17.3
Flow rate	Nm^3/hr	4966	5375	342
Particulate Matter	mg/Nm^3	18.9	13.8	21.7
	g/s	0.026	0.02	0.002
Sulphur dioxide	mg/Nm^3	87	59	2
	g/s	0.12	0.08	0.00019
Nitrogen oxides	mg/Nm^3	55	47	151
	g/s	0.075	0.07	0.014
Iron as Fe	mg/Nm^3	31	17	1.8
Copper as Cu	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Zinc as Zn	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Nickel as Ni	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Chromium as Cr	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Lead as Pb	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Cadmium as Cd	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Arsenic as As	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Mercury as Hg	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)

Table 2-13 Stack emission details (Additional/Upgraded)

Stack Attached to	Unit	Induction Furnaces (2 Nos - 12 TPH)	DG set (350 kVA)	DG set (185 kVA)
APC Measure	---	Dry Bag Filter	Acoustic with Stack	Acoustic with Stack
Stack Height	m	30	12	15
Stack diameter	m	0.1	0.2	0.3
Temperature	°K	330 - 350	390 - 425	400 - 450
Velocity	m/s	11-14	13.5 - 16	11.5 - 14
Flow rate	Nm^3/hr	4500-6500	1100-1500	2100-2600
Particulate Matter	mg/Nm^3	20-30	20-30	18-30
	g/s	0.03-0.05	0.01-0.02	0. 012-0.02
Sulphur dioxide	mg/Nm^3	60-100	3-12	2-10
	g/s	01-0.15	0.002-0.005	0.002-0.005
Nitrogen oxides	mg/Nm^3	30-80	175-260	165-250
	g/s	0.05-0.12	0.06-0.15	0.09-0.15

2.7.2 POLLUTION CONTROL SYSTEM FOR INDUCTION FURNACE

The Main Equipment in Pollution Control system are as follows:

- Motorized Operated Semi-Closed Type moving Hood Assembly – With Complete Accessories & Drive Arrangement.
- Flue gas to Air Heat Exchanger with Axial flow fan.
- Dilution Air Damper with all its accessories.
- A set of filter bag house unit Fitted with complete accessories of filter bags, cages, ventures pulse jet valves.
- Steel duct, bend work (plain duct).
- Centrifugal blower (I.D. Fan) with accessories for fume suction system.
- Chimney (31 m height)

Flue gas to Air Heat Exchanger

Flue gas to Air Heat Exchanger is provided for arresting the sparks, cooling purpose of input flue gas & filtering out the course particle. Flue gas to Air Heat Exchanger is an Air-to-Air Heat Exchanger. Furnace Flue Gas (uncleaned) is passed through inside the vertical tubes on which is forced the atmospheric air for cooling through axial flow fans. Dilution Air Damper is installed before the air to gas heat exchanger. Temperature sensors will be installed near to Dilution Damper in such a way that, if the temperature of filter bag house increases beyond the set limit, the dilution air damper will open and immediately atmospheric air will be taken into the system to bring down the temperature to safe limit. Once the gas temperature reduces below the set temperature, the dilution Air Damper closes immediately.

System Description & Working Concept of Dry Bag Filters

Dry filtration systems exploit the principle of operation of the physical separation that may occur by means of a filter cloth - cartridges, bags, pockets - or the centrifugal force - cyclone separator. The classification according to the kind of dust to treat allows us to identify the best available technology and dimensions of the filtering plant.

The principles on which the bag filter is based are as follows:

- Dust laden gases enter the filter, then meet a series of cylindrical bags, also called sleeves.
- The transport of the gas is ensured by a blower, to prevent the particulates to clog the blower itself and to keep the system in the depression mode, finally ensuring the necessary depression to the point of fumes outlet or inside the combustion chamber.

The bag filter system is designed to capture the fumes emanating from induction furnace by placement of semi-closed type moving hood and transport the fume to bag filter through plain steel duct gas to air heat exchanger and filter the same to a concentration level of ≤ 50mg/ Nm^3. During the process of melting and poking of scrap into the furnace, lot of sparks are generated and these sparks would even travel longer distances and also into the bag filter. Due to this sometimes, temperature also increases beyond the limit. Hence Emergency Dilution Damper has been provided to protect the filter bags from these sparks.

This dry type (bag filter) air pollution control system designed for gas flow rate of 80,000 Nm^3/H and temperature between 70 to 130°C. The collection mechanism for particulates in the filters is by means of interception, inertial impaction and diffusion. The dust laden air enters in the bag filter by suction or positive pressure. The heavier dust particle fall immediately into the hopper, while the lighter dust gets deposited on outside of the filter bags. This dust is removed in a predetermined cycle by pulsing of high pressure, dry and oil free compressed air.

As the filtering process starts, the collected dust begins to form a dust cake, which eventually diminish the porosity of the filter bags. The reduction in porosity is measured in U- tube manometer. As the pressure drop increases, the throughput volume of the dust collector decreases. To measure the moderate pressure drop of the system, a differential pressure U-tube manometer is used. When pressure drops to 140mm WC, a manual starting of timer can be done connected across the bag filter. The cleaning system consists of an electronic timer, which actuates the coil of solenoid valve. This solenoid valve is mounted on a diaphragm valve and thus actuating solenoid valve will open up diaphragm valve shortly to let compressed air impulse to the bags.

This impulse of air jets into the bags and thus cleaning them. The dust adhered onto the outer surface of the bag is released and falls into the hopper. The cleaning process take place row by row. It is proposed to implement pulse jet type of dust collector unit (filter bag unit) so that dust collector will provide more complete cleaning & reconditioning of Filter Bags than the dust collector system having reverse or shaker air cleaning method. The I.D. Fan develops the necessary static pressure required to suck the gases from furnace to overcome the system resistance in ducting & filter bag house. The clean filtered gas containing emission level not above than 50mg/Nm^3 RSPM is vented to atmosphere through 30m heights chimney.

2.7.3 WASTEWATER GENERATION AND DISPOSAL METHODS

The quantity of wastewater generation depends upon the quantity of water used for various purposes. As the unit will be operated on the dry process, water is not used in the process

whereas water is used at certain portion of ancillary services of the plant like cooling tower make-up. There is no trade effluent generation from the existing mill.

The total sewage generation from domestic activity will be 8.1 m^3/day after the expansion. The sewage will be treated in a Sewage Treatment Plant of 10 m^3/day capacity. The treated sewage will be utilized for green belt development within the plant premises as the green belt area is enough to handle the sewage of 8 m^3/day. The detailed STP proposal is provided in **Annexure - 12.**

2.7.4 SOLID WASTE GENERATION AND DISPOSAL

Non- Hazardous

The quantities of solid waste generation before and after the expansion are presented in Table 2-14 & Table 2-15 respectively.

Table 2-14: Solid waste generation and disposal

Name of waste	Existing (T/Annum)	After expansion (T/Annum)	Method of Disposal
Furnace Slag	1500	19000	Sold to Cement brick manufacturers
Mill Scale	-	1910	Sold to secondary users

Table 2-15: Domestic waste generations and disposal

Sl.No.	Description	Quantity (Tons/day)	Mode of treatment / disposal
1	Biodegradable waste	0.025	OWC
2	Non-biodegradable waste	0.040	Sent to authorized recyclers
3	STP Sludge	2 kg/day	Utilized as a manure for green belt.

Hazardous

The quantities of generation and the disposal of hazardous solid wastes in the plant are presented in Table 2-16.

Table 2-16 : Solid waste generation and disposal (Hazardous)

Sl. No.	Source	Quantity (TPA)		Disposal Method
		Before Expansion	After Expansion	
1	Used / Spent Oil	0.3	0.5	Managed as per Hazardous Waste Management 2016
2	Waste containing Oil	0.1	0.2	
3	Empty Oil Barrels	0.2	0.4	

2.7.5 NOISE POLLUTION AND MITIGATION MEASURES

The major noise generating sources in the steel mill unit are continuous casting machine, induction furnace, rolling mill, roughing mill and standby DG set. The noise levels recorded from the different type of machineries are given below in Table 2-17.

Table 2-17 Noise levels at the existing plant

Sl. No.	Location	Noise Levels dB (A)
1	Near Continuous Casting Machine	70.2
2	Near Induction Furnace	78.6
3	Near Rolling Mill,	81.4
4	Near Roughing Mill,	80.8
5	DG set (65 kVA)	85.3

A perusal of the above table reveals that the work zone noise levels from all important equipment vary in the range of 70.2 to 85.3 dB(A). However, people working at high noise generating equipment's are provided with earplugs/earmuffs.

3 DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

Environmental Impact Assessment Study includes an assessment of the various environmental impacts likely to be caused on the surrounding nature in and around the proposed project. It will also incorporate the appropriate control measures required to be adopted or implemented in order to minimize the adverse effects thereof.

In order to carry out such assessment study, it is first necessary to delineate and define the existing environmental factors in and around the proposed project on the existing environmental scenario which will include various environs like Ecology, Flora-fauna, Socio economic profiles, Environmental quality in respect of air, water, noise & soil etc.

This section incorporates the description of the existing environmental settings within the area encompassed by a circle of 10 km radius around the project site. The base line study was conducted during post monsoon season beginning from the month of December 2020 to February 2021 and secondary data collected from various Government, Semi-Government and Public sector organizations.

3.2 METEOROLOGY

The meteorological data recorded during the study period is very useful for proper interpretation of the baseline information as well as for input to prediction models for air quality dispersion.

On site monitoring was undertaken for various meteorological parameters in order to generate the site specific data. The Automatic Weather Station (AWS), equipped with continuous monitoring equipment to record wind speed, wind direction, temperature, humidity and rainfall was set up at the top of the office building at a height of ~ 4.0 m above the ground level. The methodology adopted for monitoring surface observations was as per the standard norms laid down by the Bureau of Indian Standards (IS: 8829) and IMD. Baseline data was generated by M/s ABC Techno Labs India Pvt.Ltd. in-house facilities which is a NABL approved laboratory.

3.2.1 METEOROLOGICAL DATA RECORDED AT SITE

The meteorological parameters were recorded at site on hourly basis during the study period and consists of parameters like wind speed, wind direction and temperature. The total rainfall was recorded daily once at 08:30 hrs. The maximum and minimum values for all the parameters except wind speed and wind direction are presented in Table 3-1.

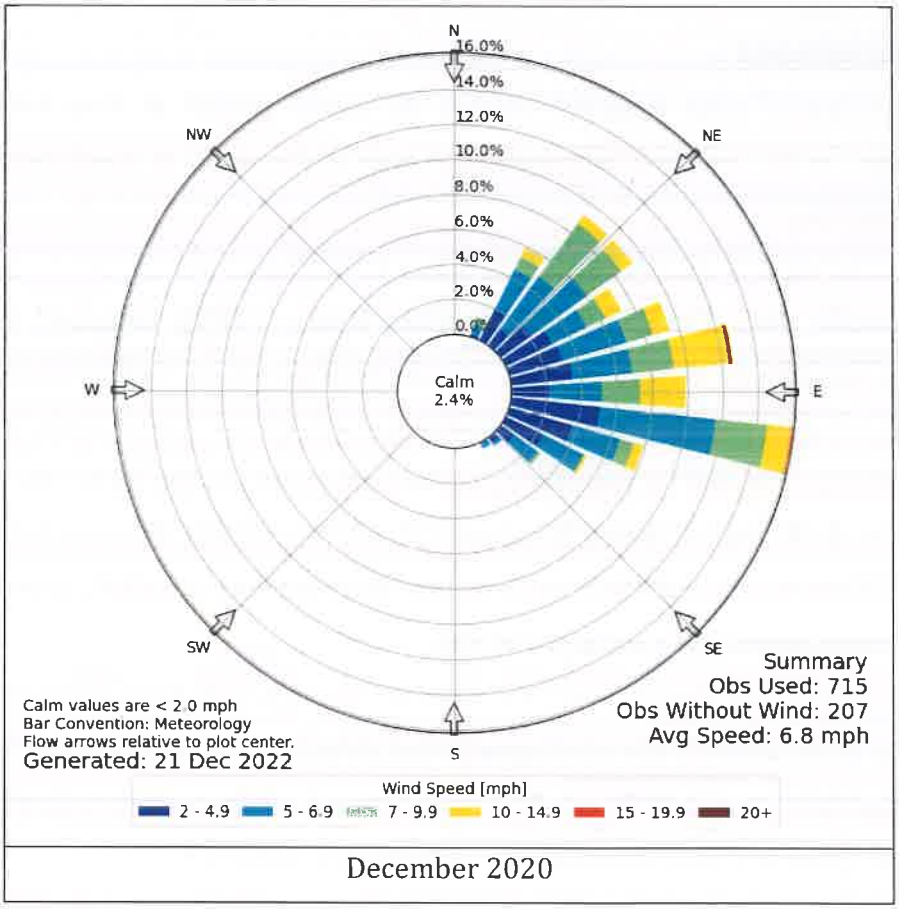
Table 3-1 Summary of the meteorological data generated at site

Month	Temperature (°C)		Relative Humidity (%)		Rainfall (mm)
	Max	Min	Max	Min	
December 2020	26	17	71	26	45.7
January 2021	29	14	100	30	52.6
February 2021	32	16	88	17	70.2

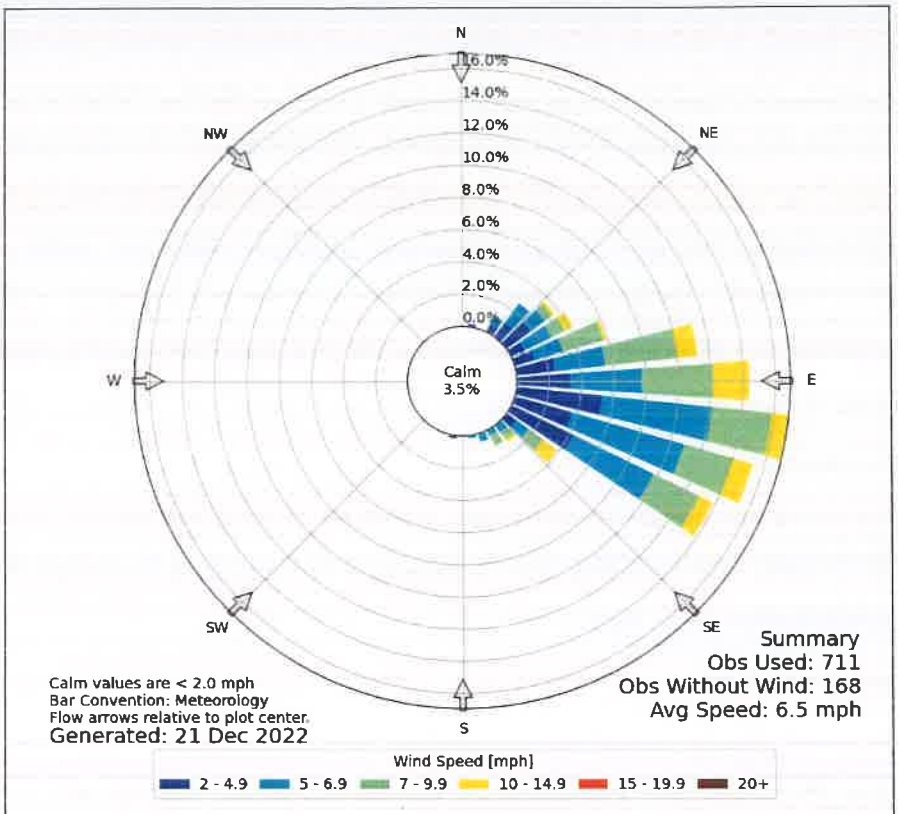
The summary of the wind pattern for study period season is given in **Table-3.2.** The graphical presentation of the same is shown in Figure 3-1.

Table 3-2 Summary of wind pattern in the study area

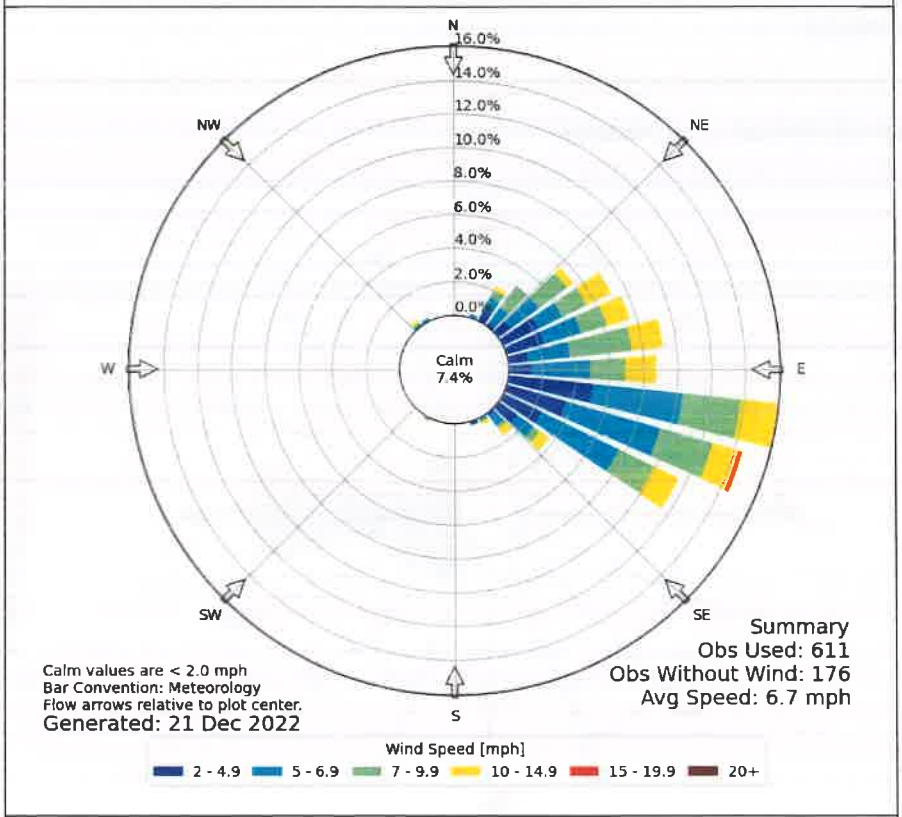
Month / Season	First Predominant Wind Direction	Second Predominant Wind Direction	Average Wind Speed (m/s)	Calm (%)
December 2020	E	ESE	4.1	9.12
January 2021	E	ESE	2.41	3.23
February 2021	E	ESE	2.35	8.78
Post Monsoon season	E	ESE	2.43	4.95



December 2020



January 2021



February 2021

Figure 3-1 Windrose diagram for study period (December 2020 – February 2021)

3.2.2 SECONDARY DATA FROM INDIAN METEOROLOGICAL DEPARTMENT (IMD) BENGALURU

The nearby India Meteorological Department station that is generating meteorological data is 60 km from the site i.e. IMD, Bengaluru. Hence, secondary information on meteorological conditions has been collected from IMD station at Bengaluru International Airport.

Indian Meteorological Department at Bengaluru regularly monitors wind direction, wind speed, relative humidity, temperature, rainfall, evaporation and pressure at 08.30 hours and 17.30 hours every day. Wind rose diagrams are collected from IMD for the period 1971 - 2000 and are shown in Figure 3-2

3.2.2.1 TEMPERATURE

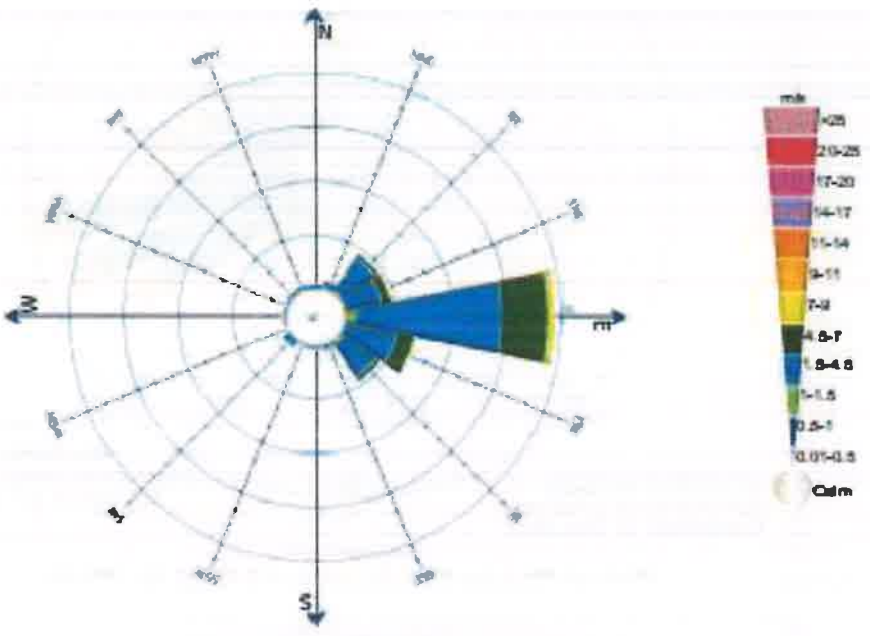
The monthly mean maximum temperature recorded during the period 1981-2010 ranged between 26 to 34°C. The monthly mean minimum temperature recorded during the same period ranged between 14 to 22°C.

3.2.2.2 RELATIVE HUMIDITY

The monthly mean relative humidity recorded at 08.30 hours for the period 1981-2010 ranged between 70 to 86% and the monthly mean relative humidity recorded at 17.30 hours for the same period ranged from 28 to 67%.

3.2.2.3 RAINFALL

The monthly total rainfall recorded for the period 1981-2010 ranged between 1.4 to 183.5 mm and average rainfall of _____mm/yr.



Windrose diagram for December 2020

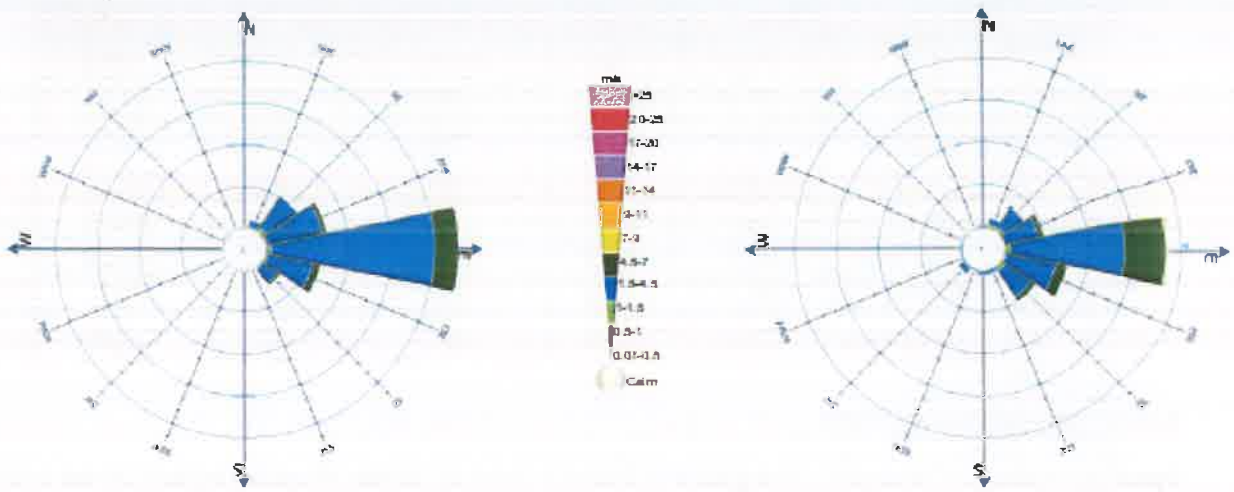


Figure 3-2 Windrose diagram for December 2020, January & February 2021 month from IMD

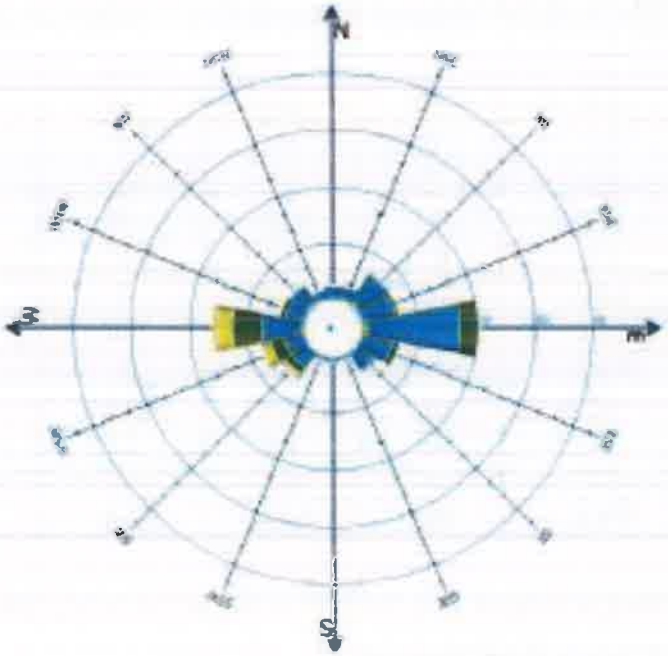


Figure 3-3 Windrose diagram for annual - IMD

Table 3-3 Summary of the meteorological data from IMD data Bengaluru

Sl.No.	Month	Temperature (°C)		Relative Humidity (%)		Rainfall (mm)
		Max	Min	08.30	17.30	
1.	January	27.6	14.8	86	41	1.4
2.	February	30.3	16.2	76	31	5.7
3.	March	32.7	18.7	70	28	15.5
4.	April	33.8	21	74	35	42.7
5.	May	33.1	21.2	76	46	94.5

Sl.No.	Month	Temperature (°C)		Relative Humidity (%)		Rainfall (mm)
		Max	Min	08.30	17.30	
6.	June	29.8	20.1	83	62	91.1
7.	July	28.6	19.6	85	65	97.7
8.	August	28.1	19.5	86	67	122.2
9.	September	28.6	19.5	85	63	183.5
10.	October	28.1	19.2	84	65	155.9
11.	November	26.9	17.5	83	61	50.6
12.	December	26.2	15.4	86	54	13.8

Source: IMD

3.2.3 SPECIAL PHENOMENON

Special weather phenomena are given in Table 3-4 for the area. Thunder occurs on an average 51.4 day in a year. Fog occurs on an average 6.4 day in a year. Hail, dust storm and squalls are rare in the region. More than 0.3 mm precipitation is occurred on 89.5 days in a year.

Table 3-4 Special Weather Phenomena in the area

Months	PPT 0.3 mm or more	Hail	Thunder	Fog	Dust Storm	Squall
January	0.6	0	0	7.9	0	0
February	0.6	0	0.2	3	0	0
March	2.2	0	1.9	1	0	0
April	4.8	0	6.5	0.2	0	0.2
May	8.8	0.1	11.6	0	0	0.5
June	9.7	0.1	5.3	0	0	0.3
July	12.2	0	3.2	0	0	0.1
August	15.2	0	4.7	00	0	0
September	13.3	0	8.5	0	0	0
October	12	0	8.1	0.2	0	0
November	7	0	1.1	1.5	0	0
December	3.2	0	0.1	4	0	0
Annual	**89.5**	**0.2**	**51.4**	**6.4**	**0**	**1**

Source: IMD

From the above table it is evident that the area is not prone to any special weather phenomena like dust storm, hail, heavy down pour etc.,

3.2.4 ATMOSPHERIC INVERSION LEVEL:

Inversions are a result of the vertical temperature profile of atmosphere. Temperature normally decreases as altitude increases in the troposphere. However, an increase of temperature may occur after certain altitude. This zone is termed as inversion which plays a major role in dispersion. Thus, the colder air layer which is below the warmer air results in a stable temperature profile that restricts vertical mixing. Because of the restricted mixing volumes of air due to the inversion, pollution becomes stagnant and does not dissipate. The mixing height is the height of vertical mixing of air and suspended particles above the ground.

This height is determined by the observation of the atmospheric temperature profile. A parcel of air rising from the surface of the earth will rise at a given rate (called the dry-adiabatic lapse rate). As long as the parcel of air is warmer than the ambient temperature, it will continue to rise. However, once it becomes colder than the temperature of the environment, it will slow down and eventually stops. It is at this junction, where the temperature of the parcel crosses the curve denoting the vertical environmental temperature profile determines the mixing height. The spatial distribution of mixing height during winter, pre-monsoon and post monsoon season for 0800 and 1700 IST is shown in Fig. 03 - 21, 03 - 22 and 03 – 23 respectively.

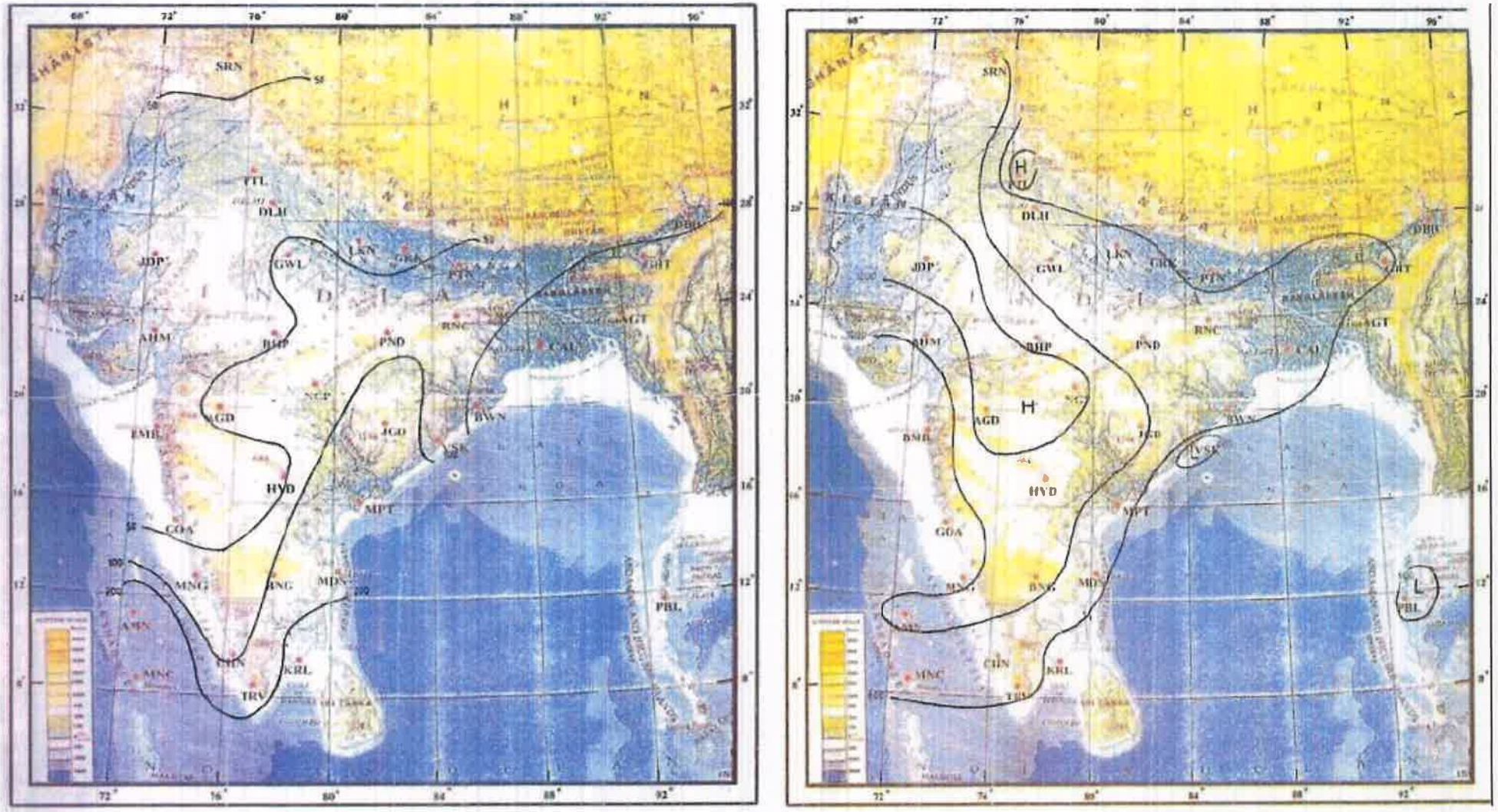


Figure 3-4: Spatial distribution of mixing height in winter season- 0800 IST and 1700 IST

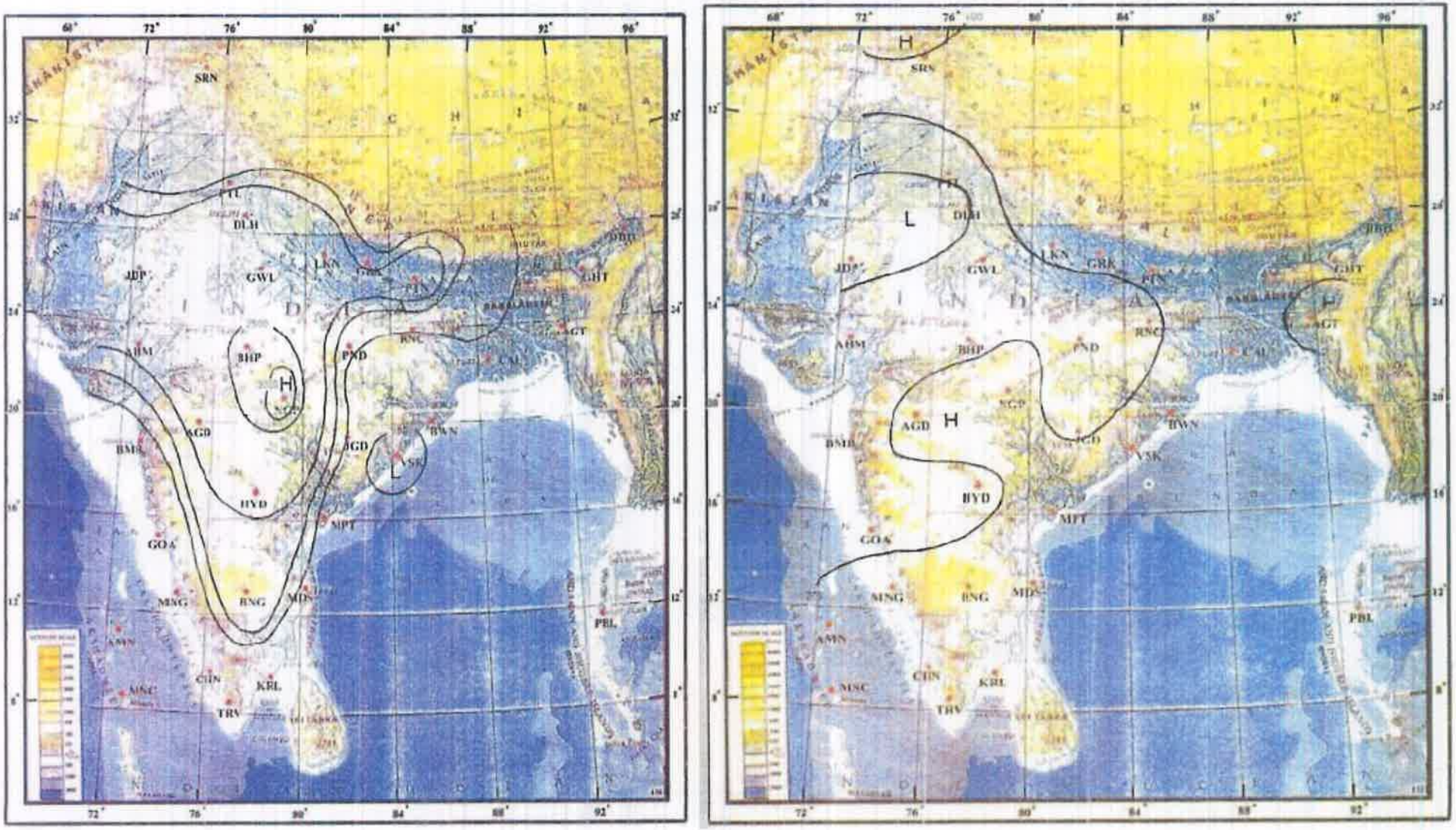


Figure 3-5: Spatial distribution of mixing height in pre-monsoon season- 0800 IST and 1700 IST

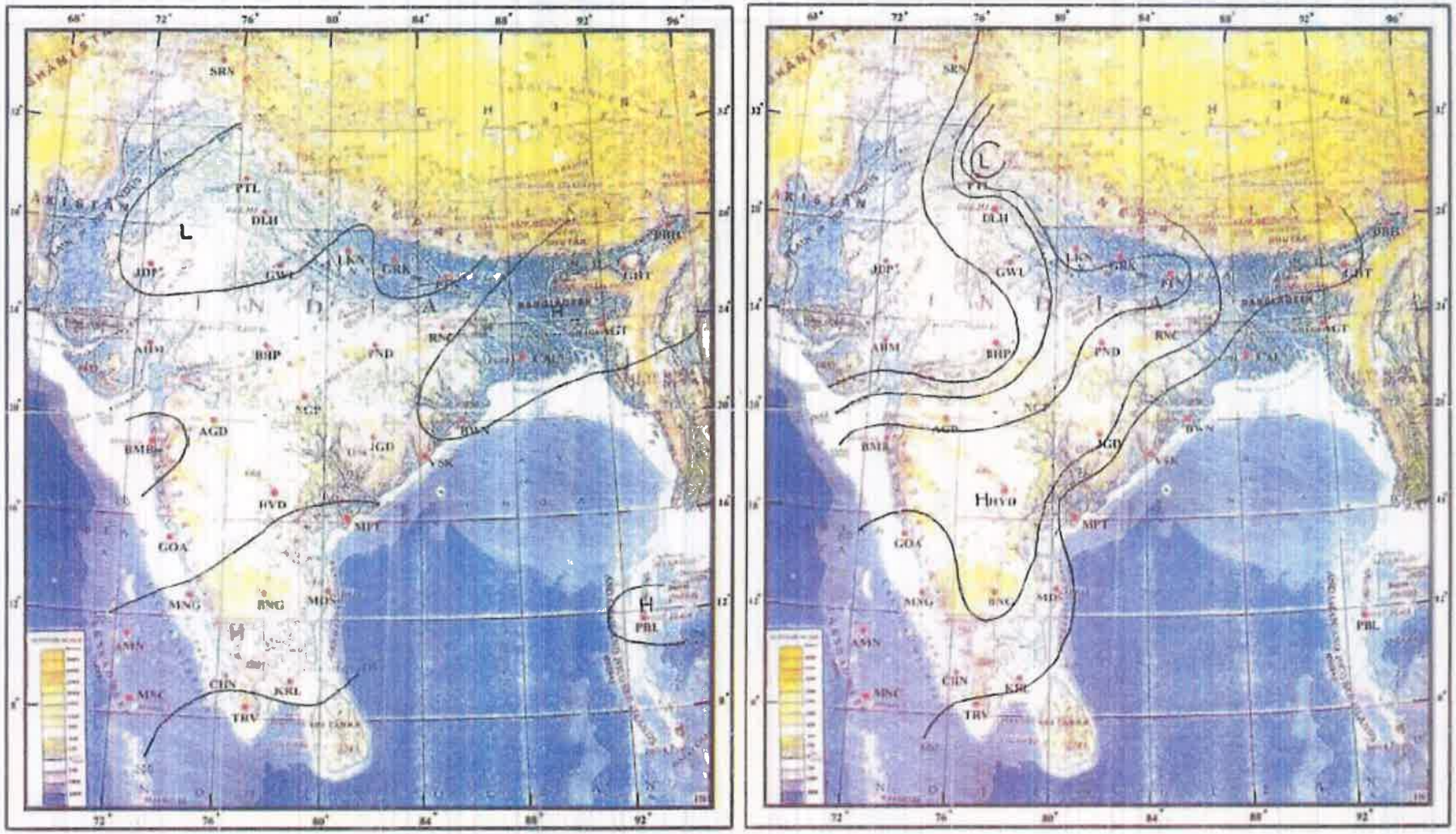


Figure 3-6: Spatial distribution of mixing height in post-monsoon season- 0800 IST and 1700 IST

3.3 GEOLOGY AND HYDROGEOLOGICAL ASPECTS

3.3.1 GEOLOGY

The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is rerpresented by Khondalite Group of rocks, Charnockite Group of rocks, Migmatites Complex, Sathyamangalam Group of rocks, while the latter is represented by alkaline rocks. The Khondalite Group includes garnet sillimanite gneiss and quartzite, which occur as small patches. The migmatite complex includes garnetiferous quartzofeldspathic gneiss and hornblends biotite gneiss, the former exposed on the western part of the district. The Sathyamangalam Group includes fuchsite quartzite, sillimanite mica schist and amphibolites. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. Amphibolites with barbed ferruginous quartzite and associated quartzo-feldspathic rocks (Champion Gneiss) represent the Kolar group and are found west and southwest of Veppanapalli. Following this there are basic intrusions occurring as dykes.

The Charnockite Group occupies a major part of the south-west portion of this district with small bands of garnetiferous quartzo-feldspathic gneiss, Granite gneiss and dolerite dykes. The Northeast and Northern part of the District mainly consist of granite gneiss with small patches of Pink Migmatite, hornblende-biotite gneiss and dolerite dykes. The Eastern part of the district consists of Epidote-Hornblende Gneiss, Ultra Mafics, Syenite and Carbonatite.

The Alkaline Complex is represented by epidote-hornblende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district. Innumerable basic dykes and felsites, quartz, barites and pegmatite veins form part of the Alkali Complex.

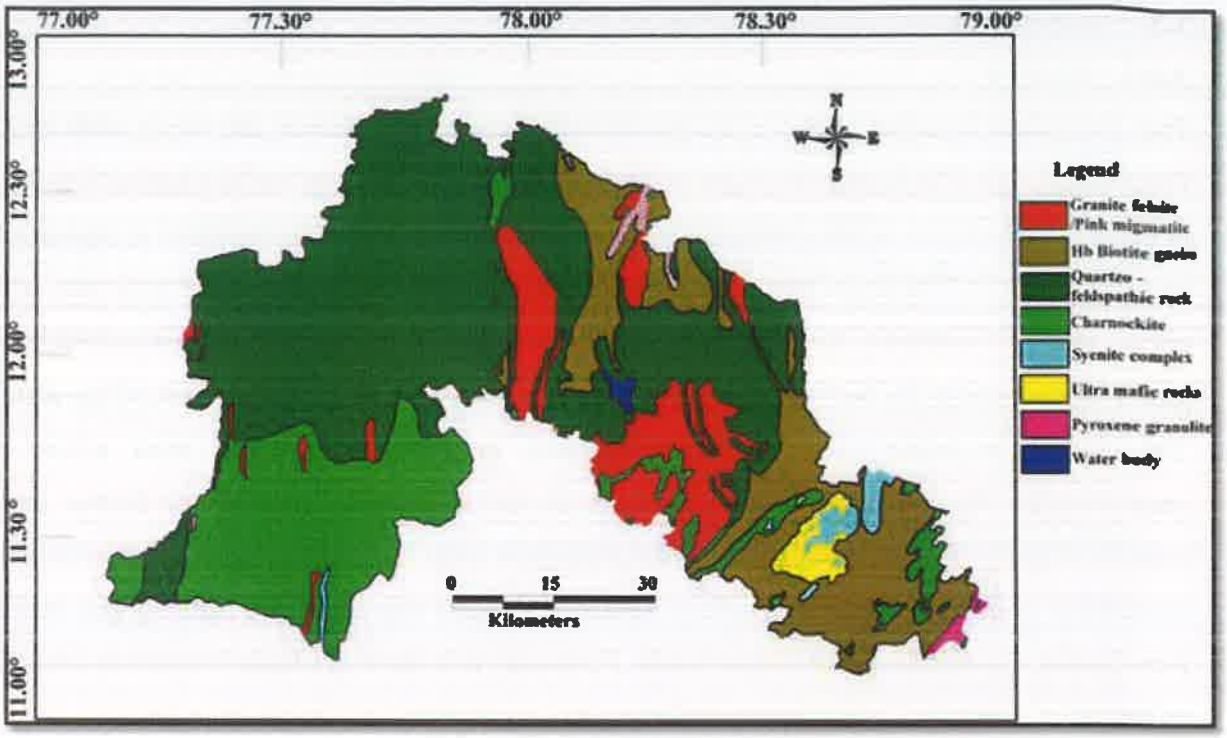


Figure 3-7 Geological Map of Krishnagiri district

3.3.2 GEOMORPHOLOGY

The prominent geomorphic units identified in the district through interpretation of satellite imagery are structural hills in the southwestern part of the district, denudational land forms like buried pediments in the plains and inselbergs and plateaus represented by conical hills aligned with major lineaments.

The district forms part of the upland plateau region with many hill ranges and undulating plains. The western part of the district has hill ranges of Mysore plateau with a chain of undulating hills and deep valleys extending in NNE-SSW direction. The plains of the district have an average elevation of 488m AMSL. The plateau region along the western boundary and the northwestern part of the district has an average elevation of 914m AMSL. The Guthrayan Durg with an elevation of 1395m AMSL is the highest peak in the district.

3.3.3 SOIL

Soil has been classified into Black soil, mixed soil, red loamy soil, gravelly and sandy soil. Vast stretches of loam soil and black soils occur in Krishnagiri district. Red soil is predominantly found in hosur, shoolagiri, kelamangalam and anchetty taluks and accounted for 45.6 percent area of the total geographical area. Krishnagiri and Uthangarai taluk comprised of clay soil which occupied eight percent of area and nearly 40% of area in all the taluks was under forest and barren soil.

3.3.4 HYDROGEOLOGY

Krishnagiri district is underlined by Archaean crystalline formations with recent alluvial deposits of limited areal extent and thickness along the courses of major rivers (Plate-II). The occurrence and movement of ground water are controlled by various factors such as physiography, climate, geology and structural features. Weathered and fractured crystalline rocks constitute the important aquifer systems in the district.

Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones at deeper levels. The thickness of weathered zones in the district ranges from less than a meter to more than 15m. The yield of large diameter dug wells in the district, tapping the weathered mantle of crystalline rocks ranges from 100 to 500lpm. These wells normally sustain pumping for 2 to 6 hours per day, depending upon the local topography and characteristics of the weathered mantle.

The depth to water level (DTW) during pre-monsoon (May 2006) ranged between 0.5 and 9.9m bgl (Plate-III) in the district. In major part of the district, the DTW is more than 5 mbgl, whereas it ranged between 2 and 9.9m bgl (Plate-IV) during post monsoon, in the district and the DTW is in the range of 5 – 10m bgl in the entire district except a few isolated pockets.

The yield of successful exploratory wells drilled in the district ranged from 0.78 to 26lps. As per the studies, the wells drilled in granitic gneiss have higher yields than the wells drilled in charnockites. The specific capacity of the wells ranged from 1.2 to 118.0 lpm/m/dd. The piezometric head of fracture zones varied between 0.50 and 18.45m bgl.

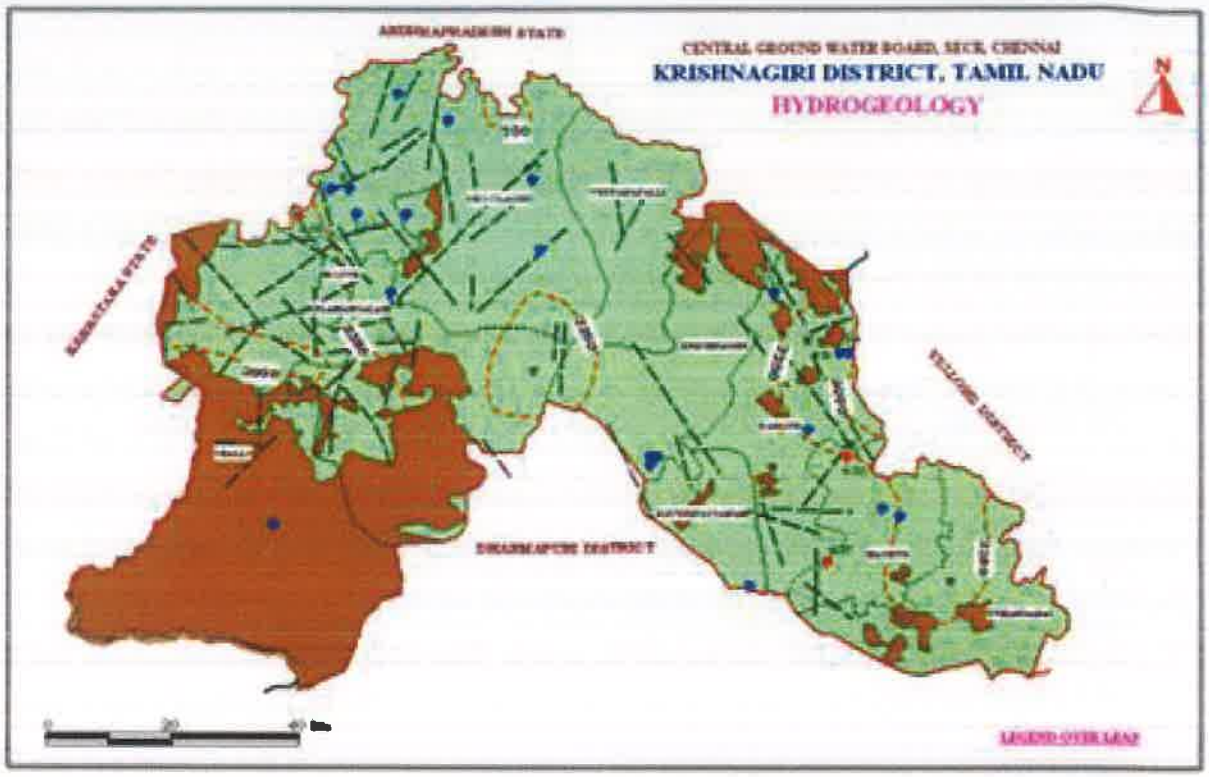


Figure 3-8 Hydrogeological map of Krishnagiri district

3.3.5 DRAINAGE

Krishnagiri district has a mountainous terrain. The General regional slop is towards east. The various landforms occurring in the districts such as structural hills, erosional plains residual hills, rolling uplands of different facies belonging to the denudational and structural land forms.

Cauvery River forms the southwestern boundary of the district. Pennaiyar is the major river draining the district and is ephemeral in nature.

The major reservoirs are KRP dam, Kelavarapalli dam and Barur lake. The prominent dams in the district namely KRP dam has a present water level at 39.05ft as against the full capacity of 52ft with command area of 9012 acre, Kelavarapalli dam water level 41.50ft against the full capacity of 44.28ft with command area of 9083acre and Barur lake 12.900ft with command area 2400acre. The other major reservoirs are Pambar and Shoolagiri chinnar with storage 280 Million cu.ft and 112 Million cu.ft. It originates from Nandhi hills in Karnataka, enters Tamil Nadu west of bagalur and flows almost in a southeasterly direction until it reaches Manjamedu from where 15 it flows along the district boundary before entering the district, again near Hanuman Tirtham. After flowing for a short distance in an easterly direction, it again follows the district boundary before entering the neighboring Dharmapuri district. Pambar and Burgur Ar., are among the important tributaries of Pennaiyar draining part of the district. The drainage plan showing the 10km radius around the project site is given in Figure 3-9.

The study area is demarcated by dendritic pattern of drainage system, a surface water divide is existing in the study area. The project area falls on the northern part of the surface water divides. The groundwater occurs in water table condition and it is in the range of >2 to 5m below ground level and as per CGWB it is categorized as safe. CGWB measures ground water table at 11nos of dugwell with 13nos of piezometers.

During the study period the existing wells dugwell/tubewell have been measures and their measured values are in line with the CGWB record.

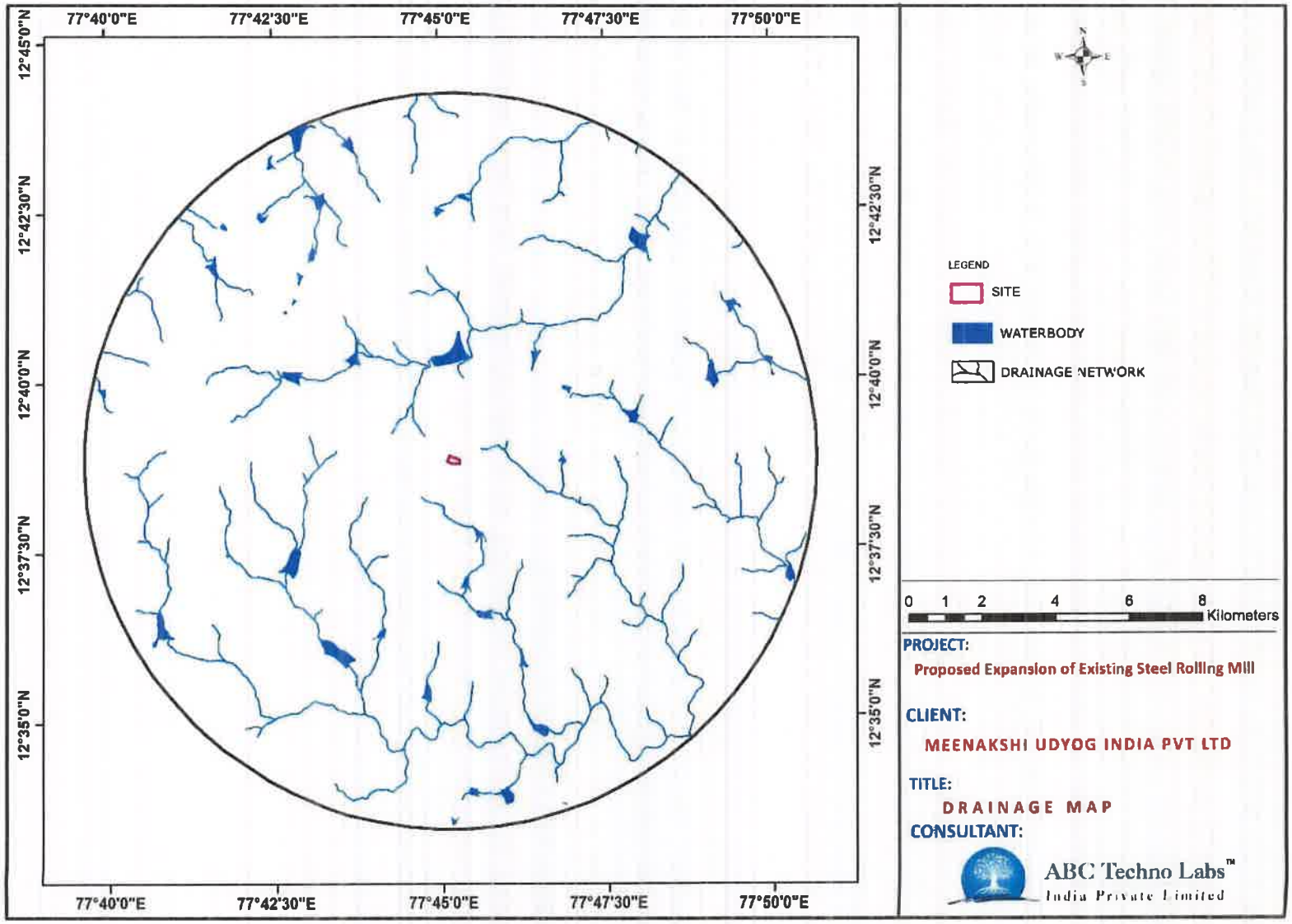


Figure 3-9 Drainage Plan Around 10km Radius

3.4 LAND USE STUIDES

3.4.1 OBJECTIVES

The objectives of land use studies are:

- To determine the present land use pattern;
- To analyze the impacts on land use due to the proposed plant site in the study area; and
- To give recommendations for optimizing the future land use pattern and associated impacts.

3.4.2 LAND USE PATTERN BASED ON REMOTE SENSING DATA

Remote sensing satellite imageries were collected and interpreted for the 10-km radius study area for analyzing the land use pattern of the study area. Based on the satellite data, Land use/ Land cover maps have been prepared.

3.4.2.1 LAND USE / LAND COVER CLASSIFICATION SYSTEM

The present land use / land cover maps were prepared based on the classification system of National standards. For explanation for each of the land use category, the details as given in Table 3-5 were considered.

3.4.2.2 DATA REQUIREMENTS

IRS-P6 Geo-Coded FCC on 1:50000 scale of LISS III was acquired February 2021 and was used for the mapping and interpretation. Besides, other collateral data as available as available in the form of maps, charts and census records other reports and especially topographical survey of India maps on 1:50000 scale are used. In addition to this, ground truth survey was also conducted to verify and confirm the ground features.

Table 3-5: Land Use Categories

Sl. No.	Level – 1	Level - 2
1	Built – up Land	Town/Cities
		Villages
		Institution/Industry/Godown etc
		Plotted Area/Layout
2	Agriculture Land	Double Crop Land/Irrigated Area
		Plantation
		Fallow
3	Forest	Evergreen/Semi evergreen
		Decidous
		Foresst Plantation
4	Wastelands	Rocky/Stony waste
		Land with / without scrubs
		Saline/sandy & Marshy/swampy

Sl. No.	Level – 1	Level - 2
5	Water Bodies	River/Stream
		Lake/Reservoir/Tanks
6	Others	Orchard/Other Plantation
		Shifting cultivation
		Salt Pans, Snow covered/Glacial
		Barren/Vacant Land

3.4.2.3 METHODOLOGY

The methodology adopted for preparation of Land use/land cover thematic map is monoscopic visual interpretation of geo coded scenes of IRS-P6 Satellite LISS-III and field observations are taken. The various steps involved in the study are preparatory field work, field survey and post field work.

3.4.2.4 PRE FIELD INTERPRETATION OF SATELLITE DATA

The False Color Composite (FCC) of IRS-P6 satellite data at 1:50000 scale are used for pre field interpretation work. Taking the help of toposheets, geology, and geomorphology by using the image elements the features are identified and delineated the boundaries roughly. Each feature is identified on image by their image elements like tone, texture, colour, shape, size, pattern and association. A tentative legend in terms of Land Use/Land cover, Physiography and erosion was formulated. The sample areas for field check are selected covering all the physiography, land use / land cover feature cum image characteristics.

- **Ground Truth Collection**

Both topo sheets and imagery were taken for field verification and a transverse plan using existing road network was made to cover as many representative sample areas as many representative sample areas as possible to observe the broad Land use features and to adjust the sample areas according to field conditions. Detailed field observations and investigations were carried out and noted the land use features on the imagery.

- **Post Field Work**

The base maps of the study area were prepared, with the help of Survey if India toposheets on 1:50000 scale. Preliminary interpreted land use and the land cover features boundaries from IRS-P6 False color composite were modified in light of field information and the final thematic details were transferred onto the base maps. The final interpreted and classified thematic map was cartographed. The cartographic map was colored with standard color coding and detailed

description of feature with standard symbols. All the classes noted and marked by the standard legend on the map.

3.4.2.5 Final Output

The final output would be the land use/land cover map on 1:50000 scale, numerals were given different colour code for each category as shown in map. Area estimation of all features of land use/land cover categories was noted.

3.4.2.6 Observations

The following are the main interpreted land use / land cover classes of the study area and their respective areas are given in hectares in Table 3-6. The land use pattern within 10-km radius based on IRS-P6 is shown in Figure 3-10. The satellite imagery and roads & settlements map of the project site within 10-km radius is shown in Figure 3-11 & Figure 3-12.

Table 3-6 Land Use Pattern of Study Area

Sl. No.	Particulars of Land use	Area in Sq.km	Percentage
1	Agriculture Plantation	100.25	33.82
2	Agriculture Crop Land	36.86	11.73
3	Agriculture Fallow Land	88.61	28.21
4	Barren/ Unculturable/ Waste/ Scrub Land	61.21	19.48
5	Other Industrial Land	2.08	0.66
6	Built-Up Land	15.56	4.95
7	Water Body	3.58	1.14
	Total Area	**308.15**	**100**

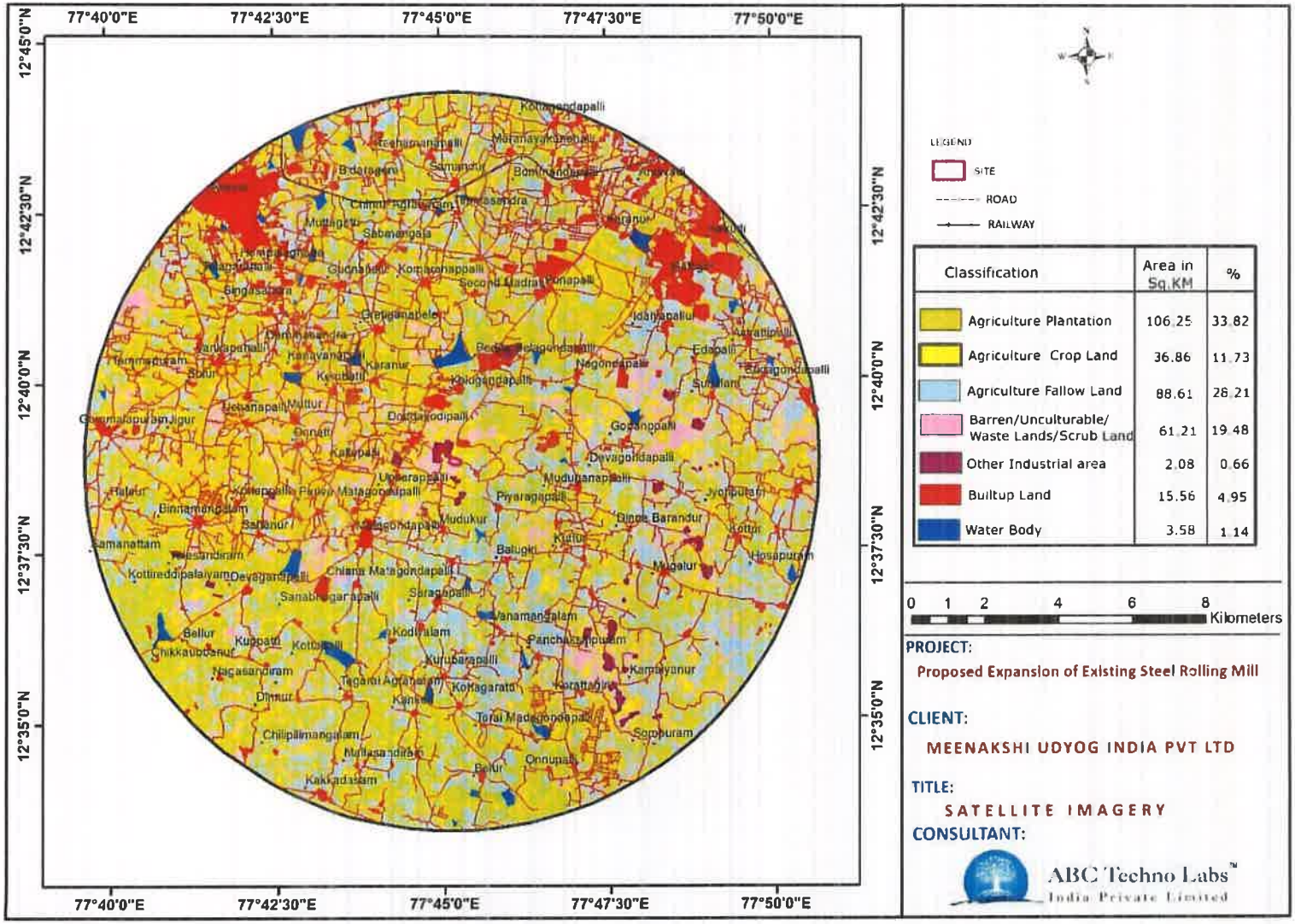


Figure 3-10 Land use/Land cover map around 10 km radius

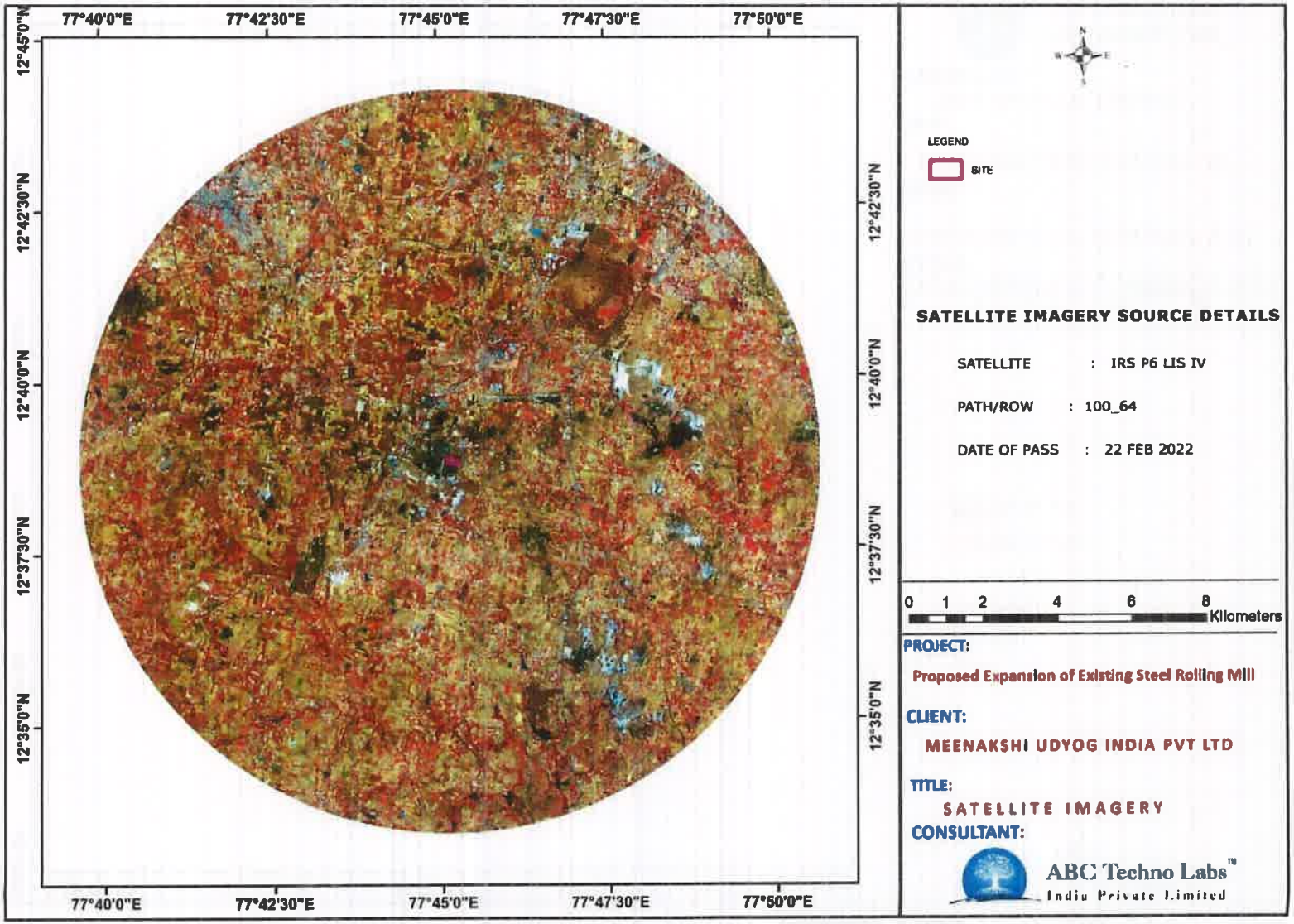


Figure 3-11 Satellite imagery map around 10 km radius

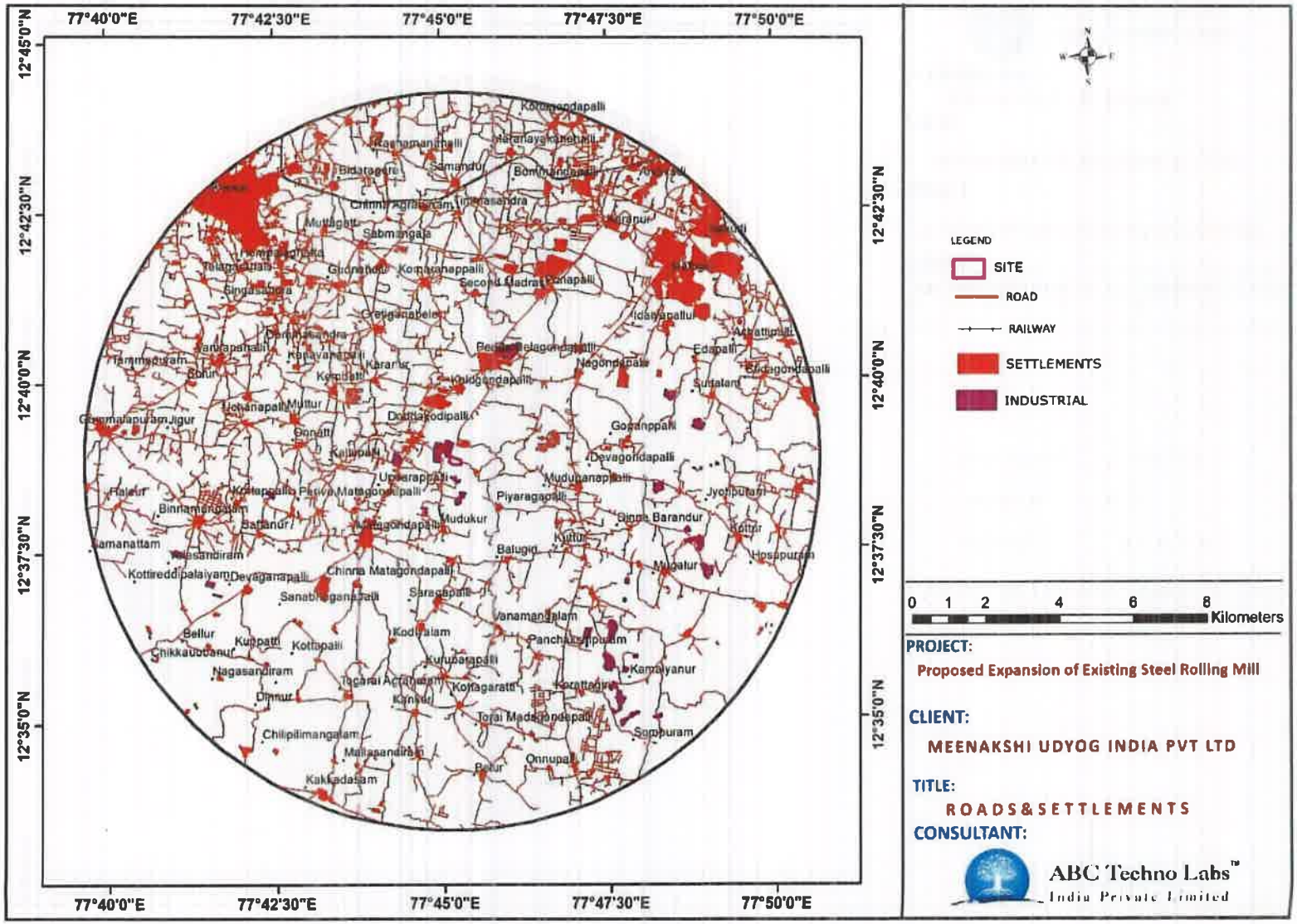


Figure 3-12 Roads & Settlements map around 10 km radius

3.5 AIR QUALITY

The prime objective of the baseline air monitoring is to evaluate the existing air quality of the project area. This will also be useful for assessing the conformity to standards of the ambient air quality during the operation of the expansion project. This section describes the selection of sampling locations, methodology adopted for sampling, analytical techniques and frequency of sampling.

3.5.1 SELECTION OF SAMPLING LOCATIONS

The baseline status of the ambient air quality has been assessed through a scientifically designed ambient air quality monitoring network. The design of monitoring network in the air quality surveillance programme has been based on the following considerations:

- Topography / Terrain of the study area
- Human Settlements
- Health status
- Accessibility of monitoring site
- Resource Availability
- Representativeness of the region for establishing baseline status
- Representativeness with respect to likely impact areas

Ambient Air Quality Monitoring (AAQM) stations were set up at eight (8) locations with due consideration to the above mentioned points. The Ambient Air Quality monitoring locations are given in the Table 3-7 and shown in the Figure 3-13.

Table 3-7 Ambient air quality monitoring locations

Code	Location	Latitude & Longitude	Distance w.r.t. plant (km)	Direction w.r.t. plant	Environmental Setting
AAQ1	Project Site	12°38'49.33"N 77°45'10.13"E	---	---	Industrial Area
AAQ2	Kodihally	12°39'13.32"N 77°44'0.25"E	2.23	WNW	Rural/ Residential Area
AAQ3	Pyarakanahally	12°38'7.44"N 77°45'50.99"E	1.60	SE	Rural/ Residential Area
AAQ4	Vadrapallyam	12°38'40.28"N 77°46'25.14"E	2.08	E	Rural/ Residential Area
AAQ5	Nagondapalli	12°39'44.60"N 77°47'17.51"E	3.98	NE	Rural/ Residential Area
AAQ6	Sarakanahally	12°36'44.90"N 77°44'55.81"E	3.74	S	Rural/ Residential Area
AAQ7	Muttur	12°39'25.18"N 77°42'48.25"E	4.35	WNW	Rural/ Residential Area

Code	Location	Latitude & Longitude	Distance w.r.t. plant (km)	Direction w.r.t. plant	Environmental Setting
AAQ8	Komaranapally	12°41'0.08"N 77°44'53.48"E	4.01	N	Rural/ Residential Area

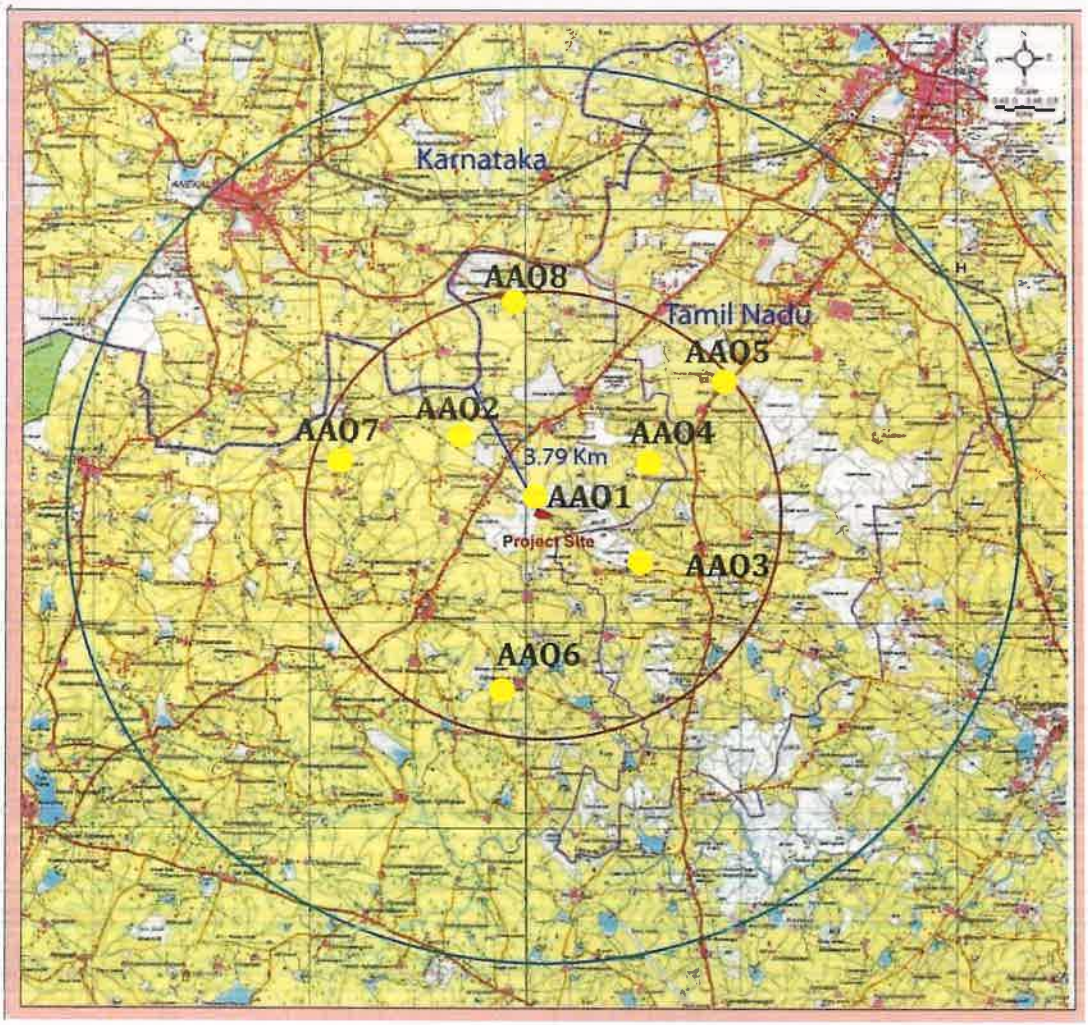


Figure 3-13 Air quality sampling locations

3.5.2 FREQUENCY AND PARAMETERS FOR SAMPLING

Ambient air quality monitoring was carried out at a frequency of two days per week at each location for three months with the help of in-house facilities of M/s ABC Techno Lab which is NABL approved laboratory. The baseline data of air environment was generated for the following parameters:

- Particulate Matter size less than 10 µm (PM_{10});
- Particulate Matter size less than 2.5 µm ($PM_{2.5}$);
- Sulphur oxides (SO_X);

- Nitrogen oxides (NOx);
- Carbon Monoixde (CO);
- Ozone (O_3);
- Lead (Pb);
- Ammonia (NH_3);
- Benzene (C_6H_6);
- Benzo (a) pyrene (BaP);
- Arsenic (As);
- Nickel (Ni)

3.5.3 INSTRUMENTS USED FOR SAMPLING

Respirable Dust Samplers APM 460 BL of Envirotech was used for monitoring Particulate matter (PM_{10}) and Fine Particulate Samplers APM 550 of Envirotech was used for monitoring ($PM_{2.5}$). For gaseous pollutants APM 411 has been used along with APM-460.

3.5.4 SAMPLING AND ANALYTICAL TECHNIQUES

The sampling and analytical techniques used for the monitoring of Ambient Air quality (AAQ) is given in Table 3-8.

Table 3-8: Techniques used for Ambient Air Quality monitoring

Sl. No.	Parameter	Technique	Detectable Limit
1	Particulate Matter (PM_{10})	EPA -40 (CFR Part 50)	2.0 µg/m³
2	Particulate Matter ($PM_{2.5}$)	EPA -40 (CFR Part 50)	2.0 µg/m³
3	Sulphur Dioxide (SO_2)	Improved West and Gaeke	5.0 µg/m³
4	Nitrogen Dioxide (NO_2)	Modified Jacob & Hochheiser	5.0 µg/m³
5	Carbon Monoxide (CO)	IS 13270 : 1992	0.1 mg/m³
6	Ozone (O_3)	KI Absorption Method	5.0 µg/m³
7	Lead (Pb)	IS 5182 P 22	0.1 µg/m³
8	Ammonia (NH_3)	Nessler's Method	5.0 µg/m³
9	Benzene (C_6H_6)	IS 5182: Pt 22: 2004	0.01 ng/m³
10	Benzo (a) pyrene – Particulate Phase	IS 5182: Pt 22: 2004	0.1 ng/m³
11	Arsenic (As);	IS 5182: Pt 22: 2004	1.0 ng/m³
12	Nickel (Ni):	IS 5182: Pt 22: 2004	1.0 ng/m³

3.5.5 PRESENTATION OF RESULTS

The survey results for the three months study period are presented in detail in **Annexure - 15.** The summary of those results with 98%ile for each location is presented in Table 3-9. These are compared with the standards prescribed by Central Pollution Control Board (CPCB) norms.

Table 3-9 Ambient Air Quality Results

Code	Location	PM_{10}				$PM_{2.5}$				SO_x			
		Min.	Max.	Avg.	98%ile	Min.	Max.	Avg.	98%ile	Min.	Max.	Avg.	98%ile
AAQ1	Project Site	58	76	67	74.62	27	36	32.13	36	13.3	18.9	10.95	13.02
AAQ2	Kodihally	41	57	58.33	56.54	19	27	22.67	27	6.9	10.4	8.55	10.17
AAQ3	Pyarakanahally	46	59	52.08	59	22	28	24.83	28	7.9	11.7	9.86	11.61
AAQ4	Vadrapallyam	41	57	48.79	57	20	28	23.25	27.08	5.8	9.3	7.47	8.93
AAQ5	Nagondapalli	39	56	46.88	56	18	26	22.25	26	5.6	9.3	7.63	9.3
AAQ6	Sarakanahally	41	57	48.25	56.54	19	26	22.79	26	7.9	11.3	9.55	11.16
AAQ7	Muttur	45	62	51.75	60.62	21	30	24.58	29.08	8.1	11.5	9.80	11.45
AAQ8	Komaranapally	48	63	55.13	62.02	23	31	26	30.54	7.4	11	9.05	10.82
CPCB Standards#		**100**				**60**				**80**			

Table 3-10 Ambient Air Quality Results

Code	Location	NO_x				CO				O_3			
		Min.	Max.	Avg.	98%ile	Min.	Max.	Avg.	98%ile	Min.	Max.	Avg.	98%ile
AAQ 1	Project Site	15.1	20.4	17.73	19.89	0.25	0.55	0.41	0.531	12.7	15.3	14.12	15.21
AAQ 2	Kodihally	14.2	18.2	16.13	18.02	0.18	0.41	0.30	0.41	12.1	15	13.37	14.72
AAQ 3	Pyarakanahally	14.7	21.1	17.57	20.69	0.25	0.51	0.38	0.51	12.1	15.2	13.71	15.06
AAQ 4	Vadrapallyam	13.9	17.8	15.88	17.8	0.17	0.49	0.29	0.45	12	14.4	13.1	14.31
AAQ 5	Nagondapalli	13.5	18.2	15.40	17.87	0.17	0.36	0.26	0.35	10.9	14.1	12.61	14.01
AAQ 6	Sarakanahally	14.8	18.9	16.68	18.72	0.19	0.47	0.31	0.44	12	14.6	13.44	14.55
AAQ 7	Muttur	15.8	21.4	18.29	20.94	0.18	0.51	0.34	0.5	12.9	16.1	14.27	15.82
AAQ 8	Komaranapally	14.6	20	17.55	19.9	0.14	0.48	0.36	0.47	12.4	15.5	14	15.36
CPCB Standards#		**80**				**2.0**				**100**			

NO_2 values are expressed in µg/m³ and CO values are expressed in mg/m³

#Standards for Industrial /Residential / Rural and Other Area

3.5.6 OBSERVATIONS

PM_{10}: The maximum and minimum concentrations for PM_{10} were recorded as 76 µg/m³ and 41 µg/m³ respectively. The maximum concentration was recorded at the project site and the minimum concentration was recorded at Kodihally, Vadrapallyam and Sarakanahally. The average concentrations were in the range of 46.88 to 67 µg/m³.

$PM_{2.5}$: The maximum and minimum concentrations for $PM_{2.5}$ were recorded as 36 µg/m³ and 18 µg/m³ respectively. The maximum concentration was recorded at the project site and the minimum concentration was recorded at Nagondapalli. The average values were observed to be in the range of 22.25 to 32.13 µg/m³.

SO_x: The maximum SO_x concentrations were recorded as 18.9 µg/m³ and miniumum is found to be 5.6 µg/m³. The maximum concentration was recorded at Project site and the minimum concentration was recorded at Nagondapalli. The average values were recorded to be in the range of 7.47 to 10.95 µg/m³.

NO_x: The maximum and minimum NO_x concentrations were recorded as 21.4 µg/m³ and 13.5 µg/m³. The maximum concentration was recorded at Muttur and the minimum concentration was recorded at Nagondapalli. The average values were noted to be in the range of 15.40 to 18.29 µg/m³.

CO: The maximum CO concentrations were recorded as 0.55 mg/m³ and minimum recorded is 0.17 mg/m³. The maximum concentration was recorded at project Site and the minimum concentration was recorded at Vadrapallyam & Nagondapalli. The average values were observed in the range of 0.26 to 0.41 mg/m³.

O_3: The maximum and minimum O_3 concentrations were recorded as 16.1 µg/m³ and 10.9 µg/m³. The maximum concentration was recorded at Muttur and the minimum concentration was recorded at Nagondapalli. The average values were observed to be in the range of 12.61 to 14.27 µg/m³.

The concentrations of NH_3, C_6H_6, BaP, Lead, Arsenic and Nickel were observed below detection limit and all the parameters were observed well within the standards prescribed by Central Pollution Control Board (CPCB) for Industrial, Rural, Residential and other area.

3.6 NOISE ENVIRONMENT

Noise survey has been conducted in the study area to assess the background noise levels in different zones viz., Residential, Industrial, Commercial and Silence zones. The main objective of noise monitoring in the study area is to establish the baseline noise levels and assess the impact of the total noise expected to be generated in the surrounding areas.

3.6.1 METHODOLOGY

Identification of sampling location

A preliminary reconnaissance survey was undertaken to identify the major noise generating sources in the area. The noise monitoring has been conducted at eight (8) locations in the study area. The physical location of noise monitoring stations is given in Table 3-11. The map showing Noise Quality Monitoring Locations is enclosed as Figure 3-14.

Table 3-11 : Details of Noise Monitoring Locations

Code	Location	Latitude & Longitude	Distance w.r.t. plant (km)	Direction w.r.t. plant	Environmental Setting
N1	Project Site	12°38'49.33"N 77°45'10.13"E	---	---	Industrial Area
N2	Kodihally	12°39'13.32"N 77°44'0.25"E	2.23	WNW	Rural/ Residential Area
N3	Pyarakanahally	12°38'7.44"N 77°45'50.99"E	1.60	SE	Rural/ Residential Area
N4	Vadrapallyam	12°38'40.28"N 77°46'25.14"E	2.08	E	Rural/ Residential Area
N5	Nagondapalli	12°39'44.60"N 77°47'17.51"E	3.98	NE	Rural/ Residential Area
N6	Sarakanahally	12°36'44.90"N 77°44'55.81"E	3.74	S	Rural/ Residential Area
N7	Muttur	12°39'25.18"N 77°42'48.25"E	4.35	WNW	Rural/ Residential Area
N8	Komaranapally	12°41'0.08"N 77°44'53.48"E	4.01	N	Rural/ Residential Area

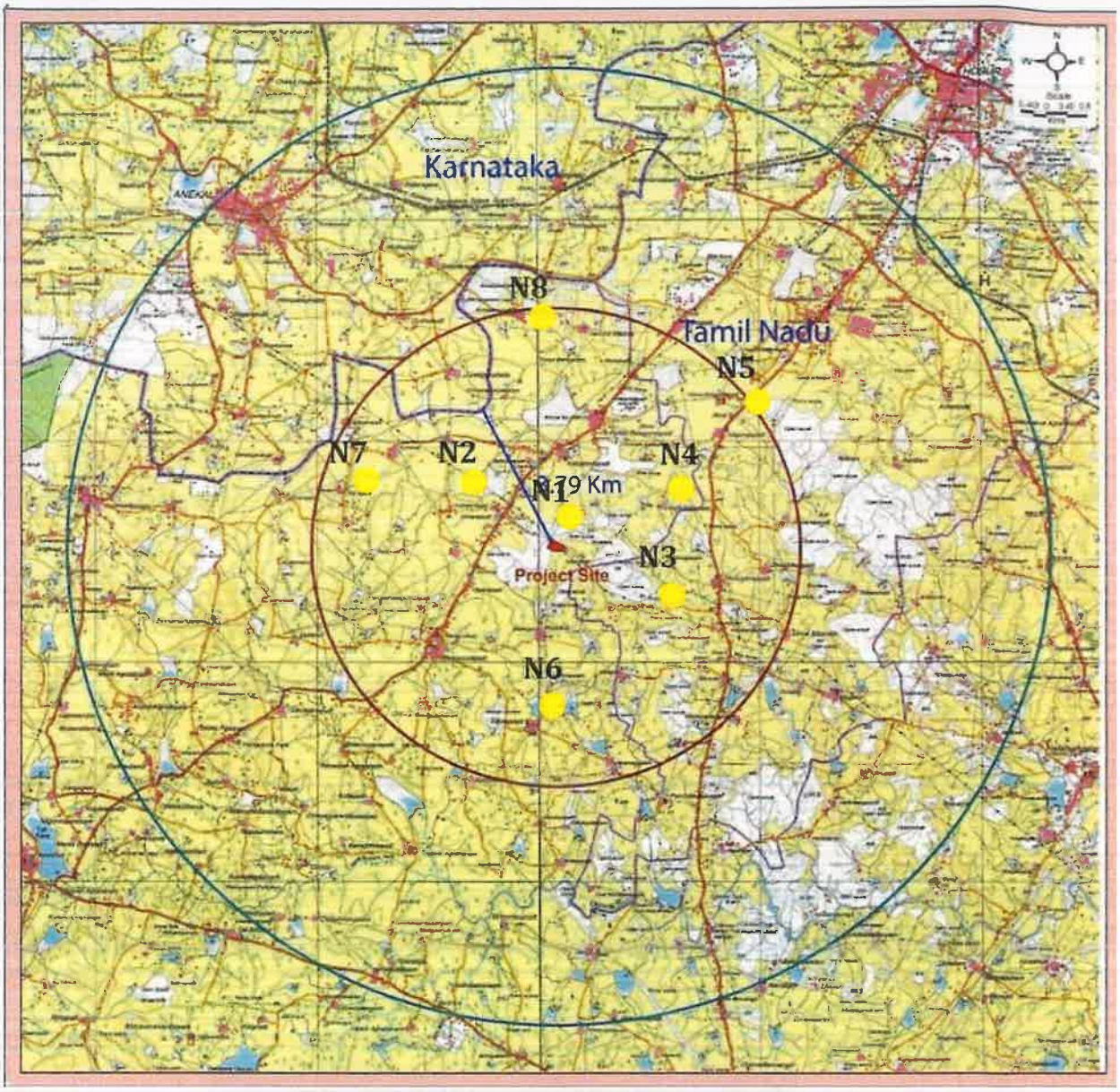


Figure 3-14 Noise Monitoring Locations

Instrument used for monitoring

Noise levels were measured using a Sound Level Meter. The sound level meter measures the Sound Pressure Level (SPL), the Maximum Sound Pressure Level (max) and the equivalent continuous noise level (Leq) by switching on the corresponding functional modes.

Method of monitoring

Sound Pressure Level (SPL) measurements were taken at the specified locations, with an interval of 1 minute over a period of one hour for 24 hours. The noise levels during day time have been monitored between 6 am to 10 pm and night noise levels during 10 pm to 6 am at all the locations covered in the study area. Noise levels were recorded every one minute in the

following manner. To obtain noise levels at 8 am, noise readings, with setting at 'A' response – slow mode, were recorded continuously for 60 minutes. All the readings were obtained for 24 hours.

Parameters Measured during Monitoring

For noise levels measured over a given period of time interval, it is possible to derive important features of noise using statistical methods.

1. Leq_{day} Average noise levels between 06.00 hours to 22.00 hours.
2. Leq_{night} Average noise levels between 22.00 hours to 06.00 hours.

3.6.2 Presentation of Results

The summary of computed ambient noise level parameters like Leq_{day} and Leq_{night} for all the sampling locations are presented in Table 3-12 and compared to the standards specified by CPCB as given below in Table 3-13.

Table 3-12 Ambient noise levels recorded in the study area

Code	Location	Leq_{day} [dB(A)]	Leq_{night} [dB(A)]	Leq [dB(A)]
N1	Project Site	68.8	59.7	67.3
N2	Kodihally	53.6	44.1	52.1
N3	Pyarakanahally	53.1	44	51.6
N4	Vadrapallyam	52.2	43.6	50.7
N5	Nagondapalli	51.9	43.1	50.4
N6	Sarakanahally	51.7	43	50.2
N7	Muttur	54.2	43.8	52.6
N8	Komaranapally	54.3	44.4	52.8

Table 3-13 Ambient Noise Standards

Sl.No.	Land use	Leq_{day}	Leq_{night}
1.	Industrial Area	75	70
2.	Commercial Area	65	55
3.	Residential Area	55	45
4.	Silence Zone	50	40

3.6.3 Observations

Day time Noise Levels

The day time noise level at industrial zone was observed to be 68.8 dB(A) which is within the prescribed limit of 75 dB(A). The day time noise level at all rural & residential zone was observed to be 51.7 to 54.2 dB(A) which is within the prescribed limit of 55 dB(A).

Night time Noise levels

The night time noise level at industrial zone was observed to be within the prescribed limit of 70 dB(A), which was 59.7 dB(A) at project site. The night time noise levels at residential locations were found to be 43 to 44.4 dB(A) within the prescribed limit of 45 dB(A).

3.7 WATER QUALITY

Water sampling has been conducted to establish baseline water quality in the area. Water analysis was carried out for physical and chemical parameters as per the methods prescribed in IS and "Standard Methods for the Examination of Water and Wastewater (American Public Health Association)". Water samples were examined to assess the effect of industrial and other activities on ground water. Samples for chemical analysis were collected in polyethylene carboys. Samples collected for metal content were acidified with 1 ml HNO_3. Samples for bacteriological analysis were collected in sterilized glass bottles.

3.7.1 WATER SAMPLING LOCATIONS

Three (3) surface water and Eight (8) ground water samples were collected as grab samples and were analyzed for various parameters to compare with the standards for drinking water as per IS: 10500:2012 for ground water and class C norms were followed for surface water. The water sampling locations are identified in Table 3-14 and shown in Figure 3-15.

Table 3-14 Ground Water Sampling Locations

Code	Location	Latitude & Longitude	Distance w.r.t. plant (km)	Direction w.r.t. plant
GW1	Project Site	12°38'49.33"N 77°45'10.13"E	---	---
GW2	Kodihally	12°39'13.32"N 77°44'0.25"E	2.23	WNW
GW3	Pyarakanahally	12°38'7.44"N 77°45'50.99"E	1.60	SE
GW4	Vadrapallyam	12°38'40.28"N 77°46'25.14"E	2.08	E
GW5	Nagondapalli	12°39'44.60"N 77°47'17.51"E	3.98	NE
GW6	Sarakanahally	12°36'44.90"N 77°44'55.81"E	3.74	S
GW7	Muttur	12°39'25.18"N 77°42'48.25"E	4.35	WNW
GW8	Komaranapally	12°41'0.08"N 77°44'53.48"E	4.01	N
SW1	BynahanakalliKere	12°37'43.74"N	2.11	SSW

Code	Location	Latitude & Longitude	Distance w.r.t. plant (km)	Direction w.r.t. plant
		77°45'32.97"E		
SW2	MathukurKere	12°38'1.22"N 77°44'59.25"E	1.31	S
SW3	Nagandahally Lake	12°39'51.46"N 77°46'55.98"E	3.56	NE



Figure 3-15 Water Sampling Locations

3.7.2 PRESENTATION OF RESULTS

The water quality results of the groundwater and surfacewater samples are tabulated in Table 3-15 & Figure 3-16 respectively.

Table 3-15: Groundwater Sample Results

Sl. No.	Parameter	Unit	Results								Standards as per IS 10500 : 2012	
			GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable limit	Permissible Limits
1.	Colour	Hazen	<1	<1	<1	<1	1	<1	1	<1	5	15
2.	Odour	-	No Odour Observed								Agreeable	Agreeable
3.	Turbidity	NTU	BDL(<0.5)	0.6	BDL(<0.5)	0.8	0.9	BDL(<0.5)	0.9	BDL(<0.5)	1	5
4.	pH at 25 °C	-	7.51	7.28	7.29	7.41	7.35	7.48	7.35	7.41	6.5-8.5	6.5-8.5
5.	Conductivity at 25 °C	µS/cm	1685	1310	1012	707	787	1820	1855	1312	Not Specified	Not Specified
6.	Total dissolved solids	mg/l	974	771	645	428	454	1012	1084	716	500	2000
7.	Total Suspended solids	mg/l	<2	<2	<2	<2	<2	<2	<2	<2	Not Specified	Not Specified
8.	Total Alkalinity as CaCO3	mg/l	380	280	310	230	180	430	390	320	200	600
9.	Total Hardness as CaCO3	mg/l	560	410	380	270	242	520	410	350	200	600
10.	Calcium as Ca	mg/l	148	98	36	66	61	118	105	85	75	200
11.	Magnesium as Mg	mg/l	46	40	40	25.5	22	55	36	33	30	100
12.	Chloride as Cl-	mg/l	263	193	127	91	118	278	306	169	250	1000
13.	Sulphate as SO4	mg/l	104	112	71	38	52	94	120	84	200	400
14.	Nitrate as NO3	mg/l	5	8	11	6	2	10	7	14	45	45
15.	Iron as Fe	mg/l	BDL(<0.05)	BDL(<0.05)	0.10	0.12	0.10	BDL(<0.05)	0.15	0.08	1	1
16.	Manganese as Mn	mg/l	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	0.10	0.3
17.	Fluoride as F	mg/l	0.24	0.33	0.36	0.41	0.31	0.26	0.39	0.31	1.00	1.5

Sl. No.	Parameter	Unit	Results								Standards as per IS 10500 : 2012	
			GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable limit	Permissible Limits
18.	Sodium as Na	mg/l	170	138	96	65	70	200	212	120	Not Specified	Not Specified
19.	Potassium as K	mg/l	4.4	3.6	5	4.2	3.6	8	6.8	4.8	Not Specified	Not Specified
20.	Barium as Ba	mg/l	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	0.7	0.7
21.	Residual Free Chlorine	mg/l	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	BDL(<0.1)	0.20	1
22.	Aluminium as Al	mg/l	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	0.03	0.2
23.	Cadmium as Cd	mg/l	BDL(<0.003)	BDL(<0.003)	BDL(<0.003)	BDL(<0.003)	BDL(<0.003)	BDL(<0.003)	BDL(<0.003)	BDL(<0.003)	0.003	0.003
24.	Lead as Pb	mg/l	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	0.01	0.01
25.	Copper as Cu	mg/l	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	0.05	1.5
26.	Zinc as Zn	mg/l	0.16	0.13	0.08	0.11	0.05	0.11	0.21	0.06	5.00	15
27.	Total Chromium as Cr	mg/l	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	0.05	0.05
28.	Arsenic as As	mg/l	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	0.01	0.05
29.	Cyanide as CN	mg/l	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	0.05	0.05
30.	Selenium as Se	mg/l	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	0.01	0.01
31.	Mercury as Hg	mg/l	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	0.001	0.001
32.	Anionic Surfactants as MBAS	mg/l	BDL(<0.025)	BDL(<0.025)	BDL(<0.025)	BDL(<0.025)	BDL(<0.025)	BDL(<0.025)	BDL(<0.025)	BDL(<0.025)	0.20	1.0
33.	Phenolic Compounds as Phenol	mg/l	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	0.001	0.002
34.	Pesticides	mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
35.	Total Coliforms	MPN/ 100ml	<2	<2	<2	<2	<2	<2	2	<2	Absent /100ml	Absent /100ml

Sl. No.	Parameter	Unit	Results								Standards as per IS 10500 : 2012	
			GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable limit	Permissible Limits
36.	E.coli	MPN/ 100ml	<2	<2	<2	<2	<2	<2	<2	<2	Absent /100ml	Absent /100ml

Table 3-16: Surface water sample results

Sl. No.	Parameter	Unit	Results			Test procedure
			SW1	SW2	SW3	
1.	Temperature	°C	25.8	263	27.2	APHA 23rd EDN -2550B
2.	Colour	Hazen	30	25	10	APHA 23rd EDN-2120 C
3.	Odour	-	No Odour Observed			APHA 23rd EDN -2150 B
4.	pH at 25°C	-	7.41	7.65	7.84	IS : 3025 Part 11- 1983 (Reaff: 2017)
5.	Electrical Conductivity	µS/cm	588	501	375	IS : 3025 Part 14- 1984 (Reaff: 2019)
6.	Turbidity	NTU	8.3	6.1	3.7	IS : 3025 Part 10-1984 (Reaff: 2017)
7.	Total Dissolved Solids	mg/l	324	272	194	IS : 3025 Part 16-1984 (Reaff: 2017)
8.	Total Hardness as CaCO3	mg/l	140	110	92	IS : 3025 Part 21-1983 (Reaff: 2019)
9.	Total Alkalinity as CaCO3	mg/l	110	96	80	IS : 3025 Part 23- 1986(Reaff: 2019)
10.	Chloride as Cl	mg/l	96	76	53	IS : 3025 Part 32-1988 (Reaff: 2019)
11.	Sulphate as SO4	mg/l	30	20	16	APHA 23rd EDN - 4500- SO42- E
12.	Fluoride as F	mg/l	0.17	0.14	0.11	APHA 23rd EDN - 4500-F B&D
13.	Nitrate as NO3	mg/l	4	11	3	APHA 23rd EDN - 4500- NO3- B
14.	Ammonia as NH3	mg/l	0.92	0.48	0.24	APHA 23rd EDN - 4500- NH3 B&C
15.	Phosphate as PO4	mg/l	1.48	0.81	0.41	IS : 3025 Part 31-1988 (Reaff: 2019)
16.	Sodium as Na	mg/l	68	52	36	IS : 3025 Part 45-1993 (Reaff: 2019)
17.	Potassium as K	mg/l	4.1	3.6	2.4	IS : 3025 Part 45-1993 (Reaff: 2019)
18.	Calcium as Ca	mg/l	38	30	18	IS : 3025 Part 40-1991 (Reaff: 2019)
19.	Magnesium as Mg	mg/l	11	6	11.4	APHA 23rd EDN 3500 Mg B
20.	Iron as Fe	mg/l	0.51	0.37	0.29	IS : 3025 Part 53-2003(Reaff: 2019)

Sl. No.	Parameter	Unit	Results			Test procedure
			SW1	SW2	SW3	
21.	Manganese as Mn	mg/l	0.04	0.03	0.02	APHA 23rd EDN -3111 B
22.	Anionic Surfactants as MBAS	mg/l	BDL(<0.025)			APHA 23rd EDN -5540 C
23.	Total Suspended Solids	mg/l	12	8	4	IS:3025 Part 17-1984(Reaff: 2017)
24.	Dissolved Oxygen as O2	mg/l	5.3	5.5	5.8	IS:3025:Part-38:1989(Reaff: 2019)
25.	Chemical Oxygen Demand	mg/l	26	20	16	IS:3025:Part-58:2006(Reaff: 2017)
26.	Bio-Chemical Oxygen Demand @ 27°C for 3 days	mg/l	4.1	2.8	2	IS:3025:Part-44:1993(Reaff: 2019)
27.	Phenolic compounds as C6H5OH	mg/l	BDL(<0.001)			APHA 23rd EDN 5530 B,C,D
28.	Copper as Cu	mg/l	BDL(<0.03)			APHA 23rd EDN -3111 B
29.	Mercury as Hg	mg/l	BDL(<0.001)			APHA 23rd EDN -3112 B
30.	Cadmium as Cd	mg/l	BDL(<0.003)			APHA 23rd EDN -3111 B
31.	Selenium as Se	mg/l	BDL(<0.01)			APHA 23rd EDN -3113 B
32.	Total Arsenic as As	mg/l	BDL(<0.01)			APHA 23rd EDN -3111 B
33.	Cyanide as CN	mg/l	BDL(<0.05)			APHA 23rd EDN-4500-CN E
34.	Lead as Pb	mg/l	BDL(<0.01)			APHA 23rd EDN -3111 B
35.	Zinc as Zn	mg/l	0.18	0.12	0.10	APHA 23rd EDN -3111 B
36.	Total Chromium as Cr	mg/l	BDL(<0.01)			APHA 23rd EDN -3111 B
37.	Nickel as Ni	mg/l	BDL(<0.01)			APHA 23rd EDN -3111 B
38.	Oil & Grease	mg/l	BDL(<0.1)			IS:3025:Part-39:1991(Reaff: 2019)
39.	Mineral oil	mg/l	BDL(<0.5)			IS:3025:Part-39:1991(Reaff: 2019)
40.	Poly Chlorinated Biphenyls (PCBs)	mg/l	BDL (<0.0001)			APHA 23rd EDN -6630 B
41.	Poly Nuclear Aromatic Hydrocarbon as PAH	mg/l	BDL (<0.0001)			APHA 23rd EDN -6440 B
42.	Total Coliform	MPN/ 100ml	>1600	>1600	>1600	IS – 1622 -1981 (Reaff – 2019)
43.	Faecal Coliform	MPN/ 100ml	>1600	>1600	>1600	IS – 1622-1981(Reaff – 2019)

* BDL –Below Detection Limit

3.7.3 OBSERVATIONS

Groundwater

The pH value of the collected ground water in the study area varies from 7.28 to 7.51 and meets the acceptable limit for drinking water standards. The conductivity varies from 707 to 1855 µS/cm. TDS values were found to be in the range of 428 to 1084 mg/l and meets permissible limit of 2000 mg/l in all locations. Total alkalinity varies from 180 to 430 mg/l and meets permissible limit of 600 mg/l in all the locations. Total Hardness varied from 242 to 560 mg/l and meets permissible limit of 600 mg/l. The chloride values were found to be in the range 91 mg/l to 306 mg/l and meets permissible limit of 1000 mg/l in all the locations.

Sulphate values varies from 38 to 120 mg/l and meets permissible limit of 400 mg/l in all the locations. The calcium values range from 61 to 148 mg/l and meets permissible limit of 200 mg/l in all the locations. Magnesium values range from 22 to 55 mg/l meets permissible limit of 100 mg/l in all the locations. Iron content ranges from less than 0.05 mg/l to maximum upto 0.15 mg/l and meets permissible limit of 0.3 mg/l in all the locations.

Zinc values found in the range from less than 0.06 to maximum of 0.21 mg/l and meets permissible limit of 15 mg/l in all the locations. Metals such as copper, lead, cadmium, chromium, arsenic, selenium, and mercury were observed to be below detection limit in the ground water samples.

Surfacewater

The pH value of the collected surface water in the study area varies from 7.41 to 7.84 and meets the acceptable limit for drinking water standards. The total hardness varies from 92 to 140 mg/l and meets acceptable limit of 200 mg/l. The chloride concentrations were found to be in the range of 53 to 96 mg/l and meets acceptable limit of 250 mg/l. Similarly, the fluoride concentration was found to be in the range of 0.11 to 0.17 mg/l and meets acceptable limit of 1.0 mg/l. The calcium concentrations varies from 18 to 38 mg/l which meets acceptable limit of 75 mg/l and magnesium concentrations were found to be 6 to 11.4 mg/l respectively which meets acceptable limit of 30 mg/l. Total dissolved solids (TDS) concentration is found to be 194 to 324 mg/l and meets acceptable limit of 500 mg/l. The heavy metal content is below the detectable limits.

3.8 SOIL ENVIRONMENT

The present study of the soil quality establishes the baseline characteristics and this will help in future in identifying the incremental concentrations if any, due to the operation of the expansion project. The sampling locations have been identified with the following objectives;

- To determine the baseline soil characteristics of the study area; and
- To determine the impact of proposed project on soil characteristics

3.8.1 DATA GENERATION

For studying soil quality of the region, eight (8) sampling locations were selected to assess the soil conditions in and around the project, area based on various land use conditions. The physical and chemical concentrations were determined. The samples were collected from different specified depths viz., 30 cm, 60 cm and 90 cm. The samples were analyzed for physical and chemical characteristics. The samples have been analyzed as per the established scientific methods for physio-chemical parameters.

3.8.2 SOIL SAMPLING LOCATIONS

The details of the sampling locations selected for soil sampling are given in Table 3-17 and shown in Figure 3-16.

Table 3-17: Details of soil sampling locations

Code	Location	Latitude & Longitude	Distance w.r.t. plant (km)	Direction w.r.t. plant
S1	Project Site	12°38'49.33"N; 77°45'10.13"E	---	---
S2	Kodihally	12°39'13.32"N 77°44'0.25"E	2.23	WNW
S3	Pyarakanahally	12°38'7.44"N 77°45'50.99"E	1.60	SE
S4	Vadrapallyam	12°38'40.28"N 77°46'25.14"E	2.08	E
S5	Nagondapalli	12°39'44.60"N 77°47'17.51"E	3.98	NE
S6	Sarakanahally	12°36'44.90"N 77°44'55.81"E	3.74	S
S7	Muttur	12°39'25.18"N 77°42'48.25"E	4.35	WNW
S8	Komaranapally	12°41'0.08"N 77°44'53.48"E	4.01	N

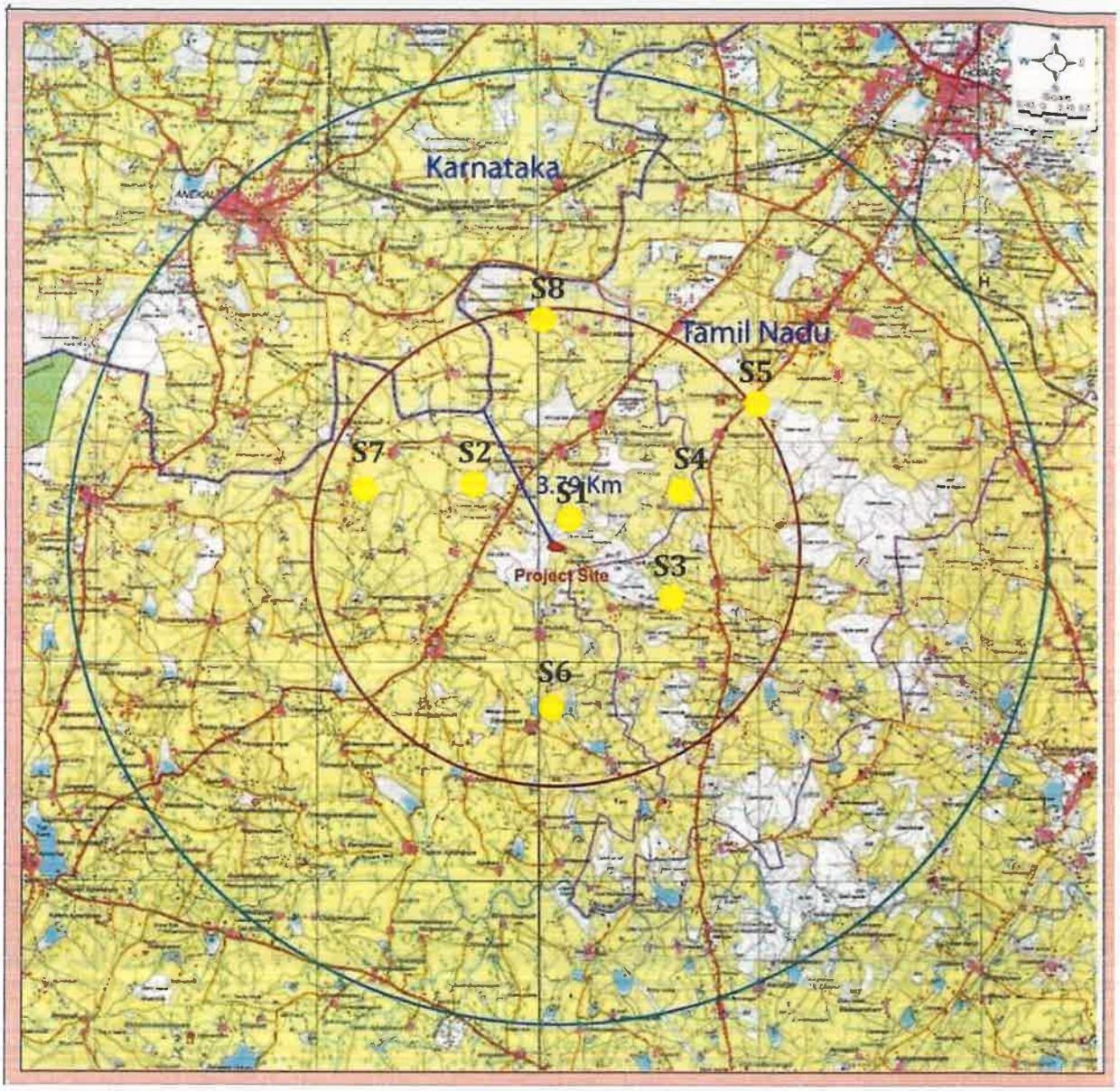


Figure 3-16 Soil sampling locations

3.8.3 BASELINE SOIL STATUS

The soil quality at all the locations during the study period is tabulated in Table 3-18. The results are compared with "Standard Soil Classification" given in Table 3-19.

Table 3-18 Soil sample test

Sl. No.	Parameters	Test Methods	S1	S2	S3	S4	S5	S6	S7	S8
1.	pH	IS -2720(Part 26) 1987(RA 2011)	6.58	7.11	6.98	7.31	6.96	7.44	7.61	6.84
2.	Bulk Density, g/cc	FAO Chapter 3, ABCTL/SOIL/SOP 1	1.35	1.37	1.31	1.35	1.38	1.29	1.32	1.39
3.	Electrical Conductivity, mS/cm	IS -14767:2000 (RA 2010)	0.084	0.071	0.142	0.102	0.116	0.148	0.171	0.097
4.	Total Nitrogen, kg/ha	IS -14684:1999, Reaff:2008	214	174	248	134	184	255	213	151
5.	Available Phosphorous, kg/ha	FAO Chapter 3, ABCTL/SOIL/SOP 2	36.6	21.7	45.7	32.4	27.4	37.3	29.1	19.7
6.	Available Potassium, kg/ha	FAO Chapter 3, ABCTL/SOIL/SOP 7	214	266	370	310	282	348	312	214
7.	Exchangeable Calcium as Ca,m.eq/100g	FAO Chapter 3, ABCTL/SOIL/SOP 4	14.2	13.7	16.5	15.1	14.6	17.3	16.9	13.3
8.	Exchangeable Magnesium as Mg, m.eq/100g	FAO Chapter 3, ABCTL/SOIL/SOP 5	4.52	5.17	3.86	6.42	4.11	5.63	3.98	3.57
9.	Exchangeable Sodium as Na, m.eq/100g	FAO Chapter 3, ABCTL/SOIL/SOP 6	0.98	1.24	1.41	1.19	1.18	1.54	1.33	1.07
10.	Organic matter (%)	IS 2720 (Part 22):1972, Reaff:2010	1.24	0.96	1.41	1.33	0.84	1.23	1.14	1.52
11.	Texture Classification	Robinson Pipette Method	Loam	Loam	Clay Loam	Loam	Loam	Clay Loam	Clay Loam	Loam
12.	Sand (%)		38.2	41	35.4	36.8	39.7	36.3	32.7	35.4
13.	Clay (%)		25.5	24.7	33.9	26.2	23.9	34.3	36.7	26.5
14.	Silt (%)		36.3	34.3	30.7	37	36.4	28.4	30.6	38.1
15.	Sodium Absorption Ratio	ABCTL/SOP/S20	1.01	1.28	1.40	1.15	1.22	1.42	1.30	1.17
16.	Boron as B, mg/kg	ABCTL/SOP/S13	3.06	2.74	5.22	4.13	3.87	6.04	5.14	2.97
17.	Iron as Fe, mg/kg	EPA 3500 B & 7000B	716	384	511	624	481	328	613	747
18.	Copper as Cu, mg/kg	EPA 3500 B & 7000B	6.98	8.22	9.31	7.21	12.2	8.6	9.1	5.4
19.	Manganese as Mn, mg/kg	EPA 3500 B & 7000B	32.5	22.7	41	18.3	24.7	40.8	40.4	26.1
20.	Zinc as Zn, mg/kg	EPA 3500 B & 7000B	21.9	33	28.1	14.6	16.3	25.1	17.8	31.5

Sl. No.	Parameters	Test Methods	S1	S2	S3	S4	S5	S6	S7	S8
21.	Molybdenum as Mo , mg/kg	EPA 3500 B & 7000B	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)
22.	Lead as Pb, mg/kg	EPA 3500 B & 7000B	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)
23.	Nickel as Ni, mg/kg	EPA 3500 B & 7000B	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)
24.	Chromium as Cr, mg/kg	EPA 3500 B & 7000B	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)
25.	Cadmium as Cd, mg/kg	EPA 3500 B & 7000B	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)
26.	Arsenic as As, mg/kg	EPA 3500 B & 7000B	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)	BDL(<2)
27.	Mercury as Hg, mg/kg	EPA 7471 B	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)	BDL(<0.5)

Table 3-19 Standard Soil Classification

Sl. No.	Soil Test	Classification
1	pH	<4.5 Extremely acidic 4.51- 5.50 Very strongly acidic 5.51-6.00 moderately acidic 6.01-6.50 slightly acidic 6.51-7.30 Neutral 7.31-7.80 slightly alkaline 7.81-8.50 moderately alkaline 8.51-9.0 strongly alkaline 9.01 very strongly alkaline
2	Electrical Conductivity (mS/cm)	Upto 1.00 Average 1.01-2.00 harmful to germination 2.01-3.00 harmful to crops
3	Organic Carbon (%)	Upto 0.2: very less 0.21-0.4: less 0.41-0.5 medium, 0.51-0.8: on an average sufficient 0.81-1.00: sufficient >1.0 more than sufficient
4	Nitrogen (Kg/ha)	Upto 50 very less 51-100 less 101-150 good 151-300 Better > 300 sufficient
5	Phosphorus (Kg/ha)	Upto 15 very less 16-30 less 31-50 medium, 51-65 on an average sufficient 66-80 sufficient > 80 more than sufficient
6	Potash (Kg/ha)	0 -120 very less 120-180 less 181-240 medium 241-300 average 301-360 better > 360 more than sufficient

3.8.4 OBSERVATIONS

- It has been observed that the pH of the soil was ranging from 6.58 to 7.61 indicating the soils are neutral in nature.
- Conductivity of the soil ranges from 0.071 to 0.171 mS/cm indicating the soil in the study area is non-saline in nature.
- Texture of the soil sample is predominantly loamy in nature.

- Soil organic content varied from 0.84 to 1.52 % which indicates sufficient level of organic matter.
- The available nitrogen content ranges between 134 to 255 kg/ha, indicates in the soil have sufficient quantity of nitrogen in the locality.
- The value of phosphorus content varies between 19.7 to 45.7 kg/ha indicates that the soil has less to medium quantities of phosphorus.
- The potassium content varies from 214 to 370 kg/ha which indicates that the soils have moderate to high quantities of potassium.

3.9 ECOLOGICAL ENVIRONMENT

Terrestrial Ecology

3.9.1 INTRODUCTION

An ecosystem is composed of plant and animal populations, and it differs from natural community designation in that it involves the total nutrient and energy economics of the system as well as the organisms involved. Ecosystems are self-maintained and self-contained. Natural ecosystems are invariably richer in species and more stable than those of artificially developed, due to their many inter-dependencies and inter-relationships.

The plant and animal populations in an area from recognizable associations called Natural communities. These are characterized by a few species called dominants. Natural communities have structure based on the life forms (e.g. grass) of the species that make them up. A hardwood forest has a given structure by virtue of the trees and shrubs that compose it. The species composition refers to the kinds of species making up to the community. The variety of species and their relative numbers are referred to as species diversity. The greater the biotic diversity, the greater the number and kind of habitats for the inhabitants of the community Based on the physical setting and the kind of distribution of flora and fauna, the study area can be classified into crop, terrestrial and aquatic ecosystems.

Generally, biological communities are good indicators of climatic and edaphic factors because of their strong relationships with them. The studies on the biological aspects of the ecosystem are important in Environment Impact Assessment studies for the suitability of natural flora and fauna. Information on the impact of environment stress on the community structure serves as an inexpensive and efficient early warning system to check the damage on a particular ecosystem.

A change in the composition of biotic communities under stress is reflected through a change in the distribution pattern, density, diversity, frequency dominance and abundance of natural

species of fauna and flora existing in the ecosystem. These changes over a span of times can be quantified and related to the existing environment.

3.9.2 OBJECTIVES

The objectives of ecological study during the study period of EIA may be outlined as follows:

- To characterize the environmental components like land, water, flora and fauna;
- To understand their present status;
- To understand carrying capacity of the ecosystem;
- To assess present bio-diversity; and
- To identify susceptible and sensitive areas.

3.9.3 REGIONAL BIODIVERSITY

Tamil Nadu has a total land area of 1,30,060 km^2 which constitute of about 3.96% of the total geographical area of the country. Physiographically, the state can be divided into four major regions viz Coastal Plains, Eastern Ghats, Central Plateau and Western Ghats. The main rivers of the State are Cauvery, Bhavani, Palar, Vaigai etc. which drain into the Bay of Bengal. Tamil Nadu has a Humid tropical climate. Tamil Nadu shares the Western Ghats Biodiversity (one of the 12 global mega biodiversity hotspots) with Western Ghats States of Kerala, Karnataka, Maharashtra and Goa. It shares the Eastern Ghats with the States of Andhra Pradesh and Orissa. It also shares the East-coast with the states of Andhra Pradesh, Orissa and West Bengal.

The state is endowed with rich biodiversity, from marine coastal systems in the Gulf of Munnar to the terrestrial evergreen forests in the Western Ghats and temperate forests in the hilly regions. As per the Champion & Seth classification of forest types (1968), the forests in Tamil Nadu belong to nine forest type groups, which are further divided into 39 forest types. The Nilgiri Biosphere Reserve represents a unique and threatened ecosystem in the tropics inside the Western Ghats mountain system and is one of the biodiversity hotspots. Tamil Nadu has been a pioneer state in the biodiversity conservation, particularly in Protected Area management, including conservation of marine fauna. Tamil Nadu is famous for its Teak and Sandalwood forests.

Forest Biodiversity in the State is mainly confined to Western Ghats and Eastern Ghats. Forest cover of the state is 26,364 km^2 which is 20.27% of the state's Geographical Area (GA). In terms of forest canopy density classes, the State has 3,605 km^2 (2.77% of GA) very dense forest, 11,030 km^2 (8.48% of GA) moderately dense forest and open forest and 11,729 km^2 (9.02 % of GA) respectively. There is an increase of 83.02 km^2 in the forest cover of the state as compared to 2017 assessment (Source: www.forests.tn.gov.in).

In Tamil Nadu, during the period 1st January 2015 to 5th February 2019, a total of 542.40 ha. of forest land was diverted for non-forestry purposes under the Forest Conservation Act, 1980 (MoEF&CC, 2019). As per the information received from the State during the last two years 74,030 ha of plantations were raised in the state. Five National Parks, 29 Wildlife Sanctuaries and 2 Conservation Reserves constitute the Protected Area network of the State covering 4.97% of its geographical area (India State Forest Report, 2019). There are about 3,072 hamlets bordering the forest areas of the state.

Tropical dry Deciduous forest covers an area of 12.23 lakh ha. constituting 54.30%, Tropical Thorn Forest covers an area of 5 lakh ha. constituting 22.10%, Tropical Moist Deciduous Forest covers an area of 2.60 lakh ha. constituting a percentage of 11.10%. The Biodiversity rich forest types are the Tropical Wet Evergreen Forest covering an area of 0.60 lakh ha constituting 2.67%, Tropical Semi Evergreen Forest covering a area of 0.23 lakh ha. constituting 1.01%, Subtropical Broad leaved Hill Forest covers an area of 1.14 lakh ha. constituting 5.04%, the Tropical Dry Evergreen Forest which is a unique type of Tamil Nadu covers an area of 0.26 lakh ha. constituting 1.16%, the mangrove forest covers an area of approximately 0.23 lakh ha. constituting 1.01%.

Habitat fragmentation is the process by which habitats which were once continuous become divided into separate fragments. This mainly happens due to human activities such as agriculture, rural development and urbanization. As cities and civilization grow in size, the fragmentation of habitats causes extinction of many plant & animal species which is the largest threat to biodiversity on earth. Designing with nature can improve the quality of cities for people, plants and animals. In doing so, ecosystem services can be enhanced.

Wild Animal diversity has been structured on the lines of Red listed animals, endemic animals, Flagship species, Keystone species, Pollinators and others. Domesticated species diversity has been structured on the lines of Cultivated Plants and Domesticated animals.

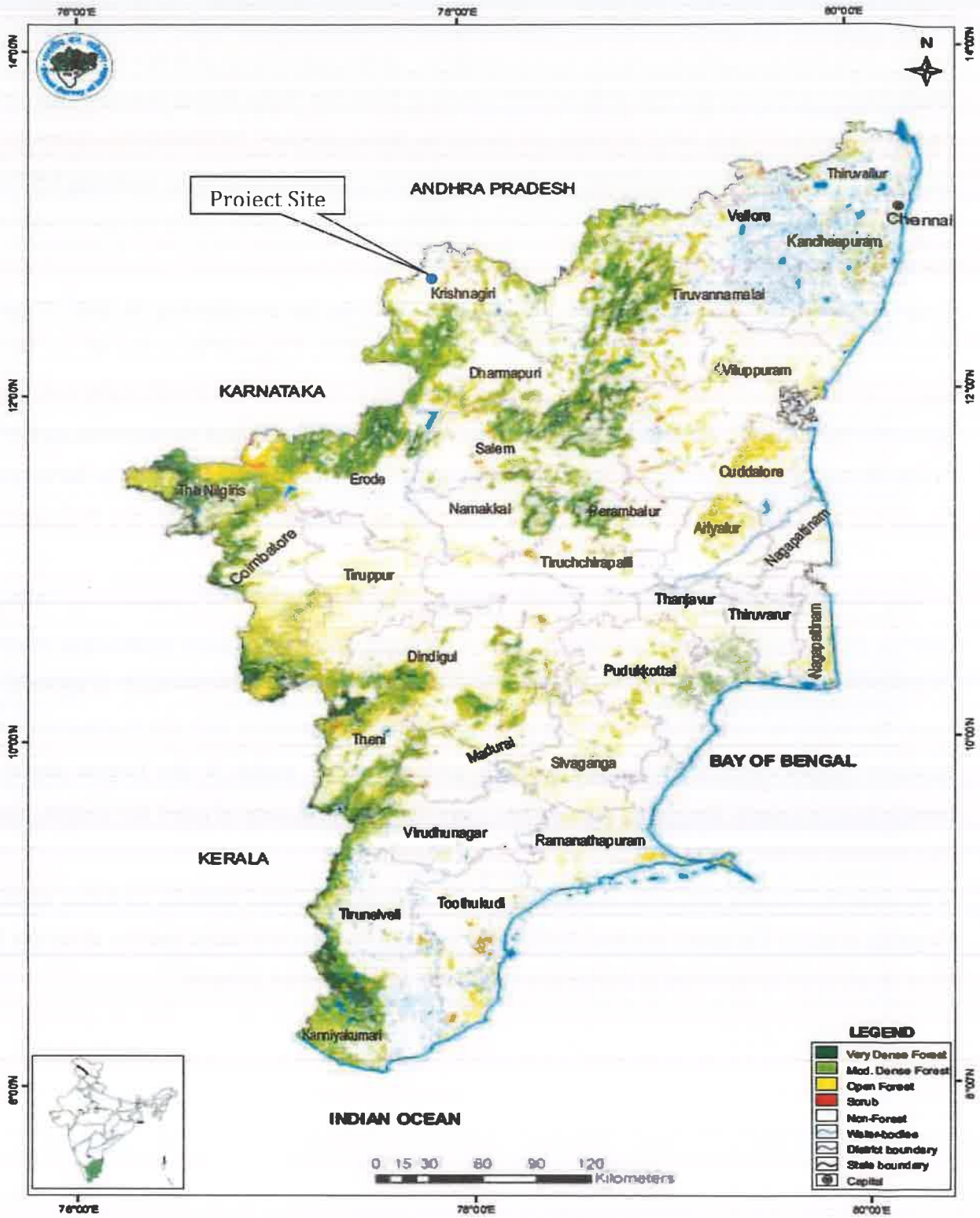


Figure 3-17 Forest map of Tamil Nadu
(Source: Forest Survey of India, 2009)

Krishnagiri District

Krishnagiri district has a total geographical area of 5143 Sq.km. The district shares borders with Tirupattur to the southeast, Thiruvannamalai district to the east, Dharmapuri district to the south and Kolar, Bengaluru Rural, Bengaluru Urban, Ramanagara and Chamarajanagar districts of the state of Karnataka to the northwest and west and Chittoor district of the state Andhra Pradesh to the north.

This district mainly has a mountainous terrain. The flatlands are irrigated by the south Pennar river. Krishnagiri district forms a part of Cauvery and Pennaiyar river basins. Cauvery river forms the southwestern boundary of the district. Dodda Halla is the most important tributary of Cauvery draining the rugged terrain in the northwestern part of the district. Pennaiyar river is another major river drains the district. It originates from Nandhi hills in Karnataka and enters Tamil Nadu and flows almost in a southeasterly direction. Pambar and Burgur Ar, are the important tributaries of Pennaiyar draining in the district.

The area under forests is 2024.09 sq.km which is only 39% of the total geographical area of the district. The major crops cultivated in the district are paddy, maize, ragi, banana, sugarcane, cotton, tamarind, coconut, mango, groundnut, vegetables and flowers. This district is famous for mangoes and for the granite industry with quarries and processing units spread around the district. With a 40% share, the district is the top producer of ragi in Tamil Nadu.

3.9.4 Biogeographic Zone, Province and Forest Type

This study has been carried out during the month of March 2021 for the purpose of providing an independent and comprehensive baseline assessment of the flora, terrestrial vertebrate, aquatic fauna and associated habitat values of the site and within 10km radius area around the project site located at S.F. Nos. 291/1,291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B,292/5A,292/5B Kalugondapalli village, Denkanikottai taluk, Krishnagiri district of Tamil Nadu and a subsequent assessment of potential ecological impacts.

Denkanikottai taluk is in Krishnagiri district with the total geographical area of total area of 14 sq.km. It is situated on the south-western extreme of the Deccan Plateau, East of the Western Ghats. The forest area of Denkanikottai forms the prime elephant habitat in the district. It is part of the Cauvery Elephant Reserve a part of the Cauvery Wildlife Sanctuary (450 sq.km). The total geographical area of Kalugondapalli village is 913.09 hectares.

The study area falls under semi-arid category as far as the Indian biogeographical zones (Rodger, Panwar, Mathur 2000) are concerned. Under the biogeographical provinces, the study area falls under the category of **6E-Deccan Peninsula-Deccan South.**

The field investigation and satellite imagery data show that the study area is a remote dry agricultural and predominantly barren lands covered with some thorny bushes in patches, and includes water bodies such as Mathukur Lake located about 1.5 km from the study area.

Thali Extension RF located about 11 Km towards West direction from project site. Other major land use feature of the study area is comprised habitation and agricultural lands.

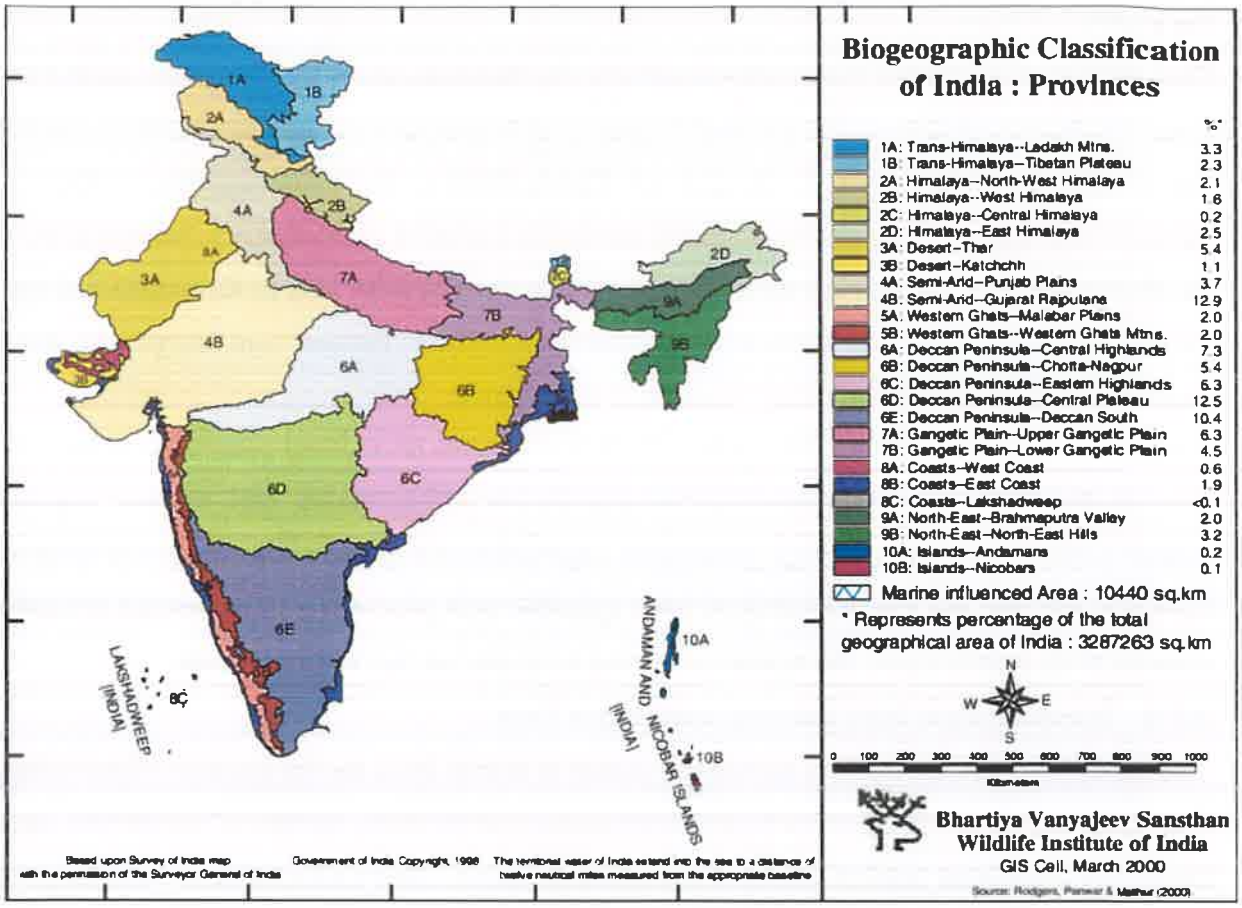


Figure 3-18 Map Showing the Bio-Geographic Provinces of India

The detailed ecological assessment of the study area has been carried out with the following objectives:

- To establish the present status of ecological conditions surrounding the project location;
- To study the existing anthropogenic stresses on the prevailing ecosystem.
- To identify and predict the likely impacts on the local ecosystem from the proposed activities;
- To list out floral species, terrestrial vertebrate and aquatic flora and fauna present within the study area, and significance status under The Wildlife (Protection) Act, 1972;
- To define ecological/conservation status of each species as per IUCN categories (Red Data List).

- To formulate migratory measures and a sustainable Environmental Management Plan (EMP) basing upon the likely impacts.

During survey, following aspects were considered for ecological studies:

- Assessment of present status of flora and fauna;
- Identification of rare and endangered species of plants and animals (if any);
- Identification of ecologically sensitive areas within the study area;
- Assessment of migratory route of wildlife (if any);

3.9.5 METHODOLOGY

Terrestrial investigations for flora and fauna records were collected by random field survey and a checklist was prepared. During field survey, discussions with the local people were carried-out to collect information related to local biodiversity in and around the villages. The ecological status of the study area has been assessed based on the following methodology:

- Primary field surveys to establish primary baseline of the study area.
- Compilation of secondary information available in published literatures/ working plan was referred from State Forest Department.
- Site Verification and finalization in consultation with Project proponent, local inhabitants.
- Vegetation analysis through quadrate method using sampling plots of 10m x 10m.
  - 10m X 10m for tree species (record trees >20 cm in GBHOB /species);
  - 3m X 3m [four plots] was laid along diagonals wherein all the shrubs recorded.
  - 1m X 1m [five plots], one at the centre and four at one per quadrate] was laid and herbs, grasses in five plots to be noted.

Protocol for Sampling through Quadrate Method

The standard method chosen for the assessment of plant diversity involves the use of square vegetation quadrates ('plots'). These quadrates were used to measure most vegetation attributes in most vegetation types. Quadrate locations marked by pegs or sometimes by grid system.

The study area is demarcated as 10 km from the periphery of project area based on the MoEF&CC guidelines. After demarcation, the study area is divided into sampling units, i.e. the areas which are approximately true representative of the whole area, and were sampled for the identification of plant and animal species.

- **Floral study**

The assessment of the flora of the study area is done by an extensive field survey of the area.

- Plant species were identified based on their specific diagnostics characters of family, genus and species using available floral and other related literature.

- Besides the identification of plant species, information was collected on the vernacular names and uses of plants made by local inhabitants.
- Qualitative analysis of vegetation is made by two different methods such as floristic (by simple studying various genera and species of various plant groups i.e. herbs, shrubs, trees etc).

❖ **Phyto – sociology**

A nested quadrates technique was used for sampling the vegetation. All the plots sampled were representative of most common types, sampling 10m x 10m for trees and 3m x 3m for shrubs, 1m x 1m for herbs square meter quadrates were laid. Selection of sites for sampling of vegetation is done by random sampling procedure. However, in general to study the phytosociological attributes, quadrates of 10 m × 10 m size for tree species are randomly laid out at each site at different elevations. Then the observation on the following parameters is recorded:

- Name of the species.
- Number of the occurrence of each species in each quadrate.

The field data for phytosociological studies was collected in the study area. Vegetation data was quantitatively analyzed for frequency, density and dominance using standard methodologies. The relative values of frequency, density, and dominance of all the recorded species was summed up to represent Importance Value Index (IVI). Not only IVI facilitates comparison between species of a community, but also the data collected on dispersion, number and cover can be profitably used in comparing the vegetation structure of two or more stands or of the same stand over a period of time. Vegetation structure with respect of varying environmental factors can also be studied through such studies in sets of varying environmental conditions. The IVI was determined as the sum of the relative frequency, relative density and relative dominance. It thus incorporates three important parameters that measures of productivity and diversity of every species therefore.

IVI = Relative frequency + Relative density + Relative dominance

❖ **Faunal Study**

Ground surveys are carried out by trekking the study area for identification of important animal groups such as birds, mammals and reptiles for sampling of animals through the following methods.

➢ For sampling birds/ avifauna 'point sampling' along the fixed transects (foot trails) were done to record all the species of birds with the help of binoculars; field guides and photography for more than 1 hour on each transect (n=4).

- For sampling mammals, 'direct count on open width (20 m) transect' were used on the same transects. Besides, information on recent sightings/records of mammals by the locals are also collected from the study areas.
- 'Reptiles' mainly lizards were sampled by 'direct count on open width transects'.
- Secondary information collected from local villagers, published government data etc.

List of the endangered and endemic species as per the schedule of The Wildlife Protection Act, 1972

Emphasis is given to identify avifauna and mammals to determine the presence and absence of Schedule-1 species, listed in The Wildlife Protection Act 1972, as well as in Red List of IUCN. Various methods used for study animals are as follows:

- **Point Survey Method:** Observations were made at each site for 15-20 min duration.
- **Roadside Counts:** The observer travelled by motor vehicles from site to site and all sightings were recorded.

3.9.6 Floristic Composition within the Study Area

The ecology and diversity survey were conducted in the 10 km radius in the study area and the surrounding area. It is observed that human settlements present in and around the project site and within the study area of 10 km radius and many of villages/ colonies have moderate ranges of plantations. Most of the vegetations observed in the study area are natural vegetation and in agricultural fields. During site assessment several floral species encountered within the 10 km radius area.

The study area does not have any forest land or permanent natural vegetation and the main land use feature of the study area is comprised of habitation and cultivating lands. From the primary observation, the tree species recorded in the study area in the plantation area were *Cocos nucifera, Acacia nilotica, Azadirachta indica, Mangifera indica* etc. The terrestrial flora in the study area consisting of various under shrubs and herbs is conspicuous during and after the rainy season only. Some of the common shrub species are *Lantana camara, Hibiscus rosa-sinensis, Calotropis giganteaa, Datura metel, Ricinus communis* etc. and *Cynodon dactylon, Achyranthes aspera, Boerhavia diffusa, Tridax procumbens, Eclipta prostrate* etc. among herbaceous species.

The survey was conducted in the 10 km radius from the study area and its surroundings. The locations covered during the present survey were Near Malugundapalli, Near Nagondapally, Near Karnoor, Near Rachamanahalli, Near Gumlapuram, Near Saragapalli. The following locations were enlisted within the 10 km radius study area during the field visits as given in Table 3-20.

Table 3-20 Details of locations for plot survey

Sl. No.	Name of village	Plot No.	Latitude	Longitude
1	Near Malugundapalli	EB1	12°39'6.43"N	77°44'5.47"E
2	Near Nagondapally	EB2	12°39'45.16"N	77°47'17.70"E
3	Near Karnoor	EB3	12°41'48.64"N	77°46'59.92"E
4	Near Rachamanahalli	EB4	12°42'55.99"N	77°44'30.19"E
5	Near Gumlapuram	EB5	12°39'10.53"N	77°40'49.54"E
6	Near Saragapalli	EB6	12°36'27.97"N	77°45'54.02"E



Figure 3-19: Sampling location of EB section.

The project area covering 10 km radial distance did not reveal any notified/ protected ecologically sensitive area including National Park or wildlife sanctuary, Elephant and Tiger reserves.

The project area covering 15 km radial distance reveal that there are Thalli R.F. located about 11 km towards West from the study area and there are no National Park or sanctuaries or reserve/ protected forest within study area of 15 km radius.

However, the vegetation within the study area is sparse, with the existence of some weeds as per the survey conducted within 10 km radius of the site. The results of survey exhibited sparsy vegetation with the existence of 131 terrestrial flora. However, Coconut, Neem, Acacia, Mango and Tamarind trees are abundant widely distributed in and away from the study area.

The following species were encountered from the study area during the field visits as given in Table 3-21.

Table 3-21 Floristic Diversity in the Study Area

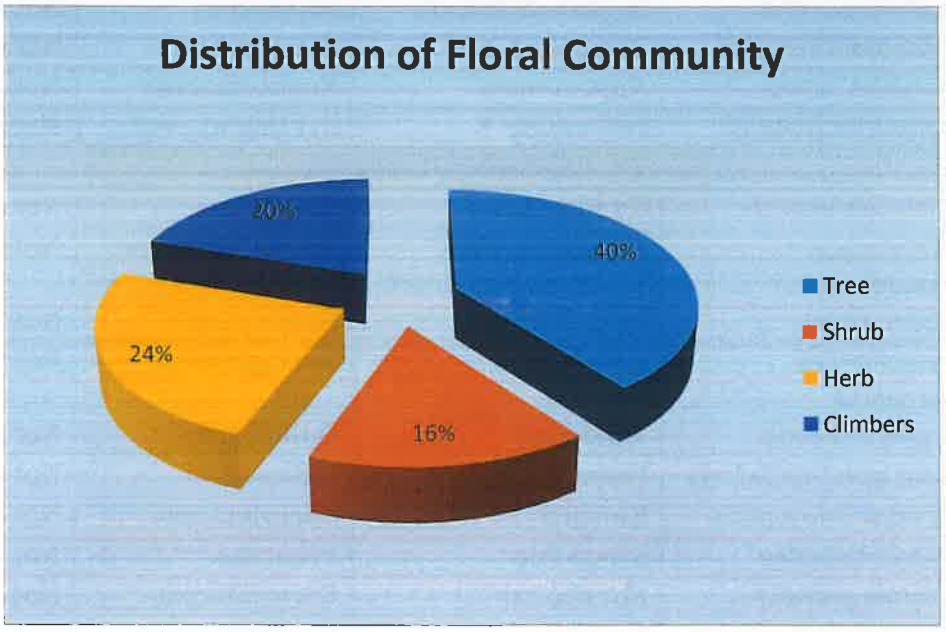
Sl. No.	Botanical Name	Common Name	Family	IUCN Conservation Status
Trees				
1	*Cocos nucifera*	Tennai	Arecaceae	Not Assessed
2	*Acacia nilotica*	Karuvelan	Fabaceae	Least Concern
3	*Azadirachta indica*	Vembu	Meliaceae	Not Assessed
4	*Acacia auriculiformis*	Acacia	Fabaceae	Least Concern
5	*Carica papaya*	Pappali	Caricaceae	Data Deficient
6	*Aegle marmelos*	Vilvam	Rutaceae	Not Assessed
7	*Ailanthus excelsa*	Perumaram	Simaroubaceae	Not Assessed
8	*Annona squamosa*	Sithapalzham	Annonaceae	Least Concern
9	*Murraya koenigii*	kariveppilai	Rutaceae	Not Assessed
10	*Syzygium cumini*	Naval	Myrtaceae	Not Assessed
11	*Ficus benghalensis*	Alai	Moraceae	Not Assessed
12	*Emblica officinalis*	Nelli	Phyllanthaceae	Not Assessed
13	*Plumeria rubra*	Nela sampangi	Apocynaceae	Not assessed
14	*Delonix regia*	Cemmayir-konrai	Caesalpiniaceae	Least Concern
15	*Diospyros melanoxylon*	Karundumbi	Ebanaceae	Not Assessed
16	*Pongamia pinnata*	Pungai	Fabaceae	Least Concern
17	*Musa paradisiaca*	Vaazha	Musaceae	Not Assessed
18	*Psidium guajava*	Koyya	Myrtaceae	Least Concern
19	*Tamarindus indica*	Puli	Fabaceae	Not Assessed
20	*Cassia fistula*	Konrai	Fabaceae	Least Concern
21	*Madhuca longifolia*	iluppai	Sapotaceae	Not Assessed
22	*Mangifera indica*	Mamaram	Anacardiaceae	Data Deficient
23	*Albizia amara*	Unjai	Fabaceae	Not Assessed
24	*Terminalia arjuna*	Marudha	Combretaceae	Not Assessed
25	*Ceiba pentandra*	Pancu	Malvaceae	Least Concern
26	*Casuarina equisetifolia*	Savukku	Casuarinaceae	Least Concern
27	*Borassus flabellifer*	Panai maram	Arecaceae	Endangared
28	*Ficus hispida*	peyatti	Moraceae	Least Concern
29	*Morinda tinctoria*	Nuna	Rubiaceae	Not Assessed
30	*Albizia lebbeck*	Siridam	Fabaceae	Not assessed
31	*Phyllanthus emblica*	Nellikkai	Phyllanthaceae	Not Assessed
32	*Polyalthia longifolia*	Nettilinkam	Annonaceae	Not Assessed
33	*Terminalia catappa*	Nattuvaduma	Combritaceae	Least Concern
34	*Tectona grandis*	Tekku	Lamiaceae	Not Assessed
35	*Eucalyptus leptophylla*	Neelagiri thailam	Myrtaceae	Not assessed
36	*Manilkara zapota*	Sapota	Sapotaceae	Not assessed
37	*Wrightia tinctoria*	Palai	Apocynaceae	Least Concern
38	*Gmelina arborea*	Kumalaamaram	Lamiaceae	Least Concern
39	*Bombax ceiba*	Ilavu	Bombacaceae	Not Assessed
40	*Terminalia chebula*	Kadukkai	Combritaceae	Not assessed

Sl. No.	Botanical Name	Common Name	Family	IUCN Conservation Status
41	*Ziziphus mauritiana*	Elandhai	Rhamnaceae	Not assessed
42	*Dalbergia sissoo*	Shisham	Fabaceae	Not assessed
43	*Butea monosperma*	Palasam	Fabaceae	Not assessed
44	*Albizia saman*	Thoongumoonji maram	Fabaceae	Secure
45	*Bambusa arundinacea*	Kulay-munkil	Poaceae	Not assessed
46	*Sesbania sesban*	Sithagathi	Fabaceae	Not assessed
47	*Citrus limon*	Elumicchai	Rutaceae	Not assessed
48	*Morus alba*	Kambli chedi	Moraceae	Not assessed
49	*Melia azedarach*	Kattu vembhu	Meliaceae	Not assessed
50	*Limonia acidissima*	Vilamaram	Rutaceae	Not assessed
51	*Leucaena leucocephala*	Subabul	Fabaceaae	Not assessed
52	*Ficus religiosa*	Arasamaram	Moraceae	Not assessed
Shrubs				
1	*Hibiscus rosa-sinensis*	Sembaruthi	Malvaceae	Not Assessed
2	*Calotropis gigantea*	Erukku	Apocynaceae	Not Assessed
3	*Jasminum sessiliflorum*	Sooman (Jasmin)	Oleaceae	Not Assessed
4	*Ocimum gratissimum*	Tulasi	Labsiatae	Not Assessed
5	*Bougainvillea glabra*	Kaahitha Poo	Nyctaginaceae	Not Assessed
6	*Hibiscus radiatus*	Pulicha Keerai	Malvaceae	Not Assessed
7	*Calotropis procera*	Vellai Erukku	Asclepiadaceae	Not assessed
8	*Vitex negundo*	Nochi	Verbenaceae	Not assessed
9	*Cassia auriculata*	Avarai	Fabaceae	Not Assessed
10	*Ipomoea carnea*	Kattamanakku	Convolvulaceae	Not Assessed
11	*Jatropha curcas*	Kattukkottai	Euphorbiaceae	Not assessed
12	*Lantana camara*	Unni chedi	Verbenaceae	Not Assessed
13	*Sida cordifolia*	Nilatutthi	Malvaceae	Not Assessed
14	*Parthenium hysterophorus*	Mookkuththi	Asteraceae	Not Assessed
15	*Prosopis juliflora*	Vaelikaruvai	Fabaceaae	Not assessed
16	*Solanum incanum*	Karimulli	Solanaceae	Not assessed
17	*Datura metel*	Umathai	Solanaceae	Not assessed
18	*Euphorbia tirucalli*	Amman-paccarici	Euphorbiaceae	Least Concern
19	*Ziziphus nummularia*	Narielandai	Rhamnaceae	Not assessed
20	*Ricinus communis*	Amanakku	Euphorbiaceae	Not Assessed
21	*Tecoma stans*	Yellow bells	Bignoniaceae	Not Assessed
Herbs / Grasses				
1	*Cynodon dactylon*	Arugampillu	Poaceae	Not Assessed
2	*Achyranthes aspera*	Nayuruvi	Amaranthaceae	Not Assessed
3	*Boerhavia diffusa*	Mukaratte kirai	Nyctaginaceae	Not assessed
4	*Amaranthus viridis*	kuppai-k-kirai	Amaranthaceae	Not Assessed
5	*Tridax procumbens*	Kenathuppoondu	Asteraceae	Not Assessed

Sl. No.	Botanical Name	Common Name	Family	IUCN Conservation Status
6	*Croton sparsiflorus*	Milakai	Euphorbiaceae	Not Assessed
7	*Aerva lanata*	Ciru-pulai	Amaranthaceae	Not assessed
8	*Chloris barbata*	Kuruthu Pillu	Cyperaceae	Not Assessed
9	*Cassia tora*	Taghrai	Ceasalpinaceae	Not Assessed
10	*Ageratum conyzoides*	Aappakkoti	Asteraceae	Not assessed
11	*Amaranthus spinosus*	Mullukkeerai	Amaranthaceae	Not assessed
12	*Argemone Mexicana*	Kudiyotti	Papaveraceae	Not Assessed
13	*Butea superba*	Pilacchi valli	Papilionaceae	Not Assessed
14	*Mimosa pudica*	Thottaccurungi	Mimosoideae	Least Concern
15	*Digitaria tomentosa*	Linn	Poaceae	Not Assessed
16	*Xanthium strumarium*	Marul-umatta	Asteraceae	Not Assessed
17	*Commelina benghalensis*	Kanang-karai	Comllinaceae	Not assessed
18	*Cyperus rotundus*	Panni-korai	Cyperaceae	Not assessed
19	*Sida acuta*	Palambasi	Malvaceae	Not Assessed
20	*Asystasia gangetica*	Miti-kirai	Acanthaceae	Not assessed
21	*Sida rhombifolia*	Chitramutti	Malvaceae	Not assessed
22	*Phyllanthus amarus*	Keelanelli	Phyllanthaceae	Not assessed
23	*Eclipta prostrate*	Karisalanganni	Asteraceae	Not assessed
24	*Euphorbia hirta*	Amanpatchaiarisi	Euphorbiaceae	Not assessed
25	*Solanum nigrum*	Manathakkaali	Solanaceae	Not Assessed
26	*Indigofera oblongifolia*	Avuri	Fabaceae	Not assessed
27	*Ocimum sanctum*	Thulasi	Lamiaceae	Not assessed
28	*Sorghum bicolor*	Cholam	Poaceae	Not assessed
29	*Physalis minima*	Sodakkuthakkaali	Solanaceae	Not assessed
30	*Vernonia cinerea*	Puvamkuruntal	Asteraceae	Not assessed
31	*Acalypha indica*	Kuppai-meni	Euphorbiaceae	Not assessed
32	*Cassia occidentalis*	Pei- avarai	Caesalpiniaceae	Not assessed
Climbers/Creepers				
1	*Abrus precatorius*	Kundumani	Fabaceae	Not assessed
2	*Aristolochia bracteolata*	Aduthendapalai	Aristolochiaceae	Not assessed
3	*Basella rubra*	Pasalakkirai	Basellaceae	Not assessed
4	*Bougainvillea spectabilis*	Kakitha poo	Nyctaginaceae	Not assessed
5	*Cansjera rheedei*	Vandikodi	Opiliaceae	Not assessed
6	*Cissus quadrangularis*	Perandai	Vitaceae	Not assessed
7	*Citrullus colocynthis*	Kumatti	Cucurbitaceae	Not assessed
8	*Clitoria ternatea*	Sangu Poo	Fabaceae	Not assessed
9	*Coccinia grandis*	Kovaikkaai	Cucurbitaceae	Not assessed
10	*Croton bonplandianus*	Railpodu	Euphorbiaceae	Not assessed
11	*Cyclea peltata*	Pon-mucuttai	Menispermaceae	Not assessed
12	*Gloriosa superba*	Sengandhal	Liliaceae	Not assessed

Sl. No.	Botanical Name	Common Name	Family	IUCN Conservation Status
13	*Hemidesmus indicus*	Nannari	Apocynaceae	Not assessed
14	*Ipomoea nil*	Kotikkakkattan	Convolvulaceae	Not assessed
15	*Ipomoea obscura*	Siruthalai	Convolvulaceae	Not assessed
16	*Ipomoea reptans*	Vallaikkirai	Convolvulaceae	Not assessed
17	*Ipomoea staphylina*	Onaankodi	Convolvulaceae	Not assessed
18	*Luffa cylindrical*	Peerkankai	Cucurbitaceae	Not assessed
19	*Pergularia daemia*	Velipparuthi	Apocynaceae	Not assessed
20	*Pueraria tuberosa*	Nilapoosani	Fabaceae	Not assessed
21	*Solena amplexicaulis*	Pulivanci	Curcurbitaceae	Not assessed
22	*Tragia involucrata*	Kanchori	Euphorbiaceae	Not assessed
23	*Trichosanthes cucumerina*	Pudalankaai	Curcurbitaceae	Not assessed
24	*Tylophora asthmatica*	Kalutai-p-palai	Asclepidaceae	Not assessed
25	*Tylophora indica*	Nachchuruppam	Asclipedaceae	Not assessed
26	*Zehneria scabra*	Naai Pagal	Cucurbitaceae	Not assessed

The detailed study revealed dominance of *Cocos nucifera, Acacia nilotica, Azadirachta indica, Mangifera indica* etc. Totally 52 species of trees found in the study area along with 21 shrub species, 32 herb species and 26 climber species. *Lantana camara, Hibiscus rosa-sinensis, Calotropis giganteaa, Datura metel, Ricinus communis* are found to be the predominant species among shrub. Among the herbaceous species *Cynodon dactylon, Achyranthes aspera, Boerhavia diffusa, Tridax procumbens, Eclipta prostrate* etc. found to be abundant.



3.9.7 PHYTOSOCIOLOGICAL ANALYSIS

Phytosociological parameters such as, density, frequency, basal area and importance value index of individual species were determined in randomly placed quadrats of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and seedlings, the IVI was calculated by summing up relative frequency, relative density and relative abundance.

Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 10 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process. Phytosociological analysis of tree species is shown in Table 3-22 .

Table 3-22: Phytosociological Analysis of Tree Species

Sl. No.	Scientific Name	Local Name	Total No.	Total no. of quad with sp.	Total No. of quad	Density	Relative Density	Frequency %	Relative Frequency	Abundance	Relative Abundance	IVI
Tree Species												
1	*Cocos nucifera*	Tennai	7	6	6	1.17	4.83	100.0	4.3	1.17	0.05	9.19
2	*Acacia nilotica*	Karuvelan	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
3	*Azadirachta indica*	Vembu	5	5	6	0.83	3.45	83.3	3.6	1.00	0.03	7.08
4	*Acacia auriculiformis*	Acacia	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
5	*Carica papaya*	Pappali	4	3	6	0.67	2.76	50.0	2.2	1.33	0.03	4.94
6	*Aegle marmelos*	Vilvam	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
7	*Ailanthus excelsa*	Perumaram	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
8	*Annona squamosa*	Sithapalzham	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
9	*Murraya koenigii*	kariveppilai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
10	*Syzygium cumini*	Naval	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
11	*Ficus benghalensis*	Alai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
12	*Emblica officinalis*	Nelli	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
13	*Plumeria rubra*	Nela sampangi	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
14	*Delonix regia*	Cemmayir-konrai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
15	*Diospyros melanoxylon*	Karundumbi	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
16	*Pongamia pinnata*	Pungai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
17	*Musa paradisiaca*	Vaazha	5	4	6	0.83	3.45	66.7	2.9	1.25	0.03	6.36
18	*Psidium guajava*	Koyya	5	4	6	0.83	3.45	66.7	2.9	1.25	0.03	6.36
19	*Tamarindus indica*	Puli	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
20	*Cassia fistula*	Konrai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
21	*Madhuca longifolia*	iluppai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
22	*Mangifera indica*	Mamaram	6	6	6	1.00	4.14	100.0	4.3	1.00	0.04	8.50

Sl. No.	Scientific Name	Local Name	Total No.	Total no. of quad with sp.	Total No. of quad	Density	Relative Density	Frequency %	Relative Frequency	Abundance	Relative Abundance	IVI
23	*Albizia amara*	Unjai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
24	*Terminalia arjuna*	Marudha	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
25	*Ceiba pentandra*	Pancu	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
26	*Casuarina equisetifolia*	Savukku	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
27	*Borassus flabellifer*	Panai maram	3	2	6	0.50	2.07	33.3	1.4	1.50	0.02	3.53
28	*Ficus hispida*	peyatti	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
29	*Morinda tinctoria*	Nuna	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
30	*Albizia lebbeck*	Siridam	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
31	*Phyllanthus emblica*	Nellikkai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
32	*Polyalthia longifolia*	Nettilinkam	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
33	*Terminalia catappa*	Nattuvaduma	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
34	*Tectona grandis*	Tekku	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
35	*Eucalyptus leptophylla*	Neelagiri thailam	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
36	*Manilkara zapota*	Sapota	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
37	*Wrightia tinctoria*	Palai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
38	*Gmelina arborea*	Kumalaamaram	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
39	*Bombax ceiba*	Ilavu	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
40	*Terminalia chebula*	Kadukkai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
41	*Ziziphus mauritiana*	Elandhai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
42	*Dalbergia sissoo*	Shisham	1	1	6	0.17	0.69	16.7	0.7	1.00	0.01	1.42
43	*Butea monosperma*	Palasam	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
44	*Albizia saman*	Thoongumoonji maram	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25

Sl. No.	Scientific Name	Local Name	Total No.	Total no. of quad with sp.	Total No. of quad	Density	Relative Density	Frequency %	Relative Frequency	Abundance	Relative Abundance	IVI
45	*Bambusa arundinacea*	Kulay-munkil	2	1	6	0.33	1.38	16.7	0.7	2.00	0.01	2.11
46	*Sesbania sesban*	Sithagathi	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
47	*Citrus limon*	Elumicchai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
48	*Morus alba*	Kambli chedi	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
49	*Melia azedarach*	Kattu vembhu	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
50	*Limonia acidissima*	Vilamaram	1	1	6	0.17	0.69	16.7	0.7	1.00	0.01	1.42
51	*Leucaena leucocephala*	Subabul	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
52	*Ficus religiosa*	Arasamaram	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
	Total		145	139	312							
Shrubs Species												
1	*Hibiscus rosa-sinensis*	Sembaruthi	5	4	6	0.83	3.45	66.7	2.9	1.25	0.03	6.36
2	*Calotropis gigantea*	Erukku	5	5	6	0.83	3.45	83.3	3.6	1.00	0.03	7.08
3	*Jasminum sessiliflorum*	Sooman (Jasmin)	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
4	*Ocimum gratissimum*	Tulasi	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
5	*Bougainvillea glabra*	Kaahitha Poo	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
6	*Hibiscus radiatus*	Pulicha Keerai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
7	*Calotropis procera*	Vellai Erukku	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
8	*Vitex negundo*	Nochi	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
9	*Cassia auriculata*	Avarai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
10	*Ipomoea carnea*	Kattamanakku	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83

Sl. No.	Scientific Name	Local Name	Total No.	Total no. of quad with sp.	Total No. of quad	Density	Relative Density	Frequency %	Relative Frequency	Abundance	Relative Abundance	IVI
11	*Jatropha curcas*	Kattukkottai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
12	*Lantana camara*	Unni chedi	7	6	6	1.17	4.83	100.0	4.3	1.17	0.05	9.19
13	*Sida cordifolia*	Nilatutthi	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
14	*Parthenium hysterophorus*	Mookkuththi	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
15	*Prosopis juliflora*	Vaelikaruvai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
16	*Solanum incanum*	Karimulli	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
17	*Datura metel*	Umathai	6	5	6	1.00	4.14	83.3	3.6	1.20	0.04	7.78
18	*Euphorbia tirucalli*	Amman-paccarici	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
19	*Ziziphus nummularia*	Narielandai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
20	*Ricinus communis*	Amanakku	4	3	6	0.67	2.76	50.0	2.2	1.33	0.03	4.94
21	*Tecoma stans*	Yellow bells	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
	Total		76	72	126							
Herbs Species												
1	*Cynodon dactylon*	Arugampillu	19	6	6	3.17	13.10	100.0	4.3	3.17	0.13	17.55
2	*Achyranthes aspera*	Nayuruvi	7	6	6	1.17	4.83	100.0	4.3	1.17	0.05	9.19
3	*Boerhavia diffusa*	Mukaratte kirai	6	6	6	1.00	4.14	100.0	4.3	1.00	0.04	8.50
4	*Amaranthus viridis*	kuppai-k-kirai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
5	*Tridax procumbens*	Kenathuppoondu	5	4	6	0.83	3.45	66.7	2.9	1.25	0.03	6.36
6	*Croton sparsiflorus*	Milakai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
7	*Aerva lanata*	Cru-puliai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
8	*Chloris barbata*	Kuruthu Pillu	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
9	*Cassia tora*	Taghrai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
10	*Ageratum conyzoides*	Aappakkoti	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66

Sl. No.	Scientific Name	Local Name	Total No.	Total no. of quad with sp.	Total No. of quad	Density	Relative Density	Frequency %	Relative Frequency	Abundance	Relative Abundance	IVI
11	*Amaranthus spinosus*	Mullukkeerai	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
12	*Argemone mexicana*	Kudiyotti	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
13	*Butea superba*	Pilacchi valli	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
14	*Mimosa pudica*	Thottaccurungi	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
15	*Digitaria tomentosa*	Linn	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
16	*Xanthium strumarium*	Marul-umatta	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
17	*Commelina benghalensis*	Kanang-karai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
18	*Cyperus rotundus*	Panni-korai	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
19	*Sida acuta*	Palambasi	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
20	*Asystasia gangetica*	Miti-kirai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
21	*Sida rhombifolia*	Chitramutti	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
22	*Phyllanthus amarus*	Keelanelli	4	4	6	0.67	2.76	66.7	2.9	1.00	0.03	5.66
23	*Eclipta prostrata*	Karisalanganni	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
24	*Euphorbia hirta*	Amanpatchaiarisi	4	3	6	0.67	2.76	50.0	2.2	1.33	0.03	4.94
25	*Solanum nigrum*	Manathakkaali	4	3	6	0.67	2.76	50.0	2.2	1.33	0.03	4.94
26	*Indigofera oblongifolia*	Avuri	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
27	*Ocimum sanctum*	Thulasi	4	3	6	0.67	2.76	50.0	2.2	1.33	0.03	4.94
28	*Sorghum bicolor*	Cholam	3	2	6	0.50	2.07	33.3	1.4	1.50	0.02	3.53
29	*Physalis minima*	Sodakkuthakkaali	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
30	*Vernonia cinerea*	Puvamkuruntal	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25
31	*Acalypha indica*	Kuppai-meni	3	3	6	0.50	2.07	50.0	2.2	1.00	0.02	4.25

Sl. No.	Scientific Name	Local Name	Total No.	Total no. of quad with sp.	Total No. of quad	Density	Relative Density	Frequency %	Relative Frequency	Abundance	Relative Abundance	IVI
32	*Cassia occidentalis*	Pei- avarai	2	2	6	0.33	1.38	33.3	1.4	1.00	0.01	2.83
	Total		126	107	192							

The interpretation vegetation study results of the study area are presented in the following Table 3-23.

Table 3-23 Interpretation of Vegetation Results in the Study Area

Relative density	Relative density is found to be maximum for *Cocos nucifera* about 4.83.	Density of the primary species is found to be much higher in comparison with the other species.
Relative frequency	Maximum RF found to be 4.3 in case of *Cocos nucifera.*	Vegetation community is heterogenous in nature
Relative Abundance	Maximum value observed in case of *Cocos nucifera* about 0.05.	*Cocos nucifera* the most common species found in the area.
Importance Value Index (IVI)	The maximum IVI value observed in case of *Cocos nucifera* is about 9.19.	The dominant species is *Cocos nucifera*

3.9.8 BIODIVERSITY INDICES

Biodiversity index is a quantitative measure that reflects how many different type of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species are equally abundant. Interpretation of Vegetation results in the study area is given in Table 3-24.

Table 3-24 Interpretation of Vegetation Results in the Study Area

Community	Biodiversity indices		
	Shannon-Wiener Index (H)	Simpson Diversity Index (1/D)	Species Evenness
Tree	3.87	0.98	0.22
Shrub	1.90	0.96	0.26
Herb	2.98	0.96	0.27

From Table 3-24, it can be interpreted that tree community has higher diversity. While the herb community shows less diversity. It is also observed that most of the quadrates have controlled generation of plant species with older strands. Higher tree species diversity can be interpreted as a greater number of successful species and a more stable ecosystem where more ecological niches are available and the environment is less likely to be hostile, environmental change is less likely to be damaging to the ecosystem as a whole.

Rare and endangered floral species: As per IUCN red list *Borassus flabellifer* (Nonkuppanai) categorized as endangered species. During the vegetation survey in the study area did not

encounter any such species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

3.9.9 FAUNAL COMMUNITIES

Both direct (sighting) and indirect (evidences) observations methods were used to survey the faunal species around the study area. Additionally reference of relevant literatures (published/ unpublished) and conversations with local villagers were also carried out to consolidate the presence of faunal distribution in the area *(Smith 1933-43, Ali and Ripley 1983, Daniel 1983, Prater 1993, Murthy and Chandrasekhar 1988).*

Mammals: No wild mammalian species was directly sighted during the field survey. Conversation with local villagers around the study area also could not confirm presence of any wild animal in that area. Little Indian field mouse, House mouse, Bonnet Macaque, Common Palm Squirrel, Indian Grey Mongoose, Black rat, Rat, Short nosed fruit bat, Indian porcupine, Indian Hare, Indian mole-rat etc. were observed during primary survey.

Avifauna: Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems *(Lawton, 1996)* attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 40 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging. The list of avifauna species found in the study area is mentioned in Table 3-25.

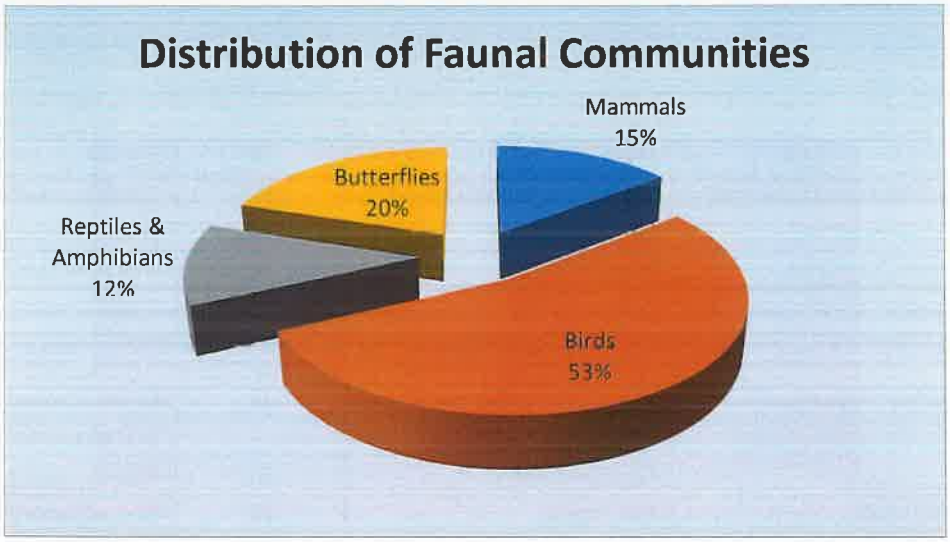
The Indian Chameleon, tree lizard, common garden lizards and common toads are also seen. Variety of butterflies (like Common mime, Southern birdwing, Common Mormon, Indian Skipper, Common tiger, Common crow, Small Grass Yellow, Great Eggfly, Common Pierrot, Indian Sunbeam, Crimson rose, Lime Butterfly, Common Castor, Common rose, Common sailor) is spotted in abundance in the study zone.

Table 3-25 Faunal Recorded from the Primary Survey in the Study Area

S. No.	Scientific Name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
Mammals					
1	*Mus booduga*	Little Indian field mouse	IV	Least Concern	DS
2	*Mus musculus*	House mouse	IV	Least Concern	DS
3	*Macaca radiata*	Bonnet Macaque	II	Vulnerable	DS
4	*Funambulus palmarum*	Common Palm Squirrel	IV	Least Concern	DS
5	*Herpestes edwardsi*	Indian Grey Mongoose	II	Least Concern	DS
6	*Rattus rattus*	Black rat	IV	Least Concern	DS
7	*Bandicota indica*	Rat	IV	Least Concern	DS

S. No.	Scientific Name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
8	*Cynopterus sphinx*	Short nosed fruit bat	IV	Least Concern	DS
9	*Hystrix indica*	Indian porcupine	IV	Least Concern	DS
10	*Lepus nigricollis*	Indian Hare	IV	Least Concern	DS
11	*Bandicota bengalensis*	Indian mole-rat	IV	Least Concern	DS
		Birds			
1	*Alcedo atthis*	Common Kingfisher	IV	Least Concern	DS
2	*Passer domesticus*	House Sparrow	IV	Least Concern	DS
3	*Acridotheres tristis*	Common myna	IV	Least Concern	DS
4	*Corvus splendens*	House crow	V	Least Concern	DS
5	*Dicrurus macrocercus*	Black Drongo	IV	Least Concern	DS
6	*Dicrurus adsimilis*	Fork-tailed drongo	IV	Least Concern	DS
7	*Bubulcus ibis*	Cattle Egret	IV	Least Concern	DS
8	*Pelargopsis capensis*	Storkbilled kingfisher	IV	Least Concern	DS
9	*Hypsipetes madagascariensis*	Black bulbul	IV	Least Concern	DS
10	*Dicrurus paradiseus*	Racket tailed drongo	IV	Least Concern	DS
11	*Turdoides caudatus*	Common Babbler	IV	Least Concern	DS
12	*Psittacula krameri*	Rose ringed parakeet	IV	Least Concern	DS
13	*Coturnix coturnix*	Grey quail	IV	Least Concern	DS
14	*Halcyon smyrnensis*	White-breasted kingfisher	IV	Least Concern	DS
15	*Pycnonotus cafer*	Red vented Bulbul	IV	Least Concern	DS
16	*Accipiter badius*	Shikra	IV	Least Concern	DS
17	*Megalaima viridis*	Small green barbet	IV	Least Concern	DS
18	*Cuculus canorus*	Cuckoo	IV	Least Concern	DS
19	*Spilopelia chinensis*	Spotted dove	IV	Least Concern	DS
20	*Merops orientalis*	Small green bee eater	IV	Least Concern	DS
21	*Calidris minuta*	Llittle stint	IV	Least Concern	DS
22	*Ardeola grayii*	Pond Heron	IV	Least Concern	DS
23	*Columba livia*	Rock pigeon	IV	Least Concern	DS
24	*Milvus migrans*	Common Kite	IV	Least Concern	DS
25	*Eudynamys scolopacea*	Koel	IV	Least Concern	DS
26	*Egretta garzetta*	Little Egret	IV	Least Concern	DS
27	*Anthus hodgsoni*	Tree pipit	IV	Least Concern	DS
28	*Apus apus*	Common swift	IV	Least Concern	DS
29	*Ardea cinerea*	Grey heron	IV	Least Concern	DS
30	*Egretta intermedia*	Intermediate egret	IV	Least Concern	DS
31	*Megalaima zeylanica*	Brown-headed barbet	IV	Least Concern	DS
32	*Nectarinia minima*	Small sunbird	IV	Least Concern	DS
33	*Nectarinia zeylonica*	Indian Purple rumped sunbird	IV	Least Concern	DS
34	*Tringa hypoleucos*	Common sandpiper	IV	Least Concern	DS
35	*Turdoides striatus*	Jungle Babbler	IV	Least Concern	DS

S. No.	Scientific Name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
36	*Phalacrocorax niger*	Little cormorant	IV	Least Concern	DS
37	*Hydrophasianus chirurgus*	Pheasant-tailed Jacana	IV	Least Concern	DS
38	*Haliastur indus*	Brahminy kite	IV	Least Concern	DS
39	*Copsychus fulicatus*	Indian robin	IV	Not Assessed	DS
40	*Coracias benghalensis*	Indian roller	IV	Least Concern	DS
Reptiles & Amphibians					
1	*Chamaeleo zeylanicus*	Indian chameleon	II	Least Concern	DS
2	*Hemidactylus frenatus*	House Lizard	-	Not assessed	DS
3	*Calotes calotes*	Garden Lizard	III	Not assessed	DS
4	*Ptyas mucosus*	Rat Snake	III	Not assessed	DS
5	*Bungarus caeruleus*	Common krait	IV	Least Concern	NS
6	*Naja naja*	Common cobra	II	Not assessed	NS
7	*Hemidactylus giganteus*	Giant Gecko	-	Least Concern	DS
8	*Euphlyctis hexadactylus*	Indian Pond Frog	IV	Least Concern	DS
9	*Duttaphrynus melanostictus*	Common toads	IV	Least Concern	DS
Butterflies					
1	*Papilio clytia*	Common mime	-	Not assessed	DS
2	*Troides minos*	Southern birdwing	-	Least Concern	DS
3	*Papilio polytes*	Common mormon	-	Not assessed	DS
4	*Spialia galba*	Indian Skipper	-	Not assessed	DS
5	*Danaus genutia*	Common tiger	-	Not assessed	DS
6	*Euploea core*	Common crow	-	Least Concern	DS
7	*Eurema brigitta*	Small Grass Yellow	-	Not assessed	DS
8	*Hypolimnas bolina*	Great Eggfly	-	Not assessed	DS
9	*Castalius rosimon*	Common Pierrot	-	Not assessed	DS
10	*Curetis thetis*	Indian Sunbeam	-	Not assessed	DS
11	*Pachliopta hector*	Crimson rose	-	Not assessed	DS
12	*Papilio demoleus*	Lime Butterfly	-	Not assessed	DS
13	*Ariadne merione*	Common Castor	-	Not assessed	DS
14	*Pachliopta aristolochiae*	Common rose	-	Not assessed	DS
15	*Neptis hylas*	Common sailor	-	Not assessed	DS

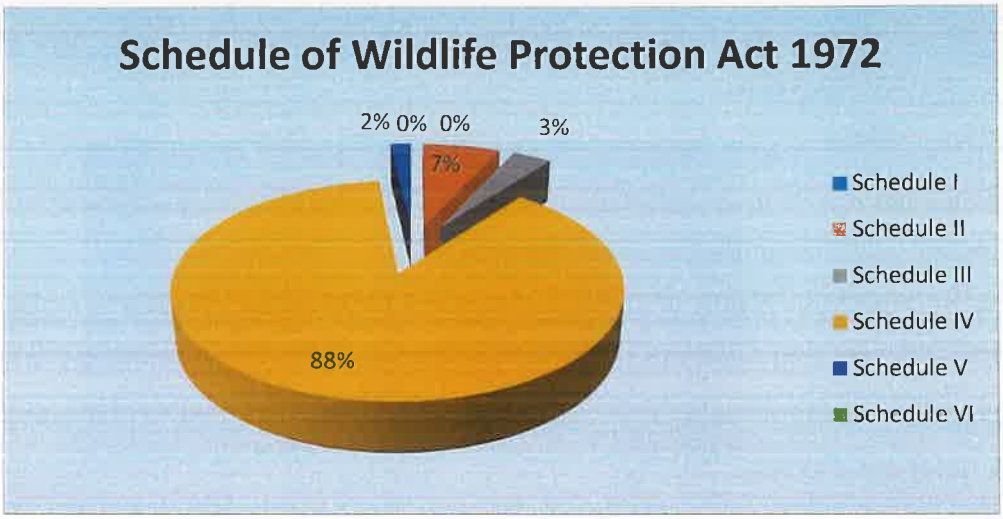


Livestock like cattle, buffalo, goat, poultry, duck and pig are reared for dairy products, meat, egg and for agriculture purpose. Majority of cattle and buffalo are of local variety. Backyard poultry farms are mostly common in this area; however, some commercial poultry farms are also recorded in the study area.

The study area is marked with moderate population of flora and fauna. With reference to the Wildlife Protection Act 1972 total number of wildlife tabulated in this study can be characterized as given in the Table 3-26.

Table 3-26: Characterization of Fauna in the Study Area (As Per W.P Act, 1972)

S. No.	Schedule of Wildlife Protection Act 1972	No. of species	Remark
1	Schedule I	0	-
2	Schedule II	4	-
3	Schedule III	2	-
4	Schedule IV	51	-
5	Schedule V	1	-
6	Schedule VI	0	-



The detailed interpretation of flora and fauna identified within 10 km radius of the project site are tabulated in Table 3-27.

Table 3-27: Description of Flora & Fauna

S. No.	Type of Species	Name	Local Name
Flora			
1	Endangered species	*Borassus flabellifer*	Nonkuppanai
2	Threatened species	None	None
3	Near Threatened species	None	None
4	Vulnerable species	None	None
Fauna			
1	Endangered species	None	None
2	Threatened species	None	None
3	Near Threatened species	None	None
4	Vulnerable species	*Macaca radiata*	Bonnet Macaque
5	Migratory Corridors & Flight Paths	No corridors & flight paths	--
6	Breeding & Spawning grounds	None	--

A comprehensive Central Legislation namely Wild Life (Protection) Act was enforced in 1972 to provide protection to wild animals. Schedule-I of this act contains the list of rare and endangered species, which are completely protected throughout the country. The list of wild animals and their conservation status as per Wild Life Act (1972) presented in Table 3-27 are the species recorded/reported from the study area, out of which 4 species belongs to schedule-II, 2 species belongs to schedule-III, 1 species belongs to schedule-V and rest of the species belongs to schedule-IV of Wildlife protection Act, 1972.

Aquatic Ecology

The study area intersected by few natural drainage and lakes. A number of samples were investigated for enumeration of aquatic fauna. In order to study aquatic flora and faunal life one

time survey was conducted during the winter season. Major component of the aquatic life under the study area are listed below.

- *Phytoplankton*
- *Zooplankton*
- *Aquatic vertebrates like fish, amphibians etc.*

To assess the planktonic profile of Phytoplankton and Zooplankton, 2 water samples from Vasa Kere (3 Km - E), Lake near Kempatti (5 Km - NW) of the project side were collected at sub-surface level. The aquatic ecological study was conducted in different water bodies of the study area and the flora and fauna was recorded.

Aquatic Flora

While considering assessment of aquatic pollution and its implications, it must be realized that, despite many changes in the physico-chemical properties of the water body and sediment, the ultimate consequences of pollutants may be reflected inevitably on the biological system. Hence, the investigations of an ecosystem and particularly of its communities constitute an integral part of any ecological assessment. This can be achieved by selecting a few reliable parameters from a complex community structure. The parameters considered have phytoplankton (cell count, and generic diversity), zooplankton (standing stock i.e., biomass and faunal groups), fishery and mammals as well as birds. The first two reflect the productivity of a water column at the primary and secondary levels, respectively. Benthic organisms being sedentary animals associated with the seabed, provide information regarding the integrated effects of stress, if any, and hence serve as good indicators of early warnings of potential damages. Ultimate commercial interest being fisheries, the status of the exploitable fishery resources was assessed. Information on larval stages of fishes and decapods was used to evaluate probable occurrence of spawning and breeding grounds of economically important species.

Significance of Plankton:

Planktons can be broadly grouped into two categories those with plant origin are called 'Phytoplankton' and those with animal origin are called 'Zooplankton'.

Significance of Phytoplankton:

Phytoplanktons are the major primary producers of organic matter in the aquatic ecosystem and especially oceans whose 90% productivity is from the planktons. Collectively, they directly or indirectly support the entire animal population. When the water column becomes shallow in spring, phytoplanktons are exposed to higher light intensity in the upper sunlight. Light is one of the major abiotic factors that favour the growth of phytoplankton. The massive buildup of

phytoplankton in spring directly contributes new organic carbon to support the zooplankton, which, in turn, benefits larger aquatic animals including fish, crustaceans, molluscs, birds. Phytoplankton group reported from the study area were Basillariophyceae, Chlorophyceae, Myxophyceae and Euglenophyceae members. About 20 species of phytoplankton were reported from all the locations. Dominance of Bacillariophyceae members followed by Myxophyceae was observed in studies samples.

Namc of spccics	Namc of Family
Ankistrodesmus falcatus, Pediastrum boryanum, Scenedesmus bijuga	Chlorophyceae
Melosira granulate, Naviclula sp., *Pinnularia* sp., *Cymbella* sp.	Bacillariophyceae
Gyrosigma acuminatum, Gyrosigma sp.	Naviculaceae
Achnanthes affinis	Achnanthaceae
Synedra balthica	Fragilariaceae
Pandorina sp.	Volvocaceae
Spirulina sp., *Oscillatoria* sp.	Myxophyceae

Significance of Zooplankton:

The significance of zooplanktons is found in their role in transferring biological production from phytoplankton to larger organisms in the food web. A large number of phytoplankton species are grazed upon by the microscopic protozoans, tunicates, copepods and other crustaceans. These in turn become food for other animals further linking the food web. Therefore, variability in the production of planktons would affect the survival of young fish that depend on them.

Name of species	Name of Family
Filinia sp., *Asplanchana* sp.	Rotifera
Mesocyclops leuckarti, Mesocyclops hyalinus	Cyclopidae
Penilia avirostris, Evadna tergestina, Daphnia sp.	Cladocera
Keratella monospina, Brachionus caudatus	Brachionidae
Arcella sp.	Arcellidae

Aquatic Fish Fauna

Among all the aquatic life in the study area the fish fauna occupies an important place.

The fish fauna of the area includes:

Major carps includes Catla, Rahu, Mirgal, Exotic carps includes Silver carp, Grass carp, Minor carps etc.

From the field observations it can be concluded that the forests in the study area are under anthropogenic pressure and show signs of degradation in the form of tree lopping, grazing, and habitat fragmentation. As per records of the forest

Department there are no Wildlife sanctuaries, National parks/biosphere reserves and migratory corridors of important species in the study area. As per the records of the Botanical Survey of India there are no plants of conservation importance in the study area. It can be concluded that there are no Schedule-I species in the study area as per the Wildlife Protection Act, 1972.

Protected Areas

As per MoEF&CC guideline, 10 km radius from the project site is considered as study area for evaluating environmental sensitivity. The description of the environmental sensitivity of the proposed site is given below:

Reserve Forest

Thali Extension RF located about 11 Km towards West direction from project site.

3.10 TRAFFIC DENSITY

The traffic studies have been conducted to know the prevailing traffic volumes on the existing roads. It is essential to consider these details for assessing the anticipated future traffic volumes as a part of overall impacts assessment for the project. The variations of traffic densities depend upon the working days and time and also vary in day and night times. In order to assess the prevailing traffic volumes on the roads, the survey was conducted during normal working days of the week by avoiding local holidays or abnormal situations to reflect the true picture of the traffic densities. The traffic study was conducted at two locations for 24 hours.

3.10.1 METHODOLOGY

3.10.1.1 VEHICLE COUNT

The vehicles passing through the road (in both ways) were counted separately for 24 hours at the two selected locations from 06.00 to 06.00 hrs next day continuously. Category-wise vehicle counting has been done continuously and recorded in the traffic volume count on hourly basis under respective categories.

3.10.1.2 *CATEGORIZATION OF TRAFFIC*

The engine driven vehicles were categorized into various heads viz. Multi Axle Vehicles, Trucks/Bus, Light Motor Vehicles (LMV), Two & Three Wheelers and others.

3.10.2 SAMPLING LOCATIONS

One traffic location is represented in Table 3-28.

Table 3-28 Details of Traffic Monitoring Locations

Location Code	Location Details
T-1	NH 948 A- Hosur- Thally Road

3.10.3 PRESENTATION OF RESULTS

The hourly vehicular traffic densities for continuous normal day at the location observed during the study period and the same are presented in Table 3-29.

Location Number : T-1

Details of Location : NH 948 A- Hosur- Thally Road

Table 3-29 Traffic details

Time	Two Wheeler	Three Wheeler	LMV	Buses / Trucks	Multi Axle Vehicles	Total Vehicles	Total PCUs
06 –07	123	10	47	18	5	203	195
07 - 08	165	19	53	25	8	270	265.5
08 - 09	286	32	86	29	7	440	379.5
09 - 10	345	39	97	47	15	543	517
10 - 11	447	35	148	61	18	709	670.5
11 - 12	382	22	132	59	22	617	621
12 - 13	312	29	121	45	24	531	549
13 - 14	251	25	118	42	16	452	466.5
14 - 15	223	26	96	39	11	395	400
15 - 16	197	19	84	45	9	354	377
16 - 17	184	36	71	43	11	345	377.5
17 - 18	243	31	93	32	10	409	386.5
18 - 19	312	24	154	36	13	539	500.5
19 - 20	254	21	122	25	12	434	399
20 - 21	166	19	85	23	10	303	301
21 - 22	133	16	66	21	11	247	261
22 - 23	114	13	52	32	9	220	258.5
23 - 24	74	11	45	27	7	164	205.5
24 - 01	56	9	39	22	8	134	178
01 - 02	47	8	24	35	5	119	183
02 - 03	33	5	25	31	6	100	166.5
03 - 04	29	4	19	36	4	92	163.5
04 - 05	84	7	23	22	2	138	147
05 - 06	95	8	41	9	3	156	137
					TOTAL	**7914**	**8105.5**

3.11 DEMOGRAPHY AND SOCIO-ECONOMICS

Socio-Economic studies has been carried out and their details are furnished in detail in section 7.0 of Chapter 7.

4 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

4.1 INTRODUCTION

This chapter presents identification of impacts and appraisal of various impacts due to the proposed expansion project on the surroundings and proposed mitigation measures to minimize the adverse impacts. The impacts have been studied for the proposed expansion project, taking into account that the pollution due to the existing production activities has already been covered under baseline environmental monitoring and will continue to remain same during the operation of the proposed expansion.

Impact assessment describes identification and appraisal of various impacts due to the proposed expansion project. "Environment Impact" can be defined as any alteration of environmental conditions or creation of a new set of environmental conditions, adverse or beneficial, caused or induced by the action or set of actions under consideration.

Generally, the environmental impacts can be categorized as either primary or secondary

- Primary impacts are those, which are attributed directly by the project,
- Secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed action.

Mitigation is the implementation of measures designed to reduce the undesirable effects of the proposed project on the environment. For mitigation to be effective, the following factors should be taken care of

- The measure proposed must be achievable within time, resources and capabilities.
- The mitigation measures must correspond to impacts.
- Funding must be adequate over the life of the activity.
- Preventive mitigation is usually cheapest and most effective.
- It must be done at design stage.

4.2 IDENTIFICATION OF IMPACTS & MITIGATION MEASURES

The construction and operation of the expansion project comprises various activities each of which may have an impact on some or other environmental parameters. Various impacts during the construction and operation phase on the environment parameters have been studied to estimate the impact on the environment and are elaborated in the subsequent sections.

4.3 IMPACTS DURING CONSTRUCTION PHASE

For the proposed expansion project, the construction activity is limited and the impact during the construction phase will be minimal. This includes the activities related construction of additional building & infrastructure like platform for proposed machineries and installation of equipment, which will have varying impacts on the following, attributes.

4.3.1 TOPOGRAPHY

Impact

The plant is currently running with 2 no's of 7 Tonne & 1 no of 10 Tonne capacity of induction furnace, along with this for proposed expansion is planned to add two more induction furnace with the capacity of 12 TPH. It involves minimal construction space for the new furnaces and a room having built-up area of 480sq.m. The plant is already levelled and levelling would not be required for the proposed expansion. However, minor foundation excavation is expected and it's expected to backfill in the plant itself. Thus the impact during the construction is reversible, short term and insignificant.

Mitigation Measures

During construction, if excess top soil is available which will be conserved and reutilized for gardening/landscape development. However, the existing topography will be remain same during construction for the expansion proposal.

4.3.2 LAND USE

Impact

The proposed expansion will be carried out with the existing plant site area under "non-planned area" land use category. No clearing of trees/shrubs is required for expansion activities. Thus, the overall impact on land use will be Nil.

Mitigation Measures

The green belt with a width if 5m, is planned to be developed all along the periphery of the boundary. In addition vacant area as shown in general layout will be developed to the extent the of 33%. This will help in controlling the pollution within the plant premises and improve the aesthetics of the plant.

4.3.3 DRAINAGE PATTERN

Impact

The overall terrain of the project site will not be changed by the construction of buildings and this will not bring significant change in the existing pattern of surface drainage. All around the

plant a storm water network is existing, which will be maintained on expansion. No impact on drainage is expected due to expansion.

Mitigation Measures

- Rainwater harvesting prevents the flooding in the project premises. Adequate rainwater harvesting and recharging system is proposed under the expansion project of steel plant as detailed in EMP.
- A basic surface drainage system can be provided for the site to avoid water run-off on to the surrounding properties and roads, especially during the monsoon.

4.3.4 Material Transportation

Impact

The various materials required for construction (e.g. Steel, Blocks, Cement, Stones, Asphalt, etc.) will be obtained from various sources which is located elsewhere and transported to the site. Transportation of these materials, typically in over-laden and sometimes uncovered trucks, usually results in fugitive dust emission. In the case of fine earth materials, dusting and spillages occur on the roadways between source and site. These occurrences represent indirect, short-term, reversible, negative impacts on public health and safety related to the project.

Mitigation Measures

The mitigation measures are as follows:

- All fine earth materials will be covered by tarpaulin during transportation to the site to prevent spillage and dusting.
- Trucks used for that purpose on the project will be fitted with tailgates that close properly and with tarpaulins to cover the materials.
- Regular cleaning of spilled earth and construction material on the roads will be carried out.
- As far as possible, transportation of construction materials will be scheduled for off-peak traffic hours. This will reduce the risk of traffic congestion.

4.3.5 Soil Quality

Impact

The soil at the plant site predominantly consists of red loam & laterite. Since the project site is existing industry in operation since 2004. Moreover, the site is plain and it will not require any major grading, filling and leveling. No significant adverse impact on soil in the surrounding area is anticipated.

Mitigation Measures

The following mitigation measures will be adopted for soil and land environment:

- Greenbelt development and related activities will be taken up during construction phase itself, so that plantation will grow to adequate height by the time of plant commissioning. Thus, greenbelt will be effective in containing the fugitive emissions during operation;
- Species selected for plantation will be with fast growing and high canopy which will adaptable for local conditions. Their ability to combat localized pollution is the prime factor for their selection and placement in the planting grid/pattern.
- There will be minimum of concreting on the top surfaces so that there is a scope for maximizing the ground water recharge; and
- Plantation outside the plant premises, in the nearby villages will be encouraged by supplying free sapling & direct plantation to the nearby villagers.

4.3.6 AIR QUALITY

Impact

The various activities include during construction phase such as drilling, foundation, deployment of machinery, erection, transportation, dumping will cause dust and gaseous emissions. These emissions are expected to result in change in baseline air quality, primarily in the working area and cause immediate effect on the construction workers. The suspended particulate matter will be the main pollutant from the above activities. Further, concentration of NO_x, SO_x and CO may also slightly increase due to increased vehicular traffic movement. However, the increase in ambient concentrations of air quality will be negligible and short term. As most of the construction equipment will be mobile, the emissions are likely to be fugitive. The impacts will be localized in nature and the areas outside the project boundary are not likely to have any major adverse impact with respect to ambient air quality.

Mitigation Measures

There will be minor leveling operations required as an existing operational industry and the plant site is already leveled partially. During dry weather conditions, it is necessary to control the dust generated by excavation and transportation activities. This will be achieved by regular water sprinkling. There will not be any concentration of emissions at any single point. It shall be ensured that both gasoline and diesel powered construction vehicles are properly maintained to minimize smoke in the exhaust emissions. Additional recommendations include the following:

- Sprinkling of water will be done at frequent intervals by preferably using truck-mounted sprinklers;
- Sprinkling of water will be done along the roads and work zone areas to reduce the fugitive dust;
- All machineries to be used for construction purpose will be of highest standard of reputed make and compliance of noise pollution control norms by these equipment will be adopted.
- Construction equipment will be maintained and serviced regularly such that the gaseous emissions from this equipment are maintained within the design specifications; and
- Since electrical power is available in the existing plant, attempts will be made to utilize the electrically powered machinery to the extent possible to minimize the emissions of SO_x and NO_x during construction.

4.3.7 WATER RESOURCES AND QUALITY

Impact

The water requirement during construction phase is estimated at 20 to 30 m^3/day, which will be sourced from panchayat water supply to the maximum extent. The construction is expected to be completed within in approximately 6 months. The construction water requirement would be temporary in nature for this period. The wastewater generation during the construction period will be from the sanitary units provided for the workers. This waste will be treated in the existing septic tank, dispersion trench & soak pit, which is having adequate capacity. Hence, there will not be any impact on the water regime due to discharge of sanitary treated wastewater.

Mitigation Measures

Continuous efforts will be made to optimize/reduce water usage; continuous attempts will be made to avoid wastage and leakage of water. The record of water consumption on a daily basis will be maintained. In addition, the treated wastewater will be used for greenery and landscaping.

4.3.8 NOISE ENVIRONMENT

Impact

The major sources of noise during the construction phase are vehicular traffic, construction equipment like dozers, scrapers, concrete mixers, pumps, compressors, pneumatic tools, saws, vibrators etc. The operation of these equipment's will generate noise ranging between 85-90 dB

(A) near the source at 1m distance. These noises will be generated within the plant boundary and will be transient in nature.

Mitigation Measures

Equipment's will be maintained appropriately to keep the noise level within 85 - 90dB(A). Wherever possible, equipment will be provided with silencers and mufflers. Construction activities will be restricted to day time only. Greenbelt will be developed from construction stage. Further, workers working in high noise areas will be provided with necessary protective devices e.g. ear-plug, ear-muffs, etc.

4.3.9 Ecology

Impact

Dust emissions from the construction activity will affect the plant and animal respiration activity. Construction activities change the natural environment. Emissions such as PM, NO_x, SO_x from DG sets and other equipment/vehicles may also cause respiration problem for the surrounding organisms. The anticipated impact on biological environment (both terrestrial and aquatic) is very low magnitude, short term and overall impact on biological environment is insignificant.

Mitigation Measures

- The dust emissions will be suppressed by spraying water.
- Emissions from DG sets and vehicles will be minimized by proper maintenance and by avoiding use of adulterant fuels and will be maintained below the standard limits prescribed by competent authority.

4.3.10 Socio Economic Condition

The beneficial impacts are significant, short term as well as long term and regional level. Whereas, the adverse impacts will be extended either within the site or extent to immediate vicinity only and it will be short term, low magnitude. The mitigation measures may prevent the adverse impact on human environment.

Positive Impacts

- Generation of revenue to the equipment and material suppliers.
- Procurement of material suppliers for various activities involved in the construction phase which will also promote economic growth of local material suppliers in and around the proposed Project site.
- Proposed project will create employment opportunities to the local people present around the project site.

Negative Impacts

- During construction phase of the proposed project, the employers are subject to Health and Safety Risks.
- At the project site, direct exposure to dust generation and high noise generation sources will cause occupant health, related impact such as asthma, bronchitis and noise induced hearing loss, etc.
- Influx of construction labour to the site for the short period.

Mitigation Measures

- To eradicate the Health and Safety risks to the employees Personal Protective Equipments (PPE) will be provided.
- Ensuring good housekeeping and cleaning operations.
- Proper on site sanitation facilities will be provided for the employees.

4.4 IMPACTS DURING OPERATIONAL PHASE

The envisaged operation that will impact the environment would be the production activities of the steel mill. Activities related to the operational phase will have varying impacts on the following attributes:

- Land use;
- Air quality;
- Water quality;
- Noise levels;
- Soil;
- Ecology; and
- Demography and socio-economics.

4.4.1 LAND USE

The impact on the land use during the operational phase of the proposed expansion project will not be distinct as there will be no major changes in the present land use of the site. In the proposed expansion of steel mill plant, most of the development has already been matured. Hence, any additional impact on land use will be insignificant.

4.4.2 TRANSPORTATION:

Most of the raw materials like scrap, sponge iron, ferro alloys are transported by road. The scraps are sometimes being imported to Chennai port by sea route and then by road to plant. The final products mainly bars are lifter by roads, by the individual entrepreneurs.

4.4.3 AIR QUALITY

Impact

Being a steel mill, the major sources of air pollution are induction furnaces, rolling mill, roughing mill, casting machine and standby DG sets. The expansion, will have 2 no's of 12 TPH capacity of induction furnace and 2 Nos. of DG sets with a capacity 185 & 320 kVA. The major pollutant expected from the above additional sources is Particulate Matter (PM), along with gaseous pollutants like Sulphur oxides (SO_x) and Nitrogen oxides (NO_x) are also expected. The sources of air pollution have been identified and quantified to predict the impact of proposed expansion on air quality.

4.4.3.1 MATHEMATICAL MODELING – AERMOD

Prediction of impacts on air environment has been carried out by employing a mathematical model. In the present case, Dispersion modeling of approved substances was performed in accordance with the Air Quality Model Guidelines developed by USEPA. These guidelines ensure consistency in the use of dispersion models in air quality assessments.

A new generation dispersion model AERMOD recommended by was selected for this project. Emission rates were used as AERMOD input values to obtain the maximum Ground Level Concentration (GLC) and two-dimensional concentration distribution for each of the modeled substances around the plant. The computations deal with major pollutants like Particulate Matter, Sulphur oxides and Oxides of Nitrogen.

AERMOD is intended to use hourly averaged meteorological data sequentially through at least one year. AERMOD includes improved treatment of the atmospheric boundary layer and a more complete understanding of diffusion processes. EPA refers to AERMOD as "state-of-the practice". The AERMOD can use measured values of horizontal and vertical turbulence directly in calculating diffusion. AERMOD includes a new computational method for evaluating the effects of building downwash on stack emissions with the algorithm PRIME. The AERMOD model was designed to support the U.S. EPA regulatory modelling options, as specified in the EPA Guidelines on Air Quality Models (Revised).

Model Options used for Computations

The options used for short-term computations are:

- The plume rise is estimated by Briggs formulae, but the final rise is always limited to that of the mixing layer;
- Buoyancy induced dispersion is used to describe the increasing plume dispersion during the ascension phase;

- Calms processing routine is used by default;
- Wind profile exponents are used by default, 'Irwin';
- Flat terrain is used for computations;
- It is assumed that the pollutants do not undergo any physiochemical transformations and that there is no pollutant removal by dry deposition;
- Washout by rain is not considered; and
- Cartesian co-ordinate system has been used for computations.

4.4.3.2 Model Input Parameters

Emission Sources

The primary pollutants from the stack/point sources are the particulate matter (PM10 and PM2.5) which are emitted from all 6 stacks within the facility. The SO2 and NOx are emitted from stacks attached to induction furnaces and DG sets. Based on the manufacturers and client information, all the stack meets the corresponding emission limits. The names of primary point emission sources, emission parameters and stacks/vents dimensions are listed in Table 4-1

Table 4-1 Details of existing stack emissions

Stack Attached to	Unit	Induction Furnaces (2 No's - 7 TPH & 1 No of 10 TPH)	Reheating Furnace (1 No- 18 TPH)	DG set (65 kVA)
APC Measure	---	Dry Bag Filter	Wet Scrubber	Acoustic with Stack
Stack Height	m	30	30	12
Stack diameter	m	0.4	0.4	0.1
Temperature	°K	342	353	412
Velocity	m/s	12.8	14.3	17.3
Flow rate	Nm^3/hr	4966	5375	342
Particulate Matter	mg/Nm^3	18.9	13.8	21.7
	g/s	0.026	0.02	0.002
Sulphur dioxide	mg/Nm^3	87	59	2
	g/s	0.12	0.08	0.00019
Nitrogen oxides	mg/Nm^3	55	47	151
	g/s	0.075	0.07	0.014
Iron as Fe	mg/Nm^3	31	17	1.8
Copper as Cu	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Zinc as Zn	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Nickel as Ni	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Chromium as Cr	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Lead as Pb	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Cadmium as Cd	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Arsenic as As	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
Mercury as Hg	mg/Nm^3	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)

Source: Meenakshi Udyog (India) Pvt. Ltd.

Table 4-2 Details of upgraded & additional stack emissions

Stack Attached to	-- Unit -	Induction Furnaces (2 No's - 12 TPH)	DG set (350 KVA)	DG set (185 KVA)
APC Measure	---	Dry Bag Filter	Acoustic with Stack	Acoustic with Stack
Stack Height	m	30	12	15
Stack diameter	m	0.4	0.2	0.3
Temperature	°K	330- 350	390-425	400-450
Velocity	m/s	11-14	13.5-16	11.5-14
Flow rate	Nm^3/hr	4500-6500	1100-1500	2100-2600
Particulate Matter	mg/Nm^3	20-30	20-30	18-30
	g/s	0.03-0.05	0.01-0.02	0. 012-0.02
Sulphur dioxide	mg/Nm^3	60-100	3-12	2-10
	g/s	01-0.15	0.002-0.005	0.002-0.005
Nitrogen oxides	mg/Nm^3	30-80	175-260	165-250
	g/s	0.05-0.12	0.06-0.15	0.09-0.15

Source: Meenakshi Udyog India Pvt Ltd

Traffic Sources

Due to increase in production quantity, it is anticipated there would be increase in traffic for shipment of raw materials and finished to and from the facility. An increase of 20 trucks/day is anticipated upon full operation of the proposed plant. The traffic movement would be along the main roadways and therefore any traffic congestion due to the movement of trucks is not anticipated. The Table 4-3 below lists the emission factors used to estimate the corresponding emissions from the movement of trucks.

Table 4-3 Average emission rates for heavy duty vehicles

Pollutant of Concern	Emission Factor (g/km)
PM_{10}	0.14
$PM_{2.5}$	0.13
SO_x	0.01
NO_x	5.38

Ref: USEPA, MOVES2010b

In order to estimate the incremental increase in the ambient air quality, the above-mentioned sources (point and traffic sources) were combined.

Meteorological Input Data

The hourly meteorological data recorded at site for the study period of 3 months has been converted to the mean hourly meteorological data as specified by CPCB and the same has been used in the model. Hourly mixing heights are taken from the "Atlas of Hourly Mixing Height and

Assimilative Capacity of Atmosphere in India" published by India Meteorological Department, New Delhi.

Based on the wind rose, January, February and March months, recorded a predominant wind from the E direction blowing towards West. The month of February recorded 8.78% of calm winds. The calm wind scenarios have an effect on the dispersion of the pollutants as they tend to be deposited near to the source. The average wind speed for the study period is 2.44 m/s.

4.4.3.3 MODELING RESULTS

Modeling results consist of maximum concentrations (in $\mu g/m^3$) for each of the modeled substances. The concentration isopleths are shown in Figure 4-1 to Figure 4-3 and the summary of dispersion modeling results for each of the selected substances is given in Table 4-4

Table 4-4 Summary of dispersion modeling results

Sl. No.	Pollutant	Predicted GLC, $\mu g/m^3$	Coordinates	Direction
1	Particulate Matter (PM)	3.374	(799,140)	W
2	Sulphur oxides (SO_x)	5.255	(798.5, 140)	W
3	Nitrogen oxides (NO_x)	3.629	(799.5, 140)	W

Cumulative impact on baseline ambient air quality, after the implementation of the proposed expansion has been arrived by superimposing the present baseline maximum air quality levels of each pollutant. The resultant ambient air quality after implementation of the proposed plant is given in Table 4-5.

Table 4-5 Resultant concentrations after proposed expansion

Sl. No.	Pollutant	Concentration ($\mu g/m^3$)			NAAQS Limits
		Baseline	Incremental	Resultant	
1	PM_{10}	76	3.374	79.374	100
2	$PM_{2.5}$	36	3.374	39.374	60
3	SO_x	18.9	5.255	24.155	80
4	NO_x	21.4	3.629	25.029	80

The predictions indicate that the PM_{10}, $PM_{2.5}$, SO_x and NO_x concentrations are likely to be well within the prescribed limit for industrial, residential and rural zone even after proposed machineries comes into operation.

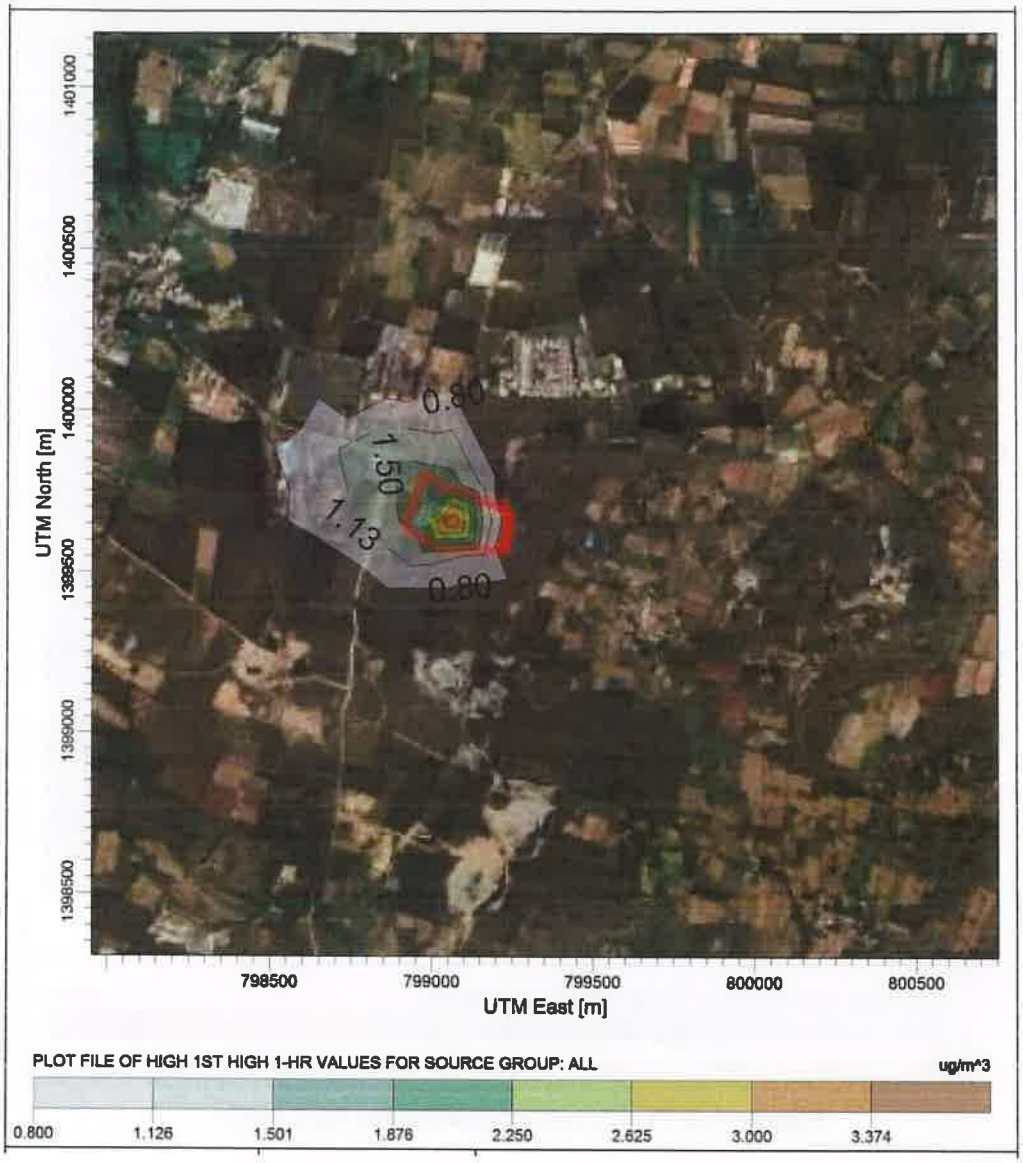


Figure 4-1 Predicted Isopleths for GLC - PM

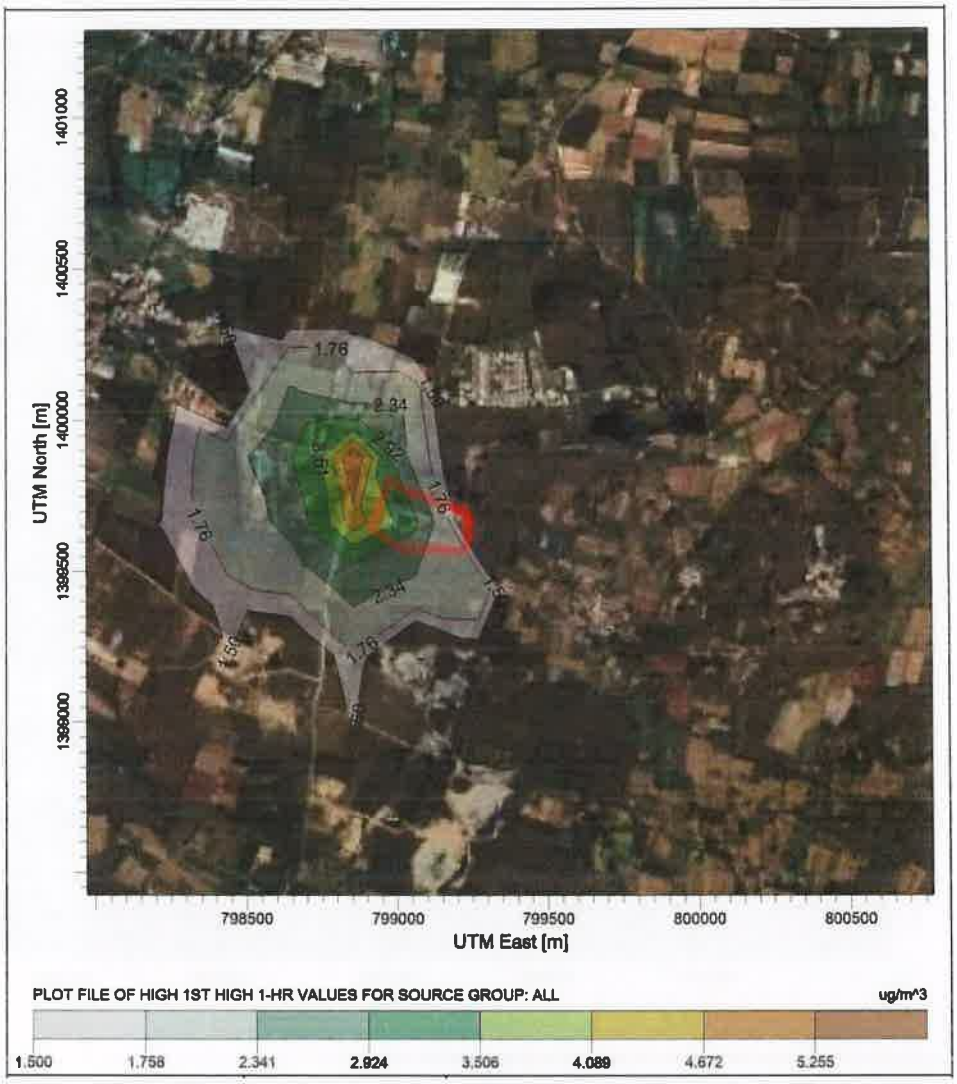


Figure 4-2 Predicted Isopleths for GLC – SO_x

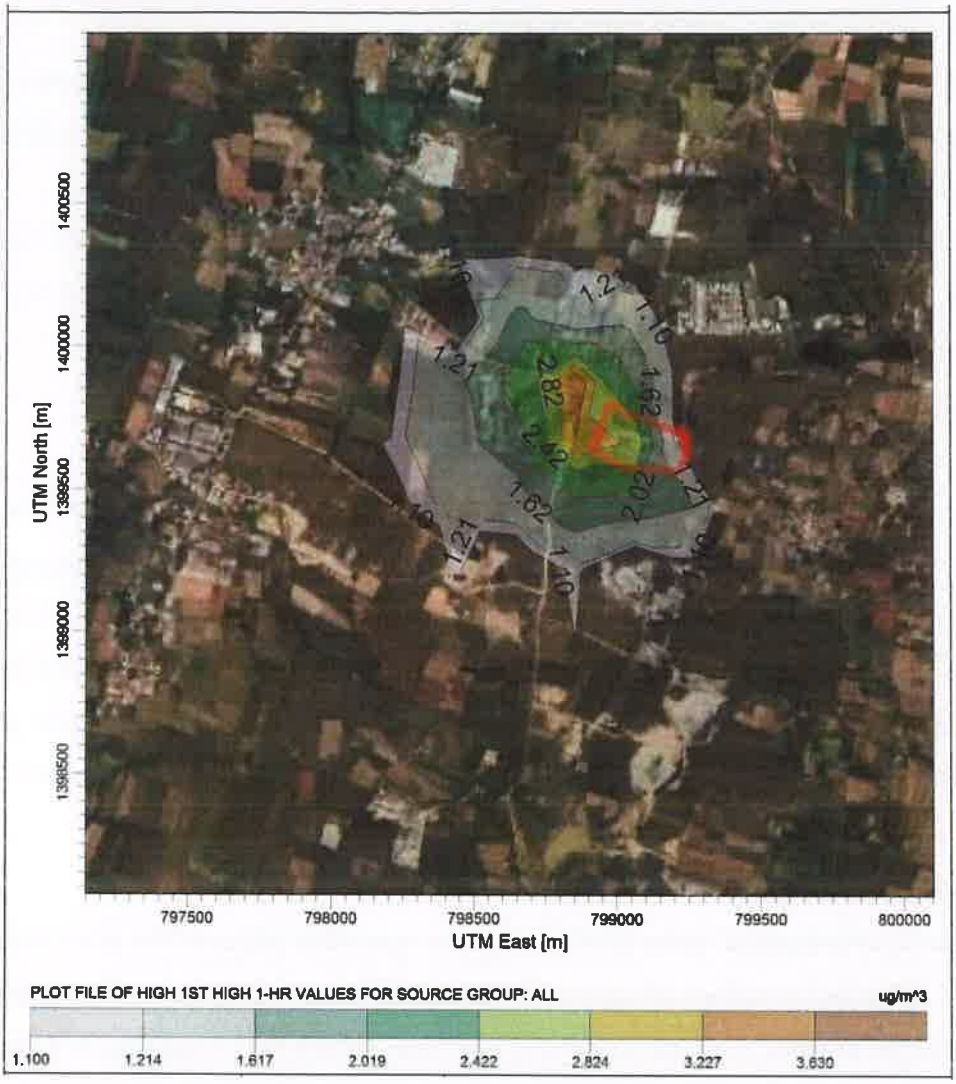


Figure 4-3 Predicted Isopleths for GLC – NO_x

Mitigation Measures

Adequate and efficient Air Pollution Control (APC) measures will be installed for the proposed induction furnaces & DG sets to keep the emissions below the standards prescribed by TNPCB and ambient air quality levels in the surroundings are meeting the prescribed standards.

Major pollutants envisaged from the expansion project are Particulate Matter. Minor quantity of gaseous pollutants like Sulphur oxides and Nitrogen oxides are expected from the induction furnace and DG sets. It is proposed to provide individual Swiveling Arrangement, Spark Arrestor, Bag Filter (made of Polyester, Polypropylene, Polyamide, and Acrylic), ID Fan with Motor to the proposed additional machineries.

4.4.3.4 Fugitive Emissions and Control Measures

Fugitive dust emissions from the proposed expansion of steel mill would be significant as there will be air pollution due to activities like transport of raw materials, products, solid waste etc., unloading of scrap & fragmenting the slag.

As all the internal roads within the steel mill operating area are already white topped, dust arising from the internal roads has been reduced. The proposed greenbelt and regular water sprinkling will help further reduction in fugitive emissions.

4.4.4 Noise Quality

Impact

Any industry in general consists of several sources of noise in clusters or single. These clusters / single source may be housed in buildings of different dimensions made of different materials or installed in open or under sheds. Potential impacts on noise quality is anticipated from various sources like operation of induction furnace, diesel generators, continuous casting machine, rolling mill, roughing mill. The additional noise levels at the source will be in the range of 70 - 90 dB(A). For computing the noise levels at various distances with respect to the mill, noise levels are predicted using in-house model.

4.4.4.1 Input for the Model

The prediction of incremental noise levels due to the operation phase of the plant expansion has been carried out using a mathematical model. Noise levels are mainly generated from induction furnace, diesel generators, continuous casting machine, rolling mill, roughing mill etc. The noise sources have been defined with respect to plant and given in Table 2-17 of Chapter-2.

4.4.4.2 Presentation of Results

The noise limits are set at various averaging times from 0.25 to 8 hours. Exposures to impulsive or impact noise shall not exceed 140 dB(A).

The model results are discussed below and the predicted model results at plant boundary are tabulated in Table 4-6 and shown in Table 4-3.

Table 4-6: Predicted noise levels at plant boundary

Duration per day, hours	Sound levels dB(A), Slow response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105

Duration per day, hours	Sound levels dB(A), Slow response
½	110
¼	115

Table 4-7 Noise sources in the study area

Sources	Noise Levels in dB(A)	Details
Diesel Generators	85.375	3 (DG Set- 65, 185 & 320 kVA)
Induction Furnace	78.6	1
Continuous Casting Machine	70.2	1
Rolling Mill	81.4	1
Roughing Mill	80.8	1
*Note: Equipment distribution is shown as required in one shift		

The damage risk criteria as enforced by OSHA (Occupational Safety and Health Administration) to reduce hearing loss, stipulates that noise level upto 90 dB(A) are acceptable for 8 hour working shift per day. From the noise modeling, the project block is expected to receive a noise level of around 61.08 dB(A). This noise modeling has been carried out considering worst conditions, in actual; the noise level is expected to be less than the calculated value. Hence, the impact due to noise level will be insignificant.



Figure 4-4 Noise modeling results

Day and night sound pressure levels Leq_{dn} is often used to describe the community noise exposure, which includes 10 dB(A) nighttime penalty. The predicted noise levels at a distance of 0.5 km and above from the plant boundary would be less than <55.0 dB(A). Most of the human settlements are at a distance greater than 0.5 km from the plant site. Hence, impact on general population would be insignificant.

Mitigation Measures

To minimize the impact of noise from the industrial operation within the unit as well as noise impact on the nearby areas from road traffic, following measures would be adopted.

- The specifications for procuring major noise generating machines/equipment such as Exhaust fans, Compressors would include built in design requirements to have minimum noise levels meeting OSHA requirement;
- The impact of noise emission from Generators will be minimized by acoustic enclosures and the noise levels will be limited to 75 dB(A);
- Appropriate noise barriers/shields would be provided on the equipments like motors, compressors etc.;
- Wherever no control equipment are possible, increase the distance between source and receiver and by altering the relative orientation of the source and receiver;
- Noise level at the receiver end reduces in inverse proportion to the square of the distance between the receiver and the source;
- Also workers/ operators working near to high noise generating machinery to be provided with ear mufflers/ ear plugs; and
- Provision of thick greenbelt to attenuate the noise levels.

4.4.5 Water Resources and Water Quality

Impact

As the steel mill is operated on the dry process, water is not required in manufacturing process. But water is required at certain stages of ancillary process like Cooling Tower. No wastewater is generated from the cooling tower as most of water is evaporated due to temperature and adequate make-up water is added.

The water consumption at the existing steel mill is about 20 m^3/day. The estimated water requirement after the expansion is about 125 m^3/day. The water will be sourced from Local Panchayat which will be followed for additional quantity too. However, Meenakshi Udyog is in the process of developing rainwater harvesting structures to recharge ground water in the project site area to enhance the ground recharge potential in the region.

About 8.1 m^3/day of sewage will also be generated from the domestic uses (drinking and sanitation) after the proposed expansion. The water balance diagram is shown in Figure 4-5.

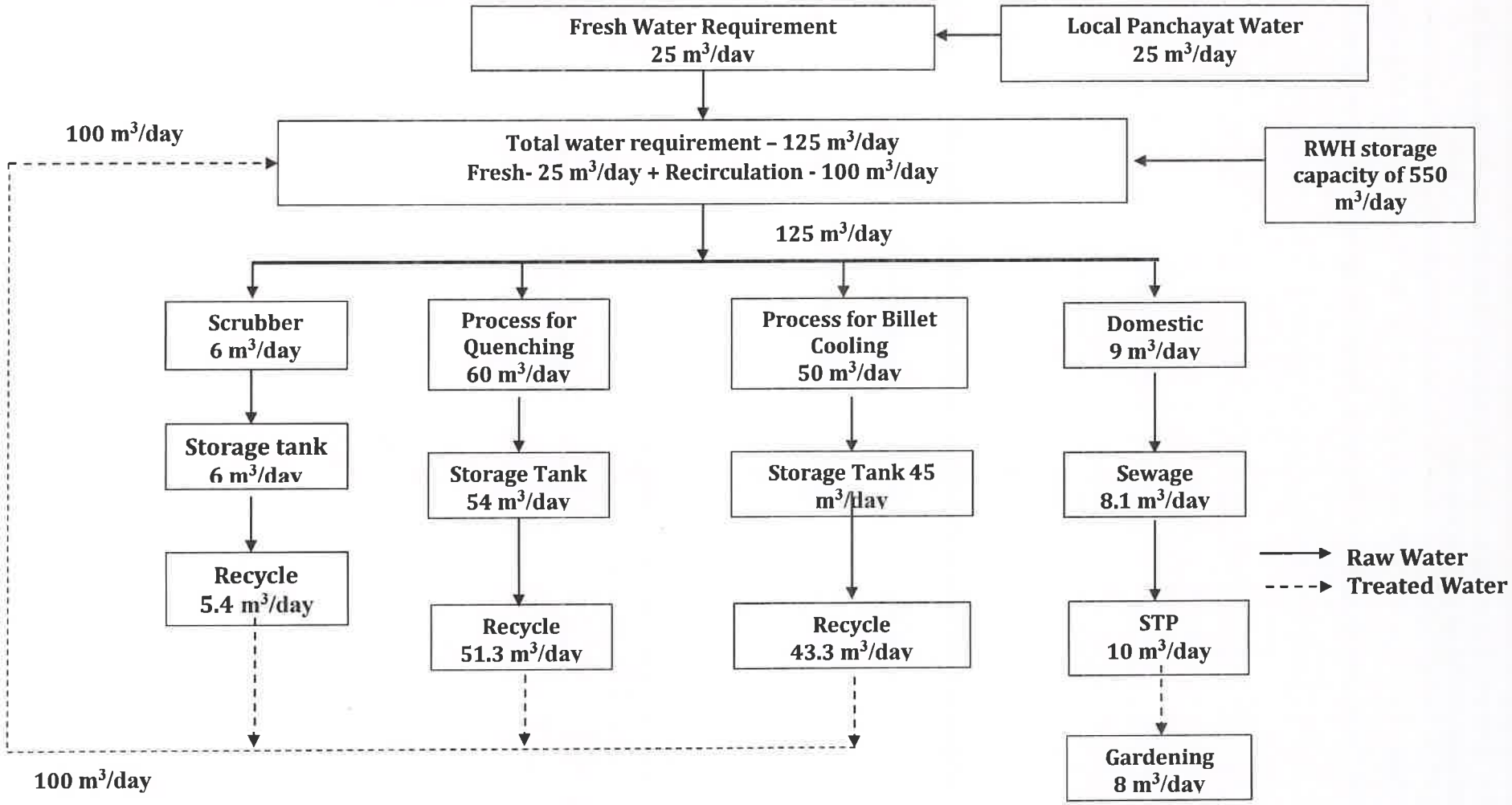


Figure 4-5: Water balance diagram

Mitigation Measures

- The entire quantity of the sewage will be disposed in the proposed Sewage Treatment Plant. The treated sewage will be reused for greenbelt development.
- The storm water in the project area will be collected through storm water drains to ensure that this is totally separated from process effluent.
- Rainwater harvesting system is also provided to recharge the ground water by means of percolation pits.

4.4.6 SOLID WASTE:

Solid waste generated are enumerated in chapter 2 of Table 2-14 to Table 2-16. The major generation of solid waste is from induction furnace slag after recovering the iron form the grinding unit which is to the tune of 12,600 TPA. It will be mainly reused in the plant for paving the road, filling the low lying area and supplied to the local for the similar purpose at free of cost.

4.4.7 SOIL QUALITY

Impact

The impact on soil could be due to the potential contamination of soil, which may happen due to improper handling and storage of solid wastes and hazardous chemicals. No major hazardous chemicals will be stored in the steel mill except diesel for standby DG sets. The solid wastes generated from the steel include the furnace slag, waste scrap & mill scale which are all disposed for beneficial use like cement brick manufacture, co processing industries. There will be insignificant impact on the soil due to the proposed expansion.

Mitigation Measures

The slag from the furnaces may contain traces of metal oxides. Since these wastes are inert, inorganic and non-hazardous, these wastes have no useful application in the plant. These wastes will also be given to reuse in cement brick manufacturing industries along with dust from dust collectors.

Recovering techniques:

The slag generated from induction furnace contains some amount of iron (fe) which will be recovered from the grinding unit. The grinding unit consists of chipping, grinding and magnetic recovery units. The slag is chipped into pieces and grounded well and fed into magnetic machine. The iron content will be removed and re-used in the induction furnace, the grounded slag almost equivalent to the sand is used for paving the roads and filling the lands.

4.4.8 TRAFFIC

With the proposed expansion project, the transportation is expected to increase on the existing road network during the operational phase on the nearest road. The impact of the traffic is assessed based on adequacy of the existing road network.

4.4.8.1 TRAFFIC DUE TO PROPOSED EXPANSION

It has been considered that the peak daily vehicle traffic due to proposed expansion project would be about 20 two wheelers, 15 three wheelers, 5 cars and 30 trucks i.e. 70 PCU (Passenger Car Unit) during functional phase per day.

4.4.8.2 ADEQUACY OF THE EXISTING ROAD NETWORK

The traffic count was conducted at NH 948 A - Hosur - Thally Road to assess the existing traffic details. Category-wise vehicle counting has been done continuously and recorded in the traffic volume count on hourly basis under respective categories. Traffic counted on this road during study was converted to passenger car unit (PCU) as per IRC SP: 41 as per details given below:

Vehicle	Conversion Factor as per IRC SP 41
Car	1.0
Motorcycle	0.5
3-wheeler	1
LCV	2.2
Bus	3
Truck	4.5

From the traffic count studies, the present traffic level found to be on NH 948 A- Hosur- Thally Road as 8105.5 PCUs. Further, it is expected that the additional peak daily vehicle traffic due to proposed expansion activities would be about 70 PCU (Passenger Car Unit) during functional phase per day. Thus, the cumulative traffic load during the operational phase would be 8105.5 + 70 = 8175.5 PCUs in NH 948 A – Hosur - Thally Road.

With present level of traffic and the increase in traffic due to the expansion project, adequacy of road / highway during operational phase has been estimated by comparison with the recommendations stipulated by Indian Road Congress (IRC). The IRC recommendations on traffic capacity are presented below in Table 4-8.

Table 4-8 Recommendations on traffic capacity – irc

Sl. No.	Category of Road	Maximum PCU/day
1	Two lane Road	15,000

As per the above standards, the existing in NH 948 A- Hosur- Thally Road is having maximum capacity of 15,000 PCU per day. The estimated peak traffic in terms of PCUs is compared with the stipulated standards by IRC for traffic capacity of the existing road network and it can be observed that the existing road will be adequate for the increased traffic also.

4.4.9 Ecology

Impacts

The baseline flora and fauna has been depicted in Chapter-3. There are no ecologically sensitive areas like national parks, wildlife sanctuaries, etc. within 10-km radius from the plant and no migration route to avi-fauna is observed or recorded in study area. Similarly, as per the forest department records, no endangered or rare species of flora and fauna are reported or observed in the study area. The impact on terrestrial ecology will be due to emission of pollutants like PM, NO_2 and SO_2. However, the incremental concentrations of these pollutants are very less and the impacts on the terrestrial ecology will be insignificant.

There are no significant aquatic bodies within the study area. The treated effluents will not be discharged into any surface water streams. Hence, no impact is envisaged from the proposed expansion project on aquatic bodies.

Mitigation Measures

- The fugitive emissions from different sources will be suppressed by spraying water.
- Emissions from the proposed induction furnaces and D.G sets will be maintained well within the standards prescribed by regulatory authorities.
- Adequate height of stacks will be provided for the Induction furnaces and DG sets to disperse the SO_x and NO_x emission.
- Vehicles emissions will also be minimized by proper maintenance and by avoiding use of adulterant fuels and will be maintained below the standard limits prescribed by competent authority.
- Development of a thick green belt will reduce the pollution loads in the surroundings areas and contain the negative impact on forests and terrestrial ecology.
- Overall green belt and avenue plantation of 40% is planned to be achieved after expansion inorder to comply the ToR condition.

4.4.10 Socio-Economics

It is obvious to assume that the activities of the proposed expansion in the production capacity will produce some improvements in the socio-economic levels in the study area. The anticipated impact of this project on various aspects is described below.

- The proposed expansion project will be carried out within the existing plant area. Hence, no impact due to land acquisition is envisaged.
- This project will not have any major impact on the population growth, as the proposed increase in labour for the expansion project is not major.
- Better literacy rates are possible due to assumed better economic conditions of the people.
- Better literacy means better social status and thereby improved life style. This will be a positive impact due to the proposed capacity expansion.
- The positive impacts of plant activities on the civic amenities are substantial. With improved transportation facilities, there is always a scope for development.

The impact of industrialization on the economic aspects can be clearly observed. The existing plant activities have already provided employment to persons of different skills and trades. The local population is the largest beneficiary among the employees. The employment has ameliorated the economic conditions of these families directly and has provided employment to many other families indirectly who are involved in business and service oriented activities.

4.4.11 Human Health

The impact from the air emissions is not expected to be significant since the stack design and the atmospheric conditions are such that the ambient air quality at present as well as in future after the implementation of the project will be well within the prescribed ambient air quality limits set forth by CPCB. The proponents of this facility will adopt effective control systems at all the identified sources of dust generation. Regular health checkup will be carried out for employees as a part occupation health & safety program.

5 ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITES)

5.1 GENERAL

Analysis of alternatives for project site as well as process technology and their assessment for selection of the most suitable location and technology as well in terms of environmental affability, energy efficient and optimized land utilizing with maximum productivity is a good practice in EIA as a project of any nature comprising of activities involving large number of human resource, material as well as financial investment.

5.2 ALTERNATIVES IN TECHNOLOGY

The proposed induction furnaces represent the most contemporary technology with static power supply, proven low loss melting furnace. The installation will comprise of 2 No's of 12 TPH Induction Furnace equipment consisting of 2 No's of crucibles each and powered by suitable solid state power supply with hydraulic power packs, remote operating console to facilitate Furnace Tilting/Metal Pouring. Operator's control desk shall be provided to facilitate start-up, shutdown, power control, metering and annunciations. Lever operated switches shall be provided with each furnace crucible for quick selection and changeover.

The Induction Furnace will be provided with an advanced highly efficient gas cleaning system. Dust loaded fumes, generated in the Induction Furnace during operation, and are extracted directly from the furnace roof canopy provided on furnace. Fumes that escape during the charge time would be extracted through secondary ducting placed at higher elevation of shed. Gases from both from primary and secondary ducts will be passed through spark arrestor and then enter into pulse jet bag filters. Bag Filters cleans the dust and leave the clean air into environment. The dust collected from bag filters would be disposed of along with Slag as it is inert dust. Hence no alternate technology is considered for the expansion project.

5.3 ALTERNATIVES IN SITE

The proposed expansion is to be setup within the premises of the existing steel mill of Meenakshi Udyog (India) Private Limited, 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A,292/4B, 292/5A & 292/5B of Kalugondapalli village, Denkanikotta taluk, Krishnagiri district, Tamil Nadu. No additional land is required to be acquired, as the land required for setting up of proposed expansion is available and is under possession of Meenakshi Udyog (India) Private Limited. The land area comes under "Unclassified" as per land use classification certificate issued by Department of Town Planning, Dharmapuri district. Hence, no alternate sites are considered for the expansion project.

6 ENVIRONMENTAL MONITORING PROGRAM

This chapter presents the details of environmental monitoring, schedule, arrangements for pollution control, cost for environmental protection measures and details of greenbelt development for the proposed expansion project.

6.1 ENVIRONMENTAL MONITORING

An Environmental Monitoring Program provides feedback about the difference between actual environmental scenario and the impacts of the project on the environment and helps to judge the adequacy of the mitigation measures in protecting the environment. The purpose of environmental monitoring is to evaluate the effectiveness of implementation of Environmental Management Plan (EMP) by periodically monitoring the important environmental parameters within the impact area, so that any adverse effects are detected and timely action can be taken. The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board/ Tamil Nadu State Pollution Control Board (TNPCB). The frequency of sampling and location of sampling will be as per the directives of CPCB/TNPCB.

Environmental monitoring will be conducted on regular basis by the Meenakshi Udyog (India) Pvt. Ltd. to assess the pollution level in the area. Usually, as in the case of the study, an impact assessment study is carried over short period of time and the data cannot bring out all variations induced by the natural or human activities. Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environment.

6.2 OBJECTIVES OF ENVIRONMENTAL MONITORING

The basic objective of the environment-monitoring program is as follows.

- To ensure implementation of mitigation measures during project implementation;
- To provide feedback to the decision makers about the effectiveness of their actions;
- To determine the project's actual environmental impacts so that modifications can be made to mitigate the impacts;
- To identify the need for enforcement action before irreversible environmental damage occurs;
- To provide scientific information about the response of an ecosystem to a given set of human activities and mitigation measures;

- To ensure that new parameters, other than those identified in the impact assessment study, do not become critical through the commissioning of new installations or through the modification in the operation of existing facilities;
- To check assumptions made with regard to the development and to detect deviations in order to initiate necessary measures;
- To establish a database for future Impact Assessment Studies for expansion projects.

6.3 TYPES OF ENVIRONMENTAL MONITORING

The key issues associated with the life cycle of a project are the monitoring of environmental parameters. Three types of environmental monitoring are associated with the project, which includes.

a) Baseline monitoring
b) Effects/ Impacts monitoring and
c) Compliance monitoring.

Baseline monitoring - Baseline monitoring deals with the measurement of environmental variables during a pre project period to determine existing conditions, ranges of variation and process of change;

Effects/impact monitoring – It involves measurements of environmental variable during construction and operation phase of the project to assess the impact that may have been caused by the project.

Compliance Monitoring- It takes the form of periodic sampling and continuous measurements of level of pollutant emissions in the air, waste discharge on land or water, level of noise to ensure that standards are met.

6.4 ENVIRONMENTAL MONITORING PLAN

The environmental monitoring plan for the proposed project has been developed in view of the institutional, scientific and fiscal issues pertaining to the project. For developing the monitoring plan, appropriate Value Ecosystem Components (VEC's) which are likely to be affected have been identified. For each component, suitable measurable environmental indicators, which are appropriate to the impact mechanism and scale of disturbance and have a low natural variability, broad applicability and an existing data series have been defined.

As per the guidelines of MoEFCC, environmental monitoring shall be required during construction and operational phases. The schedule for monitoring ambient air quality, ambient noise quality, source emission monitoring, ground water quality and wastewater quality both during the construction and operation phases of the project is given in Table 6-1.

Table 6-1 Environmental monitoring plan

Sl. No.	Potential Impact	Action to be Followed	Parameters for Monitoring	Frequency of Monitoring
1	Air Emissions	All equipment's are operated within specified design parameters	Random checks of equipment logs/ manuals	Periodic checks
		Vehicle trips to be optimized to the extent possible	Vehicle logs	Periodic check during site clearance & construction activities
		Maintenance of Induction Furnace emissions to meet stipulated standards	Particulate and Gaseous emissions (SO_x, CO, NO_x)	Periodic emission check during monitoring
		Ambient air quality within the premises of the proposed unit to be monitored.	The ambient air quality shall conform to the standards for PM_{10}, $PM_{2.5}$, SO_2, NO_x, and CO	As per CPCB / TNPCB requirement or on monthly basis whichever is earlier.
2	Noise	List of all noise generating machinery onsite along with age to be prepared. Equipment to be maintained in good working order	Equipment logs, noise reading	Regular check during construction activities
		Night workings will be minimized.	Working hour records	Daily records
		Generation of vehicular noise.	Maintenance of records of vehicles	Daily records
		Noise to be monitored in ambient air within the plant premises.	Spot noise recording	As per CPCB/ TNPCB requirement or on quarterly basis whichever is earlier

Sl. No.	Potential Impact	Action to be Followed	Parameters for Monitoring	Frequency of Monitoring
3	Waste Water Discharge	No discharge to be made to surface water, groundwater or soil.	No discharge hoses shall be in vicinity of watercourses.	Periodic check during construction activities
4	Soil Erosion	Protect topsoil stockpile where possible at edges of the site.	Effective cover in place.	Periodic check during construction activities
5	Drainage and wastewater Management	Ensure drainage system and specific Design measures are working effectively. The design to incorporate existing drainage pattern and avoid disturbing the same.	Visual inspection of drainage and records thereof	Periodic check during construction activities
6	Waste Management	Implement waste management plan that identifies and Characterizes every waste arising associated with proposed activities and which identifies the procedures for collection, handling & disposal of each waste arising.	Comprehensive Waste Management Plan should be in place and available for inspection on-site. Compliance with MSW Rules, 2016 and Hazardous Wastes (Management, handling and Trans boundary Movement) Rules, 2016	Periodic check during construction activities
7	Health	Employees and migrant labor health check ups	All relevant parameters including HIV	Regular check ups
8	Loss of flora and fauna	Re-vegetation as per Forest guidelines	No. of plants, species	During site clearance

Table 6-2 Environmental monitoring plan

Sl. No.	Component	Parameter	No. of Locations	Frequency/ Duration
1	Ambient Air Quality	PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, Pb, As, Ni, NH_3, O_3, C_2H_6 & BAP.	4	Once in a month
2	Fugitive Emission	PM_{10}, $PM_{2.5}$, SO_2, NO_2 & CO	4	Once in a month
3	Stack Emission Monitoring	PM, SO_2, NO_2, CO & HC	-	Continuous monitoring
4	Source Noise	Instantaneous Noise level in dB(A)	8	Once in a month
5	Ambient Noise Quality	Ambient noise level (L_{eq}, Leqday & Leqnight)	8	Once in a month
6	Ground water Quality	Parameters specified under IS:10500, 1991	1	Once in 3 months
7	Soil Quality	Parameter for soil quality: pH, texture, EC, Organic Matter, N, P, K, Na, Ca & Mg	1	Once in 6 months

6.5 DATA ANALYSIS

The monitored data will be analyzed and compared with the baseline levels as established in the EIA study and the regulatory standards specified by different government agencies. The standards against which the different environment components will be compared are as per Table 6-3.

Table 6-3 Applicable environmental standards

S. No.	Component	Applicable Standards
1	Ambient Air Quality	National Ambient Air Quality standards, CPCB
2	Fugitive Emission	Fugitive emission standards for Steel plant, CPCB
3	Source Emission	Industrial specific standards for Foundries
4	Source Noise Quality	Standards for workers, Insp. of Factories / OSHA
5	Ambient Noise Quality	Ambient Noise Standards, CPCB
6	Ground water quality	IS: 10500 Standards, BIS
7	Soil quality	Standard Soil Classification, ICAR

6.6 REPORTING SCHEDULE

The monitoring results of the different environmental components will be compiled every six months during the construction as well as operation phase while submitting the six monthly compliance reports to Regional Office of MoEF&CC. The report will also list the project activities along with the environmental mitigation measures and will evaluate the efficacy of the Environmental Management Plan.

6.7 BUDGET PROVISION

The above scope of environmental monitoring will be done through NABL accredited private laboratories. Therefore, no capital cost is required for the environmental monitoring work and procurement of laboratory equipments and chemicals are required.

The annual recurring cost is required for environmental monitoring which will be about Rs. 8.0 Lakhs per annum.

7 ADDITIONAL STUDIES

This chapter describes the additional studies like Risk Assessment, Disaster Management Plan, Social Impact Assessment and Public Hearing.

7.1 PUBLIC HEARING

Public Hearing conducted for the Unit of M/s. Meenakshi Udyog (India) Private Limited SF. No.291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A, 292/5B, Kalukondapalli village, Denkanikottai taluk, Krishnagiri district to the "Proposed Expansion Activity for Products of 1. MS Billets from 30,000 TPA to 1,91,000 TPA or TMT rods from 60,000 TPA to 1,80,000 TPA" on 11.08.2022 at 11.00 am at Annamacharya Kalyanamandapam, Hosur to Thally main road, Mathakondapalli village, Denkanikottai taluk, Krishnagiri district - 635 114.

The Public Notice information regating the details of Public Hearing was published in the Tamil and English dailies, such as, "Dinathanthi" and "The New Indian Express" dated 08.07.2022. The copy of newspaper publication is given in Figure 7.1.



தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம்

பொது அறிவிப்பு

வ. எண்	பொருத்தட்டத்தின் பெயர் மற்றும் அமைவிடம்	திட்டத்தின் விவரம்	பொது விசாரணை நேரம்	இடம்
1.	திரு. மீனாட்சி உதயோக் (இந்தியா) பிரைவேட் லிமிடெட் நிறுவனம் ச. எண். 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A, 292/5B, கலுகொண்டப்பள்ளி கிராமம், தேன்கனிக்கோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டம்.	1) எம் எஸ் இங்காட்ஸ் / பில்லெட்டின் ஒரு வருடத்திற்கு 30,000 மெட்ரிக் டன்னிலிருந்து 1,91,000 மெட்ரிக் டன்னாக உயர்த்தவும் மற்றும் 2) டிஎம்டி ராட்ஸ் ஒரு வருடத்திற்கு 60,000 மெட்ரிக் டன்னிலிருந்து 1,80,000 மெட்ரிக் டன்னாக உயர்த்துதல்	11.08.2022 காலை 11.00 மணிக்கு	ஒசூர் – தளி பெரிய சேலை மகாலட்சுமி திருமண மண்டபம், தேன்கனிக்கோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டம் – 635 114.

தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம்,
சென்னை – 600 032.

Dhinathanthi

TAMIL NADU POLLUTION CONTROL BOARD

PUBLIC NOTICE

Whereas as per Ministry of Environment and Forests, Government of India, New Delhi, Environment Impact Notification Number S.O.1533 dated 14.09.2006, public hearing at the site or in its close proximity, to be carried out in the manner prescribed in Apoendix IV for ascertaining concerns of local affected persons for the projects covered in Schedule of the said Notification.

Whereas the public hearing at or in close proximity to the site has to be conducted by the State Pollution Control Board concerned in the specified manner as per paragraph7(i) III stage (3) and appendix IV of the said notification.

Whereas as required public hearing is proposed to be conducted by Tamilnadu Pollution Control Board for the following project on the date, time and venue as mentioned below.

Sl. No	Name of the Project and Location	Details of Project	Date & Time	Place
1	M/s. Meenakshi Udyog (India) Private Limited, SF.No. 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A, 292/5B, Kalukondapalli Village, Denkanikottai Taluk, Krishnagiri District	Proposed to carry out the expansion activities in production of 1) MS Ingots to Billets from 30,000 MT/Annum to 1,91,000 MT/Annum and 2) TMT Rods from 60,000 MT/M to 1,80,000 MT/M	11.08.2022 11.00 A.M	"Annamacharya Kalyana Mandapam, Hosur to Thally Main Road, Mathakondapalli Village, Denkanikottai Taluk, Krishnagiri District – 635 114".

In this connection, it is informed that the Environmental Impact Assessment Report and the Executive Summary in English and Tamil is made available for public reference at the following places

1. Office of the District Collector, Krishnagiri District, Krishnagiri.
2. O/o. The General Manager, District Industries Centre, Krishnagiri, Krishnagiri District
3. O/o. The Joint Chief Environmental Engineer (Monitoring), TNPC Board, Opposite to Auxilium College, Gandhi Nagar, Vellore – 632 006.
4. O/o. The District Environmental Engineer, TNPC Board, Plot No.149-A, 1st Floor, SIPCOT Industrial Complex, Phase-I, Dharga, Hosur – 635 126, Krishnagiri District.
5. Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai –600 032.
6. State Environment Impact Assessment Authority, 4D, Panagal Building, Saidapet, Chennai – 600 015
7. Regional Office, Ministry of Environment, Forest and Climate Change, South Eastern Zone, 1st and 2nd Floor, Handloom Export promotion council Building, 34, Cathedral Garden Road, Nungambakkam, Chennai – 600 034
8. O/o Block Development Officer, Thally Panchayat Union, Thally, Denkanikottai Taluk, Krishnagiri District
9. O/o. Tahsildar, Denkanikottai Taluk, Denkanikottai, Krishnagiri District.

Suggestions, views, comments and objections of the public are invited within THIRTY DAYS from the date of publication of this notice by Tamil Nadu Pollution Control Board.

All persons including Bonafide Residents, Environmental Groups and others, located at the project site/ sites of displacement/sites likely to be affected can participate in the Public Hearing and they can also make Oral/Written suggestions to the District Environmental Engineer, Tamil Nadu Pollution Control Board, Plot No 149-A, 1st Floor, SIPCOT Industrial Complex, Phase I, Dharga, Hosur – 635 126, Krishnagiri District on the above project.

Member Secretary,
Tamil Nadu Pollution Control Board,
Chennai – 600 032.

The New Indian Express

Figure 7-1 News Paper Advertisement for PH

The public hearing was conducted inline with the EIA notification dated 14th September 2006 and its subsequent amendments. The photographs of the public hearing are given in Figure 7.2.



Figure 7-2 Public Hearing Photographs

The District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur, Krishnagiri district welcomed the Revenue Divisional Officer, Hosur (Representative of the District Collector, Krishnagiri), Revenue Officials, all the general public and the Director of the unit to attend the Public Hearing.

The Revenue Divisional Officer, Hosur (Representative of the District Collector, Krishnagiri) has initiated the Public Hearing process. Further, the Revenue Divisional Officer, Hosur requested the project director to explain about their proposed expansion activity through power point presentation and requested the public to obtain necessary clarifications of their doubts.

Thereafter, Thiru. N. Rama Krishnan EIA Consultant, M/s. ABC Techno Labs India Private Limited, Chennai of the proposed expansion activity has made presentation to the public along with Environmental Management Plan on behalf of the proponent.

The views and suggestions of the public are detailed below in the Table 7-1.

Table 7-1: Issues raised during the Public Hearing

Sl. No	Name of Participants	Question / comments by Participants	Response/clarification by company representative	Action Plan
1.	Thiru. Krishna, Ex-President-Kallukondapalli Village	Thiru. Krishna, welcomed all the attendance of the public hearing. The company management is servicing to the people. 90% of the information in the power point presentation regarding development of nearby school and village are true. He requested the company management to adapt new technologies to control the pollution and to develop more green belt around the unit premises to crub the air pollution. Further he requested to utilise electrical based induction furnance for melting the metal scraps to reduce the air pollution.	District Environmental Engineer, Tamil Nadu Pollution control Board, Hosur has replied that, the unit has used electrical based furnace for melting the metal scraps. Further, he instructed to the unit management to develop greenbelt by planting more trees in the unit premises.	It is planned to introduce the state-of-the-art induction furnace (oritech make) which is presently available in the market. The fugitive emission during charge will be collected with the help of suitable movable hood specially fabricated at site to suit the requirement. The collected air will be passing through bagfilters and the final discharge will be having <30 mg/Nm^3 of PM. Based on the commitment the existing greenbelt will be augmented by planting additional native species with minimum width of 5m around the periphery of the plant. Inaddition avenue plantation will be taken on priority basis on the roads which are leading to nearby villages.

Sl. No	Name of Participants	Question / comments by Participants	Response/clarification by company representative	Action Plan
2.	Thiru. Suresh, Vice-President – Kallukondapalli village	Thiru. Suresh has stated that the pollution level will be increased due to expansion activity. The company management has assured that they will provide latest technologies to control the pollution generation from the unit. Further, he stated that the unit shall operate with proper Air Pollution Control measures to control the Air pollution without affecting the school students passing through roads.	District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur replied that, the unit is using induction furnace for melting the metal scraps so that minimum level of pollution is generated.	Refer sl.no.1 for reply of new technology & pollution control method.
3.	Thiru. P. Nagaraj, Belagondapalli Village	Thiru. P. Nagaraj has stated that the company management shall operate the unit with updated latest technologies to control the Air and Noise pollution generating from the unit. Further, local village people rented their buildings to the employees those who are working in the factory and provisional shops established for		Noise mitigation measures will be followed such as equipment's will be maintained appropriately to keep the noise level within 85 - 90 dB(A), wherever possible equipment will be provided with silencers and mufflers. All equipments are under fully covered buildings this will act as buffer to control the noise. Further greenbelt with suitable height will be developed from the construction stage onwards.

Sl. No	Name of Participants	Question / comments by Participants	Response/clarification by company representative	Action Plan
		selling commercial products to them.		Further, workers working in high noise areas will be provided with necessary protective devices e.g. ear-plug, ear-muffs, etc., to mitigate Occupational Health Hazard.
4.	Thiru. H.N. Ramesh, Kallukondapalli Village	Thiru. H.N. Ramesh has stated that the company management shall provide new technologies for control of pollution as shown in the power point presentation. • The economy of this panchayat will be improved and many of the local people will be offered with job opportunities for the expansion of the unit. • The company management has funded of Rs. 7.35 lakhs to construction of the road extension • Further, he said that, the village people have already requested to provide		As requested and commitment stated over the public hearing, a public transport (Electric Vehicle) will be provided for commutation. The frequency will be finalized mutually agreed upon. Further a overhead tank construction will be carried out under the commitment fund of 6 lakhs.

Sl. No	Name of Participants	Question / comments by Participants	Response/clarification by company representative	Action Plan
		transport facility, for that the unit management has assured to provide electrical vehicle to the village. • The Unit management has assured to fund of Rs. 6 lakhs (33% of the total cost) for establishing overhead water tank facility at Kappakal area.		
5.	Thiru. Suryanarayanan, Hosur, Environmentalist and social worker	Thiru. Suryanarayanan has suggested the following for the environmental welfare: • Thally area is considered as 2nd Ooty from the British Period. Thally area is a greenery, cold climate and pleasant environment. • Now these industries are coming to this area is a welcome one. • Local people will be offered with job opportunity for the expansion of the unit		A medical camp will be carried out by organization to have general health checkup with suitable medical officers. Those who are working in the plant will have additional occupation health checkup as per the industrial notification.

Sl. No	Name of Participants	Question / comments by Participants	Response/clarification by company representative	Action Plan
		• The toxic gases emitted from the induction furnace have been controlled by the unit and the unit shall operate by implementing 100% of the same. • The toxic gases like CO_2, NO_x, SO_x, emitting from the emission sources creating air pollution from the industries. So, the unit shall plant more trees to control the heat radiation and air pollution. • The unit management to take responsibility to ensure the health of the local people. • Most of the local people are working in the said industry and ensure that there is no health issues to the employees those who are working in the industry. • The company management shall develop greenbelt in and		

Sl. No	Name of Participants	Question / comments by Participants	Response/clarification by company representative	Action Plan
		around the unit premises by utilizing the CSR fund.		
6.	Thiru. P.N. Srinivasan, Ex- President, Belagondapalli Village	Thiru. P.N. Srinivasan, welcomed the expansion activity of the unit. He stated that, the unit shall implement the rain water harvesting, community forest development activities in their proposed expansion project. Further, he stated that the unit is using high electricity. So, he requested to utilize the solar technology to convert sun light into electrical energy to reduce the electrical consumption and also to recycle the waste water generated from the unit.	EIA Consultant of the proposed expansion activity of the unit replied that, the sewage treatment plant is already provided and waste water is fully recycled in the process and solar panels are provided in the unit premises generate electricity.	Solar lights will be used for illumination purpose. Avenue plantations are planned for the nearby villages and community forest will also be developed in co-ordination with panchayat board on identification of the suitable land. Plant is practicing the no effluent discharge into the environment and recycling the wastewater within the plant.

The District Environmental Engineer, Tamil Nadu Pollution Control Board, Krishnagiri: The District Environmental Engineer, Tamil Nadu Pollution Control Board, informed that the views, suggestions, written complaints and queries of the public and reply by the Project Director are recorded through videography and the same will be sent to the state Environmental Impact Assessment Authority of Tamil Nadu – Chennai.

7.2 RISK ASSESSMENT

Risk is defined as the unwanted consequences of a particular activity. The magnitude of risk varies with the total impact area for different scenarios. The risk assessment is basically done of all the hazardous storages that are present in the premises. The larger the storage, greater is the risk posed by the storage. The impact area increases proportionately with storage.

Risk assessment is a tool that is used to analyze the risk posed by different project activities vis-à-vis the area. The consequence analysis forms part of this assessment and helps in evaluation of different hazards that are to be considered for conducting consequence analysis. The risk assessment basically involves the prediction of the consequence in case there is a fire, explosion or toxic gas release that might occur due to handling, storage or processing of any of the hazardous materials by the industry. The findings of risk assessment are dovetailed into On-site emergency plan also known as Disaster Management Plan.

7.2.1 APPROACH TO THE STUDY

Risk involves the occurrence or potential occurrence of some accidents consisting of an event or sequence of events. The risk assessment study covers the following:

- Identification of potential hazard areas;
- Identification of representative failure cases;
- Visualization of the resulting scenarios in terms of fire (thermal radiation) and explosion;
- Assess the overall damage potential of the identified hazardous events and the impact zones from the accidental scenarios;
- Assess the overall suitability of the site from hazard minimization and disaster mitigation point of view;
- Preparation of broad DMP covering On-site and Off-site Emergency Plan.

7.2.2 HAZARD IDENTIFICATION

Hazard Identification is a tool that is very useful for conducting a risk assessment as it helps in identification and detailing of hazards that exist in a given plant. The hazard identification is done prior to the consequence analysis in a given plant and serves as the core base of information on which whole risk assessment is based. The basic principle of risk analysis lies in the answer to the questions about risk such as type, causes, consequences and frequency.

The following two methods for hazard identification have been employed in the study:

- Identification of major hazardous units based on Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 of Government of India (GOI Rules, 1989); and
- Identification of hazardous units and segments of plants and storage units based on relative ranking technique, viz. Fire-Explosion and Toxicity Index (FE&TI).

7.2.3 CLASSIFICATION OF MAJOR HAZARDOUS UNITS

Hazardous substances may be classified into three main classes' namely flammable substances, unstable substances and toxic substances. The ratings for a large number of chemicals based on flammability, reactivity and toxicity have been given in NFPA Codes 49 and 345 M. The major hazardous materials to be stored, transported, handled and utilized within the facility have been summarized in the Table 7-2. The fuel storage details and properties are given in Table 7-2 and Table 7-3 respectively.

Table 7-2 Hazardous materials stored, transported and handled

Materials	Hazardous Properties
HSD	Dangerous Goods Class 3 – Flammable Liquid

Table 7-3 Category wise schedule of storage tanks

S. No.	Material	No. of Storage Barrels	Design Capacity (KL)	Classification
1	HSD	6	0.2	Non-dangerous Petroleum

Table 7-4 Properties of fuels used in the plant

Chemical	Codes/Label	TLV	FBP	MP	FP	UEL	LEL
			°C			%	
HSD	Flammable	5 mg/m^3	102	-	32 – 96	7.5	0.6

TLV : Threshold Limit Value
FBP : Final Boiling Point
MP : Melting Point
FP : Flash Point
UEL : Upper Explosive Limit
LEL : Lower Explosive Limit

7.2.4 Identification of Major Hazard Installations Based on GOI Rules, 1989

Following accidents in the chemical industry in India over a few decades, a specific legislation covering major hazard activities has been enforced by Govt. of India in 1989 in conjunction with Environment Protection Act, 1986. This is referred here as GOI Rules 1989. For the purpose of identifying major hazard installations the rules employ certain criteria based on toxic, flammable and explosive properties of chemicals.

A systematic analysis of the fuels/chemicals and their quantities of storage has been carried out, to determine threshold quantities as notified by GOI Rules, 1989 and the applicable rules are identified. Applicability of storage rules are summarized in Table 7-5.

Table 7-5 Applicability of GOI rules to fuel/chemical storage

Sl. No.	Chemical/ Fuel	Listed in Schedule	Total Quantity (KL)	Threshold Quantity (T) for Application of Rules	
				Clause 5,7-9,13-15	Clause 10-12
1	HSD	3 (1)	6 x 0.2	25 MT	200 MT

7.2.5 Hazard Assessment and Evaluation

An assessment of the conceptual design is conducted for the purpose of identifying and examining hazards related to feed stock materials, major process components, utility and support systems, environmental factors, proposed operations, facilities, and safeguards.

❖ **Preliminary Hazard Analysis (PHA)**

A Preliminary Hazard Analysis is carried out initially to identify the major hazards associated with storages and the processes of the plant. This is followed by consequence analysis to quantify these hazards. Finally, the vulnerable zones are plotted for which risk reducing measures are deduced and implemented. Preliminary hazard analysis for fuel storage area and whole plant is given in Table 7-6 & Table 7-7.

Table 7-6 Preliminary hazard analysis for storage areas

Unit	Capacity	Hazard Identified
HSD	6 x 0.2 KL	Fire/Explosion

Table 7-7 Preliminary hazard analysis for the whole plant in general

PHA Category	Description of Plausible Hazard	Recommendation	Provision
Environmental factors	If there is any leakage and eventuality of source of ignition.	--	All electrical fittings and cables are provided as per the specified

PHA Category	Description of Plausible Hazard	Recommendation	Provision
			standards. All motor starters are flame proof.
	Highly inflammable nature of the chemicals may cause fire hazard in the storage facility.	A well designed fire protection including dry powder and CO_2 extinguisher should be provided.	Fire extinguisher of small size and big size are provided at all potential fire hazard places. In addition to the above, fire hydrant network is also provided.

7.2.6 Fire Explosion and Toxicity Index (FE&TI) Approach

Fire, Explosion and Toxicity Indexing (FE & TI) is a rapid ranking method for identifying the degree of hazard. The application of FE & TI would help to make a quick assessment of the nature and quantification of the hazard in these areas. However, this does not provide precise information.

The degree of hazard potential is identified based on the numerical value of F&EI as per the criteria given below:

F&EI Range	Degree of Hazard
0-60	Light
61-96	Moderate
97-127	Intermediate
128-158	Heavy
159-up	Severe

By comparing the indices F&EI and TI, the unit in question is classified into one of the following three categories established for the purpose Table 7-8.

Table 7-8 Fire explosion and toxicity index

Category	Fire and Explosion Index (F&EI)	Toxicity Index (TI)
I	F&EI < 65	TI < 6
II	65 < or = F&EI < 95	6 < or = TI < 10
III	F&EI > or = 95	TI > or = 10

Certain basic minimum preventive and protective measures are recommended for the three hazard categories.

❖ **Results of FE and TI for Storage/Process Units**

Based on the GOI Rules 1989, the hazardous fuels and chemicals used by the proposed expansion project were identified. Fire and Explosion are the likely hazards, which may occur due to the fuel and chemical storage. Hence, Fire and Explosion index has been calculated for in plant storage. Detailed estimates of FE&TI are given in **Table-7.9.**

Table 7-9 FIRE EXPLOSION AND TOXICITY INDEX FOR STORAGE FACILITIES

Sl. No.	Chemical/ Fuel	Total Capacity (KL)	F&EI	Category	TI	Category
1	HSD	6 x 0.2	1.1	Light	Nil	-

Conclusion

Results of FE & TI analysis show that the storage of HSD falls into ***Light*** category of fire and explosion index with a ***Nil*** toxicity index.

7.2.7 MAXIMUM CREDIBLE ACCIDENT (MCA) ANALYSIS

Hazardous substances may be released as a result of failures or catastrophes, causing possible damage to the surrounding area. This section deals with the question of how the consequences of the release of such substances and the damage to the surrounding area can be determined by means of models. Major hazards posed by flammable storage can be identified taking recourse to MCA analysis. MCA analysis encompasses certain techniques to identify the hazards and calculate the consequent effects in terms of damage distances of heat radiation, toxic releases, vapour cloud explosion, etc. A host of probable or potential accidents of the major units in the complex arising due to use, storage and handling of the hazardous materials are examined to establish their credibility. Depending upon the effective hazardous attributes and their impact on the event, the maximum effect on the surrounding environment and the respective damage caused can be assessed. The reason and purpose of consequence analysis are many folds like:

- Part of Risk Assessment;
- Plant Layout/Code Requirements;
- Protection of other plants;
- Protection of the public;
- Emergency Planning; and
- Design Criteria.

The results of consequence analysis are useful for getting information about all known and unknown effects that are of importance when some failure scenario occurs in the plant and also to get information as how to deal with the possible catastrophic events. It also gives the workers in the plant and people living in the vicinity of the area, an understanding of their personal situation.

Selected Failure Cases

The purpose of this listing is to examine consequences of such failure individually or in combination. It will be seen from the list that a vast range of failure cases have been identified. The frequency of occurrence of failure also varies widely. Guillotine failure of a pipeline of higher sizes has a low frequency of occurrence.

Damage Criteria

The fuel storage and unloading at the storage facility may lead to fire and explosion hazards. The damage criteria due to accidental release of any hydrocarbon arise from fire and explosion. The vapours of these fuels are not toxic and hence no effects of toxicity are expected.

Tank fire would occur if the radiation intensity is high on the peripheral surface of the tank leading to increase in internal tank pressure. Pool fire would occur when fuel collected in the dyke due to leakage gets ignited.

Fire Damage

A flammable liquid in a pool will burn with a large turbulent diffusion flame. This releases heat based on the heat of combustion and the burning rate of the liquid. A part of the heat is radiated while the rest is convicted away by rising hot air and combustion products. The radiations can heat the contents of a nearby storage or process unit to above its ignition temperature and thus result in a spread of fire. The radiations can also cause severe burns or fatalities of workers or fire fighters located within a certain distance. Hence, it will be important to know beforehand the damage potential of a flammable liquid pool likely to be created due to leakage or catastrophic failure of a storage or process vessel. This will help to decide the location of other storage/process vessels, decide the type of protective clothing the workers / fire fighters need, the duration of time for which they can be in the zone, the fire extinguishing measures needed and the protection methods needed for the nearby storage/process vessels. Table 7-10 tabulates the damage effect on equipment and people due to thermal radiation intensity.

Table 7-10 Damage due to incident radiation intensities

Sl. No.	Incident Radiation (kW/m^2)	Type of Damage Intensity	
		Damage to Equipment	Damage to People
1	37.5	Damage to process equipment	100% lethality in 1 min. 1% lethality in 10 sec.
2	25.0	Minimum energy required to ignite wood at indefinitely long exposure without a flame	50% Lethality in 1 min. Significant injury in 10 sec.
3	19.0	Maximum thermal radiation intensity allowed on thermally unprotected adjoining equipment	--
4	12.5	Minimum energy to ignite with a flame; melts plastic tubing	1% lethality in 1 min.
5	4.5	--	Causes pain if duration is longer than 20 sec, however blistering is un-likely (First degree burns)
6	1.6	--	Causes no discomfort on long exposures

The effect of incident radiation intensity and exposure time on lethality is given in Table 7-11

Table 7-11 Radiation exposure and lethality

Radiation Intensity (kW/m^2)	Exposure Time (seconds)	Lethality (%)	Degree of Burns
1.6	--	0	No Discomfort even after long exposure
4.5	20	0	1 st
4.5	50	0	1 st
8.0	20	0	1 st
8.0	50	<1	3 rd
8.0	60	<1	3 rd
12.0	20	<1	2 nd
12.0	50	8	3 rd
12.5	--	1	--
25.0	--	50	--
37.5	--	100	--

Fuel Storage

The details of storages in the proposed expansion project are given *Table-7.2*. In case of fuel released in the area catching fire, a steady state fire will occur.

Modeling Scenarios

Based on the storage and consumption of fuels, the following failure scenarios for the proposed expansion project have been identified and the scenarios are discussed in Table 7-13. The fuel properties considered in modeling are given in Table 7-12.

Table 7-12 Properties of Fuels Considered for Modeling

Sl. No.	Fuel	Molecular weight (kg/kg mol)	Boiling Point (°F)	Density (kg/m³)
1	HSD	135	216	840

Table 7-13 Scenarios considered

IS No	Description	Scenario
Isolable Section 01	Diesel tanks (01-06)	Pool fire
Isolable Section 02	Diesel Transfer hose failure	Pool fire

LSIR contour was not generated even for the lowest risk level of 1E-09 per year. The reason behind is that the inventory is far less in quantity (1.2 m^3). This is only in terms of risk point of view.

Whereas in Consequence point of view, the following factor shall be taken in to consideration even though the risk is governing,

1) It is observed that the dyke is not constructed around the HSD tanks. COMPANY shall construct a dyke as industry best practice to contain any spillage in case of any leak
2) Diesel tanks are located much adjacent to building. In an event of fire, the generated smoke will ingress via duct or open windows (if any) and places people under smoke hazard. Recommended to shift the location tanks to an isolated area.
3) The vent of Diesel tanks (if available) shall be routed outside of vicinity of any ignition source i.e any electrical equipment/circuit as the natural vents are considered to be of primary source of release of flammable mixture and forms a Zone 1 radius upto 1 meter around the vent release as per Energy Institute's Model code of safe practice Part 15, Area classification for installations handling flammable fluids.

F-N Curve

F-N graph was not generated as the consequence effect isnt reaching any offsite population. The worst case consequence contours are presented to support the above assessment.

Consequence Table

a. Leak Sizes
b. Minor Leak
c. Small Leak
d. Medium Leak
e. Full Bore Rupture

Notation Example: IS 01a – Isolable Section 01 "Minor leak"

❖ ***Results and Discussion***

The results of Individual risks are tabulated in the consequence Table 7-14. The distances computed for various scenarios are from the center of the pool fire are shown in Figure 7-3 to Figure 7-6.

Table 7-14 Occurrence of various radiation intensities - pool fire

Isolable Section	Scenario	Weather	Jet Fire Downwind Hazard (m)			Flash Fire Downwind hazard (m)		Pool Fire Downwind Hazard (m)			Fire Ball Hazard (m)		
			4 kW/ m^2	12.5 kW/m^2	37.5 kW/m^2	LFL	0.5 LFL	4 kW/ m^2	12.5 kW/m^2	37.5 kW/m^2	4 kW/m^2	12.5 kW/m^2	37.5 kW/m^2
IS 01	10mm	Category 2/F	NR	NR	NR	NR	NR	35	21	13	NR	NR	NR
		Category 5/D	NR	NR	NR	NR	NR	36	23	13	NR	NR	NR
	CR	Category 2/F	NR	NR	NR	NR	NR	34	19	12	NR	NR	NR
		Category 5/D	NR	NR	NR	NR	NR	35	20	12	NR	NR	NR
IS 02	5mm	Category 2/F	NR	NR	NR	NR	NR	36	23	15	NR	NR	NR
		Category 5/D	NR	NR	NR	NR	NR	39	27	16	NR	NR	NR
	FBR	Category 2/F	NR	NR	NR	NR	NR	44	27	20	NR	NR	NR
		Category 5/D	NR	NR	NR	NR	NR	45	27	20	NR	NR	NR

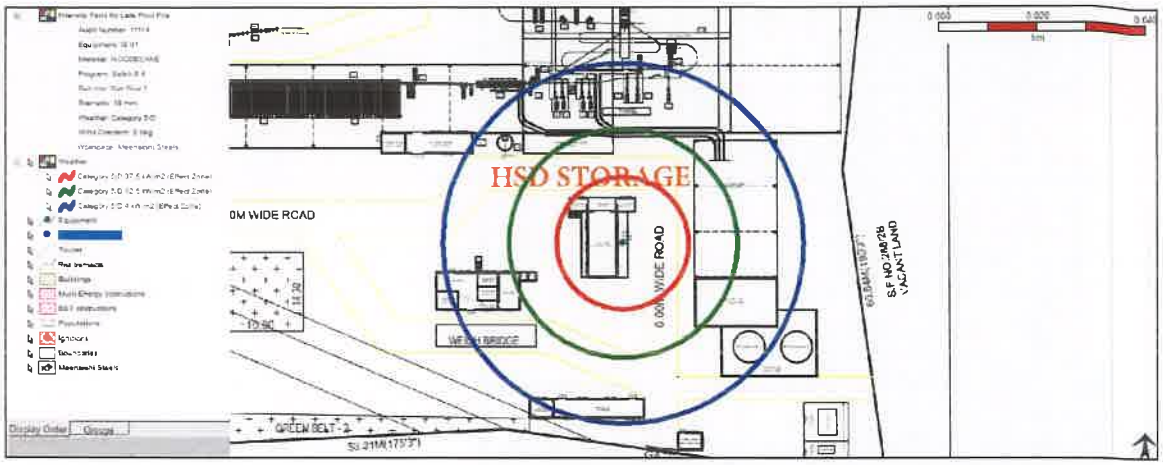


Figure 7-3 Consequence Contours – Worst Case IS 01a – Pool Fire

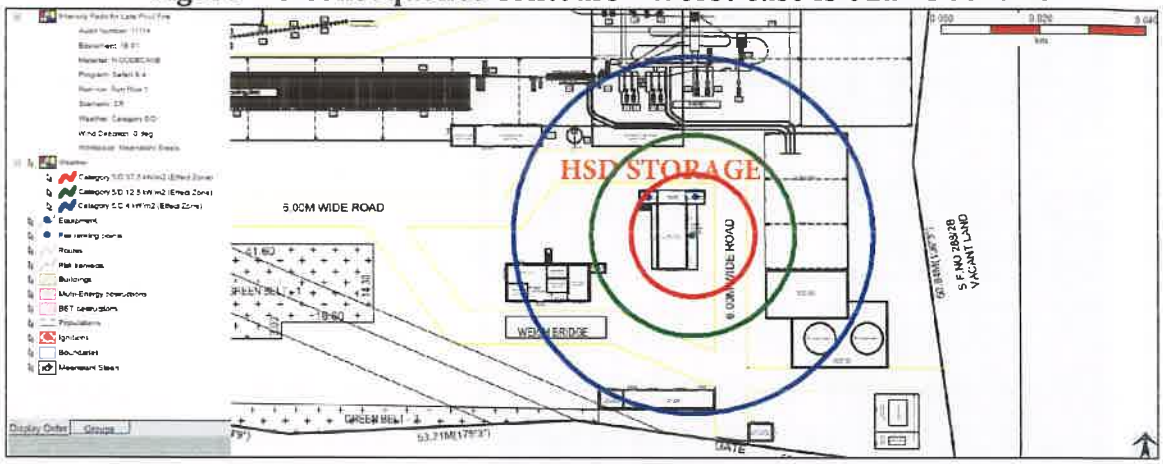


Figure 7-4 Consequence Contours – Worst Case IS 01 -CR-Pool Fire

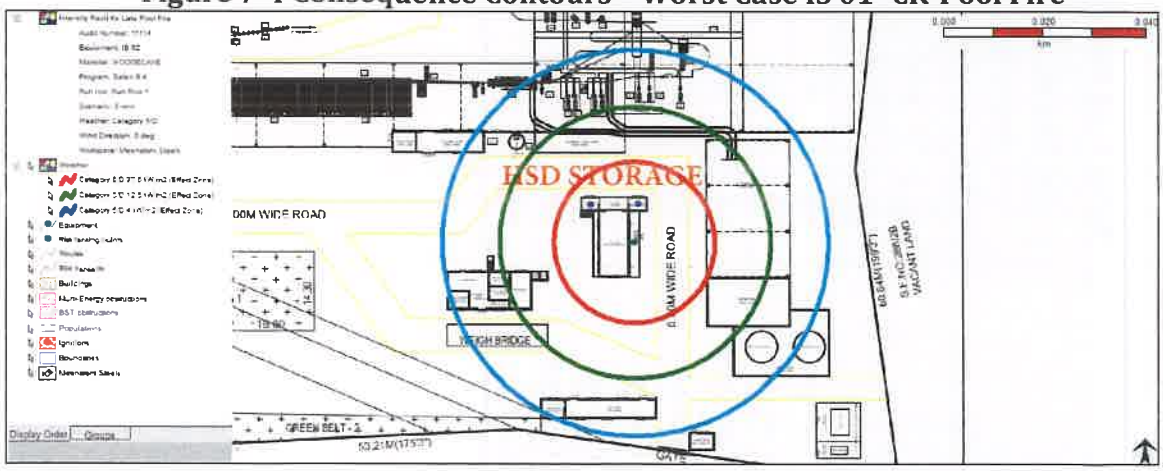


Figure 7-5 Consequence Contours – Worst Case IS 02a – Pool Fire

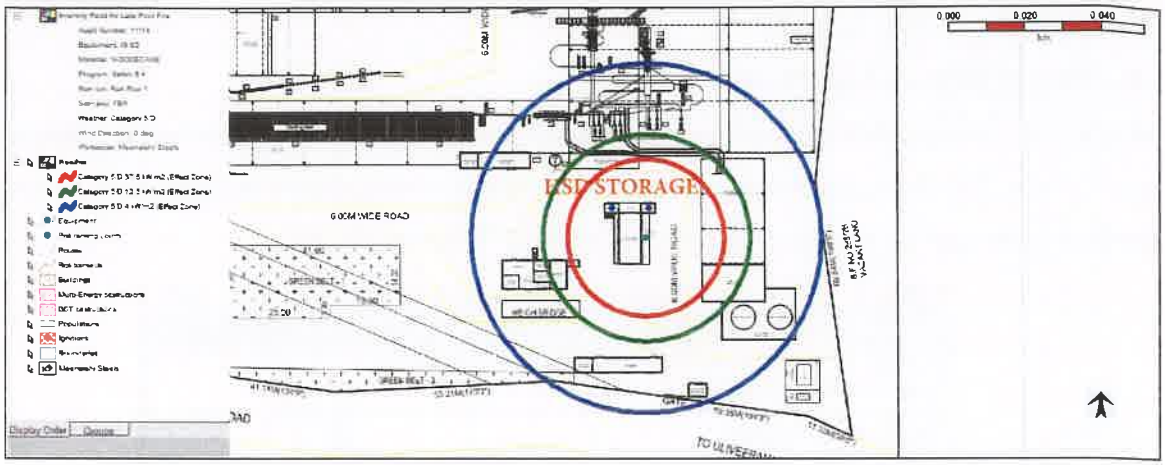


Figure 7-6 Consequence Contours – Worst Case IS 02-FBR – Pool Fire

❖ **Risk Assessment Summary**

The preliminary risk assessment has been completed for the proposed expansion of Steel Rolling Mill and associated facilities:

- There will be no significant community impacts or environmental damage consequences; and
- The hazardous event scenarios and risks in general at this facility can be adequately managed to acceptable levels by performing the recommended safety studies as part of detailed design, applying recommended control strategies and implementing a Safety Management System.

7.3 DEMOGRAPHIC & SOCIO – ECONOMIC

For assessing the prevailing socio-economic aspects of people in the study area around the proposed expansion steel mill, the required data has been collected from various secondary sources and analyzed.

7.3.1.1 METHODOLOGY ADOPTED FOR THE STUDY

The methodology adopted for the study is primarily based on the review of secondary data, such as District Primary Census Statistical Handbook of Krishnagiri District, 2011 for the parameters of demography, occupational structure of people within the study area of 10km radius around the steel mill. The village wise demographic data as per 2011 census is presented in **Annexure - 14**. The salient features of the demographic and socio-economic aspects of the study area are described in the following sections.

7.3.2 DEMOGRAPHIC ASPECTS

❖ **Distribution of Population**

As per 2011 census the study area consisted of 7,22,946 persons inhabited in the 10km radius study area. The distribution of population in the study area is shown in Table 7-15. The males and females constitute about 53.57% and 46.31% of the study area.

Table 7-15 Distribution of Population in Study Area – 2011

Particulars	General Study Area
No. of Households	180855
Male Population	387317
Female Population	335629
Total Population	722946
Average Household Size (Persons)	4.00
Sex Ratio	866

Source: District Primary Census Hand Book – Krishnagiri District, 2011

Average Household Size

The study area had an average family size of 4.00 persons per household in 2011. This is moderate family size and is in comparison with the other parts of the district.

Sex Ratio

The configuration of male and female indicates that the males and females constituted about 53.57% and 46.43% of the total population respectively, as per 2011 census records. The study area on an average had 866 females per 1000 males as per 2011 census.

7.3.3 SOCIAL STRUCTURE

In the study area, as per 2011 census, 19.71% of the population belonged to Scheduled Castes (SC) and 2.24% to the Scheduled Tribes (ST). This indicates that a considerable share of population in the study area belong to weaker sections which works out to about 21.95% of the total population in 2011. The distribution of population in the study area by social structure is shown in Table 7-16.

Table 7-16 Distribution of Population By Social Structure – 2011

Sl. No.	Particulars	Population	Percentage (%)
1	Scheduled Castes	142519	19.71
2	Scheduled Tribes	16120	2.24
3	Other castes	564307	78.05
Total		722946	**100**

Source: District Primary Census Hand Book –Krishnagiri District, 2011

7.3.4 LITERACY LEVELS

The analysis of the literacy levels in the study area reveals a moderate literacy rate in the study area. The litrecy rate of the study area is 71.53% in 2011. If this is computed only for the people of above the age group of 5 years, i.e. the school going age people, this would considerably increase the literacy rates. The distribution of literates and literacy rates in the study area is given in Table 7-17

Table 7-17 Distribution of Literates and Literacy Rates – 2011

Sl. No.	Particulars	Study Area
1	Total Literates	517181
2	Average Literacy Rate (%)	71.53
3	Male Literates	297294
4	Male Literacy (%)	41.12
5	Female Literates	219887
6	Female Literacy (%)	30.41

Source: District Primary Census Hand Book – Krishnagiri District, 2011

7.3.5 OCCUPATIONAL STRUCTURE

The occupational structure of the study area is presented in Table 7-18.

Table 7-18 Occupational Structure – 2011

Sl. No.	Occupation	Study Area	
		Population	Percentage (%)
1	Total main workers	306616	42.41
	Male	231407	32.00
	Female	75209	10.40
2	Marginal workers	35475	4.90
	Male	19894	2.75
	Female	15581	2.15
3	Non-workers	380855	52.68
	Male	136016	18.81
	Female	244839	33.86
Total Population		**722946**	**100**

Source: District Primary Census Hand Book – Krishnagiri District, 2011

7.4 DISASTER MANAGEMENT PLAN

The operating unit of the company has got its own Disaster Management Plan. However, a comprehensive DMP is suggested herewith, which may be integrated with the existing DMP of the industry and implemented.

The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of the Disaster Management Plan, it should be widely circulated and personnel training through rehearsals/drills.

To tackle the consequences of a major emergency inside the factory or immediate vicinity of the factory, a Disaster Management Plan has to be formulated and this planned emergency document is called "Disaster Management Plan".

The objective of the Industrial Disaster Management Plan is to make use of the combined resources of the plant and the outside services to achieve the following:

- Effect the rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Identify any dead:
- Provide for the needs of relatives;
- Provide authoritative information to the news media;
- Secure the safe rehabilitation of affected area;
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the Emergency.

In effect, it is to optimize operational efficiency to rescue, rehabilitate and render medical help and to restore normalcy.

7.4.1 Specific Emergencies Anticipated

Fire consequences can be disastrous, since they involve huge quantities of fuel either stored or in dynamic inventory in tanks or in nearby areas. Fire intensity can affect persons working around. Preliminary hazard analysis has provided a basis for consequence estimation. In case of EOT failure while lifting the ladle leads to miss placement of hot metal on the castle. But generally these type of failure never occurs due to proper maintenance of EOT as per the statutory requirement.

7.4.2 Emergency Organization

It is recommended to set up an Emergency Organization. A senior executive who has control over the affairs of the proposed plant would be heading the Emergency Organization. He would be designated at Site Controller. Production Manager would be designated as the Incident Controller. In the case of stores, utilities, open areas, which are not under the control

of the Production Heads, Senior Executive responsible for maintenance of utilities would be designated as Incident Controller. All the Incident Controllers would be reporting to the Site Controller.

Each Incident Controller, for himself organizes a team responsible for controlling the incidence with the personnel under his control. Shift In-charge would be the reporting officer, who would bring the incidence to the notice of the Incidence Controller and Site Controller.

Emergency Co-ordinators would be appointed who would undertake the responsibilities like fire fighting, rescue, rehabilitation, transport and provide essential and support services. For this purposes, Security In-charge, Personnel Department, Essential services personnel would be engaged. All these personnel would be designated as Key personnel.

In each shift, electrical supervisor, electricians and other maintenance staff would be drafted for emergency operations. In the event of power or communication system failure, some of staff members in the plant offices would be drafted and their services would be utilized as messengers for quick passing of communications. All these personnel would be declared as essential personnel.

7.4.3 Emergency Communication

Whoever notices an emergency situation such as fire, escalation of fire, leakage etc. would inform his immediate superior and Emergency Control Center. A place nearer to the security office / Admin Block shall be identified as Emergency Control Center. The person on duty in the Emergency Control Center would appraise the Site Controller. Site Controller verifies the situation from the Incident Controller of that area or the Shift In-charge and takes a decision about an impending On Site Emergency. This would be communicated to all the Incident Controllers, Emergency Co-ordinators. Simultaneously, the emergency warning system would be activated on the instructions of the Site Controller.

7.4.4 Emergency Responsibilities

The responsibilities of the key personnel are appended below:

❖ **Site Controller**

On receiving information about emergency he would rush to Emergency Control Center (ECC) and take charge of ECC and the situation and;

- Assesses the magnitude of the situation on the advice of incident Controller and decides;
- Whether the affected area needs to be evacuated;
- Whether personnel who are at assembly points need to be evacuated;
- Declare Emergency and order for operation of emergency siren;

- Organizes announcement by public address system about location of emergency;
- Assesses which areas are likely to be affected, or need to be evacuated or are to be alerted;
- Maintains a continuous review of possible development and assesses the situation in consultation with Incident Controller and other Key Personnel as to whether shutting down the plant or any section of the plant required and if evacuation of persons is required;
- Directs personnel for Rescue, rehabilitation, transport, fire, brigade, medical and other designated mutual support systems locally available, for meeting emergencies;
- Controls evacuation of affected areas, if the situation is likely to go out of control or effects are likely to go beyond the premises of the factory, inform the District Emergency Authority, Police, Hospital and seeks their intervention and help;
- Inform the Inspector of Factories, Deputy Chief Inspector of Factories, TNPCB and other statutory authorities;
- Give a public statement if necessary;
- Keep record of chronological events and prepares an investigation report and preserve evidence;
- On completion of On Site Emergency and restoration of normalcy, declares all clear and orders for all clear warning.

❖ **Incident Controller**

- Assembles the incident control team;
- Directs operations within the affected areas with the priorities for safety to personnel minimize damage to the plant, property and environment and minimize the loss of materials;
- Directs the shutting down and evacuation of plant and areas likely to be adversely affected by the emergency;
- Ensure that key personnel help is sought;
- Provides advice and information to the Fire and Security Officer and the Local Fire Services as and when they arrive;
- Ensures that all non-essential workers/staff of the affected areas evacuated to the appropriate assembly points, and the areas are searched for casualties;
- Has regard to the need for preservation of evidence so as to facilitate any inquiry into the caused and circumstances, which caused or escalated the emergency;

- Co-ordinates with emergency services at the site;
- Provides tools and safety equipment to the team members;
- Keeps in touch with the team and advise them regarding the method of control to be used;
- Keeps the Site Controller of Emergency informed of the progress being made.

❖ **Emergency Coordinator – Rescue & Fire Fighting**

- Helps the incident Controller in containment of the emergency;
- Ensure fire pumps in operating conditions and instructs pump house operator to ready for any emergency with standby arrangement;
- Guides the fire fighting crew i.e. firemen, trained plant personnel and security staff;
- Organizes shifting the fire fighting facilities to the emergency site, if required;
- Takes guidance of the Incident Controller for fire fighting as well as assesses the requirements of outside help;
- Arranges to control the traffic at the gate and the incident area;
- Directs the security staff to the incident site to take part in the emergency operations under his guidance and supervision;
- Evacuates the people in the plant or in the nearby areas as advised by Site Controller;
- Searches for casualties and arranges proper aid for them;
- Assembles search and evacuation team;
- Arranges for safety equipment for the members of this team;
- Decides which paths the evacuated workers should follow;
- Maintains law and order in the area, and if necessary seeks the help of police.

❖ **Emergency Coordinator - Medical, Mutual Aid, Rehabilitation, Transport & Communication**

- In the event of failure of electric supply and thereby internal telephone, sets up communication point and establishes contact with the ECC;
- Organizes medical treatment to the injured and if necessary will shift the injured to nearby hospitals;
- Mobilizes extra medical help from outside, if necessary;
- Keeps a list of qualified first aid providers of the factory and seek their assistance;
- Maintains first aid and medical emergency requirements;
- Makes sure that all safety equipment is made available to the emergency team;
- Assists Site Controller with necessary data and to coordinate the emergency activities;

- Assists Site Controller in updating emergency plan, organizing mock drills verification of inventory of emergency facilities and furnishing report to Site Controller;
- Maintains liaison with Civil Administration;
- Ensure availability of canteen facilities and maintenance of rehabilitation centre;
- He will be in liaison with Site Controller/Incident Controller;
- Ensure transportation facility;
- Ensures availability of necessary cash for rescue/rehabilitation and emergency expenditure;
- Controls rehabilitation of affected areas on discontinuation of emergency;
- Makes available diesel/petrol for transport vehicles engaged in emergency operation.

❖ **Emergency Coordinator - Essential Services**

- He would assist Site Controller and Incident Controller;
- Maintains essential services like Diesel Generator, Water, Fire Water, Compressed Air/Instrument Air, power supply for lighting;
- He would plan alternate facilities in the event of power failure, to maintain essential services such as lighting, refrigeration plant etc.;
- He would organize separate electrical connections for all utilities and emergency services so that in the event of emergency or fires, essential services and utilities are not affected;
- Gives necessary instructions regarding emergency electrical supply, isolation of certain sections etc. to shift in-charge and electricians;
- Ensures availability of adequate quantities of protective equipment and other emergency materials, spares etc.;

❖ **General Responsibilities of Employees during an Emergency**

During an emergency, it becomes more enhanced and pronounced when an emergency warning is raised, the workers if they are in-charge of process equipment should adopt safe and emergency shut down and attend any prescribed duty as essential employee. If no such responsibility is assigned, he should adopt a safe course to assembly point and await instructions. He should not resort to spread panic. On the other hand, he must assist emergency personnel towards objectives of DMP.

7.4.5 EMERGENCY FACILITIES

❖ **Emergency Control Center (ECC)**

Office Block near to the main office is identified as Emergency Control Center. It would have external Telephone, Fax and e-mail facility. All the Site Controller/ Incident Controller Officers, Senior Personnel would be located here. Also, it would be an elevated place. The following information and equipment are to be provided at the Emergency Control Center (ECC).

- Intercom Telephone
- P & T Telephone
- Safe contained breathing apparatus
- Fire suit / gas tight goggles / gloves / helmets
- Hand tools, wind direction / velocities indications
- Public address megaphone, hand bell, telephone directories
- Internal P & T factory layout, site plan
- Emergency lamp / torch light / batteries
- Plan indicating locations of hazard inventories, plant control room, sources of safety equipment, work road plan, assembly points, rescue location vulnerable zones, escape routes
- Hazard chart
- Emergency shut-down procedures
- Nominal roll of employees
- List of key personnel, list of essential employees, list of Emergency Co-ordinators
- Duties of key personnel
- Address with telephone numbers and key personnel, emergency coordinator, essential employees
- Important address and telephone numbers including Government agencies, neighbouring industries and sources of help, outside experts, chemical fact sheets population details around the factory

❖ **Assembly Point**

Number of assembly depending upon the plant location would be identified wherein employees who are not directly connected with the disaster management would be assembled for safety and rescue. Emergency breathing apparatus, minimum facilities like water etc. would be organized.

In view of the size of plant, different locations are ear marked as assembly points. Depending upon the location of hazard, the assembly points are to be used.

❖ **Fire Fighting Facilities**

Fire fighting equipment suitable for emergency should be maintained in each section in the plant. This would be as per statutory requirements. Fire alarms would be located in the bulk storage areas. Fire officer will be the commanding officer of fire fighting services.

❖ **Location of Wind Sock**

On the top of the production block windsocks shall be installed to indicate direction of wind for emergency escape.

❖ **Emergency Medical Facilities**

Stretchers, gas masks and general first aid materials for dealing with fire burns would be maintained in the emergency control room. Medical superintendent of the plant will be the head of the casualty services ward. Private medical practitioners help would be also sought. Government hospital would be approached for emergency help.

Apart from plant first aid facilities, external facilities would be augmented. Names of Medical Personnel, Medical facilities in the area would be prepared and updated. Necessary specific medicines for emergency treatment of Burns Patients and for those affected by toxicity would be maintained.

Breathing apparatus and other emergency medical equipment would be provided and maintained. The help of nearby industrial management in this regard would be taken on mutual support basis.

7.4.6 EMERGENCY ACTIONS

❖ **Emergency Warning**

Communication of emergency would be made familiar to the personnel inside the plant and people outside. An emergency warning system shall be established.

❖ **Emergency Shutdown**

There are number of facilities which can be provided to help deal with hazardous conditions, when a tank is on fire. The suggested arrangements are:

1. Stop the production;
2. Dilute contents;
3. Remove heat;
4. Deluge with water; and
5. Transfer contents.

Whether a given method is appropriate depends on the particular case. Cessation of agitation may be the best action in some instances but not in others. Stopping of the feed may require the provision of bypass arrangements.

Methods of removing additional heat include removal through the normal cooling arrangements or use of an emergency cooling system. Cooling facilities, which use vapouring liquid, may be particularly effective, since a large increase in vaporization can be obtained by dropping pressure.

❖ **Evacuation of Personnel**Error! Bookmark not defined.

There could be more number of persons in the storage area and other areas in the vicinity. The area would have adequate number of exits, staircases. In the event of an emergency, unconnected personnel have to escape to assembly point. Operators have to take emergency shutdown procedure and escape. Time Office maintains a copy of deployment of employees in each shift, at ECC. If necessary, persons can be evacuated by rescue teams.

❖ **All Clear Signal**

Also, at the end of an emergency, after discussing with Incident Controllers and Emergency Co-ordinators, the Site Controller orders an all clear signal. When it becomes essential, the Site Controller communicates to the District Emergency Authority, Police, Fire Service personnel regarding help required or development of the situation into an Off-Site Emergency.

❖ **Employee Information**

During an emergency, employees would be warned by raising siren in specific pattern. Employees would be given training of escape routes, taking shelter, protecting from toxic effects. Employees would be provided with information related to fire hazards, antidotes and first aid measures. Those who would be designated as key personnel and essential employees should be given training to emergency response.

❖ **Public Information and Warning**

The industrial disaster effects related to this plant may mostly be confined to the plant area. The detailed risk analysis has indicated that the pool fire effects would not be felt outside. However, as an abundant precaution, the information related to chemicals in use would be furnished to District Emergency Authority for necessary dissemination to general public and for any use during an offsite emergency. Factories of this size and nature are in existence in our state since long time.

❖ **Co-ordination with Local Authorities**

Keeping in view of the nature of emergency, two levels of coordination are proposed. In the case of an On Site Emergency, resources within the organization would be mobilized and in the event extreme emergency local authorities help should be sought.

In the event of an emergency developing into an offsite emergency, local authority and District Emergency Authority (normally the Collector) would be appraised and under his supervision, the Off Site Disaster Management Plan would be exercised. For this purpose, the facilities that are available locally, i.e. medical, transport, personnel, rescue accommodation, voluntary organizations etc. would be mustered. Necessary rehearsals and training in the form of mock drills should be organized.

❖ **Mutual Aid**

Mutual aid in the form of technical personnel, runners, helpers, special protective equipment, transport vehicles, communication facility etc. should be sought from the neighbouring industrial management.

❖ **Mock Drills**

Emergency preparedness is an important on that of planning in Industrial Disaster Management. Personnel would be trained suitably and prepared mentally and physically in emergency response through carefully planned, simulated procedures. Similarly, the key personnel and essential personnel should be trained in the operations.

❖ **Important Information**

Important information such names and addresses of key personnel, essential employees, medical personnel, outside the plant, transporters address, address of those connected with Off Site Emergency such as Police, Local Authorities, Fire Services, District Emergency Authority should be prepared and maintained.

7.4.7 Off-Site Emergency Preparedness Plan

Off-site emergency plan follows the on-site emergency plan. When the consequences of an emergency situation go beyond the plant boundaries, it becomes an off-site emergency. Off-site emergency is essentially the responsibility of the public administration. However, the factory management will provide the public administration with the technical information relating to the nature, quantum and probable consequences on the neighbouring population. The off-site plan in detail will be based on those events, which are most likely to occur, but other less likely events, which have severe consequence, will also be considered. Incidents which have very severe consequences yet have a small probability of occurrence should also

be considered during the preparation of the plan. However, the key feature of a good off-site emergency plan is flexibility in its application to emergencies other than those specifically included in the formation of the plan.

The roles of the various parties who will be involved in the implementation of an off-site plan are described below. Depending on local arrangements, the responsibility for the off-site plan should be either rest with the works management or, with the local authority. Either way, the plan should identify an emergency co-ordinating officer, who would take the overall command of the off-site activities. As with the on-site plan, an emergency control center should be setup within which the emergency co-ordinating officer can operate.

An early decision will be required in many cases on the advice to be given to people living "within range" of the accident - in particular whether they should be evacuated or told to go indoors. In the latter case, the decision can regularly be reviewed in the event of an escalation of the incident. Consideration of evacuation may include the following factors:

a. In the case of a major fire but without explosion risk (e.g. an oil storage tank), only houses close to the fire are likely to need evacuation, although a severe smoke hazard may require this to be reviewed periodically;
b. If a fire is escalating and in turn threatening a store of hazardous material, it might be necessary to evacuate people nearby, but only if there is time; if insufficient time exists, people should be advised to stay indoors and shield them from the fire. This latter case particularly applies if the installation at risk could produce a fireball with vary severe thermal radiation effects;
c. For release or potential release of toxic materials, limited evacuation may be appropriate downwind if there is time. The decision would depend partly on the type of housing "at risk". Conventional housing of solid construction with windows closed offers substantial protection from the effects of a toxic cloud, while shanty house, which can exist close to factories, offer little or no protection.

The major difference between releases of toxic and flammable materials is that toxic clouds are generally hazardous down to much lower concentrations and therefore hazardous over greater distances. Also, a toxic cloud drifting at, say 300m per minute covers a large area of land very quickly. Any consideration of evacuation should take this into account. Although the plan will have sufficient flexibility built in to cover the consequences of the range of accidents identified for the on-site plan, it will cover in some detail the handling of the emergency to a particular distance from each major hazard works.

7.4.7.1 Aspects Proposed to be considered in the Off-Site Emergency Plan

The main aspects, which should be included in the emergency plan, are:

- **Organization**

  Details of command structure, warning systems, implementation procedures, emergency control centres. Names and appointments of incident controller, site main controller, their deputies and other key personnel.

- **Communications**

  Identification of personnel involved, communication center, call signs, network, list of telephone numbers.

- **Specialized knowledge**

  Details of specialist bodies, firms and people upon whom it may be necessary to call e.g. those with specialized chemical knowledge, laboratories.

- **Voluntary organizations**

  Details of organizers, telephone numbers, resources etc.

- **Chemical Information**

  Details of the hazardous substances stored or procedure on each site and a summary of the risk associated with them.

- **Meteorological information**

  Arrangements for obtaining details of weather conditions prevailing at the time and weather forecasts.

- **Humanitarian arrangements**

  Transport, evacuation centres, emergency feeding treatment of injured, first aid, ambulances and temporary mortuaries.

- **Public information**

  Arrangements for dealing with the media press office and informing relatives, etc.

- **Assessment of emergency plan**

  Arrangements for:

  - Collecting information on the causes of the emergency;
  - Reviewing the efficiency and effectiveness of all aspects of the emergency plan.

7.4.7.2 Role of the Emergency Co-ordinating Officer

The various emergency services should be co-ordinated by an Emergency Co-ordinating Officer (ECO), who will be designated by the District Collector. The ECO should liaison closely with the site main controller. Again depending on local arrangements, for very severe incidents with major or prolonged off-site consequences, the external control should be

passed to a senior local authority administrator or even an administrator appointed by the central or state government.

7.4.7.3 Role of the Local Authority

The duty to prepare the off-site plan lies with the local authorities. The Emergency Planning Officer (EPO) appointed should carry out his duty in preparing for a whole range of different emergencies within the local authority area. The EPO should liaison with the works, to obtain the information to provide the basis for the plan. This liaison should ensure that the plan is continually kept up to date.

It will be the responsibility of the EPO to ensure that all those organizations, which will be involved off site in handling the emergency, know of their role and are able to accept it by having for example, sufficient staff and appropriate equipment to cover their particular responsibilities. Rehearsals for off-site plans should be organized by the EPO.

7.4.7.4 Role of Police

Formal duties of the police during an emergency include protecting life and property and controlling traffic movements. Their functions should include controlling bystanders evacuating the public, identifying the dead and dealing with casualties, and informing relatives of death or injury.

7.4.7.5 Role of Fire Authorities

The control of a fire should be normally the responsibility of the senior fire brigade officer who would take over the handling of the fire from the site incident controller on arrival at the site. The senior fire brigade officer should also have a similar responsibility for other events, such as explosions and toxic release. Fire authorities in the region should be apprised about the location of all stores of flammable materials, water and foam supply points, and fire-fighting equipment. They should be involved in on-site emergency rehearsals both as participants and, on occasion, as observers of exercises involving only site personnel.

7.4.7.6 Role of Health Authorities

Health authorities, including doctors, surgeons, hospitals, ambulances, and so on, should have a vital part to play following a major accident, and they should form an integral part of the emergency plan.

For major fires, injuries should be the result of the effects of thermal radiation to a varying degree, and the knowledge and experience to handle this in all but extreme cases may be generally available in most hospitals. For major toxic releases, the effects vary according to the chemical in question, and the health authorities should be apprised about the likely toxic

releases from the plant, which will unable then in dealing with the aftermath of a toxic release with treatment appropriate to such casualties. Major off-site incidents are likely to require medical equipment and facilities additional to those available locally, and a medical "mutual aid" scheme should exist to enable the assistance of neighbouring authorities to be obtained in the event of an emergency.

7.4.7.7 Role of Government Safety Authority

This will be the factory inspectorate available in the region. Inspectors are likely to satisfy themselves that the organization responsible for producing the off-site plan has made adequate arrangements for handling emergencies of all types including major emergencies. They may wish to see well-documented procedures and evidence of exercise undertaken to test the plan.

In the event of an accident, local arrangements regarding the role of the factory inspector will apply. These may vary from keeping a watching brief to a close involvement in advising on operations in case involvement in advising on operations. In cases where toxic gases may have been released, the factory inspectorate may be the only external agency with equipment and resources to carry out tests.

7.5 OCCUPATIONAL HEALTH AND SAFETY

A few major anticipated occupational health and safety hazards are enlisted below;

- Fire and electrical hazards
- Increased risk of communicable diseases due to water contamination
- Injuries associated with construction activities
    - ❖ Dust generation points/places
    - ❖ Working in heights
    - ❖ Over exertion
    - ❖ Moving machinery
    - ❖ Smoke by objects

7.5.1 Occupational Health

Occupational health needs attention both during construction and operation phases. However, the problem varies both in magnitude and variety in the above phases.

- **Construction Phase**

The occupational health problems envisaged at this stage can mainly be due to constructional accident and noise. Safety provisions will be made to conform to health/safety requirements

by the contractor. Provisions like preventive protection equipments will be provided to workers for their protection and safety.

- **Operation phase**

The problem of occupational health, in the operation phase is due to disorders due to emission, noise and industrial accidents. Suitable personnel protective equipment should be given to the required employees. The working personnel should be given the following appropriate personnel protective equipment.

- Industrial Safety Helmet
- Face shield with replacement acrylic vision
- Zero power plain goggles with cut type filters on both ends
- Zero power goggles with cut type filters on both sides and blue colour glasses
- Welders equipment for eye and face protection
- Cylindrical type earplug
- Ear muffs
- Canister Gas mask
- Self- contained breathing apparatus
- Leather apron
- Aluminized fiber glass fix proximity suit with hood and gloves
- Safety belt/line man's safety belt
- Leather hand gloves
- Asbestos hand gloves
- Canvas cum leather hand gloves with leather palm
- Electrically tested electrical resistance hand gloves
- Industrial safety shoes with steel toe
- Electrical safety shoes without steel toe and gum boots

A full fledge health centre facilities is available round the clock for attending emergency arising out of accidents, if any. All working personnel are medically examined at least once in every year and the records are maintained. The above examination covers Blood Test, Urine Test, Spirometry, Vision Testing and opinion by practising Doctor.

It is proposed add pre-employment medical examination for all the employees before they join into duty. Moreover, the scope of the medical examination will also be improved with tests like Chest X-ray, Audiometry, Vision Testing (Far & Near vision, colour vision and any other ocular defect) and ECG.

7.5.2 SAFETY

Safety of both men and materials during the construction and operation phase of the industry is of concern. The preparedness of an industry for the occurrence of possible disasters is known as emergency plan.

❖ **Safety Plan**

The disaster in Steel Rolling Mill plant is possible due to spillage of liquid metal, collapse of induction furnace, collapse of structures, fire/explosion, etc. The details of the fire fighting equipment installed are given below:

- Fire Extinguisher - Dry Chemical Powder (DCP) Type
- Fire Extinguisher - CO_2 Type
- Fire Extinguisher - Foam Type
- Fire Extinguisher - Soda Acid Type
- Fire buckets

The fire extinguishers are located all over the building for immediate use. Fire extinguishers are provided in DG room, MCC room, Furnace platform, Laboratory, Process area and Storage room. The type of hand appliances provided is such that the fire extinguishers can be directly taken and used for firefighting purpose at any location inside the building. Keeping in view the safety requirement during construction, operation and maintenance phases at the Steel Rolling Mill plant should formulated safety policy with the following regulations:

- To take steps to ensure that all known safety factors are taken into account in the design, construction, operation and maintenance of plants, machinery and equipment.
- To ensure that adequate safety instructions are given to all employees.
- To provide wherever necessary protective equipment, safety appliances and clothing, and to ensure their proper use.
- To inform employees about materials, equipment or processes used in their work, which are known to be potentially hazardous to health or safety.
- To keep all operations and methods of work under regular review for making necessary changes from the point of view of safety in the light of experience and upto date knowledge.
- To provide appropriate facilities for first aid and prompt treatment of injuries and illness at work.

- To provide appropriate instruction, training, retraining and supervision to employees in health and safety, first aid and to ensure that adequate publicity is given to these matters.
- To ensure proper implementation of fire prevention methods and an appropriate fire fighting service together with training facilities for personnel involved in this service.
- To promote through the established machinery, joint consultation in health and safety matters to ensure effective participation by all employees.
- To publish/notify regulations, instructions and notices in the common language of employees.
- To prepare separate safety rules for each type of occupation/processes involved in the project.
- To ensure regular safety inspection by a competent person at suitable intervals of all buildings, equipment, work places and operations.

❖ **Safety Organization**

During the construction and operation of proposed buildings, the posting of safety officers should be in accordance with the requirement of Factories Act and their duties and responsibilities should be as defined thereof.

❖ **Safety Circle**

In order to develop the capabilities of the employees in identification of hazardous processes and improving safety and health, safety circles would be constituted in each area of work. The circle would consist of 5-6 employees from that area. The circle normally should meet for about an hour every week.

❖ **Safety Training**

A full-fledged training center should be set up at the plant. Safety training should be provided by the Safety Officer with the assistance of faculty members called from Professional Safety Institutions and Universities. In addition to regular employees, limited contractor labours should also be provided safety training. To create safety awareness safety films should be shown to workers and provide leaflets etc. Some precautions and remedial measures proposed to be adopting to prevent fires are:

- Compartmentation of cable galleries, use of proper sealing techniques of cable passages and crevices in all directions would help in localizing and identifying the

area of occurrence of fire as well as ensure effective automatic and manual fire fighting operations;

- Spread of fire in horizontal direction would be checked by providing fire stops for cable shafts;
- Reliable and dependable type of fire detection system with proper zoning and interlocks for alarms are effective protection methods for conveyor galleries.
- Housekeeping of high standard helps in eliminating the causes of fire and regular fire watching system strengthens fire prevention and fire fighting; and
- Proper fire watching by all concerned would be ensured.

❖ **Health and Safety Monitoring Plan**

All the potential occupational hazardous work places such as induction furnaces, transformers, casting machine, fuel storage areas, etc. should be monitored regularly. The health of employees working in these areas should be monitored once in a year for early detection of any ailment due to exposure to hazardous chemicals.

8 PROJECT BENEFITS

8.1 IMPROVEMENT IN THE PHYSICAL INFRASTRUCTURE

The impacts of the proposed expansion of steel mill on the civic amenities are substantial. The basic requirement of the community needs will be strengthened by extending health care, educational facilities to the community, strengthening of existing roads in the area. Meenakshi Udyog (India) Pvt. Ltd. will initiate the above amenities either by providing or by improving the facilities in the area, which will help in uplifting the living standards of local communities.

The proposed project will have numerous induced impacts on services to transport. With improved transportation facilities, there is always a scope for development. The communication facilities will improve after the expansion of steel mill operations.

8.2 IMPROVEMENT IN THE SOCIAL INFRASTRUCTURE

The proposed expansion project will result in improving the social infrastructure in following manner:

- Generation of employment and improved standard of living;
- Establishment of small scale ancillary & supply industries;
- Increased revenue to the state by way of royalty, taxes and duties;
- Improved communication and transport facilities etc.

In addition to above, the local community will also get benefits through the following aspects.

- There shall be significant change in the socio-economic scenario of the area.
- The proposed expansion project shall enhance the prospects of direct and indirect employment during construction and in operation phase. Most of the unskilled and semiskilled workers for the proposed expansion project are from the nearby villages.
- Overall, the expansion project will change the living standards of the people and improves the socio-economic conditions of the area.

8.3 EMPLOYMENT POTENTIAL

The impact of proposed expansion project on the economic aspects can be clearly observed. The activities of project expansion will provide employment to persons of different skills and trades. The local population is getting preference to get an employment. The employment potential is ameliorating economic conditions of these families directly and provide employment to many other families indirectly who are involved in business and service oriented activities.

The employment of local people in proposed project shall upgrade the prosperity of the region. This will in turn improve the socio-economic conditions of the area. The total manpower required for the proposed expansion project during the operation phase is about 200 persons which would be mainly sourced from local community in and around the unit and few technical persons will be employed from outside area. In addition to the above, direct employment shall be provided to the contractual labour and indirect employment opportunities shall arise after expansion of the steel mill.

8.4 DIRECT REVENUE EARNING TO THE NATIONAL AND STATE EXCHEQUER

The proposed project will also contribute revenue to the Central & State exchequer in the form GST & Corporate taxes etc. Indirect contribution to the Central & State exchequer will be there due to Income by way of registration of trucks, payment of road tax, income tax from individual as well as taxes from associated units.

The Indian Steel industry is organized in three categories i.e., main producers, other major producers and the secondary producers. The main producers and other major producers have integrated steel making facility with plant capacities over 0.5 MT and utilize iron ore and coal/gas for production of steel.

The secondary sector is dispersed and consists of sponge iron producers, mini blast furnaces, electric arc furnaces, induction furnaces that uses iron ore, sponge iron and melting scrap to produce steel as well as re-rollers that roll out semis into finished steel products for consumer use. Due to growing demand for steel, India has been identified as one of the hottest destinations of steel exports from all over the world. As the demand from foreign countries increases. The Indian Market is exporting the steel products to more than 51 countries and earning valuable foreign exchange to the central and state exchequer.

Thus, the proposed expansion project will contribute to state and central exchequer which will help in developing the area. Development with sustainable approach is the goal of the industry to maintain good environment.

Corporate Environmental Responsibility:

CER will also be the additional benefit to the region, which is detailed in chapter no 10.

9 ENVIRONMENTAL COST BENEFIT ANALYSIS

The environmental cost benefit analysis is not recommended during scoping stage. Hence, the same was not carried out.

10 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all contractors and subcontractors, including consultants understand the potential environmental risks arising from the proposed expansion project and take appropriate actions to properly manage that risk. EMP also ensures that the project implementation is carried out in accordance with the design and the mitigation measures as recommended in the Environment Impact Assessment study to reduce the adverse impacts during the project's life cycle. The plan outlines existing and potential problems that may adversely impact the environment and recommends corrective measures where required. Also, the plan outlines roles and responsibility of the key personnel and contractors who are charged with the responsibility to manage the proposed project site and its surroundings.

The EMP is generally:

- Prepared in accordance with the approved ToR issued by MoEF&CC / SEIAA;
- In compliance with the rules & requirements of Tamil Nadu Pollution Control Board (TNPCB);
- To ensure that the project facilities are operated in accordance with the design;
- A process that confirms proper operation through supervision and monitoring;
- A system that addresses public complaints during construction and operation of the facility and take appropriate corrective action plans to overcome those unwanted situations; and
- A plan that ensures remedial measures is implemented immediately.

The key benefits of the EMP are that it provides the organization with means of managing and improving its environmental performance thereby allowing it to contribute to better environmental quality. The other benefits include cost control and improved relations with the stakeholders.

10.1 ELEMENTS OF EMP

EMP includes four major elements;

Commitment & Policy: The proposed project management will strive to provide and implement the Environmental Management Plan that incorporates all issues related to environmental and social components and will comply with the suggestions given by MoEF&CC/SEIAA.

Planning: This includes identification of environmental impacts and setting environmental objectives. The various potential impacts are discussed under Chapter –4.

Implementation: This comprises of resources available to the developers, accountability of contractors, training of operational staff associated with environmental control facilities and documentation of measures to be taken.

Measurement & Evaluation: This includes monitoring of implementation of the mitigation measures, corrective actions and record keeping.

Appropriate mitigation measures have been recommended to minimize the impact on the environmental and social parameters.

10.2 INSTITUTIONAL ARRANGEMENTS FOR ENVIRONMENT PROTECTION AND CONSERVATION

For the effective implementation of the mitigation measures and consistent functioning of the proposed project, an Environmental Management System (EMS) has been proposed. The EMS will include the following:

- An Environmental Management Cell
- Environmental Monitoring Program
- Personnel Training
- Regular Environmental Audits and Corrective Action Plan
- Documentation – Standard operating procedures of Environmental Management
- Plans and other records.

10.2.1 Environmental Management Cell

A permanent organizational set up will be formed to ensure the effective implementation of mitigation measures and to conduct environmental monitoring. The major duties and responsibilities of Environmental Management Cell will be as follows:

- To implement the environmental management plan;
- To ensure regular operation and maintenance of pollution control devices;
- To assure regulatory compliance with all relevant rules and regulations;
- To minimize environmental impacts of operations by strict adherence to the EMP;
- To initiate environmental monitoring as per approved schedule;
- Review and interpretation of monitored results and corrective measures in case monitored results are above the specified limit;
- Maintain documentation of good environmental practices and applicable environmental laws as ready reference;

- Maintain environmental related records;
- Coordination with regulatory agencies, external consultants and monitoring laboratories;
- Maintaining log of public complaints and the action taken;
- To report the non-compliances / violations of the environmental norms to the board directors of the company.

10.2.2 Hierarchical Structure of Environmental Management Cell

Normal activities of the EMP cell will be supervised by General Manager of the unit who will report to the Managing Director of the plant. The hierarchical structure of Environment Management Cell is given in following Figure 10-1.

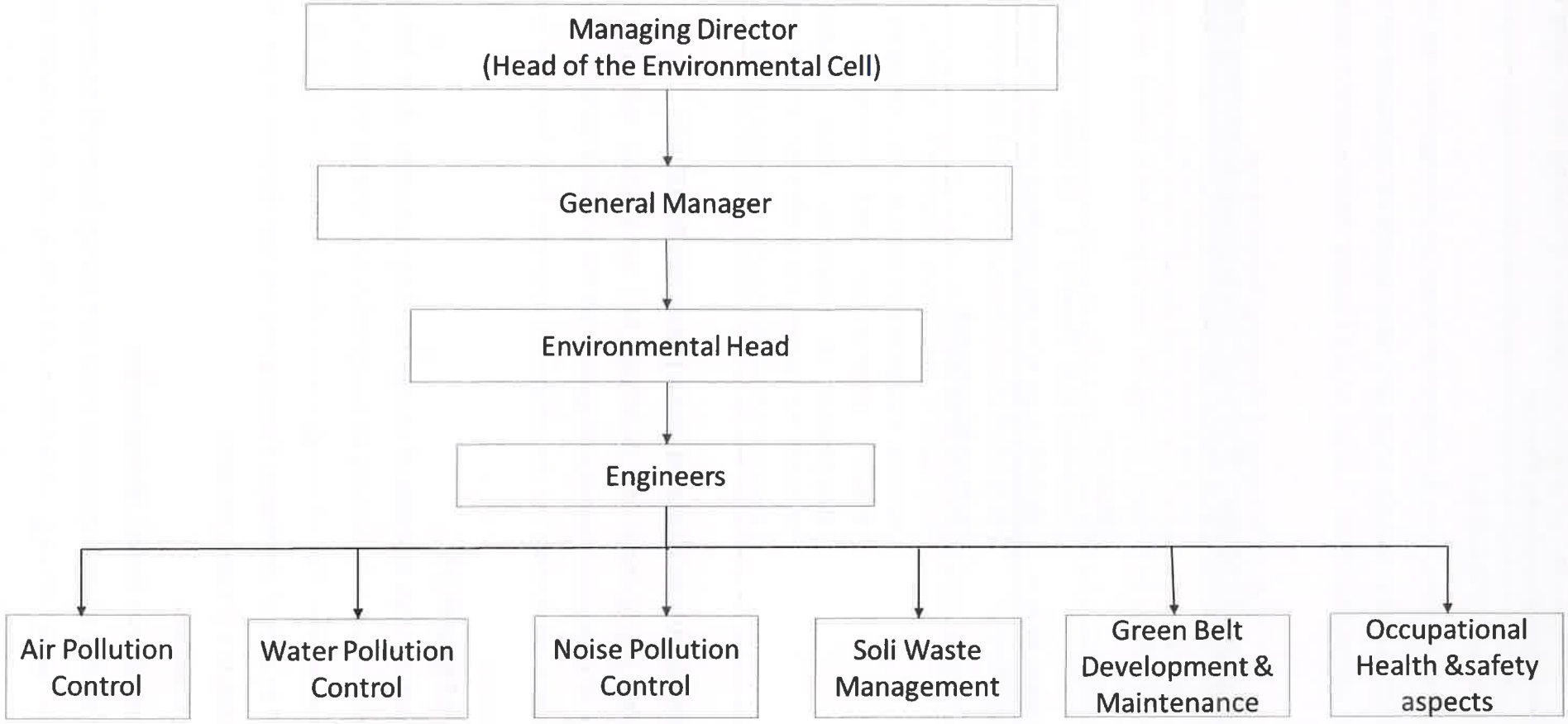


Figure 10-1 Environmental Management Cell

10.2.3 Record Keeping and Reporting

Record keeping and reporting of performance is an important management tool for ensuring sustainable operation of the manufacturing unit. Records will be maintained for regulatory, monitoring and operational issues. Typical record keeping requirements is summarized in Table 10-1

Table 10-1 Record-Keeping Requirement

Parameter	Particulars
Ambient Air Quality	Monitoring of air quality parameters
Solid Waste Handling and Disposal	Daily quantity of waste generated, stored, recycled and disposed
Regulatory (Environmental) Licenses	Environmental Permits / Consents from TNPCB/ MoEFCC Copy of waste manifests as per requirement
Monitoring and Survey	Records of all monitoring carried out as per the finalized monitoring protocol.
Others	Log book of compliance, Employee's health and safety records, Equipment inspection and calibration records, Vehicle maintenance and inspection records, Maintenance of Corporate Social Responsibilities towards the society even after the completion of the project work and during the operation phase

10.3 IMPLEMENTATION MECHANISM FOR MITIGATION MEASURES

The environment management cell developed for the existing mill will ensure the implementation of mitigation measures suggested for the project expansion. The details of the implementation mechanism for the mitigation measures have been discussed will be adopted.

10.4 ENERGY MANAGEMENT

An industry requires large amounts of energy for their operation. Many industries have reduced operating expenses by focusing on energy efficiency, considering both energy supply and energy consumption. Use of energy conservation measures as part of design and operations, will be part of the Master Planning and the specifications as part of awarding development work to a private contractor.

Energy Saving Practices

- Promoting use of Solar Street Lighting System
- Purchase of Energy efficient appliances along with Energy Audit will be carried out.
- Constant Monitoring of Energy consumption and defining targets for energy conservation

- Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort levels.
- Use of compact fluorescent lamps and low voltage lighting.

❖ **Behavioral Change on Consumption**

- Promoting self-awareness on energy conservation
- Training staffs on methods of energy conservation and to be vigilant to such opportunities

❖ **Energy Management**

Some of the energy saving options will be informed to the staffs,

- Switch off lights that are not needed
- Make maximum use of daylight
- Don't leave lights on in unoccupied areas
- Fit labels on switches so people know which switches operate particular lights
- Use local desk lights if few people are in the building
- Report faulty lighting promptly – a flickering tube uses more electricity and is a contributing factor to 'sick building syndrome'.
- Don't leave any electrical equipment running overnight or at the weekends unless there is a special reason for doing so
- Keep doors and windows closed in air conditioned areas
- Don't cool for 24 hours a day when occupancy times are less
- Switch off equipment and lighting where possible to reduce heat gains
- Consider installing a run back timer which switches off a split cooling system after a preset time to prevent it running continuously
- Solar energy will be used for streetlight.

10.5 DEVELOPMENT OF GREENBELT

One of the most effective, economical and useful remedies for control of environmental pollution is tree plantation. Plants purify air by assimilating carbon dioxide and releasing oxygen thus keeps check on the vehicular pollution on road and its surroundings. It also helps in soil and water conservation. The main objectives of green belt development are as follows:

- To reduce the impacts of air and dust pollution
- To reduce the impact of vehicular noise caused due to movement of vehicles
- To arrest soil erosion at the embankment slopes

- Beautification of the project corridor by landscaping and turfing with grasses and shrubs
- Prevention of glare from the headlight of incoming vehicles

While making choice of the plant species for cultivation in green belts, weightage has to be given to the natural factor of bio-climate. For effective removal of pollutants, it is necessary that

- Plants grow under conditions of adequate nutritional supply (for health and vigour of growth)
- Absence of water stress (to maintain openness of stomatal apertures and form of epidermal structures)
- Well exposed to atmospheric conditions of light and breeze, to maintain free interaction with gases.

10.5.1 Design of Green Development

The greenbelt shall be developed all along the boundaries of the plant site and the roads. The green belt acts as a sink for pollutants, attenuation of noise levels and improvement in aesthetic quality of the plant. In any greenbelt development, monoculture is not advisable due to its climatic factor and other environmental constraints. Greenbelt with varieties of species is preferred to maintain species diversity, rational utilization and for maintaining health of the trees. The greenbelt coverage area for the proposed project is about 33.88%. In addition to the greenbelt development of existing 33%, to comply ToR condition overall green coverage of 40% will be taken care, covering plant premises and nearby villages.

Well-developed greenbelt leads to a favorable micro-climatic to support different microorganisms in the soil as a result of which soil quality will be improved further. In the proposed unit greenbelt development will be undertaken in all available areas and also along the roads around the foundry and plant infrastructure, etc.

Tall and leafy trees like Azadirachta indica, Syzygium cumini, Swietenia mahagoni, etc. will be developed in these areas and ornamental varieties like Cassia fistula, Magnolia champaca will be planted. The list of trees & ornamental varieties recommended for greenbelt is given in Table 10-2 & Table 10-3.

As far as possible, the following guidelines will be considered in greenbelt development. Shrubs and trees will be planted in encircling rows within the plant site. The short trees (10 m height) will be planted in the first two rows and the tall trees (>10 m) in the outer rows around the project site. Planting of trees in each row will be in staggered pattern.

In the front row, short trees consisting of *Neriumodoratum Lam, Bauhinia purpurea L.,* etc. will be grown. Since the trunks of the tall trees are generally devoid of foliage, it will be useful to have shrubs in front of the trees so as to give coverage to this portion. Spacing between the trees will be slightly maintained facilitating effective height of greenbelt.

All tolerant plants are not necessarily good for green belts e.g. Xerophytes with sunken stomata can withstand pollution by avoidance but are poor absorbers of pollutants due to low gaseous exchange capacity. Therefore, selection of plants is very important in green belt development for effective removal of suspended particulate matter and for absorption of gases. About 570 no. of various varieties of tress and short trees are planted in the project site and about 740 Nos. of trees are proposed to be planted.

The green belt development plan showing the area allotted for green belt development is given in Figure 10-3. The greenbelt co-ordinates are given in Table 10-2.

Table 10-2 List of Trees recommended for Green Belt

Sl.No	Botanical Name	Common Name	Preferred site of planting	Nos
1	*Leucaenaleucocephala (Lam)de Wit*	Jabarichettu	A1	25
2	*Pongamiapinnata (L.) Pierre*	Kanuga	A2	15
3	*Cascabelathevetia (L.)*	Pachaganneru	A2	18
4	*Polyalthialongifolia (Sonn) Thwaites*	Indian mast tree	A1	25
5	*Roystonearegia (Kunt)O.F.Cook*	Royal palm	B	14
6	*Ixoracoccinea L.*	Ramabanam	C	8
7	*Terminalia catappa L.*	Baadam	A1	7
8	*Thespesiapopulnea (L.)*	Ganga Raavi	A1	5
9	*Tecomastans (L.) Juss. ex*	Patchaturai	A2	15
10	*Bauhinia purpurea L.*	Are	A3	10
11	*Vitexnegundo L.*	Vaavili	A2	10
12	*Plumeria alba L.*	Deva ganneru	C	8
13	*Caryotaurens L.*	Fish tail palm	B	12
14	*Vitexnegundo L.*	Vaavili	A2	8
15	*Melaleuca citrina (Curtis)*	Crimson bottle brush	A2	5
16	*Neriumodoratum Lam.*	Ganneru	A3, B	20
17	*AzadirachtaindicaA.Juss.*	Neem	A1	15

Preferred site of planting codes:

A1: Tall trees towards boundary wall

A2: Medium sized trees next row to A1 species

A3: Small trees next row to A2 species

B: Near entrance gate and paths

C: Garden center and space provided for plantation

Table 10-3 List of Ornamental herbs and shrubs within the greenbelt area (recommended for aesthetic value)

Sl.No	Botanical Name	Common Name	Habit	Preferred site of planting	Nos
1	*Acalyphahispida*	--	Shrub	Next row to Hedges	5
2	*Plumariapudica*	--	Tree	Garden Centre	5
3	*Tabernaemontanadivaricata*	Nandivardhanam	Shrub	Garden Centre	4
4	*Caesalpiniapulcherrima*	Ratnagandhi	Shrub	Next row to Hedges	3
5	*Allamandaschottii compacta*	--	Hedge	Towards paths	100
6	*Begonia semperflorens*		Hedge	Towards paths	10
7	*Caladium hortulanum*	Fancy LeavedCaladium	Hedge	Towards paths	10
8	*Euphorbia geraldii*	Kiss Me Quick	Herb	Near Corridor	10
9	*Catharanthusrosea*	Vinca Ordinary	Herb	Near Paths	100
10	*Crinum asiaticum*	Blood Lily	Herb	Near Corridor	10
11	*Crossandraundulaefolialutea*	Crossandra Yellow	Herb	Near Corridor	10
12	*Eranthemum purpureum*	Kodia Purple Leaves	Hedge	Towards paths	10
13	*Gerbera jamesonii*	Transvaal Daisy	Herb	Near Corridor	10
14	*Lantana camaraerecta*	Lantana Red	Shrub	Next row to Hedges	10
15	*Kalanchoetubiflora*	Chandelier Plant	Herb	Near Corridor	100
16	*Buddlejadavidii*	Butterfly bush	Shrub	Next row to Hedges	10
17	*Asystasiagangetica*	Creeping foxglove	Hedge	Near Paths	100
18	*Bauhinia Scarlet*		Climbing	Entrance to Garden	5
19	*Ixoracoccinea*	jungle flame	Shrub	Next row to Hedges	5
20	*Pennisetumclandestinum*	Lawn Grass	Grass	Rest of all	LS

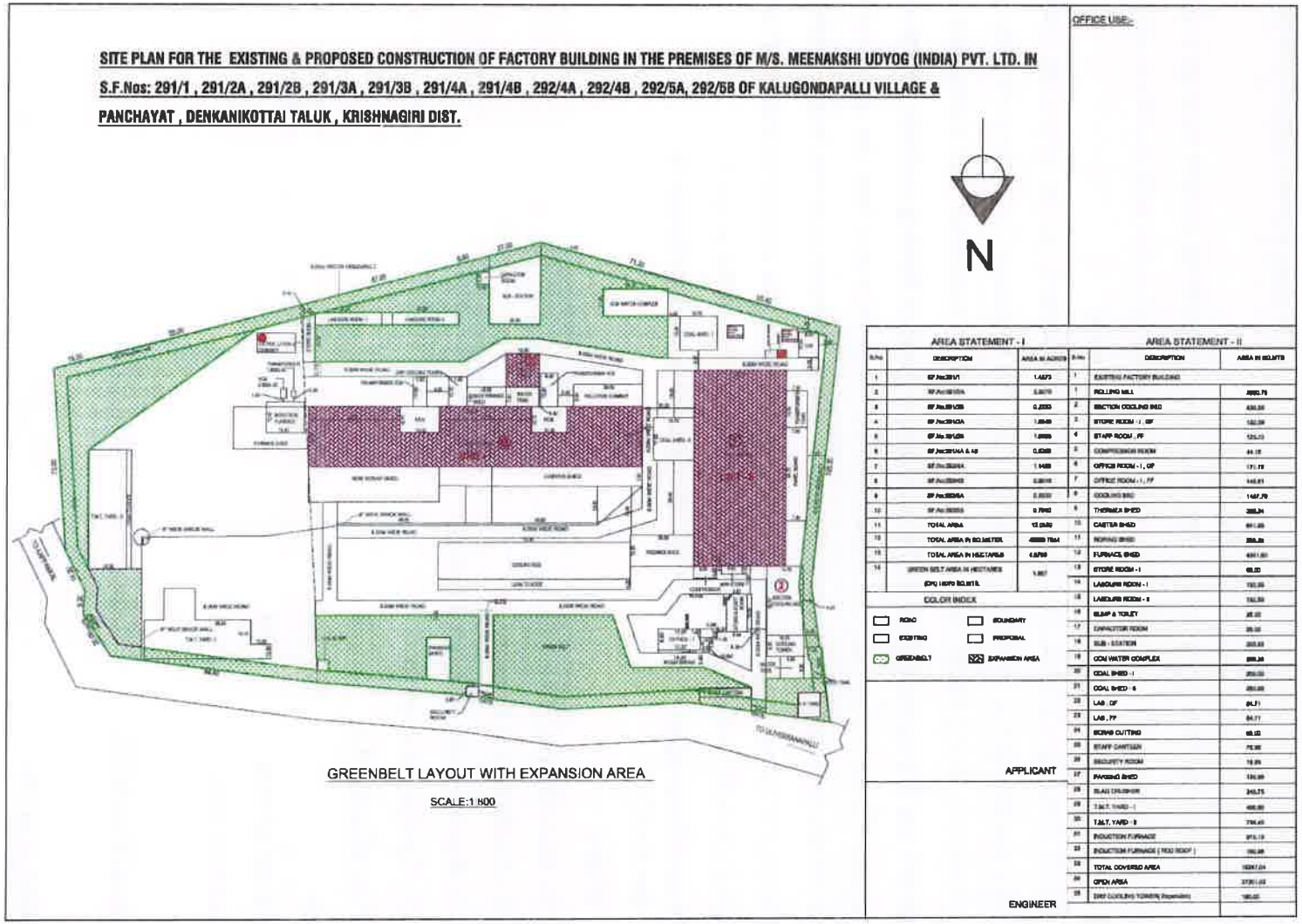


Figure 10-2: Green Belt Layout

10.6 RAIN WATER HARVESTING SYSTEM

The rainwater will create surface run-off from the existing foundry facility during monsoon season. The run-off will be of two types i.e. run-off from the open surface area of the plant site and run-off from the built-up area of the plant.

The run-off from the building area of the plant facilities will be routed through a carefully designed piping network and collected in the roof water collection tank and the excess water will be connected along with the open storm water network.

The run-off from the open surface area will be routed directly to the rainwater harvesting structures constructed at suitable locations as per the contours. For augmenting the ground water resources in the plant area, adequate number of rainwater harvesting pits will be constructed and the internal drains where excess rain water flowing in drain will be diverted to these pits. These structures will facilitate percolation of water into the ground and thus augmenting the groundwater sources. This will result in increase in groundwater tables and to some extent the improvement of ground water quality. The size and the locations of rainwater harvesting pits will be decided during detailed engineering of the project.

Run off from the proposed project site is calculated using rational formula:

Q = C x I X A

Where,

Q - Run-off in m^3/hr

C - Coefficient of Run-off

I - Max intensity of Rainfall in m/hr

A - Catchment Area (m^2)

Run-off co-efficient (C)

- Roof - 0.9
- Hard paved area - 0.8
- Green belt area - 0.2

Intensity of Rainfall (I) - 25 mm/hr or 0.025 m/hr

Catchment area (A)

- Roof Area - 20750 Sq. m
- Hard paved area - 5120 Sq. m
- Green belt & open area - 22830 Sq. m

If the rain continues for one hour, the total run off expected is calculated as below.

Roof area

Run off (Q) - 0.9 x 0.025 x 20750

- 466.88 m^3/hr

Hard paved area

Run off (Q) - 0.8 x 0.025 x 5120

- 102.40 m^3/hr

Green belt & open area

Run off (Q) - 0.2 x 0.025 x 22830

- 114.15 m^3/hr

Hence, total volume of rainwater run-off will be about 683.43 m^3.

If rains for 15 min, total volume of rain water run-off will be about 170.86 m^3.

Rain harvesting system

It is proposed to construct 2 Nos of rainwater underground storage tank at site with total capacity of 550 m^3. The stored water will be used for plant process as make up water when the rainwater is available.

Arrangements of Harvesting:

The roof water will be guided through a down comer of 150mm size and laid into surface water drain, at the lowest inert level of surface water drain will have a pre-settling drain which will be filled with the charcoal for removing the dust. The decanted water from the pre-settling will be led into a sump of RCC tank of 2 no's having capacity of 250m^3. The water collected from the tank will be used for make-up water in the plant.

Recharge system.

Keeping in mind the importance of water and its scarcity, it is proposed to conserve water by rainwater harvesting by which the subsoil water condition / moisture content is maintained / improved to a great extent. Also it is proposed to harness rainwater from the roof area by collecting the same in a rainwater collection tank of suitable capacity and reused for gardening / domestic purposes with the provision of a water treatment plant.

Storage volume per RWH structure of 1.75-m diameter and 5-m depth is - 12 Cu.m.

No. of RWH structures required – 170.86/ 12 – 15 Nos. The schematic diagram of the typical rain water harvesting structure is shown in Figure 10-3.

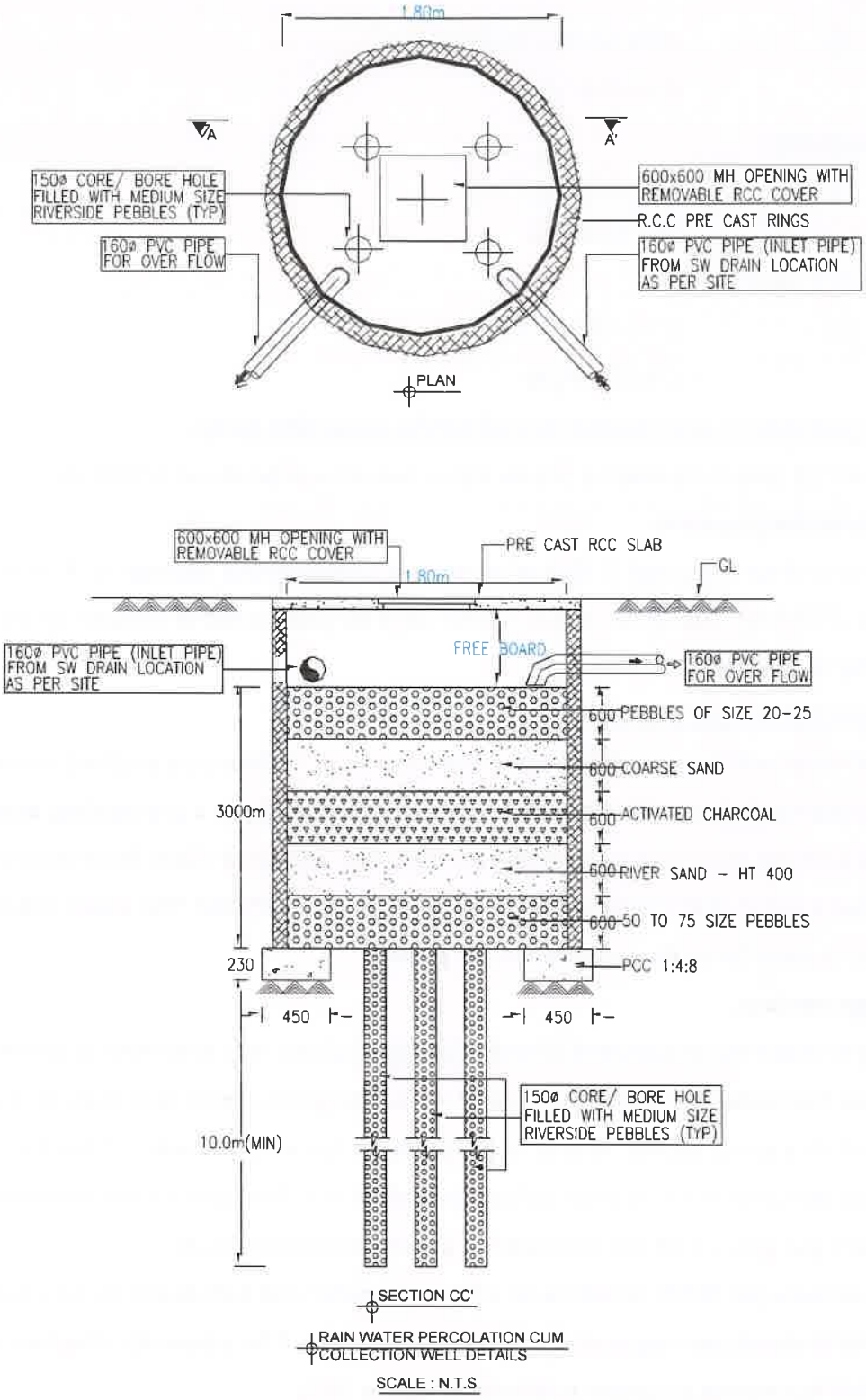


Figure 10-3 Typical Rainwater Recharging Structure

10.7 EXPENDITURE ON ENVIRONMENTAL MANAGEMENT

The capital cost of the expansion project is about Rs. 25 Cr. It is proposed to invest about Rs. 125 Lakhs on pollution control, treatment, green belt development, monitoring systems and others including CER. The break-up of the investment is given in Table 10-4.

Table 10-4 Expenditure on environmental matters

Sl. No.	Description	Capital Cost (Rs. In lakhs)	Operational Cost per annum (Rs. In lakhs)
1	Air Pollution Control measures	40	5
2	Water Pollution Control – RWH	10	2.5
3	Solid Waste Management	15	3
4	Noise Pollution Control	10	2.5
5	Environment Monitoring	-	3
6	Occupational Health & Safety	10	2
7	Green belt Development	15	2
8	Corporate Environmental Responsibility (CER) related with PH issues.	25	-
Total		**125**	**20**

10.8 CORPORATE ENVIRONMENTAL RESPONSIBILITY

As stipulated in the ToR issued by MoEF&CC, (MUIPL) has to fulfil its Corporate Environment Responsibility (CER) by adopting an appropriate strategy to improve the socioeconomic environment in the project impact area in keeping with felt needs of the villages and people inhabiting there.

A tentative CER Management Plan is conceived for the project proponent based on the needs expressed during the household and village level survey during Socio Economic studies at site. The plan however needs to be finalised as per the specific needs expressed and zeroed-in at the Public Consultation of the project and approved by the district administration.

It is assumed that project expansion by M/s Meenakshi Udyog (India) Private Limited will be completed and full-scale operations will commence at the earliest from now and sustain on the project achieving the optimum operating capacity. Thus, a 5-year CER Management Plan for the project is conceived as detailed in Table 10-5

- Infrastructure & education aids to nearby School;
- Laying Road in nearby villages
- Providing drinking water facilities in nearby schools
- Roadside tree plantation in the vicinity;

Table 10-5 Proposed CER activities

Sl. No.	Description	Capital Cost (Rs. in lakhs)
1	Lay a road network to Ulliveerannapally to Kappakal Road	8
2	Providing drinking water facility by installing RO System & Toilet facilities in nearby schools and villages	10
3	Contributing to Rain water harvesting & Plantation programmes in the nearby villages	3
4	Vocational Skill Development Programmes (for different target groups such as Women, Youth etc.)	4
Total		**25**

11 SUMMARY & CONCLUSIONS

This chapter presents the justification for implementation of the project, summary of anticipated impacts and mitigation measures and conclusions.

11.1 JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

The proposed expansion of steel mill will have marginal adverse impacts on the local environment. However, with the implementation of the adequate pollution control and environment management measures, the minor impacts due to construction and operation of the proposed expansion plan will be mitigated.

There will not be any displacement of population due to the proposed expansion project. The total expansion will take place within the existing land area of 4.87 ha. The proposed expansion project will provide direct employment to about 125 persons and indirect employment to about 231 persons. Apart from the employment and business opportunities for the local people, they will also be benefited in the areas such as education, health care and infrastructure facilities. The Government of Tamil Nadu will be benefited in terms of taxes and duties, the railways, ports and industries authorities, etc. will be benefited indirectly.

Thus, this project will lead to overall development of the region in particular and in the state in general. This project will also generate indirect employment to a considerable number of families, who will render their services for the employees of the project.

Thus, in view of considerable benefits from the project without any major adverse environmental impact, the proposed project is most advantageous to the region as well as to the state.

11.2 SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The summary of anticipated adverse environmental impacts due to the expansion project and mitigation measures is given in tTable 11-1.

Table 11-1 Anticipated adverse environmental impacts and mitigation measures

Discipline	Potential Negative Impacts	Probable Source	Mitigative Measures	Remarks
Constructional Impact				
Air Quality	Increase in dust and NO_X concentration	Leveling activity and Vehicular movement	Sprinkling of water in the construction area and unpaved roads. Proper maintenance of vehicles will be done. Regular checkup of vehicles will be carried out.	The impact will be low, as the main approach road is tarred.
Water Quality	Increase in suspended solids due to soil run-off during heavy precipitation	Loose soil at construction site	During monsoon season run off from construction site will be routed to a temporary sedimentation tank for settlement of suspended solids.	---
Noise	Increase in noise level	Construction equipment	Equipment will be kept in good condition to keep the noise level within 85-dB (A).	Workers will be provided with necessary protective equipment *e.g.* ear plug.
Terrestrial Ecology	Depression of plant growth	Dust emission from construction	Landscaping and extensive plantation will be done.	Plantation will be done in consultation with the local forest department.
Operational Impact				
Air Quality	Increase in PM, SO_x and NO_x levels in ambient air.	Stack emissions and material handling	Dust/fume collection system on Induction Furnace consists essentially of Semi Closed Type moving Dust Collection Hood, Air Duct, Gas to Air Heat Exchanger, Dilution Air Mix Valve, Bags filtration unit, an ID (Induced	The resultant air quality will confirm to the stipulated standards. Particulate emission from the proposed furnaces stack will be kept below 50 mg/Nm^3.

Discipline	Potential Negative Impacts	Probable Source	Mitigative Measures	Remarks
			Draught) fan for creating the desired level of suction from the Furnace and fume suction points, a chimney, and dampers for flow and pressure/Temperature control. Adequate stack height will be provided as per CPCB guidelines for the proper dispersion of gaseous pollutants. Motor able roads in the plant area will be black topped to reduce dust emission. Plantation programs will be undertaken around the plant area. Dust suppression measures will be implemented material handling area.	
Noise	Increase in noise levels in the plant area.	Equipment in main plant and auxiliaries	Equipment will be designed to conform to noise levels prescribed by regulatory agencies. Providing acoustic enclosure as source control. Provision of green belt and plantation would further help in attenuating noise.	Employees working in high noise areas would be provided earplugs as protective device.
Water Quality	Deterioration of surface water quality.	Discharge from domestic usages.	Adequate capacity of Sewage Treatment Plant will be provided for treatment of sewage.	Entire quantity of treated sewage will be reused for green belt development.

Discipline	Potential Negative Impacts	Probable Source	Mitigative Measures	Remarks
Solid waste	Furnace slag, waste scrap, mill scale and dust from filter	From furnaces and APC measures	The furnace slag will be used in cement brick manufacturing industries along with dust from dust collectors.	Efforts will be made to utilize the solid waste to the extent possible.
Ecology				
a. Terrestrial	Impact on plant species	Emissions from stack	Emission will be controlled as well as dispersed through appropriate design.	As ambient air quality will be within limits, no active injury to the vegetation is expected.
b. Aquatic	Impact on aquatic life of the water bodies	Domestic Sewage	The domestic wastewater will be provided with adequate treatment facilities (STP).	As the sewage water will be treated properly no significant impact on aquatic life is expected.
Demography and Socio-economics	Strain on existing amenities like housing, water sources and sanitation, medical and infrastructure facilities.	Influx of people of proposed expansion employees as well as contractor's employees/ laborers.	Most of the worker requirement will be fulfilled by local people. No significant impact is envisaged	Overall socio-economic status of the area is expected to improve.

11.3 CONCLUSIONS

The proposed expansion project will have certain level of marginal impacts on the local environment. However, development of this project has certain beneficial impact / effects in terms of providing the employment opportunities that the same will create during the course of its constructional phase as well as during operational phase of the project.

Thus, it can be concluded that with the judicious and proper implementation of the pollution control and mitigation measures, the proposed expansion project will be beneficial to the society and will help reduce the demand supply gap of MS Billets & TMT Rods and will contribute to the economic development of the region in particular and state in general.

12 DISCLOSURE OF CONSULTANTS

This chapter presents the details of the environmental consultants engaged, their background and the brief description of the key personnel involved in the project.

12.1 INTRODUCTION

ABC Techno Labs India Private Limited is an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company & leading Environmental Engineering & Consultancy Company. ABC is the first firm to be accredited by NABET (National Accreditation Board for Education and Training), Quality Council of India, as an EIA Consultant. ABC is equipped with in-house, spacious laboratory, accredited by NABL (National Accreditation Board for Testing & Calibration Laboratories), Department of Science & Technology, Government of India. Copy of the NABET & NABL accreditation is shown in Figure 12-1.

Since establishment our focus is on sustainable development of Industry and Environment based on sound engineering practices, innovation, quality, R&D and most important is satisfying customers need. The company has successfully completed more than 100's projects of variety of industries, in the field of pollution control. We are also dealing in the projects of waste minimization and cleaner production technology. Our team of technocrats and scientists are well experienced to deal with the Designing, Manufacturing, Fabrication, Installation and Commissioning of Effluent/Wastewater Treatment Plants, Sewage Treatment Plants, Combined Treatment Plants.

We are having a well experienced team of Scientists & Engineers who are looking after our well equipped analytical laboratory with a facility including analysis of physical, chemical and biological parameters as per the requirements of the State Pollution Control Board and our clients.

QUALITY COUNCIL® OF INDIA
Creating an Ecosystem for Quality

National Accreditation Board for Education and Training

Certificate of Accreditation

ABC Techno Labs India Private Limited
#400, 13th Street, SIDCO Industrial Estate (North Phase),
Ambattur, Chennai, Tamil Nadu-600098

*The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations, Version 3: for preparing EIA-EMP reports in the following Sectors –*

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including open cast/ underground mining	1	1 (a) (i)	A
2	Offshore and onshore oil and gas exploration, development & production	2	1 (b)	A
3	River Valley projects-Irrigation projects only	3	1 (c)	A
4	Thermal power plants	4	1 (d)	A
5	Mineral beneficiation including palletization	7	2 (b)	A
6	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
7	Cement plants	9	3 (b)	A
8	Petroleum refining industry	10	4 (a)	A
9	Asbestos milling and asbestos based products	12	4 (c)	A
10	Leather/skin/hide processing industry 4	15	4 (f)	A
11	Chemical Fertilizers	16	5 (a)	A
12	Petro-chemical complexes	18	5 (c)	A
13	Petrochemical based processing	20	5 (e)	A
14	Synthetic organic chemicals industry	21	5 (f)	A
15	Distilleries	22	5 (g)	A
16	Sugar Industry	25	5 (j)	B
17	Oil & gas transportation pipeline	27	6 (a)	A
18	Isolated storage & handling of hazardous chemicals	28	-	B
19	Airports	29	7 (a)	A
20	Industrial estates/ parks/ complexes/ Areas, export processing zones(EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	A
21	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (d)	A
22	Ports, harbours, break waters and dredging	33	7 (e)	A
23	Highways	34	7 (f)	A
24	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
25	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
26	Building and construction projects	38	8 (a)	B
27	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RA AC minutes dated January 17, 2020, supplementary assessment minutes dated September 21, 2021 and April 12, 2022 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/20/1257 dated March 2, 2020. The accreditation needs to be renewed before the expiry date by ABC Techno Labs India Private Limited, Chennai following due process of assessment.

Sr. Director, NABET
Dated: April 19, 2023

Certificate No.
NABET/EIA/1922/RA 0155 (Rev.01)

Valid up to
May 24, 2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website

National Accreditation Board for Education and Training

QCI/NABET/ENV/ACO/23/2742 April 21, 2023

To

ABC Techno Labs India Private Limited
(formerly known as ABC Environ Solutions Pvt. Ltd.)
400, 13th Street, SIDCO Industrial Estate (North Phase),
Ambattur, Chennai - 600098

Sub.: Extension of Validity of Accreditation till July 20, 2023 – regarding
Ref.. 1. Certificate no NABET/EIA/1922/RA0155
2. Request e-mail dated April 21, 2023

Dear Sir/Madam

This has reference to the accreditation of your organization under QCI-NABET EIA Scheme, the validity **ABC Techno Labs India Private Limited** is hereby extended till July 20, 2023 or completion of assessment process, whichever is earlier.

The above extension is subject to the submitted documents/required information with respect to your application and timely submission and closure of NC/Obs during the process of assessment.

You are requested not to use this letter the after expiry of the above-stated date.

With best regards.

(A K Jha)
Sr. Director, NABET

12.2 QUALITY POLICY

- ✓ Providing high quality consultancy services
- ✓ Time bound completion of projects and submission of reports
- ✓ Employing competent engineers and scientists
- ✓ Implementing the best available technology
- ✓ Maintaining a good quality products and public relation practice
- ✓ Continually improving the effectiveness of Quality Management System

12.3 SERVICES OFFERED

ENVIRONMENTAL SERVICES

- ✓ Environmental Impact Assessment (EIA)
- ✓ Environmental Management Plan (EMP)
- ✓ Social Impact Assessment (SIA)
- ✓ Environmental Baseline data collection for Air, Meteorology, Noise, Water, Soil, Ecology, Socio-Economic and Demography, etc.
- ✓ Environmental Monitoring
- ✓ Socio Economic Studies
- ✓ Resettlement & Rehabilitation Plan
- ✓ Ecological & Human Health Risk Assessment Studies
- ✓ Ecological Impact Assessment
- ✓ Environmental Management Framework
- ✓ Solid Waste Management
- ✓ Hazardous Waste Management
- ✓ Internship & Training

MULTILAB DIVISION

- ✓ Chemical Testing
- ✓ Environmental Testing
- ✓ Microbiological Testing
- ✓ Food Testing
- ✓ Metallurgical Testing
- ✓ Mechanical Test
- ✓ Chemical Testing

TURNKEY PROJECTS

- ✓ Water Treatment Plants
- ✓ Sewage Treatment Plant
- ✓ Recycling & Water Conservation Systems
- ✓ Zero Discharge System
- ✓ Operation & Maintenance of Water & Waste Water Plants
- ✓ Water & Wastewater Treatment Chemicals
- ✓ Pilot Plant studies
- ✓ Feasibility studies & preparation of budgetary estimates

12.4 SECTORS WE SERVE

- ✓ Mining of Minerals including Opencast & Underground Mining
- ✓ Offshore Oil and gas exploration, development & productions
- ✓ Irrigation Projects
- ✓ Thermal Power Plant
- ✓ Mineral Beneficiation including palletisation
- ✓ Metallurgical Industries
- ✓ Cement Plants
- ✓ Petroleum Refining Industry
- ✓ Leather/Skin/hide processing industry
- ✓ Chemical Fertilizers
- ✓ Pesticides industry and pesticide specific intermediates
- ✓ Petro-chemical Complexes
- ✓ Synthetic organic chemicals industry
- ✓ Distilleries
- ✓ Sugar Industry
- ✓ Oil & gas transportation pipe line
- ✓ Isolated storage & handling of hazardous chemicals
- ✓ Airports
- ✓ Industrial estates/ parks/ complexes/ areas, EPZs, SEZs
- ✓ Ports, Harbours, Jetties, Marine terminals, break waters and dredging
- ✓ Highways, Railways, Transport terminals, mass rapid transport system
- ✓ Common Effluent Treatment Plants (CETPs)
- ✓ Common Municipal Solid Waste Management Facility (CMSWMF)
- ✓ Building and large Construction projects
- ✓ Townships and Area development projects

12.5 STUDY TEAM

The multidisciplinary team included expertise in Environmental Impact Assessment, Air pollution & Control measures, Noise Control measures, Ecology and bio-diversity, Land use, Geology, Environmental Chemistry and Socio-Economic planner.

Sl. No.	EIA Coordinator / FAE	Name of the Expert/s
I.	EIA Coordinator	Dr. S Veezhinathan
II.	**Functional Areas**	
1.	AP*	Dr. Muthaih Mariappan
2.	WP*	Dr. R.K. Jayaseelan
3.	SHW*	Dr. Muthaih Mariappan
4.	SE*	Mr. Sushil U. Meshram
5.	EB*	Mr. Abhik Saha
6.	HG*	Dr. R.K. Jayaseelan
7.	SC*	Mr. Ratnakumar V Mudliar
8.	AQ*	Mr. Vinod Kumar Gautam

Sl. No.	EIA Coordinator / FAE	Name of the Expert/s
9.	NV*	Mr. M.S. Bhaskar
10.	LU*	Dr. R.K. Jayaseelan
11.	RH*	Mr. Vinod Kumar Gautam
III	**Team Member**	
1	Amita Rathod	FAE
2	Y Mythili Keerthana	FAA
3	T U Dinesh	FAA
4	Robson Chinnathurai	Senior Chemist
5	M Venkateshwarlu	Field Technician

Annexure - 7

PROCEEDINGS OF PUBLIC HEARING CONDUCTED FOR THE UNIT OF M/S. MEENAKSHI UDYOG (INDIA) PRIVATE LIMITED, SF.NO.291/1,291/2A, 291/2B,291/3A,291/3B,291/4A,292/4A,292/4B,292/5A,292/5B, KALUKONDAPALLI VILLAGE, DENKANIKOTTAI TALUK, KRISHNAGIRI DISTRICT TO THE PROPOSED EXPANSION ACTIVITY FOR PRODUCTS OF 1) MS INGOTS TO BILLETS FROM 30,000 MT/ANNUM TO 1,91,000 MT/ANNUM AND 2) TMT RODS FROM 60,000 MT/ ANNUM TO 1,80,000 MT/ ANNUM ON 11.08.2022 AT 11.00 AM AT "ANNAMACHARYA KALYANAMANDAPAM, HOSUR TO THALLY MAIN ROAD, MATHAKONDAPALLI VILLAGE, DENKANIKOTTAI TALUK, KRISHNAGIRI DISTRICT – 635 114" :

Present:

1	Tmt.V.Thenmozhi	:	Revenue Divisional Officer, Hosur (Representative of the District Collector, Krishnagiri)
2.	Er. R. Venkatesan	:	District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur, Krishnagiri District
3	Er. V. Deenadayalan	:	Assistant Engineer, Tamil Nadu Pollution Control Board, Hosur, Krishnagiri District
4	Thiru. Jayesh Agarwal	:	The Director M/s. Meenakshi Udyog (India) Private Limited
5	Thiru.N.Rama Krishnan	:	EIA Consultant, M/s. ABC Techno Labs India Private Limited
	Public	:	52 Nos. (List enclosed as Annexure)

The District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur, Krishnagiri District welcomed the Revenue Divisional Officer, Hosur (Representative of the District Collector, Krishnagiri), Revenue officials, all the general public and the Director of the unit who have attended the public hearing

to the proposed expansion activity for the Unit of M/s. Meenakshi Udyog (India) Private Limited, SF.No.291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A, 292/5B, Pudur Kalapalli Village, Denkanikottai Taluk, Krishnagiri District to the products of 1) MS Ingots To Billets from 30,000 MT/Annum to 1,91,000 MT/Annum and 2) TMT Rods from 60,000 MT/Annum to 1,80,000 MT/Annum and stated that the expansion activity for the Unit is required to get Environmental Clearance (EC) from the Ministry of Environment, Forest and Climate Change (MoEF &CC), Government of India. He added that the public notice informing the conducting of Public Hearing was published in the Tamil and English dailies, such as, "Dinathanthi" and "The New Indian Express" dated 08.07.2022 and informed that the Project Director would make a presentation on the project, after which the public can express their views.

The District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur, Krishnagiri District also stated that the views, suggestions and queries of the public and reply by the Project Director will be recorded through videography and the same will be sent to the Ministry of Environment, Forest and Climate Change/ State Environment Impact Assessment Authority of Tamilnadu.

The Revenue Divisional Officer, Hosur (Representative of the District Collector, Krishnagiri) has initiated the Public Hearing process. Further, the Revenue Divisional Officer, Hosur requested the Project Director to explain about their proposed expansion activity through power point presentation and requested the public to obtain necessary clarifications for their doubts.

Thereafter, Thiru.N.Rama Krishnan EIA Consultant, M/s. ABC Techno Labs India Private Limited, Chennai of the proposed expansion activity has made presentation about the proposed expansion activity to the public along with Environmental Management Plan. Thereafter, the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur, Krishnagiri District has invited the public to express their views and comments about the proposed expansion activity. The views and suggestions of the public are detailed below:

1. Thiru. Krishna, Ex-President - Kallukondapalli Village:

Thiru. Krishna, welcomed all the attendance of the public hearing. The company management is servicing to the people. 90% of the information in the power point presentation regarding development of nearby school and village are true. He requested the company management to adapt new technologies to control the pollution and to develop more green belt around the unit premises to curb the air pollution. Further, he requested to utilise electrical based induction furnace for melting the metal scraps to reduce the air pollution.

Reply:

District Environmental Engineer, Tamilnadu Pollution Control Board, Hosur has replied that, the unit has used electrical based furnace for melting the metal scraps. Further, he instructed to the unit management to develop green belt by planting more trees in the unit premises.

2. Thiru. P. Nagaraj, Belagondapalli Village:

Thiru. P. Nagaraj has stated that the company management shall operate the unit with updated latest technologies to control the Air Pollution and Noise pollution generating from the unit. Further, local village people rented their buildings to the employees those who are working in the factory and provisional shops established for selling commercial products to them.

3. Thiru. Suresh, Vice-President - Kallukondapalli Village:

Thiru. Suresh has stated that the pollution level will be increased due to expansion activity. The company management has assured that they will provide latest technologies to control the pollution generation from the unit. Further, he stated that the unit shall operate with proper Air Pollution Control measures to control the Air pollution without affecting the school students passing through roads.

Reply:

District Environmental Engineer, Tamilnadu Pollution Control Board, Hosur replied that, the unit is using induction furnace for melting the metal scraps so that minimum level of pollution generated.

4. **Thiru. H.N. Ramesh, Kallukondapalli Village:**

Thiru. H.N. Ramesh has stated that the company management shall provide new technologies for control of pollution as shown in the power point presentation.

- The economy of this panchayat will be improved and many of the local people will be offered with job opportunities for the expansion of the unit.
- The company management has funded of Rs.7.35 lakhs to construction of the road extension.
- Further, he said that, the village people have already requested to provide transport facility, for that, the unit management has assured to provide electrical vehicle to the village.
- The unit management has assured to fund of Rs. 6 Lakhs (33% of the total cost) for establishing over head water tank facility at Kappakal area.
- Finally, he told that, the water consumption of the unit will be 60000 litter due to expansion activity so the water scarcity will arise in the village and requested the company management for alternate the water resources.

5. **Thiru. Suryanarayanan, Hosur, Environmentalist and social worker:**

Thiru. Suryanarayanan has suggested the following for the environmental welfare:

- Thally area is considered as 2nd Ooty from the British period. Thally area is a greenery, cold climate and pleasant environment.
- Now these industries are coming to this area is a welcome one.

- Local people will be offered with job opportunity for the expansion of the unit.
- The toxic gases emitted from the induction furnace have been controlled by the unit and the unit shall operate by implementing 100% of the same.
- The toxic gases like CO_2, NO_X, SO_2 emitting from the emission sources creating air pollution from the industries. So, the unit shall plant more trees to control the heat radiation and air pollution.
- The unit management to take responsibility to ensure the health of the local people.
- Most of the local people are working in the said industry and ensure that there is no health issues to the employees those who are working in the industry.
- The company management shall develop green belt in and around the unit premises by utilizing the CSR fund.

6. Thiru. P.N. Srinivasan, Ex-President, Belagondapalli Village:

Thiru. P.N. Srinivasan, welcomed the expansion activity of the unit. He stated that, the unit shall implement the rain water harvesting, community forest development activities in their proposed expansion project. Further, he stated that, the unit is using high electricity. So, he requested to utilise the solar technology to convert sun light into electrical energy to reduce the electrical consumption and also to recycle the waste water generated from the unit.

Answer:

EIA Consultant of the proposed expansion activity of the unit replied that, the sewage treatment plant is already provided and waste water is fully recycled in the process and solar panels are provided to in the unit premises generate electricity.

Conclusion:

Finally, the District Environmental Engineer, Tamil Nadu Pollution Control Board, Krishnagiri informed that the views, suggestions, written complaints and queries of the public and reply by the Project Director are recorded through videography and the same will be sent to the State Environment Impact Assessment Authority of Tamilnadu - Chennai.

Further, 21 number of petitions were received on the proposed expansion activity of M/s. Meenakshi Udyog (India) Private Limited, during the public hearing meeting. The petitions are enclosed herewith.

Further, it is informed that there is no written representation was received in the O/o. District Environmental Engineer, Tamilnadu Pollution Control Board, Hosur, Krishnagiri District from the public on the proposed expansion activity of M/s. Meenakshi Udyog (India) Private Limited.

List of publics attended the public hearing meeting along with photographs, Pen Drive and CD recorded with the entire proceedings of public hearing are enclosed herewith.

District Environmental Engineer **Tamilnadu Pollution Control Board** **Hosur**	**Revenue Divisional Officer** **Hosur**	**District Collector** **Krishnagiri**

திர்ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட், ச. எண். 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A, 292/5B, கலுகொண்டப்பள்ளி கிராமம், தேன்கனிகோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டத்தில் அமைந்துள்ள தொழிற்சாலையின் விரிவாக்கத்திற்கான 1) எம் எஸ் இன்காட்ஸ் / பில்லெட்டஸ் ஒரு வருடத்திற்கு 30,000 மெட்ரிக் டன்னிலிருந்து 1,91,000 மெட்ரிக் டன்னாக உயர்த்தவும் மற்றும் 2) டிஎம்டி ராட்ஸ் ஒரு வருடத்திற்கு 60,000 மெட்ரிக் டன்னிலிருந்து 1,80,000 மெட்ரிக் டன்னாக உயர்த்த மத்திய அரசின் சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் சுற்றுச்சூழல் அனுமதி பெறும் பொருட்டு 11.08.2022 அன்று ஓசூர் – தளி மெயின் ரோடு, மதகொண்டப்பள்ளி கிராமம், தேன்கனிக்கோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டத்தில் அமைந்துள்ள திர்ள். அன்னமாச்சாரியா கல்யாணமண்டபத்தில், முற்பகல் 11.00 மணியளவில் நடைபெற்ற பொதுமக்கள் கருத்து கேட்பு கூட்ட நடவடிக்கை விபரங்கள்:

பங்கேற்றோர்:

1	திருமதி. V. தேன்மொழி	:	வருவாய் கோட்டாட்சியர், ஓசூர் (மாவட்ட ஆட்சித் தலைவர். கிருஷ்ணகிரி அவர்களின் பிரதிநிதி)
2	Er. R. வெங்கடேசன்	:	மாவட்ட சுற்றுச்சூழல் பொறியாளர். தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம். ஓசூர்.
3	Er.V. தீனதயாளன்	:	உதவி பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம். ஓசூர்.
4	திரு. ஜெயஷ் அகர்வால்	:	இயக்குநர் திர்ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட்
5	திரு.N. ராம கிருஷ்ணன்	:	சுற்றுச்சூழல் தாக்க மதிப்பீடு ஆலோசகர் திர்ள். ஏபிசி டெக்னோ லேப்ஸ் இந்தியா பிரைவேட் லிமிடெட், சென்னை.
	பொதுமக்கள்	:	52 எண்ணிக்கை (வருகை பதிவேடு இணைக்கப்பட்டுள்ளது)

தி/ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட் தொழிற்சாலையின் விரிவாகத்திற்காக மத்திய சுற்றுச்சூழல் வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்திலிருந்து சுற்றுச்சூழல் அனுமதி பெறுவது தொடர்பாக பொதுமக்கள் கருத்து கேட்பு கூட்டத்திற்கு வருகை புரிந்த வருவாய் கோட்ட அலுவலர், ஓசூர் மற்றும் வருவாய்துறை அதிகாரிகள், பொதுமக்கள் மற்றும் தி/ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட் நிறுவனத்தின் இயக்குநர் அனைவரையும் மாவட்ட சுற்றுச்சூழல் பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம், ஓசூர் அவர்கள் வரவேற்றார். மேலும், இந்த பொதுமக்கள் கருத்து கேட்பு கூட்டம் நடைபெறும் விவரம் ஏற்கனவே தமிழ் மற்றும் ஆங்கில நாளிதழ்களான முறையே "தினத்தந்தி" மற்றும் "நியூ இந்தியன் எக்ஸ்பிரஸ்" நாளிதழ்களில் 08.07.2022 அன்று அறிவிப்பு வெளியிடப்பட்டு இருந்ததை சுட்டிக்காட்டினார். இத்திட்டம் தொடர்பாக திட்ட ஆலோசகர் விளக்கவுரையாற்றிய பின் பொதுமக்கள் இத்திட்டம் தொடர்பாக தங்களது கருத்துக்களையும் மற்றும் ஆலோசனைகளையும் வழங்கலாம் என கூறினார்.

மேலும், இத்திட்டம் தொடர்பாக நிறுவனத்தின் இயக்குநர் சார்பாக அவர்களுடைய திட்ட ஆலோசகர் ஆலையின் உற்பத்திதிறன் விரிவாக்க திட்டத்தை பற்றிய விளக்கவுரையை பொதுமக்களுக்கு விளக்குவார். அதனை தொடர்ந்து பொதுமக்கள் இத்திட்டம் தொடர்பான கருத்துக்கள், ஆலோசனைகள், சந்தேகங்கள், விளக்கங்களை கேட்கலாம். இவையனைத்தும் வீடியோகிராபி மற்றும் ஒலிப்பதிவு செய்யப்பட்டு, இக்கூட்டத்தின் நடவடிக்கைகள் மற்றும் குறிப்புகள் மத்திய சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் / தமிழ்நாடு மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்திற்கு அனுப்பப்படும் என தெரிவித்தார்.

வருவாய் கோட்ட அலுவலர், ஓசூர் அவர்கள் பொதுமக்கள் கருத்து கேட்பு கூட்டத்தை தொடங்கி வைத்தார். பின்னர் தி/ள். மீனாட்சி உத்யோக் (இந்தியா)

பிரைவேட் லிமிடெட் நிறுவனத்தின் இயக்குநர் அவர்களை உத்தேசிக்கப்பட்டுள்ள ஆலையின் உற்பத்திதிறன் விரிவாக்க திட்டத்தின் விளக்கவுரையை நிகழ்த்தக் கூறினார்.

தி/ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட் நிறுவனத்தின் சுற்றுச்சூழல் தாக்க மதிப்பீடு ஆலோசகர் திரு.N. ராம கிருஷ்ணன் தி/ள். ஏபிசி டெக்னோ லேப்ஸ் இந்தியா பிரைவேட் லிமிடெட், சென்னை அவர்கள் பொதுமக்கள் கருத்து கேட்பு கூட்டத்திற்கு வருகை புரிந்தோர் அனைவரையும் வரவேற்று நிறுவனத்தின் திட்டம் செயல்பாடு தொடர்பாகவும் மற்றும் இதன் செயல்பாட்டின் போது மேற்கொள்ளப்படும் சுற்றுச்சூழல் மேலாண்மை திட்டம் தொடர்பாகவும் காணொளி விளக்கக்காட்சி மூலம் விரிவாக எடுத்துரைத்தார்.

மேற்கூறிய விளக்கவுரைக்கு பிறகு, மாவட்ட சுற்றுச்சூழல் பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம், ஓசூர் அவர்கள் பொதுமக்கள் தங்களுடைய கருத்துக்களை எழுத்து மூலமாகவோ, வாய்மொழி மூலமாகவோ வழங்கலாம் என குறிப்பிட்டார். கருத்துக்களை பதிவு செய்யும் முன்பு பொதுமக்கள் தங்கள் பெயர் மற்றும் ஊரின் பெயர் ஆகியவற்றை குறிப்பிட்டு தங்கள் கருத்துக்களை பதிவு செய்யுமாறு தெரிவித்தார்.

அதன்படி, பொதுமக்கள் தங்களுடைய கீழ்க்கண்ட கருத்துக்களை மற்றும் ஆலோசனைகளை தெரிவித்தனர்.

பொதுமக்கள் கருத்துகேட்பு:

1. **திரு. கிருஷ்ணா, முன்னாள் ஊராட்சி மன்றத் தலைவர்– கலுக்கொண்டப்பள்ளி கிராமம்:**

திரு. கிருஷ்ணா அவர்கள் பொதுமக்கள் கருத்துக் கேட்பு கூட்டத்திற்கு வருகை புரிந்த அனைவரையும் வரவேற்றார். அவர், இத்தொழிற்சாலையின் நிர்வாகத்தினர் மக்களுக்கு சேவை செய்கின்றனர் என்றார். மேலும், திரையில் காண்பிக்கப்பட்டது போல அருகில் உள்ள கிராமங்கள் மற்றும் பள்ளிகூடங்களுக்கு

நிர்வாகத்தினர் உதவிஅளித்ததை 90 சதவீதம் உண்மையேயென்று தெரிவித்தார். மேலும், தொழிற்சாலையில் நிர்வாகத்தினர், புதிய தொழில்நுட்பங்களை பயன்படுத்தி தொழிற்சாலையில் உருவாகும் மாசினை கட்டுப்படுத்துமாறு தெரிவித்தார். மேலும், தொழிற்சாலையை சுற்றிலும் அதிகளவில் மரங்களை நட்டு பசுமை வளாகத்தை அதிகபடுத்துமாறு கேட்டுக்கொண்டார். தொழிற்சாலையில் இரும்பை உருக்குவதற்கு எண்ணெயை எரிபொருளாக பயன்படுத்தும் உலையினை பயன்படுத்தாமல். மின்சாரத்தை மூலமாக (Electrical Induction furnace) கொண்டு இரும்பை உருக்கும் உலையினை பயன்படுத்தி காற்று மாசினை குறைக்குமாறு தெரிவித்தார்.

பதில்

இதற்கு மாவட்ட சுற்றுச்சூழல் பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம், ஓசூர் அவர்கள் தங்களுடைய கருத்து வரவேற்கத்தக்கது என்று கூறினார். மேலும், தொழிற்சாலையின் நிர்வாகத்தினர் மின்சாரத்தை (Electrical Induction furnace) பயன்படுத்தி இரும்பை உருக்கும் உலையினை மட்டுமே பயன்படுத்துவதாகவும் தெரிவித்தார் மற்றும் அதிகளவில் மரக்கன்றுகளை நடுமாறும் தொழிற்சாலையின் நிர்வாகத்தினரிடம் அறிவுறுத்தினார்.

2. **திரு. P. நாகராஜ், பெலகொண்டப்பள்ளி கிராமம்:**

திரு. P. நாகராஜ் அவர்கள், தொழிற்சாலையில் உருவாகும் காற்று மற்றும் ஒலி மாசுபாடுகளை காலத்திற்கேற்ப நவீன தொழில்நுட்பங்களை புகுத்தி உரிய மாசு தடுப்பு சாதனங்களை பயன்படுத்தி மாசு அளவினை கட்டுப்படுத்தி இத்தொழிற்சாலையை இயக்குமாறு கேட்டுக்கொண்டார். இத்தொழிற்சாலை இப்பகுதியில் அமைந்துள்ள காரணத்தினால் இப்பகுதியிலுள்ள மக்கள் வீடுகளை கட்டி தொழிற்சாலையின் தொழிலாளர்களுக்கு வாடகைக்கு விட்டும், மளிகை கடைகள் அமைத்தும் பயன்பெற்று வருகின்றார்கள் என்று கூறினார்.

3. திரு. சுரேஷ், ஊராட்சி மன்றத் துணைத்தலைவர், கலுகொண்டப்பள்ளி கிராமம்:

திரு. சுரேஷ் அவர்கள், இத்தொழிற்சாலையின் விரிவாக்கத்தினால் முக்கிய பிரச்சனையாக அதிகளவு மாசு உருவாவது தான் இருக்கும் என்றும் இருப்பினும் இத்தொழிற்சாலையின் நிர்வாகத்தினர் நவீன தொழில் நுட்பங்களை பயன்படுத்தி அவ்வாறு உருவாகும் மாசினை கட்டுப்படுத்துவோம் என்று உறுதியளித்துள்ளனர். அதனை அவர்கள் கண்டிப்பாக பின்பற்ற வேண்டும் என்று கூறினார். மேலும். பள்ளி செல்லும் மாணவர்கள் இந்த காற்று மாசுபாட்டினால் பாதிப்புக்குள்ளதாகவும் அதனை கட்டுப்படுத்தி மாணவர்களுக்கு பாதிப்பு ஏற்படா வகையில் தொழிற்சாலையை இயக்குமாறு கேட்டுக்கொண்டார்.

மேலும். இத்தொழிற்சாலையின் நிர்வாகத்தினர் உள்ளூரில் அமைந்துள்ள சாலையின் சீரமைப்பிற்கும். உள்ளூர் கோயிலினை புனரமைக்கவும் நிதியுதவி அளித்துள்ளனர் என்று தெரிவித்தார்.

பதில்:

இதன் தொடர்ச்சியாக, மாவட்ட சுற்றுச்சூழல் பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம். ஓசூர் அவர்கள் இத்தொழிற்சாலையின் நிர்வாகத்தினர் தூண்டல் உலையினை(Induction furnace) மட்டுமே பயன்படுத்தி இரும்பு கழிவுகளை உருக்குவதால் காற்று மாசு பாட்டின் அளவு குறைந்த அளவே ஏற்படும் என்று கூறினார்.

4. திரு. H.N. ரமேஷ், கலுகொண்டப்பள்ளி கிராமம்:

திரு. H.N. ரமேஷ் அவர்கள், நிழற்பட விளக்கக் காட்சியில் குறிப்பிட்ட நவீன தொழில் நுட்பங்களை பயன்படுத்தி காற்று மாசு பாட்டின் அளவை குறைத்திடுமாறு தெரிவித்தார்.

- இத்தொழிற்சாலை விரிவாக்கத்தினால் இப்பஞ்சாயத்தின் பொருளதாரம் உயரும் என்றும், இங்கிருக்கும் மக்களுக்கு வேலைவாய்ப்பும் கிடைக்கும் என்று தெரிவித்தார்.

- இத்தொழிற்சாலையின் நிர்வாகத்தினர் சாலை விரிவாக்கத்திற்காக நிதியுதவி கேட்ட பொழுது 7.35 லட்சம் தொகையை வழங்கினர்.
- இக்கிராம மக்களுக்கு வாகன போக்குவரத்து வசதி கேட்டிருப்பதாகவும், அவர்கள் அதற்கு மின்சார வாகனம் அளிப்பதாக கூறியுள்ளதாகவும், கப்பக்கல் பகுதியில் உயர்நிலை நீர்தேக்க தொட்டி கட்டுவதற்கு 6 லட்சம் (மொத்த தொகையில் 33 சதவீதம்) தருவதாகவும் உறுதியளித்துள்ளதை தெரிவித்தார்.
- இத்தொழிற்சாலை விரிவாக்கத்தினால் தொழிற்சாலையின் பயன்பாட்டிற்கு 60 ஆயிரம் லிட்டர் தண்ணீர் தேவை ஏற்படும் என்றும், இதனால் இப்பஞ்சாயத்திற்கு நீர்பற்றாக்குறை ஏற்பட வாய்ப்புள்ளதாகவும் அதனால் இதற்கு மாற்று ஏற்பாடு செய்து தருமாறு கேட்டுக்கொண்டார்.

5. திரு. சூரியநாரயணன், ஓசூர், சுற்றுச்சூழல் மற்றும் சமூக நல ஆர்வலர்:

திரு. சூரியநாரயணன் அவர்கள், சுற்றுச்சூழல் நல மேம்பாட்டிற்காக சில திட்டங்களை கீழ்க்கண்டவாறு பரிந்துரைத்தார்.

- தளி பகுதியானது ஆங்கிலேயர் காலத்திலிருந்து இரண்டாவது ஊட்டியாக கருதப்படுகிறது. இப்பகுதியானது பசுமையாகவும், குளிர்ச்சியாகவும், அமைதியான சுற்றுச்சூழலுடன் இருந்ததாகவும் தெரிவித்தார்.
- தற்போது தொழிற்சாலைகள் இப்பகுதிக்கு வருவது வரவேற்கத்தக்கதாக உள்ளதாக தெரிவித்தார். இத்தொழிற்சாலைகளால் உள்ளூர் பொதுமக்களுக்கு வேலைவாய்ப்பு வருவதாக தெரிவித்தார்.
- தொழிற்சாலையில் பயன்படுத்தப்படும் தூண்டல் உலையிலிருந்து வெளிப்படும் நச்சு வாயுக்களின் காரணமாக அதிகளவு காற்று மாசு மற்றும் வெப்பம் கதிரியக்கம் ஆகியவற்றை கட்டுப்படுத்தப்படுவதாக தொழிற்சாலை நிர்வகத்தினர் கூறியுள்ளதாகவும், அதனை 100 சதவீதம் முழுமையாக பின்பற்றி தொழிற்சாலையை இயக்க வேண்டும் என்று தெரிவித்தார்.

- இத்தொழிற்சாலையினால் ஏற்படும் காற்று மாசு மற்றும் வெப்பம் கதிரியக்கத்தை தடுக்க அதற்குரிய மரங்களை நட வேண்டும் என்று தெரிவித்தார்.
- இத்தொழிற்சாலையிலிருந்து வெளிவரும் CO_2, NO_x, SO_2 போன்ற நச்சு வாயுக்களால் காற்று மாசு ஏற்படுகிறது. இதனால் அருகில் உள்ள பொதுமக்களின் ஆரோக்கியம் காக்கப்பட வேண்டிய பொறுப்பு தொழிற்சாலை நிர்வாகத்தினருக்கு உள்ளது.
- தொழிற்சாலையில் உள்ளூர் மக்கள் அதிகளவில் வேலை செய்கின்றனர். அவர்களுக்கு எந்தவித உடல் நல பாதிப்பு இல்லை என்று உறுதிப்படுத்தப்பட வேண்டும்.
- நிறுவன சமூக பொறுப்பு நிதியின் (CSR) மூலம் அதிகப்படியான மரங்கள் நடப்படவேண்டும் என்று தெரிவித்தார்.

6. திரு. P.N. சீனிவாசன், முன்னாள் ஊராட்சி மன்றத் துணைத்தலைவர்– பெலக்கொண்டப்பள்ளி கிராமம்:

திரு. P.N. சீனிவாசன், அவர்கள் தொழிற்சாலை விரிவாக்கத்தினை வரவேற்பதாக தெரிவித்தார். மேலும் மழைநீர் சேகரிப்பு, சமூக காடு வளர்ப்பு. ஆகியவற்றை இத்திட்டத்தில் இணைத்து செயல்படுத்துமாறு கேட்டுக்கொண்டார். இத்தொழிற்சாலையின் நிர்வாகத்தினர் அதிகளவில் மின்சாரத்தினை பயன்படுத்துகின்றனர் என்றும் இதற்கு மாற்றாக சூரிய ஒளியை பயன்படுத்தி மின் ஆற்றல் உற்பத்தியை பெருக்கி, மின்சார உபயோகத்தினை குறைக்குமாறு கேட்டுக் கொண்டார். மேலும், உபயோகப்படுத்தப்பட்ட கழிவு நீரினை மறுசுழற்சி செய்து உபயோகப்படுத்துமாறு கேட்டுக் கொண்டார்.

பதில்:

தொழிற்சாலையின் உற்பத்தி விரிவாக்க திட்டத்திற்கான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆலோசகர் அவர்கள் தொழிற்சாலையில் ஏற்கனவே கழிவுநீர்

சுத்திகரிப்பு நிலையம் அமைக்கப்பட்டு ஒரு சொட்டு நீர் கூட வீணாக்காமல் மறுசுழற்சி செய்து உபயோகப்படுத்தப்படுகிறது என்றும், சூரிய மின்தகடுகள் அமைக்கப்பட்டு சூரியஒளியின் மூலம் மின்னாற்றல் பெறப்பட்டு மின்தேவைக்கான பயன்பாட்டில் உள்ளது என்று கூறினார்.

முடிவுரை:

இறுதியாக மாவட்ட சுற்றுச்சூழல் பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம், ஓசூர் அவர்கள் பொதுமக்கள் கூறிய கருத்துக்கள் பதிவு செய்யப்பட்டு மற்றும் எழுத்து பூர்வமான மனுக்கள் பெறப்பட்டு அவை மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம் சென்னைக்கு அனுப்பப்படும் என்பதனை தெரிவித்துக் கொண்டு இந்த பொது மக்கள் கருத்து கேட்பு கூட்டம் முடிவுபெற்றதாக தெரிவித்தார்.

மேலும், தி/ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட் நிறுவனத்தின் உத்தேசிக்கப்பட்டுள்ள ஆலை விரிவாக்க செயல்பாட்டினை அமைப்பது தொடர்பாக பொதுமக்கள் கருத்து கேட்பு கூட்டத்தின்போது பொதுமக்களிடமிருந்து பெறப்பட்ட 21 எண்ணிக்கையிலான மனுக்கள் இத்துடன் இணைக்கப்பட்டுள்ளது.

மேலும், தி/ள். மீனாட்சி உத்யோக் (இந்தியா) பிரைவேட் லிமிடெட் நிறுவனத்தின் உத்தேசிக்கப்பட்டுள்ள ஆலை விரிவாக்க செயல்பாட்டினை அமைப்பது தொடர்பாக பொதுமக்களிடம் எழுத்து மூலமாக, மாவட்ட சுற்றுச்சூழல் பொறியாளர், தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம், ஓசூர், அலுவலகத்தில் எவ்வித மனுக்களும் பெறப்படவில்லை.

மேற்கூறிய பொதுமக்கள் கருத்து கேட்பு கூட்டத்தில் பங்குபெற்றோர் பட்டியல் கூட்ட நடவடிக்கைகளை பதிவு செய்த காணொலி குறுந்தகடு, ஒலி பதிவு மற்றும் புகைப்படங்கள் அடங்கிய பதிவுகோல், ஆகியவை இத்துடன் இணைத்து அனுப்பப்படுகிறது.

மாவட்ட சுற்றுச்சூழல் பொறியாளர் தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம் ஓசூர்	வருவாய் கோட்ட அலுவலர் ஓசூர்	மாவட்ட ஆட்சியர் கிருஷ்ணகிரி

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பொதுமக்கள் நேரடிக் கேட்புக் கூட்டம்

வருகைப் பதிவுப் பட்டியல்

தேதி : 11.08.2022
நேரம் : 11.00 AM
இடம் : தி/எ. அண்ணாசாரியா கல்யாண மண்டபம்
புதூர் - தனி வட்டம் ரோடு,
மதுரைகாண்டம்பட்டி கிராமம்,
தேன்கனிக்கோட்டை வட்டம்,
கிருஷ்ணகிரி மாவட்டம்.

தி/எ. மதனாட்டி உதவி ஆட்சியர் (பயிற்சி) அவர்கள் தலைமை, ச.எண் : 291/1, 291/2A, 291/2B, 291/3A, 291/3B, 291/4A, 292/4A, 292/4B, 292/5A, 292/5B மதுரைகாண்டம்பட்டி கிராமம், தேன்கனிக்கோட்டை வட்டம் கிருஷ்ணகிரி மாவட்டம் அமைவதன்கண் 1.ஏரி - மண் தோண்டப்பட்ட / பயன்படுத்தப்படும் ஆற்று வண்டல் மண் 30,000 மெ.டன்னிலிருந்து 1,91,000 மெ.டன்னாக உயர்த்தவும் 2. மு.மை.மே.டி. ஏரிப்பள்ளம் ஆற்று வண்டல் மண் 60,000 மெ.டன்னிலிருந்து 1,80,000 மெ.டன்னாக உயர்த்தவும் பொதுமக்கள் நேரடிக் கேட்புக் கூட்டம்.

வ.எண்	பெயர் மற்றும் முகவரி	தொலைபேசி எண்	கையொப்பம்
1	V. தேன்மொழி வருவாய் கோட்ட அலுவலர் புதூர்	9445000430	
2	Er. வெங்கடேசன் மாவட்ட சுற்றுச்சூழல் பொறியாளர் புதூர்	8056042207	11/8/2022
3	Er. வெங்கையான் உதவி பொறியாளர் தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம், புதூர்	9940808449	

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வ.எண்	பெயர் மற்றும் முகவரி	தொலைபேசி எண்	கையொப்பம்
4	Jayesh Agarwal	9841077846	
5	[illegible]	9345298007	
6	SALIL BANSAL	9841012201	
7	P. VEDUCOPEX Nookadara AP.	9391564555	
8	ACHINTYA BANSAL	9962354419	
9	H-N. Ramesh.	9494263377	
10	K. Nagaraj Reddy Wivecera pally	9994561402	
11	M. Suresh kappukal.	9894461091	
12	Prabhakar. M Kalakandapalli.	9791443212	

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வ.எண்	பெயர் மற்றும் முகவரி	தொலைபேசி எண்	கையொப்பம்
14	K. VIKRAM Illivenpalli.	9443311329	
15	A. Alilesh. Kappakal.	8220528195	
16	M. ASWATH Kappakal.	9442946603	
17	D[illegible] Kaipattu	7305542311	
18	K. Sreenivasamurthy Karnataka	9741708853	K.S.murthy
19	Tarsam Bhardwaj	9910357527	
20	Madhav Prasad Sharma Kabbakal.	9894119038	
21	D. Ashok. Hyd(T.G)	8096081725	D. Ashok
22	B.L MANOHAR	Belgudgalli,	9442089714

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எண்	பெயர் மற்றும் முகவரி	தொலைபேசி எண்	கையொப்பம்
24	B.V Reddy (ஹோசூர்)	9052566634	BV
25	R. Suryanarayana. Hosur	9751289667	
26	A. Sudersham Hyd மூர்	7981520849	
27	K. Rama krishna	9848375901	
28	R.S.S. kumar (N.G.O)	9440224347	R.S.S.
29	மஞ்சுநாத் (வி.ஐ.டி)	8123716324	Manjunath
30	K Shamala	9154489617	K Shamala
31	K. Renga Rao Environmental Social worker	7886871877	
32	Ramprasath	9629340857	

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வ.எண்	பெயர் மற்றும் முகவரி	தொலைபேசி எண்	கையொப்பம்
34	Dr. N. Ramakrishnan	9944497871	
35	L. Selvakumar	9940079792	
36	Virendra	9360271189	
37	T Ravikumar	9790491337	
38	Dhivakar.	9363256827	
39	Pmadesh.	9597305875	
40	Venkatesh Kalukondapalli		
41	Maheswara Kalukondapalli	9003502072	
42	Vinesh Devaganapathy	8110852274	
43	Nagesh. Bangalore	9945040324	

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எண்	பெயர் மற்றும் முகவரி	தொலைபேசி எண்	கையொ
44	M. Ramesh Dheemai	9790017756	
45	N. Krishnap	9443324	
46	B.N. Srinivasan.	9443828303	
47	P. Nagaraj	8870677297	
48	Narayana Reddy	8870551035	
49	S. Senthilkum	9841401793	
50	M. Suresh	9[illegible]4	
51	Prashanth	9789149400	
52	Sunil	9003620992	

Annexure - 8

TAMIL NADU POLLUTION CONTROL BOARD

From
Thiru. R.Kannan, M.Tech.,
Member Secretary,
Tamil Nadu Pollution Control Board,
76, Mount Salai,
Guindy, Chennai - 32

To
The Addl. Principal
Chief Conservator of Forests (C),
MoEF & CC Regional Office (SEZ),
1st and 2nd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai - 34

Letter No. T1 / TNPCB / F.006200 / Orange / HSR / 2023 dated: 17.03.2023

Sub: TNPCB - Industries - M/s. Meenakshi Udyog Pvt. Ltd., SF. No. 291/1,2A, Etc., Kalugondapalli Village, Denkanikottai Taluk, Krishnagiri District – Certified Compliance Report (CCR) - requested - Furnished – reg.

Ref: 1. OM F. No. IA3-22 / 10 / 2022-IA.III (E 177258), dated: 08.06.2022
2. Unit's letter dated 06.03.2023

****

I invite, kind attention to the reference 2nd cited, wherein the unit M/s. Meenakshi Udyog Pvt. Ltd., SF. No. 291/1,2A, Etc., Kalugondapalli Village, Denkanikottai Taluk, Krishnagiri District has requested the TNPCB to issue Certified Compliance Report (CCR) of the latest renewal of consent issued vide Proceeding dated 13.04.2022 under the Water and Air Act, as per the query raised by the MoEF & CC vide reference 1st cited.

In this regard, the Certified Compliance Report (CCR) for the conditions stipulated in the latest RCO issued to the unit vide proceeding dated 13.04.2022 is enclosed herewith.

The receipt of the letter may be acknowledged.

Encl : As above

20/03/23
For Member Secretary
20.3.2023

Copy to:

The General Manager,
M/s. Meenakshi Udyog (I) Pvt. Ltd.,
Room No. 3, Right Wing, 2nd Floor, Alamall,
No. 4, Montieth Road, Egmore,
Chennai - 08

COMPLIANCE REPORT OF RCO CONDITIONS UNDER THE WATER AND AIR ACTS OF THE UNIT OF M/S. MEENAKSHI UDYOG (INDIA) PVT LTD, SF. NO. 291/1,2A, 2B&3A & 292/4A, 4B&5A, KALUGONDAPALLI VILLAGE, DENKANIKOTTAI TALUK, KRISHNAGIRI DISTRICT VIDE PROC. NO. F.0715HSR/OL/DEE/TNPCB/HSR/W&A/2022 DATED 13/04/2022.

Sl. No.	Consent Order Conditions	Compliance Status
	Water Act	
1.	The unit shall treat the sewage generated from the unit through Septic Tank followed by Dispersion Trench and Soak Pit arrangements.	Complied. Sewage generated from the unit is treated in the Septic Tank followed by Dispersion Trench and Soak Pit.
2	The unit shall ensure that the wet scrubber bleed off shall be completely recycled back to the process after filtration without any stagnation/ponding.	Complied. Scrubber bleed off is completely recycling back to the process after filtration
3.	The unit shall dispose the non hazardous solid waste scientifically for further beneficial use without much accumulation.	The unit has assured to comply with.
4.	The unit shall ensure that the activity shall not attract any public complaint.	There is no complaint against the unit.
5.	The unit shall ensure that the production of in house Steel Ingots shall not exceed the consented quantity of 2500 T/M.	Complied. The unit was inspected on 14.03.2023. During inspection, no Establishment / Operation for expansion carried out.
6.	The unit shall not go for any expansion activity without obtaining prior Consent for Expansion of the Board.	
7.	Concealing the factual data or failure to comply with any of the conditions mentioned in the consent order may result in withdrawal of this Consent and attract legal actions under the provisions of Environment (Protection) Act, 1986.	The unit has assured to comply with.
8.	The unit shall furnish the audited Balance Sheet every year for verification of the Gross Fixed Assets so as to collect the balance or consent fee, if any.	The unit has furnished the audited certificate as on 08.04.2022 of GFA value of Rs. 1843.62 Lakhs. Demand for 2022-2024 = Rs. 1,80,618/- Remittance: Remitted 162288/- vide CR. No. 1,39,930 Dated 04.04.2022 and Rs. 18,330/- vide CR. No. 139943 Dated 05.04.2022. Total Remitted = Rs. 1,80,618/-
9	The unit shall not use 'Use and throwaway plastics' such as plastic sheets used for food wrapping, spreading on dining table etc, plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bag and plastics flags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco-friendly alternative such as banana leaf, areca nut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.,	The unit has assured to comply with.

10	In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.	The unit has furnished the audited certificate as on 08.04.2022 of GFA value of Rs. 1843.62 Lakhs. Demand for 2022-2024 = Rs. 1,80,618/- Remittance: Remitted 162288/- vide CR. No. 1,39,930 Dated 04.04.2022 and Rs. 18,330/- vide CR No. 139943 Dated 05.04.2022. Total Remitted = Rs. 1,80,618/-
	Air Act	
1.	The unit shall operate and maintain the Air Pollution Control measures effectively and continuously so as to achieve the NAAQ / Emission standards prescribed by the Board.	Complied. The Air Pollution Control measures were in operational condition. The ROA of the AAQ & SM survey conducted through TNPCB Lab. on 23.06.2022 (Copy enclosed) shows that all the parameters are within the limit prescribed by the Board.
2.	The unit shall adhere to Ambient Noise Level standards prescribed by the Board.	Complied. The ROA of the ANL survey conducted through TNPCB Lab. on 23.06.2022 (Copy enclosed) shows that all the parameters are within the limit prescribed by the Board.
3.	The unit shall maintain the online PM monitoring system attached to the Reheating Furnace and connected to CAC, TNPCB, Chennai.	Complied. The unit is maintaining the online PM monitoring system attached to the Reheating Furnace to the Care Air Centre, Chennai.
4.	The unit shall continue to develop more green belt in and around the unit's premises.	Complied. The unit has developed green belt and agreed to develop further.
5.	The unit shall ensure that the production of in house Steel Ingots shall not exceed the consented quantity of 2500 T/M.	Complied. The unit was inspected on 14.03.2023. During inspection, no Establishment / Operation for expansion carried out.
6.	The unit shall not go for any expansion activity without obtaining prior Consent for Expansion of the Board.	
7.	Concealing the factual data or failure to comply with any of the conditions mentioned in the consent order may result in withdrawal of this Consent and attract legal actions under the provisions of Environment (Protection) Act, 1986.	The unit has assured to comply with.
8.	The unit shall furnish the audited Balance Sheet every year for verification of the Gross Fixed Assets so as to collect the balance or consent fee, if any.	The unit has furnished the audited certificate as on 08.04.2022 of GFA value of Rs. 1843.62 Lakhs. Demand for 2022-2024 = Rs. 1,80,618/- Remittance: Remitted 162288/- vide CR. No. 1,39,930 Dated 04.04.2022 and Rs. 18,330/- vide CR. No. 139943 Dated 05.04.2022. Total Remitted = Rs. 1,80,618/-
9	In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.	

District Environmental Engineer
Tamil Nadu Pollution Control Board
Hosur

TAMIL NADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Hosur .

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,
2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur.
3. Date of Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)
4. Duration of Survey : 8 Hours
5. Category : Orange – Large
6. Land Use Classification : Rural & Others

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	28	30		50	81
Weather Condition	Clear sky		Rain Fall (mm)	NIL	
Predominant Wind Direction	SW - NE		Mean Wind Speed (km/hr)	-	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction *	Distance (m) *	Height Form GL (m)	Pollutants Concentration (microgram / m^3)		
					PM 10	SO_2	NOx
1	Top of Scaffolding near old main gate	NE	200	2.0	68	20	24
2	Top of Scaffolding near Compound Wall	E	200	2.0	64	18	20
3	Top of Scaffolding near Slag yard	SE	200	2.0	60	15	18
4	Top of Scaffolding near Lab	SW	100	2.0	48	12	15
5	Top of Scaffolding near Main gate	NW	100	2.0	46	10	12

Note: * With respect to major emission

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB, Hosur.

Test Performed	Test Method
PM10	IS 5182 : (Part 23) - 2006
SO2	Modified West – Graeke / IS 5182 : (Part 2) – 2001 RA: 2012
NOx	Jacobs – Hochheiser / IS 5182 : (Part 6) - 2006 RA.2012

TAMILNADU POLLUTION CONTROL BOARD

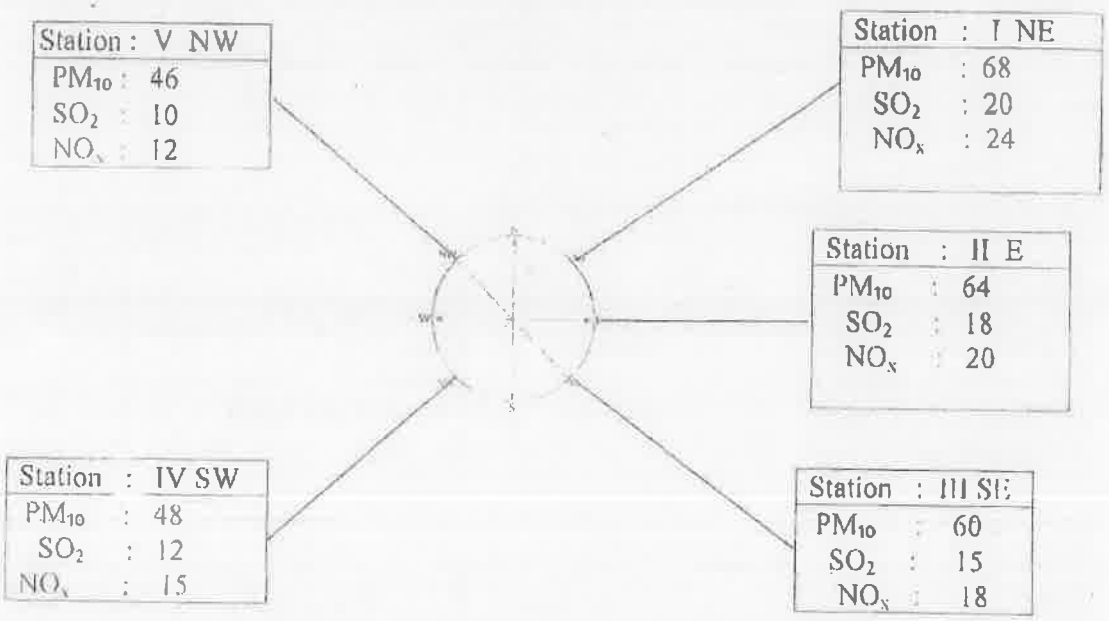
District Environmental Laboratory, Hosur

AMBIENT AIR QUALITY SURVEY

Schematic Diagram Showing Location of Sampling

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,
2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur.
3. Date of Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)



Note: All the values are expressed in and restricted to sampling period of 8 hours.

Meteorological Conditions:	
Predominant Wind Direction	SW- NE
Wind Speed	----
Weather Condition	Clear Sky
Rainfall	Nil

A. Parthasarathi

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur

STACK MONITORING SURVEY – Report of Analysis

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,
2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur.
3. Date of Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)
4. Type of Industry : Foundry

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Stack . Temp ^{o}C	Velocity in (m/ sec)	Discharge rate In Nm^3/Hr	Pollutants (mg / Nm^3)		
					PM	SO_2	NO_X
1	Induction Furnace – 6 T	38	5.2872	2292	46	15	18
2	Induction Furnace – 10 T	45	5.5398	2358	38	12	20

Test Performed	Test Method
PM	IS 11255: (Part 1) – 1985
SO2	IS 11255: (Part 2) – 1985
NOx	IS 11255: (Part 7) – 2005

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Hosur

Stack Details

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,
2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur
3. Date of Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)

Sl. No.	Particulars		1	2
1.	Stack attached to		Induction Furnace – 6 Ton / Batch	Induction Furnace – 10 Ton / Batch
2.	Details of process stack		Metal Melting	Metal Melting
3.	Height from G Level in (m)		30.3	30.3
4.	Diameter in (m)		0.4	0.4
5.	Port hole height from Ground Level or bends or ducts in (m)		11.2	11.2
6.	Fuel Used (with % Sulphur content)		--	--
7.	Fuel Consumption rate per day (mention units)		--	--
8.	Boiler type and capacity		6 Ton / Batch	10 Ton / Batch
9.	APC Measures provided		Fume Extraction System With Bag House filter	Fume Extraction System With Bag House filter
10.	APC functional status		Functioning	Functioning
11.	Composition of flue gas	--	--	--
		--	--	--
		--	--	--
12	Moisture content in %		--	--
13.	Ambient temp in ^{o}K		295	295
14.	Temp of flue gas in ^{o}K		309	317
15.	Velocity of flue gas in m/sec		5.2872	5.5398
16.	Volume of flue gas sampled in m^3		1.008	1.000
17.	Gaseous Discharge rate per day in Nm^3/Hr		2292	2358
18.	Combustion efficiently %			--

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur.
STACK MONITORING SURVEY – Additional details

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,
2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur.
3. Date of Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)
4. Type of Industry : Foundry

Stack Monitoring Additional details

Sl. No.	Details of stack mentioned in the Air Consent order	Details of stack available and in working condition	Details of stack for which stack Emission sampling have been done	Justification for the left out of stack Emission Sampling
1	Induction Furnace – 02 nos	Induction Furnace – 02 nos Working Condition	SPM,SO_2,NO_x Sampling done	-----
2	Reheating Furnace	Reheating Furnace Working Condition	Sampling not done	-----
3	Coal Pulveriser	Coal PulveriserWorking Condition	Sampling not done	-----
4	DG – 65KVA	DG – 65KVA Working Condition	Sampling not done	Below 500KVA, Stand by

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur .
AMBIENT/SOURCE NOISE LEVEL SURVEY - Report of Analysis

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1.	Name of the Industry	M/s.MeenakshiUdyog (I) Pvt Ltd,		
2.	Address of the Industry	Kappakal Village,Hosur – ThallyRoad,Hosur.		
3.	Date of Survey	23.06.2022 (6.30 a.m. – 14.30 p.m.)		
	Orange / Large		Unclassified	
	Ambient		Day	
			Calm	

Logging Parameters

	Casella Technologies		Serial No		CC8110029
	10 Minutes each point				50 - 110
Weighting	**" A"**		**"C"**		FAST
	RANDOM				11.30Hrs

Report of Noise Level Monitoring(Before Testing)

Sl No	Location	Duration	Distance	Direction	Sound Level – dB (A)					
					L_{eq}	L_{90}	L_{50}	L_{10}	Min	Max
1	Near old main gate	10	70	NE	57.2	53.5	55.5	58.0	53.0	67.1
2	Near Compound Wall	10	100	E	56.2	54.0	55.0	58.0	53.3	63.8
3	Near Slag Yard	10	60	SE	54.8	53.5	54.5	56.0	52.4	58.5
4	Near Lab Area	10	70	SW	54.0	51.5	53.5	55.0	51.0	64.6
5	Near New main gate	10	60	NW	54.3	53.5	54.0	55.0	52.7	58.8

Note:L90 Value refers to background noise: L50 Value refers to mean noise.L10 value refers to nuisance or annoyance level :Leq value is the average energy for the measured period

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur

General Particulars

Report No.020/ AAQS/2022-2023 Date:27.06.2022

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,

2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur.

3. Date of Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)

Sl. No.	Particulars	
1.	Process Description	M.S.Scraps --- Ingots --- Rolling Billets
2.	Emission Sources	Induction Furnace, Rolling Mill
3.	Fugitive Emission Sources	Induction Furnace, Rolling Mill, Vehicle Movement
4.	Raw Material Consumptions	MS.Scrap, Sponge Iron, Mild Steel, MN. Silica
5.	Production Capacity as per Air Consent order No. & Date	1.M.S.Ingots – 2500 Ton / Month 2. M.S.Rods – 5000 Ton / Month 2008232025776 dt:05.10.2020
6.	Production on the day of Survey	1.M.S.Ingots - 75 Ton 2. M.S.Rods –148 Ton
7.	Percent production with respect to Air Consent Order	1.M.S.Ingots – 90% 2. M.S.Rods – 89%
8.	Air Consent Order No. Validity upto 31st March 20.....	2008232025776 dt:05.10.2020 Valid upto 31.03.2022
9.	Details of APC measures	1.Fume Extraction System with Bag House Filter provided for Induction Furnace. 2.Wet Scrubber Provided for Reheating Furnace
10.	Functional Status of APC measures	Functioning
11.	Compliance with Consent Conditions	Compliance
12.	Field Observations	--------

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur.
INFERENCE REPORT ON AAQS/ S.M.

1. Name of the Industry : M/s.MeenakshiUdyog (I) Pvt Ltd,
2. Address of the Industry : Kappakal Village, Hosur – Thally Road, Hosur
3. Pollution Category : Orange- Large
4. Date of A.A.Q. Survey : 23.06.2022 (6.30 a.m. – 14.30 p.m.)
5. Predominant Wind Direction : South West to North East
6. Weather condition : Clear Sky

STATUS OF POLLUTANTS LEVEL

1. AMBIENT AIR QUALITY :-

1. Total No. of A.A.Q. stations monitored : 5
2. No. of A.A.Q. stations in which Pollutants level exceeded the Boards standards : NIL

Maximum and Minimum values of Pollutants Level observed:

Sl. No	POLLUTANT	Values in microgram/m^3		BOARD's STANDARD (As per consent order)
		Maximum	Minimum	
1.	PM_{10}	68	46	100
2.	GASEOUS POLLUTANTS:-			
	(i) SO_2	20	10	80
	(ii) NO_2	24	12	80

4) [illegible]

1. Total No. of Stacks Monitored : 2
2. No. of Stacks in which Pollutants level Exceeded the Boards standards : Nil

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur.

Report No.020/ AAQS/2022-2023

To.
M/s.MeenakshiUdyog (I) Pvt Ltd,
S.F.No.29/1,2A,2B &3A &292 / 4.4B& 5 A
Anchettipalli Village, Hosur Taluk,Krishnagiri Dt.

Bill No.	020/2022-23
Date	27.06.2022

Ref: 1. B.PMs.No.6 Dt.31.03.2009.
2. This Office Lr.No. DEL / HSR / AAQS / F.No.M - 4 / 2022-23 / Dt : 24.05.2022
3. Cash Receipt No dt. Rs.

*****

Sl. No	Description	No. of Stations	Rate (Rs.)	Amount (Rs).
1.	Ambient Air Quality Survey – PM_{10} (Sampling)	5	3500.00	17500.00
2.	Stack Monitoring – PM, SO_2, NO_x,	2	9600.00	19200.00
3.	Analysis Charges – PM_{10}	7	1050.00	7350.00
4.	Analysis Charges – Sulphur dioxide	7	1050.00	7350.00
5.	Analysis Charges – NO_2 & Nitrogen Oxides	7	1050.00	7350.00
6.	Ambient Noise Level testing charges (First 5 Points)	I[st] 5points	7,000.00	7000.00
7.	Ambient Noise Level testing			
	Total			65750.00
Less: Advance Vide CR No. Dt: Advance Vide& Report No: 29/2020-21 Dt: 22.07.2020				NIL 9300.00
Balance to be paid				56450.00
Excess payment with TNPCB				NIL

Deputy Chief Scientific Officer,
District Environmental Laboratory,
TNPCB / HOSUR.

Annexure - 9

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(IA DIVISION-INDUSTRY-1 SECTOR)

*****

Dated: 05.06.2023

Date of Zero Draft MoM sent to EAC: 04.06.2023
Approval by Chairman: 05.06.2023
Uploading on PARIVESH: 05.06.2023

MINUTES OF THE 33RD EXPERT APPRAISAL COMMITTEE (INDUSTRY-1 SECTOR) MEETING HELD ON 30TH MAY, 2023

Venue: **Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003 through Video Conferencing**

Time: **10:30 AM onwards**

DAY-1: MAY 30, 2023 [TUESDAY]

(i) Opening Remarks by the Chairman, EAC

Shri Rajive Kumar, Chairman EAC welcomed the Committee members and opened the EAC meeting for further deliberations.

Shri Rajive Kumar also appreciated the efforts of the Ministry's Team (Industry 1 Sector) for preparation and uploading the agenda of the EAC meetings and draft record of discussion very scientifically, systematically and timely on Parivesh Portal.

(ii) Details of Proposals and Agenda by the Member Secretary

Dr. R. B. Lal, Scientist 'F' & Member Secretary, EAC (Industry-1 Sector) appraised to the Committee about the details of Agenda items to be discussed during this EAC meeting.

(iii) Confirmation of the Minutes of the 30th and 31st Meeting of the EAC (Industry-1 Sector) held during 15th and 16th May, 2023 at MoEF&CC through VC.

The EAC, having taken note that final minutes were issued after incorporating comments offered by the EAC (Industry-1 Sector) members on the minutes of its **30th and 31st Meeting of the EAC (Industry-1 Sector) held during 15th and 16th May, 2023** conducted through Video Conferencing, and noted that there is one modifications/factual correction, in the minutes of the 31st EAC meeting for the project/activities and same was incorporated in the Minutes of 32nd EAC meeting held on May 26th & 29th May 2023.

Details of the proposals considered during the 33rd meeting **conducted** through **Video Conferencing**, deliberations made and the recommendations of the Committee are explained in the respective agenda items as under:

Consideration of Environmental Clearance Proposals

Agenda No. 33.1

33.1 Proposed expansion of existing steel rolling mill by M/s Meenakshi Udyog (India) Pvt. Ltd., located at Kalugondapalli Village, Denkanikottai taluk, Krishnagiri district of Tamil Nadu-Consideration of EC proposal.

[Proposal No. IA/TN/IND/156666/2020; File No. IA-J-11011/199/2020-IA-II-(IND-I)]
[Consultant: ABC Techno Labs India Pvt. Ltd.; Valid upto 05.12.2023]

33.1.1 M/s. Meenakshi Udyog (India) Pvt Ltd has made an online application vide proposal no IA/TN/IND1/411355/2022 Dated 19.05.2023 along with copy of EIA report and Forms (Part A, B and C) and certified compliance report seeking Environment Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 3(a) Metallurgical industries (ferrous & non-ferrous) under Category "B" of the schedule of the EIA Notification, 2006 and attracts general condition due to Interstate Boundary falling within 5 km radial distance from the proposed project site and therefore being appraised at Central Level.

33.1.2 Name of the EIA consultant: M/s. ABC Techno Labs India Pvt. Ltd. [List of ACOs with their Certificate / Extension Letter no. QCI/NABET/ENV/ACO/23/2742; valid upto 20.07.2023, as on June 2, 2023].

Details submitted by Project proponent

33.1.3 The details of the ToR are furnished as below:

Date of Application	Consideration	Details	Date of Accord	ToR Validity
09.09.2020	23rd EAC Meeting held on 28th – 30th September, 2020.	Terms of Reference	22.10.2020	21.10.2024

33.1.4 The project of M/s Meenakshi Udyog (India) Pvt Ltd located in Kalugondapalli Village, Denkanikottai Tehsil, Krishnagiri District, Tamil Nadu is for expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods.

33.1.5 Environmental Site Settings:

S. No.	Particulars	Details	Remarks
1.	Total land	4.89 ha of MUIPL	Land use:

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td></td><td></td><td>Unclassified area as per DTCP</td></tr>
<tr><td>2.</td><td>Land acquisition details as per MoEF&CC O.M. dated 7/10/2014</td><td>The entire land is already under the possession of the proponents.</td><td></td></tr>
<tr><td>3.</td><td>Existence of Habitation & involvement of R&R, if any.</td><td>No R&R involved.

Nearest Habitation –
Malugundapalli- 1.19 km, WNW</td><td>-</td></tr>
<tr><td>4.</td><td>Latitude and Longitude of all corners of the project site.</td><td><table><tr><th>Pt</th><th>Latitude</th><th>Longitude</th></tr><tr><td>1</td><td>12°38'53.21"N</td><td>77°45'8.19"E</td></tr><tr><td>2</td><td>12°38'51.81"N</td><td>77°45'10.32"E</td></tr><tr><td>3</td><td>12°38'49.55"N</td><td>77°45'16.80"E</td></tr><tr><td>4</td><td>12°38'48.84"N</td><td>77°45'17.07"E</td></tr><tr><td>5</td><td>12°38'45.66"N</td><td>77°45'16.64"E</td></tr><tr><td>6</td><td>12°38'45.74"N</td><td>77°45'9.85"E</td></tr><tr><td>7</td><td>12°38'47.85"N</td><td>77°45'6.15"E</td></tr></table></td><td></td></tr>
<tr><td>5.</td><td>Elevation of the project site</td><td>950 - 956 M above mean sea level</td><td></td></tr>
<tr><td>6.</td><td>Involvement of Forest land if any.</td><td>No forest land involved.</td><td></td></tr>
<tr><td>7.</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area</td><td><table><tr><th>Waterbody</th><th>Distance</th><th>Direction</th></tr><tr><td>Uliveeranahally Kere</td><td>0.84 km</td><td>NW</td></tr><tr><td>Mathukur Kere</td><td>1.31 km</td><td>S</td></tr><tr><td>Kabanka Pond</td><td>1.33 km</td><td>S</td></tr><tr><td>Bynahanakalli Kere</td><td>2.11 km</td><td>SSW</td></tr><tr><td>Vasa Kere</td><td>2.81km</td><td>E</td></tr><tr><td>Nagandahally Lake</td><td>3.56 km</td><td>NE</td></tr><tr><td>Nagandahally Lake</td><td>3.58 km</td><td>NE</td></tr><tr><td>Kempatti Lake</td><td>4.85 km</td><td>NW</td></tr><tr><td>Muthagatti Lake</td><td>6.67 km</td><td>NNW</td></tr><tr><td>Dodda Ubbanuar Lake</td><td>9.10 km</td><td>WSW</td></tr><tr><td>Kothagondapalli Lake</td><td>9.31 km</td><td>NNW</td></tr></table></td><td>-</td></tr>
<tr><td>8.</td><td>Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere</td><td>NIL within 10 km radius from project site</td><td></td></tr>
</table>

S. No.	Particulars	Details	Remarks
	reserve/ tiger reserve/ elephant reserve etc. if any within the study area		

33.1.6 The existing project had obtained Consent to Establish from TNPCB vide Consent order No.166600 dated 27.03.2006 under Air act & Consent order No. 20567 dated 27.03.2006 under Water act for production of 30,000 TPA of MS billets & TMT rods of 60,000 TPA. Latest Consent to Operate for the existing unit was accorded by Tamil Nadu State Pollution Control Board vide PROCEEDINGS NO.F.0715HSR/OL/DEE/TNPCB/HSR/A/2022 dated 13.04.2022. The validity of CTO is up to 31.03.2024.

33.1.7 Implementation status of the existing CTO:

S. No.	Facilities	Units	As CTE dated 27.03.2006	Implementation Status as on date	Production as per CTO
1.	MS Rods	1	60000 TPA	Implemented	5000 T/M
2.	MS Ingots	1	30000 TPA	Implemented	2500 T/M

33.1.8 The unit configuration and capacity of existing and proposed project is given as below:

Sl. No.	Plant Equipment/ Facility	Existing facilities as per CTE dated 27.03.2006		Proposed Units		Final (Existing + Proposed)	
		Configuration	Capacity	Configuration	Capacity	Configuration	Capacity
1	Induction furnace	2 nos. of 7 TPH 1 no. of 10 TPH	1 x 7 TPH 1 x 10 TPH	1 no. of 10 TPH 2 nos. of 12 TPH	1 x 10 TPH 2 x 12 TPH	1 no. of 10 TPH 2 nos. of 12 TPH	1 x 10 TPH 2 x 12 TPH
2.	Continuous casting machine	2 strands	2 strands	-	-	2 strands	2 strands
3.	RHF & Scrubber	1	18 T	Nil	Nil	1	18 T
4.	Air Cooled Water tower	1	-	1	-	1	-
5.	MS Billets	1	30000 TPA	either to 1,91,000 TPA of MS Billets or 1,80,000 TPA of TMT rods		either to 1,91,000 TPA of MS Billets or 1,80,000 TPA of TMT rods	
6.	TMT Rods	1	60000 TPA				
7.	Plate type heat exchanger	1	-	-	-	1	-
8.	Fume Extraction system	1	-	-	-	1	-
9.	Cooling tower	1	-	-	-	1	-

33.1.9 The details of the raw material requirement for the proposed project along with its source and mode of transportation is given as below:

S. No-	Raw Material For MS Billets	Quantity required per annum			Source	Distance from site (Kms)	Mode of Transportation
		Existing	Expansion	Total			
1	MS Scrap	19,800	1,06,200	1,26,000	Indian Market	Max 300 Kms	Road
2	MS Graded Scrap	11,760	38,640	50,400	Indian Market	Max 300 Kms	Road
3	Sponge Iron	3,900	27,600	31,500	Indian Market	Max 300 Kms	Road
4	Ferro Alloy	300	1,800	2,100	Indian Market	Max 300 Kms	Road
TMT Rods							
1	MS Billets	30000	161000	191000	In house	-	Road

33.1.10 Existing Water requirement is 20 m^3/day, water requirement is obtained from Panchayat and permission for the same has been obtained from Panchayat president vides letter dated 24.05.2014. The water requirement for the proposed project is estimated as 125 m^3/day, out of which 25 m^3/day of fresh water requirement will be obtained from the Panchayat and the remaining requirement of 100 m^3/day will be met from the recycling.

33.1.11 Existing power requirement of 9.9 MW is obtained from TANGEDCO. The power requirement for the proposed project is estimated as 12.95 MW will be obtained from the TANGEDCO.

33.1.12 Bascline Environmental Studies:

Period	December 2020 to February 2021
AAQ parameters at 8 Locations (min and max)	• $PM_{2.5}$ = 18 to 36 µg/m^3 • PM_{10} = 41 to 76 µg/m^3 • SO_2 = 5.6 to 18.9 µg/m^3 • NOx = 13.5 to 21.1 µg/m^3 • CO = 0.14 to 0.55 mg/m^3
Incremental GLC level	• PM_{10} = 3.374 µg/m^3 (Level at 0.5 km in W Direction) • SO_2 = 5.255 µg/m^3 (Level at 0.5 km in W Direction) • NOx = 3.629 µg/m^3 (Level at 0.5 km in W Direction)
Ground water quality at 8 locations	pH: 7.28 to 7.51, Total Hardness: 242 to 560 mg/l, Chlorides: 91 to 306 mg/l, Fluoride 0.24 to 0.41 mg/l. Heavy metal below BDL.
Surface water quality at 3 locations	pH: 7.41 to 7.84; DO: 5.3 to 5.8 mg/l and BOD: 2 to 4.1 mg/l. COD from 16 to 26 mg/l
Noise levels Leq (Day and Night)	51.7 to 68.8 dB(A) for the daytime and 43 to 59.7 dB(A) for the Night time.
Traffic assessment study findings	• Traffic study has been conducted at **NH 948 A** which isapproximately **1 km** (distance) from the plant site. • Transportation of raw material, fuel & finishedproduct will be done

	100% by road. • Existing PCU is **8105.5** PCU/hr on **NH 948 A (NH/SH/MDR)** and existing level of service (LOS) is: **C**

Road	V (Volumein PCU/hr.)	C (Capacityin PCU/hr.)	ProposedV/C Ratio	LOS
NH 948 A	8105.5	15000	0.54	C

	• PCU load after proposed project will be **8105.5** (Existing) + **70** (Additional) PCU/hr and level of service (LOS) will be: **C**

Road	V (Volumein PCU/hr.)	C (Capacityin PCU/hr.)	ProposedV/C Ratio	LOS
NH 948 A	8175.5	15000	0.55	C

	** Note: Capacity as per IRC 73 Guide line for Capacity for roads.* **Conclusion:** The level of service will be fair after including additional traffic due to proposed project.
Flora and Fauna	No Schedule-I fauna and endangered flora observed in the study area.

33.1.13 The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

S. No.	Type of Waste	Source	Quantity generated (TPA)	Mode of Treatment	Disposal
1.	Furnace Slag	Induction Furnace	19000	Grinding	Cement manufacturing/ road laying
2.	Mill Scale	Rod Mill	1910	Collection	Secondary users
3.	Used/spent oil	DG sets	0.5	No Treatment	Disposal to authorized vendors
4.	Waste Containing oil	Machineries	0.2	No Treatment	Disposal to authorized vendors

33.1.14 Public Consultation:

Details of advertisement given	08.7.2022
Date of Public Consultation	11.08.2022
Venue	Annamacharya Kalyanamandapam
Presiding Officer	Revenue Divisional Officer, Hosur
Major issues raised	• To adapt new technologies to control the pollution and to develop more green belt around the unit.

	• To provide transport facility

Action plan as per MoEF&CC O.M. dated 30/09/2020:

SL. No.	Description	Capital Cost (Rs. In Lakhs)	Timeline
1.	Lay a road network to Ulliveerannapally to Kappakal Road	18	Within 8 months from EC
2.	Providing drinking water facility by installing RO System & Toilet faciliFes in nearby schools and villages	15	Within 8 months from EC
3.	ContribuFng to Rain water harvesFng & PlantaFon programmes in the nearby villages	6	Within 8 months from EC
4.	VocaFonal Skill Development Programme (for different target groups such as Women, Youth etc.)	6	Within 8 months from EC
Total		**45**	-

33.1.15 Existing capital cost of project was 14.5 Crores. The capital cost ofthe proposed project is Rs 25 Crores and the capital cost for environmental protection measures is proposed as Rs 1 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 0.2 Crores. The employment generation from the proposed project /expansion is 125. The details of cost for environmental protection measures are as follows:

S. No.	Description of Item	Existing (Rs. In lakhs)		Proposed (Rs. In lakhs)	
		Capital Cost	Recurring Cost	Capital Cost	Recurring Cost
(i).	Air Pollution Control/ Noise Management	400	16	40	5
(ii).	Water Pollution Control	100	10	10	2.5
(iii).	Environmental Monitoring andManagement	-	3	-	3
(iv).	Green Belt Development	50	0.5	15	2
(v).	Addressal of Public Consultation concerns	-	-	11.35	-

33.1.16 Existing green belt has been developed in 1 ha area which is about 20% of the total project area of 4.87 ha with total sapling of 570 Trees. Proposed greenbelt will be developed in 1.65 ha which is about 33% of the total project area. A 5 m wide greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB/MoEF&CC, New Delhi guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 4100 saplings will be planted and nurtured in 1.65 hectares in a year.

33.1.17 It is submitted that there is no violation under EIA Notification, 2006/court case/show cause/direction related to the project under consideration.

Written representations:

33.1.18 During the meeting, based on the deliberations made by the EAC, the project proponent vide letter dated 30.05.2023 through email dated 30.05.2023 submitted the following information:

S. No.	Clarification sought	Reply by the PP
1.	The PP had submitted water supply letter from local Panchayat dated 24-05-2014. The revised letter is to be submitted.	In the existing water supply approval letter it is mentioned that the MUIPL is being supplied the water of 20 m^3/day which can be enhanced to 25 m^3/day. The copy of the latest water supply letter is submitted.
2.	As per guidelines a hectare of greenbelt (GB) should have 2500 trees. The PP has earmarked GB area of 1.65 ha, in which the GB should be developed accordingly.	The project site has about 570 existing grown-up trees and accordingly as per the committee's directives, it is planned to provide 4100 trees within the project site within the GB area of 1.65 ha. It is hereby committed to plant about 3530 trees.
3.	The unit is proposing to knockout induction furnace of 14 TPH and proposed to install induction furnace of 24 TPH but the process water requirement is increased by 7 times, please justify the same.	The existing production capacity of the unit is 90,000 TPA out of which MS Billets is 60,000 TPA and only 30,000 TPA is sold as TMT Rods. The re-rolling mills in the unit requires more water for strengthening the TMT rods. In the existing unit, the process water requirement is 15m^3/day (7 for billet cooling and 8 for quenching in rolling mill). Whereas the proposed expansion, the unit will produce 1,91,000TPA of TMT Rod which requires 95.5m^3/day of process water in line with the existing consumption of rolling mill process water. However, it was taken as 110m^3/day with 15% contingency. Now, as per the committee's suggestions the contingency is reduced as 10% thereby the process water requirement will be reduced to 105m^3/day. The revised water balance is submitted. In addition, the harvested rainwater will also be used to reduce the freshwater intake for process/GB.
4.	The proposed trees in the greenbelt area should have adequate water	The reduced process water of about 5m^3/day will be used for greenbelt development, hence the water available for greenbelt development is about 13m^3/day which will meet the water requirement of 4100 trees on alternate days at the rate of 6 liter/tree. The revised water balance is submitted.

S. No.	Clarification sought	Reply by the PP
5.	The PP had earmarked the amount of 25 lakhs for CER and budget for resolving the issues raised during PH. This committee directed to raise the CER amount to a minimum of 40-45 lakhs.	As per the committee's suggestions, PP agrees to earmark the fund amounting to 45 Lakhs as Corporate Environmental Responsibility and budget for resolving the issues raised during PH.

Certified Compliance Report from SPCB

33.1.19 The certified compliance report has been obtained from Tamil Nadu Pollution Control Board vide letter No. T1/TNPCB/F.006200/ORNAGE/HSR/2023 dated 17.03.2023. As per the report, all the conditions of CTO are complied with by the project proponent.

Deliberations by the Committee

33.1.20 The Committee noted the following:

1. The instant proposal is for expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods.
2. The proposed cement griding unit is a category B project and appraised as Category A at Central level project due to Interstate Boundary falling within 5 km radial distance from the proposed project site.
3. The EAC, constituted under the provision of the EIA Notification, 2006 comprising Expert Members/domain experts in various fields, examined the proposal submitted by the Project Proponent in desired format along with EIA/EMP reports prepared and submitted by the Consultant accredited by the QCI/ NABET on behalf of the Project Proponent.
4. The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.
5. The Committee noted that the EIA reports are in compliance of the ToR issued for the project, reflecting the present environmental status and the projected scenario for all the environmental components. The Committee deliberated on the proposed mitigation measure towards Air, Water, Noise and Soil pollutions. The Committee suggested that the storage of toxic/explosive raw materials/products shall be undertaken with utmost precautions and following the safety norms and best practices.
6. The existing project had obtained Consent to Establish from TNPCB vide Consent order No.166600 dated 27.03.2006 under Air act & Consent order No. 20567 dated 27.03.2006 under Water act for production of 30,000 TPA of MS billets & TMT rods of 60,000 TPA. Latest Consent to Operate for the existing unit was accorded by Tamil Nadu State Pollution

Control Board vide PROCEEDINGS NO.F.0715HSR/OL/DEE/TNPCB/HSR/A/2022 dated 13.04.2022. The validity of CTO is up to 31.03.2024.

7. The EAC deliberated on the certified compliance report of earlier CTO and its action plan and found it satisfactory.

8. The total project area is 4.89 ha which is under the possession of the project proponent.

9. The nearest habitation is Malugundapalli at a distance of 1.19 km in WNW direction of the project site. The EAC is of the opinion that PP shall strictly implement the environmental safeguard measures proposed to minimise the impact on the habitation of the locals.

10. Uliveeranahally Kere is at a distance of 0.84 km in NW of the project site. Also, there are other water bodies such as Lakes, ponds and are within the study area of 10 km of the project site. The EAC is of the opinion that water bodies shall not be disturbed. Mitigation measures w.r.t. safeguarding the water bodies shall be implemented.

11. Existing Water requirement is 20 m^3/day which is obtained from Panchayat. The water requirement for the proposed project is estimated as 125 m^3/day, out of which 25 m^3/day of fresh water requirement will be obtained from the Panchayat and the remaining requirement of 100 m^3/day will be met from the recycling.

12. The Committee has found that the baseline data and incremental GLC due to the proposed project and found it satisfactory.

13. The PP has submitted that existing green belt has been developed in 1 ha area which is about 20% of the total project area of 4.87 ha with total sapling of 570 Trees. Proposed greenbelt will be developed in 1.65 ha which is about 33% of the total project area. Total no. of 4100 saplings will be planted and nurtured in 1.65 hectares in a year. The EAC deliberated on the revised greenbelt action plan along with the budget earmarked and is of the opinion that as committed, the greenbelt shall be completed in the coming monsoons of 2023.

14. The committee deliberated details of carbon foot prints and carbon sequestration study w.r.t. proposed project and found them to be satisfactory.

15. The Committee also deliberated on the public hearing issues along with revised action plan submitted by the proponent to address the issues raised during the public hearing and found it satisfactory.

16. The EAC also deliberated on the submitted written representation of project proponent and found it satisfactory.

17. The EAC deliberated on the proposal with due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The Experts Members of the EAC found the proposal in order and recommended for grant of environmental clearance.

18. The environmental clearance recommended to the project/activity is strictly under the provisions of the EIA Notification 2006 and its subsequent amendments. It does not tantamount/construe to approvals/consent/permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The project proponent shall obtain necessary

permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, from the State Pollution Control Board, prior to construction & operation of the project.

19. EAC also reviewed the EC conditions (specific and general) pertaining to Industry-I projects and observed that some of the specific conditions stipulated so far in the previously recommended EC projects are common and applicable to most of the projects in general. In view of the same, the General Conditions (in case of EC projects) have been revised through reallocation of these common conditions from specific to General Conditions (in case of EC projects). Accordingly, the instant project is also being stipulated with the modified General conditions.

Recommendations of the Committee:

33.1.21 In view of the foregoing and after detailed deliberations, the committee **recommended** the instant proposal for grant of Environment Clearance **subject to uploading the written submission on portal** under the provisions of EIA Notification, 2006 subject to the stipulation of following specific conditions and general conditions as per the Ministry's Office Memorandum No. 22-34/2018-III dated 9/8/2018 based on project specific requirements:

A. Specific Condition:

i. The project proponent shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.

ii. The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.

iii. The nearest habitation is Malugundapalli at a distance of 1.19 km in WNW direction of the project site. Project Proponent shall take appropriate environmental safeguard measures to minimise the impact on the habitation of the locals. PP needs to strengthen green belt all around the plant area to reduce the dust pollution. The PP shall also include this location in its environmental monitoring programme.

iv. Uliveeranahally Kere is at a distance of 0.84 km in NW of the project site. Also, there are other water bodies such as lakes, ponds and are within the study area of 10 km of the project site. A robust and full proof Drainage Conservation scheme to protect the natural drainage and its flow parameters; along with Soil conservation scheme and multiple Erosion control measures shall be implemented.

v. The water requirement of 125 m^3/day shall be obtained from Panchayat (Fresh water – 25 m^3/day) and the remaining from the recycling (100 m^3/day) after obtaining necessary permission from the Competent Authority, afresh. The existing approval is 9 years old. No ground water extraction is permitted.

vi. Three tier Green Belt shall be developed in at least 33% of the project area in a time period of 1 year with native species all along the periphery of the project site of adequate width

and tree density shall not be less than 2500 per ha. Survival rate of green belt developed shall be monitored on periodic basis to ensure that damaged plants are replaced with new plants in the subsequent years. PP shall also develop greenbelt in the form of shelter belt comprising of total of 6 rows of 2x2 m plantation with tall trees & broad leaves with thick canopy along with windshield inside the plant premises to act as green barrier for air pollution & noise levels towards Malugundapalli Villages. Compliance status in this regard, shall be submitted to concerned Regional Office of the MoEF&CC.

vii. All the commitments made towards socio-economic development of the nearby villages shall be satisfactorily implemented. The action plan based on the social impact assessment study of the project as per the EMP in accordance to the Ministry's OM dated 30.09.2020 amounting to Rs. 45 Lakhs shall be strictly implemented and progress shall be submitted to the Regional Office of MoEF&CC.

viii. The PP shall improve the housekeeping at the project site and implement the activities such as dust control mechanism, vacuum cleaning facilities, adequate internal drainage to avoid water logging, internal road maintenance with paved/concrete, waste yard upkeep, and adequate lighting etc. The PP shall conduct regular internal audit on these aspect for better housekeeping in the Unit. The implementation Report needs to be submitted to the IRO, MoEFCC.

ix. The PP shall adopt undertake village adoption programme, prepare and implement the action plan to develop them into model villages.

B. General Conditions

I. Statutory compliance:

i. The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.

ii. This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 02 Nos. Continuous Ambient Air Quality Station (CAAQMS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NOx in reference to SO_2 and NOx emissions)

within and outside the plant area (at least at four locations one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.

iii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

iv. Sampling facility at process stacks shall be provided as per CPCB guidelines for manual monitoring of emissions.

v. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

vi. The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.

vii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

viii. Ensure covered transportation and conveying of raw material to prevent spillage and dust generation. The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.

ix. The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.

x. Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.

xi. Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.

xii. Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.

xiii. The project proponent shall adopt the Clean Air practices like mechanical collectors, wet scrubbers, fabric filters (bag houses), electrostatic precipitators, combustion systems (thermal oxidizers), condensers, absorbers, adsorbers, and biological degradation. Controlling emissions related to transportation shall include emission controls on vehicles as well as use of cleaner fuels. Sufficient numbers of additional truck mounted Fog/Mist water cannons shall be procured and operated regularly inside the project premises and also in the surrounding villages to arrest suspended dust in the atmosphere.

xiv. Bag filters shall be cleaned regularly and efficiency of bag filter system shall be monitored at regular intervals.

xv. Water Sprinklers/Water mist system shall be installed near raw material yards, operational units and other strategic locations to control fugitive emissions from the plant.

xvi. The particulate matter emissions from the process stacks shall be less than 30 mg/Nm^3 and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed.

xvii. Following additional arrangements to control fugitive dust shall be provided:

a. Fog / Mist Sprinklers at all on bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas.

b. Proper covered vehicle shall be used while transport of materials.

c. Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.

xviii. Online stack monitoring system for IF and RHF shall be installed and monitoring report shall be submitted to the concerned Regional Office of the MoEF&CC along with the six monthly compliance report.

xix. Low NOx Burners will be installed at Reheating Furnace for control of Gaseous emissions generated while using PNG.

III. Water quality monitoring and preservation

i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre- and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.

iii. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.

iv. Water meters shall be provided at the inlet to all unit processes in the plants.

v. The project proponent shall make efforts to minimise water consumption in the plant complex by segregation of used water, practicing cascade use and by recycling treated water.

vi. The proposed project shall be designed as "Zero Liquid Discharge" Plant. ETP shall be installed and there shall be no discharge of effluent from the plant. Domestic effluent shall be treated in Sewage Treatment Plant. Suitable measures shall be adopted for sewage water handling to ensure no contamination of any kind of water body.

vii. All stockyards shall have impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains and catch pits to trap the run off material and shall be implemented as per the action plan submitted in EIA/EMP report.

viii. Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.

IV. Noise monitoring and prevention

i. Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof, and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures

i. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
ii. Provide LED lights in their offices and residential areas.
iii. The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases of reheating furnaces.
iv. Practice hot charging of slabs and billets/blooms as far as possible.
v. Ensure installation of regenerative type burners on all reheating furnaces.

VI. Waste management

i. Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil.
ii. Kitchen waste shall be composted or converted to biogas for further use.
iii. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.
iv. The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022. In this regard, CPCB has issued a direction to all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) on 30/06/2022 to ensure the compliance of Notification published by Ministry on 12/08/2021. The technical guidelines issued by the CPCB in this regard is available at https://cpcb.nic.in/technical-guidelines-3/. All the project proponents are hereby requested to sensitize and create awareness among people working within the Project area as well as its surrounding area on the ban of SUP in order to ensure the compliance of Notification published by this Ministry on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six monthly compliance report being submitted by the project proponents.
v. A proper action plan must be implemented to dispose of the electronic waste generated in the industry.
vi. Solid waste utilization
    a. PP shall install a slag crusher to convert steel slag into aggregate for use in construction industry, fine sand for use as flux in steel plant, sand in brick making and as lime in cement making.
    b. PP shall recycle/reuse solid waste generated in the plant as far as possible.
    c. Used refractories shall be recycled as far as possible.

VII. Green Belt

i. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration by trees.
ii. Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage and offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitor able with defined time frames.

iii. Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.

VIII. Public hearing and Human health issues

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.

iii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP. Safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

iv. Occupational health surveillance of the workers shall be done on a regular basis and records maintained.

IX. Environment Management

i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed.

ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Integrated Regional Office of the MoEF&CC.

X. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be implemented

vi. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

vii. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

viii. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure, and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

x. The recommendations of the approved Site-Specific Wildlife Management Plan (in case of involvement of Schedule-I species) shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.

xi. The PP shall put all the environment related expenditure, expenditure related to Action Plan on the PH issues, and other commitments made in the EIA/EMP Report etc. in the company web site for the information to public/public domain. The PP shall also put the information on the left over funds allocated to EMP and PH as committed in the earlier ECs and shall be carried out and spent in next three years, in the company web site for the information to public/public domain.

xii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

xiii. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

xiv. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xv. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xvi. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

xvii. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

***

Agenda No. 33.2

33.2 Setting of 5.00 MTPA Iron Ore Processing Plant and 3.0 MTPA Pellet Plant by M/s MSPL Limited, located at Village Somalapura, Sandur Taluk, Bellary District, Karnataka– Re-Consideration of Environmental Clearance.

[Proposal No.: IA/KA/IND1/402872/2022; File No. IA-J-11011/329/2021-IAII(IND-1)]
[Consultant: M/s. Mineral Engineering Services; valid upto 08.07.2023 and M/s Ardra Consulting Services Pvt Ltd.: valid upto 05.07.2023]

33.2.1 M/s. MSPL Limited has made an online application vide proposal no. IA/KA/IND1/413204/2023 Dated 12.01.2023 along with copy of EIA/EMP report, Forms (Part A, B and C) seeking Environment Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 2(b) Mineral Beneficiation and 3(a), Metallurgical industries (ferrous & non-ferrous) under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

33.2.2 Name of the EIA consultant:

Beneficiation Plant: M/s. Mineral Engineering Services [List of ACOs with their Certificate / Extension Letter No: QCI/NABET/ENV/ACO/23/2758; valid upto 08.07.2023, as on June 2, 2023].

Pellet Plant: M/s Ardra Consulting Services Pvt Ltd. [List of ACOs with their Certificate / Extension Letter no. QCI/NABET/ENV/ACO/23/2730; valid upto 05.07.2023, on June 2, 2023].

Details submitted by Project proponent

33.2.3 The details of the ToR are furnished as below:

Date of Application	Consideration	Details	Date of Accord	ToR Validity
09.10.2021	47th meeting of EAC held on 28th - 29th Oct, 2021	Terms of Reference	15.11.2021	14/11/2025

Annexure - 10

ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environment Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

To,

The Director

MEENAKSHI UDYOG (INDIA)PVT LTD

Kapakkal Village Road -Via Ullivernapalli Hosur ,Thally Road,Krishnagiri District,GeneralManager,Krishnagiri,Tamil Nadu-635110

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/TN/IND1/411355/2022 dated 19 May 2023. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC23A008TN162913**
2.	**File No.**	IA-J-11011/199/2020-IA-II(IND-I)
3.	**Project Type**	Expansion
4.	**Category**	A
5.	**Project/Activity including Schedule No.**	3(a) Metallurgical industries (ferrous & non ferrous)
6.	**Name of Project**	Meenakshi Udyog (India) Pvt Ltd - Proposed expansion of existing steel rolling mill
7.	**Name of Company/Organization**	MEENAKSHI UDYOG (INDIA)PVT LTD
8.	**Location of Project**	Tamil Nadu
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 19/07/2023

(e-signed)
Dr. R B Lal
Scientist F
IA - (Industrial Projects - 1 sector)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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F. No. IA-J-11011/199/2020-IA-II (IND-I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division – Industry I sector)
***

Indira Paryavaran Bhawan
Vayu Wing, 3rd Floor,
Jor Bagh Road, Aliganj,
New Delhi – 110003

Dated: 19th July, 2023

To,

M/s Meenakshi Udyog (India) Pvt. Ltd
Kapakkal Village Road -Via Ullivernapalli Hosur,
Thally Road,Krishnagiri District,
Kalugonda palli Tamil Nadu- 635110
Email: meenakshiudyog18@gmail.com

Project: Proposed expansion of existing steel rolling mill by M/s Meenakshi Udyog (India) Pvt. Ltd., located at Kalugondapalli Village, Denkanikottai taluk, Krishnagiri district of Tamil Nadu – Grant of Environmental Clearance regarding.

Sir,

This refers to your proposal no. IA/TN/IND1/411355/2022 Dated 19.05.2023 along with copy of EIA report and Forms (Part A, B and C) and certified compliance report seeking Environment Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above. . Further, PP has submitted the information on Portal on **21.06.2023**.

2. The proposed project activity is listed at S. No. 3(a) Metallurgical industries (ferrous & non-ferrous) under Category "B" of the schedule of the EIA Notification, 2006 and attracts general condition due to Interstate Boundary falling within 5 km radial distance from the proposed project site and therefore being appraised at Central Level.

3. The instant Proposal was considered in the **33rd EAC Meeting held on 30th May 2023 wherein after detailed deliberations, the committee recommended the proposal for grant of Environment Clearance under the provisions of EIA Notification, 2006 subject to the stipulation of specific conditions and general conditions**. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed at https://parivesh.nic.in

4. The details of the proposal are as per the EIA/EMP report submitted by the proponent. The salient features of the proposal as presented during the above-mentioned meetings of EAC (Industry 1 Sector) are as under: -

S. No.	Particulars	Details submitted by PP
a.	Terms of Reference for undertaking EIA study	22.10.2020
b.	Period of baseline data collection	**December 2020 to February 2021**
c.	Date of Public Consultation	11.08.2022
d.	Action plan to address the PH issues	An amount of Rs. 45 Lakhs have been earmarked to address the issues raised during public hearing. Detail of activities proposed

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details submitted by PP</th></tr>
<tr><td></td><td></td><td>attached as Annexure 1.</td></tr>
<tr><td>e.</td><td>Location of the project</td><td>Kalugondapalli Village, Denkanikottai taluk, Krishnagiri district of Tamil Nadu</td></tr>
<tr><td>f.</td><td>Latitude and Longitude of the project site</td><td>
<table>
<tr><th>Pt</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1</td><td>12°38'53.21"N</td><td>77°45'8.19"E</td></tr>
<tr><td>2</td><td>12°38'51.81"N</td><td>77°45'10.32"E</td></tr>
<tr><td>3</td><td>12°38'49.55"N</td><td>77°45'16.80"E</td></tr>
<tr><td>4</td><td>12°38'48.84"N</td><td>77°45'17.07"E</td></tr>
<tr><td>5</td><td>12°38'45.66"N</td><td>77°45'16.64"E</td></tr>
<tr><td>6</td><td>12°38'45.74"N</td><td>77°45'9.85"E</td></tr>
<tr><td>7</td><td>12°38'47.85"N</td><td>77°45'6.15"E</td></tr>
</table>
</td></tr>
<tr><td>g.</td><td>Total land</td><td>4.89 ha of MUIPL</td></tr>
<tr><td>h.</td><td>Land acquisition details as per MoEF&CC O.M. dated 7/10/2014</td><td>The entire land is already under the possession of the proponents</td></tr>
<tr><td>i.</td><td>Existence of habitation & involvement of R&R, if any</td><td>No R&R involved.

Nearest Habitation –
Malugundapalli- 1.19 km, WNW</td></tr>
<tr><td>j.</td><td>Elevation of the project site</td><td>950 - 956 M above mean sea level</td></tr>
<tr><td>k.</td><td>Involvement of Forest land if any.</td><td>No Forest Land is involved.</td></tr>
<tr><td>l.</td><td>Water body exists within the project site as well as study area</td><td>
<table>
<tr><th>Waterbody</th><th>Distance</th><th>Direction</th></tr>
<tr><td>Uliveeranahally Kere</td><td>0.84 km</td><td>NW</td></tr>
<tr><td>Mathukur Kere</td><td>1.31 km</td><td>S</td></tr>
<tr><td>Kabanka Pond</td><td>1.33 km</td><td>S</td></tr>
<tr><td>Bynahanakalli Kere</td><td>2.11 km</td><td>SSW</td></tr>
<tr><td>Vasa Kere</td><td>2.81km</td><td>E</td></tr>
<tr><td>Nagandahally Lake</td><td>3.56 km</td><td>NE</td></tr>
<tr><td>Nagandahally Lake</td><td>3.58 km</td><td>NE</td></tr>
<tr><td>Kempatti Lake</td><td>4.85 km</td><td>NW</td></tr>
<tr><td>Muthagatti Lake</td><td>6.67 km</td><td>NNW</td></tr>
<tr><td>Dodda Ubbanuar Lake</td><td>9.10 km</td><td>WSW</td></tr>
<tr><td>Kothagondapalli Lake</td><td>9.31 km</td><td>NNW</td></tr>
</table>
</td></tr>
<tr><td>m.</td><td>Existence of ESZ / ESA / national park / wildlife Sanctuary / biosphere Reserve / tiger reserve / elephant reserve etc. if any within the study area</td><td>NIL within 10 km radius from project site</td></tr>
<tr><td>n.</td><td>Project cost</td><td>Existing capital cost of project was 14.5 Crores. The capital cost of the proposed project is Rs 25 Crores</td></tr>
<tr><td>o.</td><td>EMP cost</td><td>The capital cost for environmental protection measures is proposed as Rs 1 Crores. The annual recurring cost towards the</td></tr>
</table>

S. No.	Particulars	Details submitted by PP
		environmental protection measures is proposed as Rs 0.2 Crores
p.	Employment opportunity	The employment generation from the proposed project / expansion is 125
q.	Water and Power requirement	The water requirement for the proposed project is estimated as 125 m3/day. The power requirement for the proposed project is estimated as 12.95 MW.

Unit configuration and capacity:

Sl. No.	Plant Equip ment/ Facility	Existing facilities as per CTE dated 27.03.2006		Proposed Units		Final (Existing + Proposed)	
		Configuration	Capacity	Configuration	Capacity	Configuration	Capacity
1	Induction furnace	2 nos. of 7 TPH 1 no. of 10 TPH	1 x 7 TPH 1 x 10 TPH	1 no. of 10 TPH 2 nos. of 12 TPH	1 x 10 TPH 2 x 12 TPH	1 no. of 10 TPH 2 nos. of 12 TPH	1 x 10 TPH 2 x 12 TPH
2.	Continuous casting machine	2 strands	2 strands	-	-	2 strands	2 strands
3.	RHF & Scrubber	1	18 T	Nil	Nil	1	18 T
4.	Air Cooled Water tower	1	-	1	-	1	-
5.	MS Billets	1	30000 TPA	either to 1,91,000 TPA of MS Billets or 1,80,000 TPA of TMT rods		either to 1,91,000 TPA of MS Billets or 1,80,000 TPA of TMT rods	
6.	TMT Rods	1	60000 TPA				
7.	Plate type heat exchanger	1	-	-	-	1	-
8.	Fume Extraction system	1	-	-	-	1	-
9.	Cooling tower	1	-	-	-	1	-

6. The EAC, in its meeting held during 30th May, 2023, inter-alia, deliberated the following:

i. The instant proposal is for expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods.

ii. The proposed cement griding unit is a category B project and appraised as Category A at Central level project due to Interstate Boundary falling within 5 km radial distance from the proposed project site.

iii. The EAC, constituted under the provision of the EIA Notification, 2006 comprising Expert Members/domain experts in various fields, examined the proposal submitted by the Project Proponent in desired format along with EIA/EMP reports prepared and submitted by the Consultant accredited by the QCI/ NABET on behalf of the Project Proponent.

iv. The EAC noted that the Project Proponent has given an undertaking that the data and

information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.

v. The Committee noted that the EIA reports are in compliance of the ToR issued for the project, reflecting the present environmental status and the projected scenario for all the environmental components. The Committee deliberated on the proposed mitigation measure towards Air, Water, Noise and Soil pollutions. The Committee suggested that the storage of toxic/explosive raw materials/products shall be undertaken with utmost precautions and following the safety norms and best practices.

vi. The existing project had obtained Consent to Establish from TNPCB vide Consent order No.166600 dated 27.03.2006 under Air act & Consent order No. 20567 dated 27.03.2006 under Water act for production of 30,000 TPA of MS billets & TMT rods of 60,000 TPA. Latest Consent to Operate for the existing unit was accorded by Tamil Nadu State Pollution Control Board vide PROCEEDINGS NO.F.0715HSR/OL/DEE/TNPCB/HSR/A/2022 dated 13.04.2022. The validity of CTO is up to 31.03.2024.

vii. The EAC deliberated on the certified compliance report of earlier CTO and its action plan and found it satisfactory.

viii. The total project area is 4.89 ha which is under the possession of the project proponent.

ix. The nearest habitation is Malugundapalli at a distance of 1.19 km in WNW direction of the project site. The EAC is of the opinion that PP shall strictly implement the environmental safeguard measures proposed to minimise the impact on the habitation of the locals.

x. Uliveeranahally Kere is at a distance of 0.84 km in NW of the project site. Also, there are other water bodies such as Lakes, ponds and are within the study area of 10 km of the project site. The EAC is of the opinion that water bodies shall not be disturbed. Mitigation measures w.r.t. safeguarding the water bodies shall be implemented.

xi. Existing Water requirement is 20 m3/day which is obtained from Panchayat. The water requirement for the proposed project is estimated as 125 m3/day, out of which 25 m3/day of fresh water requirement will be obtained from the Panchayat and the remaining requirement of 100 m3/day will be met from the recycling.

xii. The Committee has found that the baseline data and incremental GLC due to the proposed project and found it satisfactory.

xiii. The PP has submitted that existing green belt has been developed in 1 ha area which is about 20% of the total project area of 4.87 ha with total sapling of 570 Trees. Proposed greenbelt will be developed in 1.65 ha which is about 33% of the total project area. Total no. of 4100 saplings will be planted and nurtured in 1.65 hectares in a year. The EAC deliberated on the revised greenbelt action plan along with the budget earmarked and is of the opinion that as committed, the greenbelt shall be completed in the coming monsoons of 2023.

xiv. The committee deliberated details of carbon foot prints and carbon sequestration study w.r.t. proposed project and found them to be satisfactory.

xv. The Committee also deliberated on the public hearing issues along with revised action plan submitted by the proponent to address the issues raised during the public hearing and found it satisfactory.

xvi. The EAC also deliberated on the submitted written representation of project proponent and found it satisfactory.

xvii. The EAC deliberated on the proposal with due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The Experts Members of the EAC found the proposal in order and recommended for grant of environmental clearance.

xviii. The environmental clearance recommended to the project/activity is strictly under the provisions of the EIA Notification 2006 and its subsequent amendments. It does not tantamount/construe to approvals/consent/permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The project proponent shall obtain necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, from the State Pollution Control Board, prior to construction & operation of the project.

xix. EAC also reviewed the EC conditions (specific and general) pertaining to Industry-I projects and observed that some of the specific conditions stipulated so far in the previously recommended EC projects are common and applicable to most of the projects in general. In view of the same, the General Conditions (in case of EC projects) have been revised through reallocation of these common conditions from specific to General Conditions (in case of EC projects). Accordingly, the instant project is also being stipulated with the modified General conditions.

7. The EAC (Industry-1 Sector), in its 33rd meeting held on May 30, 2023, based on information & clarifications provided by the project proponent and after detailed deliberations **recommended** the proposal for grant of Environment Clearance subject to stipulation of specific and general conditions as detailed in the point below.

8. The MoEF&CC has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1 Sector) hereby decided to grant **Environment Clearance for instant proposal of M/s Meenakshi Udyog (India) Pvt. Ltd.** under the provisions of EIA Notification, 2006 subject to the following specific conditions and general conditions:

A. Specific Condition:

i. The project proponent shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.

ii. The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.

iii. The nearest habitation is Malugundapalli at a distance of 1.19 km in WNW direction of the project site. Project Proponent shall take appropriate environmental safeguard measures to minimise the impact on the habitation of the locals. PP needs to strengthen green belt all around the plant area to reduce the dust pollution. The PP shall also include this location in its environmental monitoring programme.

iv. Uliveeranahally Kere is at a distance of 0.84 km in NW of the project site. Also, there are other water bodies such as lakes, ponds and are within the study area of 10 km of the project site. A robust and full proof Drainage Conservation scheme to protect the natural drainage

xvii. The EAC deliberated on the proposal with due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The Experts Members of the EAC found the proposal in order and recommended for grant of environmental clearance.

xviii. The environmental clearance recommended to the project/activity is strictly under the provisions of the EIA Notification 2006 and its subsequent amendments. It does not tantamount/construe to approvals/consent/permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The project proponent shall obtain necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, from the State Pollution Control Board, prior to construction & operation of the project.

xix. EAC also reviewed the EC conditions (specific and general) pertaining to Industry-I projects and observed that some of the specific conditions stipulated so far in the previously recommended EC projects are common and applicable to most of the projects in general. In view of the same, the General Conditions (in case of EC projects) have been revised through reallocation of these common conditions from specific to General Conditions (in case of EC projects). Accordingly, the instant project is also being stipulated with the modified General conditions.

7. The EAC (Industry-1 Sector), in its 33rd meeting held on May 30, 2023, based on information & clarifications provided by the project proponent and after detailed deliberations **recommended** the proposal for grant of Environment Clearance subject to stipulation of specific and general conditions as detailed in the point below.

8. The MoEF&CC has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1 Sector) hereby decided to grant **Environment Clearance for instant proposal of M/s Meenakshi Udyog (India) Pvt. Ltd.** under the provisions of EIA Notification, 2006 subject to the following specific conditions and general conditions:

A. <u>Specific Condition</u>:

i. The project proponent shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.

ii. The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.

iii. The nearest habitation is Malugundapalli at a distance of 1.19 km in WNW direction of the project site. Project Proponent shall take appropriate environmental safeguard measures to minimise the impact on the habitation of the locals. PP needs to strengthen green belt all around the plant area to reduce the dust pollution. The PP shall also include this location in its environmental monitoring programme.

iv. Uliveeranahally Kere is at a distance of 0.84 km in NW of the project site. Also, there are other water bodies such as lakes, ponds and are within the study area of 10 km of the project site. A robust and full proof Drainage Conservation scheme to protect the natural drainage

and its flow parameters; along with Soil conservation scheme and multiple Erosion control measures shall be implemented.

v. The water requirement of 125 m^3/day shall be obtained from Panchayat (Fresh water – 25 m^3/day) and the remaining from the recycling (100 m^3/day) after obtaining necessary permission from the Competent Authority, afresh. The existing approval is 9 years old. No ground water extraction is permitted.

vi. Three tier Green Belt shall be developed in at least 33% of the project area in a time period of 1 year with native species all along the periphery of the project site of adequate width and tree density shall not be less than 2500 per ha. Survival rate of green belt developed shall be monitored on periodic basis to ensure that damaged plants are replaced with new plants in the subsequent years. PP shall also develop greenbelt in the form of shelter belt comprising of total of 6 rows of 2x2 m plantation with tall trees & broad leaves with thick canopy along with windshield inside the plant premises to act as green barrier for air pollution & noise levels towards Malugundapalli Villages. Compliance status in this regard, shall be submitted to concerned Regional Office of the MoEF&CC.

vii. All the commitments made towards socio-economic development of the nearby villages shall be satisfactorily implemented. The action plan based on the social impact assessment study of the project as per the EMP in accordance to the Ministry's OM dated 30.09.2020 amounting to Rs. 45 Lakhs shall be strictly implemented and progress shall be submitted to the Regional Office of MoEF&CC.

viii. The PP shall improve the housekeeping at the project site and implement the activities such as dust control mechanism, vacuum cleaning facilities, adequate internal drainage to avoid water logging, internal road maintenance with paved/concrete, waste yard upkeep, and adequate lighting etc. The PP shall conduct regular internal audit on these aspect for better housekeeping in the Unit. The implementation Report needs to be submitted to the IRO, MoEFCC.

ix. The PP shall adopt undertake village adoption programme, prepare and implement the action plan to develop them into model villages.

B. General Conditions

I. Statutory compliance:

i. The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.

ii. This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 02 Nos. Continuous Ambient Air Quality Station (CAAQMS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and

CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NOx in reference to SO_2 and NOx emissions) within and outside the plant area (at least at four locations one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.

iii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

iv. Sampling facility at process stacks shall be provided as per CPCB guidelines for manual monitoring of emissions.

v. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

vi. The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.

vii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

viii. Ensure covered transportation and conveying of raw material to prevent spillage and dust generation. The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.

ix. The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.

x. Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.

xi. Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.

xii. Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.

xiii. The project proponent shall adopt the Clean Air practices like mechanical collectors, wet scrubbers, fabric filters (bag houses), electrostatic precipitators, combustion systems (thermal oxidizers), condensers, absorbers and biological degradation. Controlling emissions related to transportation shall include emission controls on vehicles as well as use of cleaner fuels. Sufficient numbers of additional truck mounted Fog/Mist water cannons shall be procured and operated regularly inside the project premises and also in the surrounding villages to arrest suspended dust in the atmosphere.

xiv. Bag filters shall be cleaned regularly and efficiency of bag filter system shall be monitored at regular intervals.

xv. Water Sprinklers/Water mist system shall be installed near raw material yards, operational units and other strategic locations to control fugitive emissions from the plant.

xvi. The particulate matter emissions from the process stacks shall be less than 30 mg/Nm^3 and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed.

xvii. Following additional arrangements to control fugitive dust shall be provided:

a. Fog / Mist Sprinklers at all on bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas.
b. Proper covered vehicle shall be used while transport of materials.
c. Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.

xviii. Online stack monitoring system for IF and RHF shall be installed and monitoring report shall be submitted to the concerned Regional Office of the MoEF&CC along with the six monthly compliance report.

xix. Low NOx Burners will be installed at Reheating Furnace for control of Gaseous emissions generated while using PNG.

III. Water quality monitoring and preservation

i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre- and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.

iii. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.

iv. Water meters shall be provided at the inlet to all unit processes in the plants.

v. The project proponent shall make efforts to minimise water consumption in the plant complex by segregation of used water, practicing cascade use and by recycling treated water.

vi. The proposed project shall be designed as "Zero Liquid Discharge" Plant. ETP shall be installed and there shall be no discharge of effluent from the plant. Domestic effluent shall be treated in Sewage Treatment Plant. Suitable measures shall be adopted for sewage water handling to ensure no contamination of any kind of water body.

vii. All stockyards shall have impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains and catch pits to trap the run off material and shall be implemented as per the action plan submitted in EIA/EMP report.

viii. Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.

IV. Noise monitoring and prevention

i. Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof, and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures

i. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
ii. Provide LED lights in their offices and residential areas.
iii. The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases of reheating furnaces.
iv. Practice hot charging of slabs and billets/blooms as far as possible.
v. Ensure installation of regenerative type burners on all reheating furnaces.

VI. Waste management

i. Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil.
ii. Kitchen waste shall be composted or converted to biogas for further use.
iii. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.
iv. The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022. In this regard, CPCB has issued a direction to all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) on 30/06/2022 to ensure the compliance of Notification published by Ministry on 12/08/2021. The technical guidelines issued by the CPCB in this regard is available at https://cpcb.nic.in/technical-guidelines-3/. All the project proponents are hereby requested to sensitize and create awareness among people working within the Project area as well as its surrounding area on the ban of SUP in order to ensure the compliance of Notification published by this Ministry on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six monthly compliance report being submitted by the project proponents.
v. A proper action plan must be implemented to dispose of the electronic waste generated in the industry.
vi. Solid waste utilization
    a. PP shall install a slag crusher to convert steel slag into aggregate for use in construction industry, fine sand for use as flux in steel plant, sand in brick making and as lime in cement making.
    b. PP shall recycle/reuse solid waste generated in the plant as far as possible.
    c. Used refractories shall be recycled as far as possible.

VII. Green Belt

i. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration by trees.
ii. Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage and offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitor able with defined time frames.

iii. Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.

VIII. Public hearing and Human health issues

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.

iii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP. Safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

iv. Occupational health surveillance of the workers shall be done on a regular basis and records maintained.

IX. Environment Management

i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed.

ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/ violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Integrated Regional Office of the MoEF&CC.

X. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall monitor the criteria pollutants level namely; PM10, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be implemented

vi. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

vii. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

viii. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

x. The recommendations of the approved Site-Specific Wildlife Management Plan (in case of involvement of Schedule-I species) shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.

xi. The PP shall put all the environment related expenditure, expenditure related to Action Plan on the PH issues, and other commitments made in the EIA/EMP Report etc. in the company web site for the information to public/public domain. The PP shall also put the information on the left over funds allocated to EMP and PH as committed in the earlier ECs and shall be carried out and spent in next three years, in the company web site for the information to public/public domain.

xii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

xiii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

9. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

10. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

11. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

12. The above conditions shall be enforced, *inter-alia* under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

13. This issues with approval of the competent authority.

(Dr. R.B. Lal)
Scientist 'F'/ Director
Tel: 011-20819346
Email- rb.lal@nic.in

Encl. as above at Annexure –I

Copy to: -

1. Principal Secretary to Government, Department of Environment, Climate Change and Forests, Government of Tamil Nadu.
2. Additional Chief Secretary to Government, Department of Environment, Climate Change and Forests, Government of Tamil Nadu.
3. The Director General of Forest, Ministry of Environment, Forest and Climate Change, New Delhi.
4. Principal Chief Conservator of Forests (Head of Department), Panagal Maaligai, 1, Jeenis Road, Saidapet, Chennai 600 015.
5. Regional Officer, Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Ist and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34.
6. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
7. Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai- 600 032, Tamil Nadu.
8. Member Secretary, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
9. District Collector, Krishnagiri District, Tamil Nadu.
10. The Monitoring Cell, IA Division, Ministry of Environment, Forest and Climate Change, New Delhi.
11. Guard File/Record File/Monitoring File/MOEF&CC Website.

(Dr. R.B. Lal)
Scientist 'F'/ Director
Tel: 011-20819346
Email- rb.lal@nic.in

Annexure – 1

Table: Action plan as per MoEF&CC O.M. dated 30/09/2020

SL. No.	Description	Capital Cost (Rs. In Lakhs)	Timeline
1.	Lay a road network to Ulliveerannapally to Kappakal Road	18	Within 8 months from EC
2.	Providing drinking water facility by installing RO System & Toilet facilities in nearby schools and villages	15	Within 8 months from EC
3.	Contributing to Rain water harvesting & plantation programmes in the nearby villages	6	Within 8 months from EC
4.	Vocational Skill Development Programme (for different target groups such as Women, Youth etc.)	6	Within 8 months from EC
Total		**45**	-

***

Nature Protects if She is Protected

Signature invalid
Digitally signed by Dr. R B Lal
Scientist F
Date: 7/19/2023 4:39 PM

Annexure - II

F. No. J-11011/199/2020-IA-II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division – Industry I sector)
***

Indira Paryavaran Bhawan
Vayu Wing, 3rd Floor,
Jor Bagh Road, Aliganj,
New Delhi – 110003

Dated: 1st September, 2023

To,

M/s Meenakshi Udyog (India) Pvt. Ltd.
Kapakkal Village Road -Via Ullivernapalli Hosur,
Thally Road,Krishnagiri District, Kalugonda palli, Tamil Nadu- 635110
Email: meenakshiudyog18@gmail.com

Project: Proposed expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] to 1,91,000 TPA of MS Billets and 1, 80,000 TPA of TMT rods by M/s Meenakshi Udyog (India) Pvt. Ltd., located at Kalugondapalli Village, Denkanikottai taluk, Krishnagiri district of Tamil Nadu– Corrigendum in Environmental Clearance– regarding.

Sir,

This refers to your proposal no. IA/TN/IND/302758/2023 received through PARIVESH Portal along with Form 10 and sought for Corrigendum in Environmental Clearance accorded by the Ministry vide No. IA-J-11011/199/2020-IA-II-(IND-I), dated 19.07.2023.

2. The proposals were considered in the 41st meeting of the EAC for Industry-I sector held on 2nd & 4th & 8th August, 2023. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed at https://parivesh.nic.in .

Details submitted by the project proponent

3. The PP has requested modifications in the 33rd meeting of the EAC for Industry-I sector held on 30th May, 2023 and the EC dated 19.07.2023 granted to M/s Meenakshi Udyog (India) Pvt. Ltd. It was also mentioned by Project Proponent that all desired modifications were part of their EIA/EMP report.

4. The instant proposal is for seeking Corrigendum in Environmental Clearance as detailed below.

MoM ref point no.	Details given in MoM of 33rd EAC Meeting dated 30th May, 2023 (Agenda No. 33.1)	Corrections suggested	Remarks/ Justification
Page No. 9 Para 33.1.8 (In the table)	**The unit configuration and capacity** either to 1,91,000 TPA of MS Billets or 1,80,000 TPA of TMT rods	**The unit configuration and capacity** 1,91,000 TPA of MS Billets and 1,80,000 TPA of TMT rods	The EAC noted that this is Typo error and recommended for the correction in the minutes.
Page No. 9	1. The instant proposal is for	1. The instant proposal is for	The EAC noted

Para 33.1.20 (1)	expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] either to 1,91,000 TPA of MS Billets or 1, 80,000 TPA of TMT rods.	expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] to 1,91,000 TPA of MS Billets and 1, 80,000 TPA of TMT rods.	that this is Typo error and recommended for the correction in the minutes
Page No. 9 Para 33.1.20 (2)	2. The proposed cement griding unit is a category B project and appraised as Category A at Central level project due to Interstate Boundary falling within 5 km radial distance from the proposed project site.	2. The proposed expansion of existing steel rolling mill is a category B project and appraised as Category A at Central level project due to Interstate Boundary falling within 5 km radial distance from the proposed project site.	The EAC noted that this is Typo error and recommended for the correction in the minutes

5. There is no change in configuration & capacity of units in granted EC.

Deliberations by the Committee

6. The Committee noted the following:

i). It was informed to the Committee members that PP has requested modifications in the 33rd meeting of the EAC for Industry-I sector held on 30th May, 2023 and the EC dated 19.07.2023 granted to M/s Meenakshi Udyog (India) Pvt. Ltd. pertaining to proposal agenda no. 33.1 as referred above. It was also mentioned by Project Proponent/ consultant that all desired modifications were part of their EIA/EMP report.

ii). The EAC deliberated and noted that the request of the PP may be accepted and recommended for the incorporation of the above-mentioned corrections/modifications in the minutes of the meeting. Accordingly, aforementioned para 33.1.8 (Table column), 33.1.20 (1) and 33.1.20 (2) stands modified in the minutes of 33th EAC (Industry-1) meeting as detailed in table above. According Corrigendum to the EC dated 19.07.2023 granted to M/s Meenakshi Udyog (India) Pvt. Ltd., may be issued after approval of Competent Authority as these are typographical error and needs factual corrections.

7. As per the recommendation the Unit configuration and capacity table in page 4 of EC dated 19.07.2023 is corrected as below.

Sl. No.	Plant Equipment/ Facility	Existing facilities as per CTE dated 27.03.2006		Proposed Units		Final (Existing + Proposed)	
		Configuration	Capacity	Configuration	Capacity	Configuration	Capacity
1	Induction furnace	2 nos. of 7 TPH 1 no. of 10 TPH	1 x 7 TPH 1 x 10 TPH	1 no. of 10 TPH 2 nos. of 12 TPH	1 x 10 TPH 2 x 12 TPH	1 no. of 10 TPH 2 nos. of 12 TPH	1 x 10 TPH 2 x 12 TPH
2.	Continuous casting	2 strands	2 strands	-	-	2 strands	2 strands

Sl. No.	Plant Equipment/ Facility	Existing facilities as per CTE dated 27.03.2006		Proposed Units		Final (Existing + Proposed)	
		Configuration	Capacity	Configuration	Capacity	Configuration	Capacity
	machine						
3.	RHF & Scrubber	1	18 T	Nil	Nil	1	18 T
4.	Air Cooled Water tower	1	-	1	-	1	-
5.	MS Billets	1	30000 TPA	1,91,000 TPA of MS Billets and 1,80,000 TPA of TMT rods		1,91,000 TPA of MS Billets and 1,80,000 TPA of TMT rods	
6.	TMT Rods	1	60000 TPA				
7.	Plate type heat exchanger	1	-	-	-	1	-
8.	Fume Extraction system	1	-	-	-	1	-
9.	Cooling tower	1	-	-	-	1	-

8. The EAC deliberation part of page 4 of EC dated 19.07.2023 is corrected as below.

i. The instant proposal is for expansion of existing steel rolling mill [existing - 30000 Tons Per Annum (TPA) MS Billets and 60000 Tons Per Annum TMT rods] to 1,91,000 TPA of MS Billets and 1, 80,000 TPA of TMT rods.

ii. The proposed expansion of existing steel rolling mill is a category B project and appraised as Category A at Central level project due to Interstate Boundary falling within 5 km radial distance from the proposed project site.

9. The MoEF&CC has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1 Sector) hereby decided to grant **Corrigendum in Environmental Clearance dated 19th July, 2023** for instant proposal of **M/s Meenakshi Udyog (India) Pvt. Ltd.** under the provisions of EIA Notification, 2006.

10. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

11. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

12. This issues with approval of the competent authority.

(Dr. R. B. Lal)
Scientist 'F'/ Director

Tel: 011-20819346
Email-rb.lal@nic.in

Copy to: -

1. Principal Secretary to Government, Department of Environment, Climate Change and Forests, Government of Tamil Nadu.
2. Additional Chief Secretary to Government, Department of Environment, Climate Change and Forests, Government of Tamil Nadu.
3. The Director General of Forest, Ministry of Environment, Forest and Climate Change, New Delhi.
4. Principal Chief Conservator of Forests (Head of Department), Panagal Maaligai, 1, Jeenis Road, Saidapet, Chennai 600 015.
5. Regional Officer, Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Ist and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34.
6. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
7. Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032, Tamil Nadu.
8. Member Secretary, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
9. District Collector, Krishnagiri District, Tamil Nadu.
10. The Monitoring Cell, IA Division, Ministry of Environment, Forest and Climate Change, New Delhi.
11. Guard File/Record File/Monitoring File/MOEF&CC Website.

Nature Protects if She is Protected

(Dr. R. B. Lal)
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Annexure-12

2020 SCC OnLine NGT 675

Affirmed in *Gajubha Jadeja Jesar* v. *Union of India*, 2022 SCC OnLine SC 993

In the National Green Tribunal[±]

(Through Video Conferencing)

(BEFORE S.P. WANGDI, JUDICIAL MEMBER AND SIDDHANTA DAS, EXPERT MEMBER)

Gajubha Jesar Jadeja ... Applicant(s);

Versus

Union of India and Others ... Respondent(s).

Original Application No. 55/2019(WZ)

Decided on February 12, 2020

Advocates who appeared in this case:

Rahul Chaudhary, Advocate, for the Applicant(s)

Mr. Pinaki Misra, Senior Advocate a/w Mr. Kishore Kumar and Mr. Pratesh Chaudhary, Advocates for Respondent No. 7, for the Respondent(s)

Mr. D.M. Gupte, Advocate for Respondent No. 1

Ms. Nidhi Jaswal and Ms. Manyaa Chandok, Advocates for GPCB

Mr. Parth. H. Bhatt & Priyanshi Chandarana for Tushar Mehta, for State of Gujarat for R-4 & 5

ORDER

1. The present application has been filed alleging violation of the EIA Notification, 2006 by the Respondent No. 7 on the ground that it had failed to obtain Environmental Clearance before commencing with the Cold Rolled Stainless Steel manufacturing industry and was extracting ground water without NoC from the Central Ground Water Authority.

2. Vide order dated 27.08.2019, apart from issuing notice, we had directed constitution of a committee comprising of (i) The State Environmental Impact Assessment Authority (SEIAA), Gujarat, (ii) the Gujarat Pollution Control Board (GPCB) (iii) the District Collector/Magistrate, Kutch District and (iv)The Regional Director, 2 CGWA with a direction to verify on the factual aspects set out in the original application and to submit a report.

3. The consequential report filed by the Joint Committee was considered on 15.10.2019 which *inter-alia* concluded as follows:"•

"Committee concluded that the opinion on applicability of Environmental Clearance to the aforementioned unit involving process of Rolling, Annealing Furnace, Pickling and Skin Pass Rolling can only be given by the Ministry of Environment, Forest & Climate Change in consideration of the EIA Notification, 2006 as amended on 01/12/2009 ad definition of the Secondary Metallurgical Processing Industries as given in the EIA Guidance Manual Prepared by IL & FS Ecosmart Ltd."

4. During the course of the proceeding on 15.10.2019, Mr. Rahul Chaudhary, Learned Counsel for the Applicant, placed before us letter dated th August, 2019, written by the MoEF to the Chairman, SEIAA, Chhattisgarh, on the same subject whereby it has been stated as follow:

"It is to inform that the Ministry is in receipt of various representation with regard to applicability of EIA Notification 2006 on steel re-rolling

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mills. The representations received earlier in this regard have been deliberated upon suitably in this Ministry.

2. As on date the Technical EIA Guidance Manual of the MoEF & CC for Metallurgical industry classifies rerolling as a secondary metallurgical industry.

3. As per EIA Notification 2006 secondary metallurgical industries are to be appraised for EC as category B projects under schedule 3(a) Metallurgical industries. In case of secondary metallurgical processing industries units, those projects involving operation of furnaces only such as induction and electric arc furnace, submerged arc furnace, and cupola with capacity more than 30000 tonnes per annum (TPA) would require Environmental Clearance.

4. In view of the above, you are hereby requested to appraise the steel re-rolling proposals as per the provisions of EIA Notification 2006."

5. Considering the above facts and circumstances where the report involved facts *pari materia* to the present case, the stand of the MoEF taken in the letter dated 14.8.2019, in our opinion, would be applicable in full force in the present case also. However, before taking a final call, we deemed it appropriate to seek the clarification from the MoEF as to whether the position indicated in the letter referred to above would be applicable in the present case also.

6. In the interregnum, I.A No. 4 of 2020 came to be filed by the respondent no. 7, the project proponent and was taken up on 16.1.2020 on being mentioned by the learned counsel for the said respondent. None had appeared for the Applicant on that day despite having been informed of the I.A being listed on that day. In fact the learned counsel had informed by e-mail of the same date that he would be appearing on 12.2.2020 when this O.A was earlier listed.

7. The I.A had been preferred by the Respondent No. 7 to place on record the subsequent events which taken place after the order dated 21.11.2019 prohibiting further operation of the unit. A minutes of the meeting of the reconstituted Environment Appraisal Committee (EAC) (Industry-I) held on 23rd — 24th December 2019 was placed before us, the relevant part of which read as follows;

"14.21.20 in view of the forgoing and after detailed deliberations, the Committee recommended the following:

i.) Project activity of CSPL falls under Category B of Schedule 3(a) Metallurgical Industries (ferrous and non-ferrous) of EIA Notification, 2006.

ii.) The committee also noted that there are a few issues which may have diverse interpretations. The reports submitted by the Committee formed by the Hon'ble NGT and the joint inspection report by the Regional office of Bhopal and RO of GPCB for Kutch, have also left the final interpretation to the MoEF&CC. It is also noted that the present unit has obtained CTE from GPCB which is a Statutory authority. There may be other similarly placed cases in the country. This shows that there is a scope and need for further clarification in the matter regarding certain issues so that there is no subjective interpretation in future. These issues are (1) definition of secondary metallurgy units for the purpose of EIA process, (2) clarification about the types of furnaces under applicability of MoEF&CC notification 2006 and (3) clarifying re rolling v. cold rolling in the context of Environment Clearance. Therefore, for further smoothening the EC process for present unit and proposals in future, the MoEF&CC may consider issuing further clarifications.

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iii.) In order to address to instant and similar cases where such re rolling/cold rolling units are established or operating with a CTE/CTO from the concerned State Pollution Control Boards, the Ministry may consider directing the State Pollution Control Boards to get a list of all such cases and take further quick actions so that they apply for EC and get covered by the EIA notification 2006. Since, these units are established or operating under the CTEs/CTOs obtained from a statutory authority i.e. the respective State Pollution Control Boards, a period of one year may be allowed for this recommended conversion to EC. This will also ensure that the units remain in operation for the allowed period and closures, unemployment and related social issues/unrests are avoided.. During this period of one year, they will have to follow all the conditions imposed under the CTE.CTO."

8. As will appear from paragraph (iii.) of clause 14.21.20 of the minutes reproduced above, category of the units to which the Respondent No. 7 belongs, having been established or operating under CTEs/CTOs obtained from the statutory authority, are permitted to operate for conversion to EC and would ensure that the units remain in operation for the said period with the condition that during the period of one year, the units shall follow all the conditions imposed under the CTE/CTO.

9. In the context of the above, we have noted that the respondent no. 7 had been operating under a CTE issued by the GSPCB containing the terms and conditions prescribed therefor. We were thus of the opinion that the order dated 21.11.2019 granting stay of the operation of the unit, required modification to the extent that the respondent no. 7 shall be permitted to run for a period of one year provided that the unit strictly adhere to the CTE conditions till such time CTO was not granted.

10. A short affidavit has now been filed on behalf of the respondent no. 7 which is dated 10.2.2020 to bring on record certain additional documents. On 7.2.2020, the MoEF also filed an affidavit which we find to be of relevance as by that affidavit, the MoEF has accepted recommendations no. (iii) of the Expert Committee reproduced above. We may reproduce below the relevant paragraph of the affidavit:—

"5. It is submitted that the Ministry has accepted the recommendations no. (iii). of EAC to allow those units, operating under the CTEs/CTOs obtained from the respective State Pollution Control Boards, for a period of one year. Further, it has been decided that the requirement of EC or not for such units is a policy decision. Hence, the Ministry will constitute an Expert Committee, other than an EAC, having metallurgical experts for their recommendations.

11. Considering the above facts and circumstances when the foundational question involved in the case have been dealt with effectively by the MoEF, in our considered opinion, nothing further would survive for our consideration.

12. It would appear from the sequence of events that the position that subsisted earlier in respect of Cold Rolled Coils (CRC) of stainless steel was quite obscure as it was not clear as to whether such activity would require environmental clearance under the EIA notification, 2006. The MoEF upon consideration of the expert opinion appears to have now clarified that such industry do require prior environmental clearance but, having regard to the fact that there were a large number of such mills operating on the strength of CTE and CTO, opportunity should be provide to such units to fall within the EC regime by granting a period of at least one year to operate for the purpose.

13. In view of the above the O.A stands disposed off and no order as to cost.

———

† Principal Bench, New Delhi

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Annexure - 13

रजिस्ट्री सं. डी.एल.- 33004/99

REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-20072022-237385
CG-DL-E-20072022-237385

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 3090] नई दिल्ली, बुधवार, जुलाई 20, 2022/आषाढ़ 29, 1944
No. 3090] NEW DELHI, WEDNESDAY, JULY 20, 2022/ASHADHA 29, 1944

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 20 जुलाई, 2022

का.आ. 3250(अ).—माननीय राष्ट्रीय हरित प्राधिकरण ने मूल आवेदन संख्या 55/2019 (डब्लयू जैड), (गजूबा जेसर जडेजा बनाम भारत संघ और अन्य) में अपने तारीख 12 फरवरी, 2020 के आदेश द्वारा अन्य बातों के साथ यह प्रेक्षित किया था कि कोल्ड रोल्ड स्टेनलेस स्टील विनिर्माण उद्योगों के लिए पूर्व पर्यावरण अनुमति अपेक्षित होती है लेकिन इस तथ्य को ध्यान में रखते हुए कि स्थापना की सहमति (सीटीई) और प्रचालन की सहमति (सीटीओ) के आधार पर बृहद संख्या में ऐसी मिलें संचालित की जा रही थीं, माननीय अधिकरण ने यह निर्णय दिया है कि ऐसी इकाइयों को पर्यावरण अनुमति व्यवस्था के भीतर आने के प्रयोजन के लिए कार्य करने हेतु कम से कम एक वर्ष प्रदान करके अवसर प्रदान किया जाना चाहिए;

और केन्द्रीय सरकार ने कोविड-19 महामारी के कारण कारित प्रभाव को ध्यान में रखते हुए; माननीय राष्ट्रीय हरित प्राधिकरण के पूर्वोक्त उक्त आदेश के अनुरूप विचार विमर्श करके विनिश्चय किया है, जिससे ऐसी री-रोलिंग या कोल्ड रोलिंग इकाइयों को पूर्व पर्यावरण अनुमति प्राप्त करने का अवसर प्रदान किया जा सके:

और केन्द्रीय सरकार का यह विचार है कि भारत के राजपत्र, असाधारण, भाग II, खंड 3, उपखंड (ii), में अधिसूचना संख्यांक का.आ. 1533(अ), तारीख 14 सितंबर, 2006 द्वारा प्रकाशित भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना की अनुसूची के धातुकर्म उद्योग (लौह और अलौह) से संबंधित मद 3(क) के अनुसार द्वितीय धातु कर्म प्रसंस्करण उद्योग के परिक्षेत्र में आने वाले स्टील री-रोलिंग प्रचालन और अपेक्षित पर्यावरण अनुमति,

उसकी अनुसूची में (जिसे इसमें इसके पश्चात् उक्त अधिसूचना कहा गया है) जिसमें प्रवर्ग ख के अधीन आने वाली 5,000 टन/एनम (टीपीए) से अधिक क्षमता वाली सभी गैर विषैली द्वीतिय धातूकर्म प्रसंस्करण इकाइयां है, समाविष्ट परियोजनाओं के लिए पूर्व पर्यावरण अनुमति की अपेक्षा को आज्ञापक बनाती है;

अत:, अब, केन्द्रीय सरकार, पर्यावरण (संरक्षण) अधिनियम, 1986(1986 का 29) की धारा 3 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए यह निर्देश देती है कि सभी स्टैंड अलोन री-रोलिंग इकाईयां कोल्ड रोलिंग इकाईयां, जो इस अधिसूचना की तारीख को यथास्थिति, संबद्ध राज्य प्रदूषण नियंत्रण बोर्ड या संघ राज्य क्षेत्र प्रदूषण नियंत्रण समिति से स्थापन की विधिमान्य सहमति (सीटीई) और प्रचालन की विधिमान्य सहमति (सीटीओ) के साथ इस अधिसूचना की तारीख को विद्यमान हैं और प्रचालन में हैं, पर्यावरण अनुमति के अनुसरण में निर्देश निबंधन (टीओआर) अनुदत्त करने के लिए ऑनलाइन आवेदन करेंगी और उक्त इकाइयों को उक्त अधिसूचना की मद 3(क) के अनुसार मानक निर्देश निबंधन अनुदत्त किए जाएंगे और उन्हें लोक परामर्श की अपेक्षा से छूट प्राप्त होगी:

परंतु टीओआर अनुदत्त करने के लिए आवेदन, इस अधिसूचना की तारीख से एक वर्ष की अवधि के भीतर किया जाएगा ।

2. यह अधिसूचना इसके राजपत्र में प्रकाशन की तारीख से प्रवृत्त होगी ।

[फा. सं. आईए-जे-11013/8/2019-आईए.II(I)]

डॉ. सुजीत कुमार बाजपेयी, संयुक्त सचिव

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 20th July, 2022

S.O. 3250(E).—Whereas, the Hon'ble National Green Tribunal *vide* its order, dated the 12th February, 2020, in Original Application No. 55/2019 (WZ), *(Gajubha Jesar Jadeja vs Union of India &Ors.)*, has *inter alia* observed that Cold Rolled Stainless Steel Manufacturing Industries require prior environment clearance but, having regard to the fact that there were a large number of such mills operating on the strength of Consent to Establish (CTE) and Consent to Operate (CTO), the Hon'ble Tribunal has held that opportunity should be provided to such units to fall within the Environment Clearance regime by granting a period of at least one year to operate for the purpose;

And whereas, the Central Government, keeping in view the impact caused due to the Covid19 pandemic has taken a considered decision in line with the above said order of the Hon'ble National Green Tribunal, so as to provide a window period for such re-rolling or cold rolling units to obtain prior Environmental Clearance;

And whereas, the Central Government is of the view that steel re-rolling operations fall under the purview of the secondary metallurgical processing industry and require Environment Clearance as per item 3(a), relating to Metallurgical Industries (Ferrous and Non-ferrous), of the Schedule to the notification of the Government of India in the *erstwhile* Ministry of Environment and Forest, published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii), *vide* notification number S.O. 1533 (E), dated the 14th September, 2006, mandating the requirement of prior environmental clearance for the projects covered in its Schedule (hereinafter referred to as the said notification), wherein all non–toxic secondary metallurgical processing units with capacities greater than 5000 tonnes/annum (TPA) fall under category B;

Now, therefore, in exercise of the powers conferred by section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby directs that all the standalone re-rolling units or cold rolling units, which are in existence and in operation as on the date of this notification, with valid Consent to Establish (CTE) and Consent to Operate (CTO) from the concerned State Pollution Control Board or the Union territory Pollution Control Committee, as the case may be, shall apply online for grant

of Terms of Reference (ToR) followed by Environment Clearance and the said units shall be granted Standard Terms of Reference as per item 3(a) of the said notification and shall be exempted from the requirement of public consultation:

Provided that the application for the grant of ToR shall be made within a period of one year from the date of this notification.

2. This notification shall come in to force from the date of its publication in the Official Gazette.

[F. No. IA-J-11013/8/2019-IA.II(I)]

Dr. SUJIT KUMAR BAJPAYEE, Jt. Secy.

Uploaded by Dte. of Printing at Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054. ALOK KUMAR

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Page 1 Saturday, August 24, 2024
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Annexure - 14

2022 SCC OnLine SC 993

In the Supreme Court of India

(BEFORE HEMANT GUPTA AND VIKRAM NATH, JJ.)

Civil Appeal No. 3116 of 2020

Gajubha Jadeja Jesar ... Appellant(s);

Versus

Union of India and Others ... Respondent(s).

With

Civil Appeal No. 3576 of 2020

Civil Appeal No. 3116 of 2020 and Civil Appeal No. 3576 of 2020

Decided on August 10, 2022

The Judgment of the Court was delivered by

HEMANT GUPTA, J.:— This order shall dispose of Civil Appeal No. 3116 of 2020 arising out of an application filed by the appellant[1] before the National Green Tribunal[2] and Civil Appeal No. 3576 of 2020 filed by the Project Proponent, both arising out of the same order passed by the Tribunal on 12.2.2020.

2. The Project Proponent applied for Consent to Establish (CTE) Cold Rolled Coils of stainless steel on 20.1.2018, the permission of which was granted by Gujarat State Pollution Control Board. After the unit was erected, Project Proponent was granted permission to operate the unit on 6.2.2020. It is noted that the Project Proponent has invested Rs. 1100 crores for the development of infrastructure and had a turnover of approximately Rs. 743 crores and paid Rs. 286.17 crores as Goods and Services Tax till the Financial Year 2020-2021. The applicant also earned US Dollars 15.52 million foreign exchange for the country.

3. An application was filed before the Tribunal on 20.7.2019 on the ground that the Project Proponent has set up the unit in violation of Environment Impact Assessment (EIA) notification dated 14.9.2006, as such plant would fall within category 3(a) i.e., secondary metallurgical industry for which a prior environmental clearance is required. The relevant extract from the EIA notification reads thus:

3(a)	Metallurgical industries (ferrous & non ferrous)	a) Primary metallurgical industry All projects b) Sponge iron manufacturing ≥200 TPD c) Secondary metallurgical processing industry All toxic and heavy metal producing units ≥ 20,000 tonnes/annum -	Sponge iron manufacturing <200 TPD Secondary metallurgical processing industry i) All toxic and heavy metal producing units <20,000 tonnes/annum ii) All other nontoxic secondary metallurgical processing industries	General Condition shall apply for Sponge iron manufacturing Note: (i) The recycling industrial units covered under HSM Rules are exempted. (ii) In case of secondary metallurgical processing industrial units only those

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			>5000 tonnes/annum	projects involving operation of furnaces such as induction and electric are furnace, submerged are furnace, cupola and crucible furnace with capacity more than 30,000 tonnes per annum (TPA) would require environmental clearance (iii) Plant/units other than power plants (given against entry no. 1 (d) of the schedule), based on municipal solid waste (non hazardous) are exempted).

4. The Tribunal set up a Joint Committee on 28.7.2019. The Committee concluded that the applicability of the notification would be determined by the Ministry of Environment, Forest and Climate Change[3]. The Ministry filed an affidavit on 21.11.2019, on the basis of which the Tribunal took a prima facie view that the industry requires an environmental clearance and thus stayed all activities of the project as the Ministry sought time to file an additional response. Later, an affidavit was filed by the Ministry that a Group of Experts had been appointed on the issue. After the said report, the Project Proponent filed an application for modification of the order passed by the Tribunal on 21.11.2019 and the stay was thereafter vacated on 16.1.2020.

5. The Expert Appraisal Committee[4] in its meeting held on 23-24.12.2019 concluded that grace period of one year could be granted where the industry has been established after CTE/CTO. The Ministry filed an affidavit accepting the recommendation No. 3(iii) of the EAC recommending one year grace period for the industry. The relevant part of the recommendation is reproduced as under:

> "i. Project activity of CSPL falls under Category B of Schedule 3(a) Metallurgical Industries (ferrous and non-ferrous) of EIA Notification, 2006.
>
> ii. The committee also noted that there are a few issues which may have diverse interpretations. The reports submitted by the Committee formed by the Hon'ble NGT and the joint inspection report by the Regional office of Bhopal and RO of GPCB for Kutch have also left the final interpretation to the MoEF&CC. It is also noted that the present unit has obtained CTE from GPCB which is a Statutory authority. There

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may be other similarly placed cases in the country. This shows that there is a scope and need for further clarification in the matter regarding certain issues so that there is no subjective interpretation in future. These issues are (1) definition of secondary metallurgy units for the purpose of EIA process, (2) clarification about the types of furnaces under applicability of MoEF&CC notification 2006 and (3) clarifying re rolling vs. cold rolling in the context of Environment Clearance. Therefore, for further smoothening the EC process for present unit and proposals in future, the MoEF&CC may consider issuing further clarifications.

iii. In order to address to instant and similar cases where such re rolling/cold rolling units are established or operating with a CTE/CTO from the concerned State Pollution Control Boards, the Ministry may consider directing the State Pollution Control Boards to get a list of all such cases and take further quick actions so that they apply for EC and get covered by the EIA notification 2006. Since, these units are established or operating under the CTEs/CTOs obtained from a statutory authority i.e. the respective Stale Pollution Control Boards, a period of one year may be allowed for this recommended conversion to EC. This will also ensure that the units remain in operation for the allowed period and closures, unemployment and related social issues/unrests are avoided. During this period of one year, they will have to follow all the conditions imposed under the CTE/CTO."

6. It is on the basis of the said recommendation that the Tribunal passed the order dated 12.2.2020 that in view of the large number of such mills operating on the strength of CTE/CTO, opportunity should be provided to such units to fall within EC regime by granting a period of at least one year to operate for the purpose.

7. The applicant challenged the time granted by the Tribunal on the ground that the Tribunal has no jurisdiction to grant period for obtaining Environmental Clearance as the EIA notification mandates a prior Environmental Clearance. Since such consent was not obtained before the setting up of the industry, the time limit of one year is against the mandate of the statute. It was further argued that under Section 21 of the National Green Tribunal Act, 2010[5], the Tribunal has the jurisdiction to set aside the Environmental Clearance but has no jurisdiction for the grant of time for Environmental Clearance.

8. The Project Proponent, aggrieved against the order passed by the Tribunal, challenged the findings recorded that Environmental Clearance is required. During the pendency of the appeal before this Court, the Project Proponent was served with a closure notice on 25.6.2021 by the Gujarat State Pollution Control Board and the unit was closed in terms of the said notice. This closure notice has been assailed by way of I.A. No. 81563 of 2021.

9. While the appeals were pending before this Court, the Government of India has published a notification on 20.7.2022 in terms of Section 3 of the Environment (Protection) Act, 1986[6] to apply Terms of Reference within one year followed by Environmental Clearance. The notification reads thus:

"MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 20th July, 2022

S.O. 3250(E).—Whereas, the Hon'ble National Green Tribunal vide its order, dated the 12th February, 2020, in Original Application No. 55/2019 (WZ), (*Gajubha Jesar Jadeja* v. *Union of India*), has inter alia observed that Cold Rolled Stainless Steel Manufacturing Industries require prior environment clearance but, having regard to the fact that there were a large number of such mills operating on the strength of Consent to Establish (CTE) and Consent to Operate (CTO), the Hon'ble Tribunal has held that opportunity should be provided to such units to fall within the Environment Clearance regime by granting a period of at least one year to

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operate for the purpose;

And whereas, the Central Government, keeping in view the impact caused due to the Covid19 pandemic has taken a considered decision in line with the above said order of the Hon'ble National Green Tribunal, so as to provide a window period for such re-rolling or cold rolling units to obtain prior Environmental Clearance;

And whereas, the Central Government is of the view that steel re-rolling operations fall under the purview of the secondary metallurgical processing industry and require Environment Clearance as per item 3(a), relating to Metallurgical Industries (Ferrous and Non-ferrous), of the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forest, published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii), vide notification number S.O. 1533 (E), dated the 14th September, 2006, mandating the requirement of prior environmental clearance for the projects covered in its Schedule (hereinafter referred to as the said notification), wherein all non-toxic secondary metallurgical processing units with capacities greater than 5000 tonnes/annum (TPA) fall under category B;

Now, therefore, in exercise of the powers conferred by section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby directs that all the standalone re-rolling units or cold rolling units, which are in existence and in operation as on the date of this notification, with valid Consent to Establish (CTE) and Consent to Operate (CTO) from the concerned State Pollution Control Board or the Union territory Pollution Control Committee, as the case may be, shall apply online for grant of Terms of Reference (ToR) followed by Environment Clearance and the said units shall be granted Standard Terms of Reference as per item 3(a) of the said notification and shall be exempted from the requirement of public consultation:

Provided that the application for the grant of ToR shall be made within a period of one year from the date of this notification.

2. This notification shall come in to force from the date of its publication in the Official Gazette.

[F. No. IA-J-11013/8/2019-IA.II(I)]
Dr. SUJIT KUMAR BAJPAYEE, Jt. Secy"

10. With this background, the parties have addressed arguments on the question of jurisdiction of the Tribunal to pass an order to operate a unit without Environmental Clearance and the decision of closure of the unit.

11. It may be stated that there are 1689 similar Re-Rolling/Cold Re-Rolling Steel Plants in the country out of which 403 plants are in the State of Gujarat itself. All the units have been set up without obtaining prior Environmental Clearance as there was an ambiguity whether such Rolling Steel Mills are required to obtain prior Environmental Clearance.

12. Ms. Anitha Shenoy, learned senior counsel for the applicant relies upon judgments of this Court reported as *Common Cause* v. *Union of India*[7], *Hanuman Laxman Aroskar* v. *Union of India*[8] and *Alembic Pharmaceuticals Limited* v. *Rohit Prajapati*[9] to contend that prior Environmental Clearance is mandatory. Since the unit has been set up in violation of the notification, the Tribunal could not permit the unit to operate.

13. On the other hand, Mr. Shyam Divan, learned senior counsel for the Project Proponent submitted that in terms of Section 21 of the NGT Act, the Tribunal is competent to pass an order towards sustainable development. It is contended that the order of the Tribunal granting time of at least one year is based upon report of the recommendation of the EAC. The EAC recommended that Re-Rolling Units are

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established or operating with CTE/CTO from the concerned State Pollution Control Boards, therefore, a period of one year may be allowed for this recommended conversion to Environment Clearance regime.

14. Mr. Divan also referred to an affidavit filed on behalf of the Ministry referring to the report submitted by a high-level Expert Committee under the Chairmanship of Dr. Indranil Chattoraj, Director, National Metallurgical Laboratory, Jamshedpur. The Committee noted that there is ambiguity in the EIA notification with respect to applicability of Environmental Clearance for non-toxic secondary metallurgical processing industry. Therefore, in order to bring out clarity, the Ministry may amend schedule 3(a) of the EIA notification. The relevant assertion from the affidavit reads thus:

> "7. That the committee after conducting a series of meetings submitted its report on 17/01/2022. The committee, inter-alia, has recommended that
>
> i. "That there is an ambiguity in the EIA notification, 2006 with respect to the applicability of EC for non-toxic secondary metallurgical processing industry.
>
> ii. Steel re-rolling mills [Hot rolling (or) Cold rolling] are one of the processes in the secondary metallurgical processes and attracts the provisions of the Environment Impact Assessment (EIA) Notification, 2006.
>
> iii. There are around 1689 standalone steel re-rolling mills operating across the country without requisite Environment Clearance and such unit may be brought under EC regime by providing an adequate time frame.
>
> iv. Revised threshold limits for primary and secondary metallurgical industry prescribed under chapter 6 may be considered by the Ministry for amending the schedule 3(a) of EIA Notification, 2006 in order to bring out clarity on the applicability of EC for difference secondary processes in metallurgical industry.
>
> That a copy of the report of the HLEC has been annexed as ANNEXURE R/2.
>
> 8. That it is humbly submitted that Ministry is in the process of bringing out suitable amendment in the EIA Notification 2006 in line with the recommendations made by the Committee, in order to remove the ambiguity with respect to the applicability of EC for non-toxic secondary metallurgical processing industry."

15. It is in pursuance of such report, the amendment was published on 20.7.2022.

16. Mr. Divan further relies upon an order passed by this Court in *Municipal Corporation of Greater Mumbai* v. *Ankita Sinha*[10] wherein the question as to whether the Tribunal has suo moto jurisdiction to entertain proceedings under the NGT Act were examined. The scope of jurisdiction of the Tribunal was also considered.

17. Mr. Divan also refers to an order passed by this Court reported as *Pahwa Plastics Pvt. Ltd.* v. *Dastak NGO*[11] wherein the order passed by the Tribunal, holding that the manufacturing units which do not have prior Environmental Clearance could not be allowed to operate, was set aside.

18. We have heard learned counsel for the parties and find no error in the order passed by the Tribunal. The order of the Tribunal is based upon recommendation of the EAC which suggested that one year time should be granted to the industry to comply with the EIA notification dated 14.9.2006. The stand of the Ministry as well as the Project Proponent is that there was ambiguity in the EIA notification 2006. 1689 units have come up in the country on the basis of CTE and CTO regime. It is not a case of ambiguous interpretation in respect of one or two units but the entire country was having the same interpretation that Re-Rolling Steel Plants do not require a prior Environmental Clearance. The ambiguity has been removed only on 20.7.2022 when the notification has been amended, as reproduced above. Since there was ambiguity

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earlier, the Tribunal had granted time to the Project Proponent to comply with the requirement of Environmental Clearance.

19. Such direction of the Tribunal is, in fact, arising out of scope of powers conferred on the Tribunal under Section 21 of the NGT Act. This Court in *Ankita Sinha* considering the suo moto powers of the Tribunal held as under:

> "98. The NGT Act, when read as a whole, gives much leeway to the NGT to go beyond a mere adjudicatory role. The Parliament's intention is clearly discernible to create a multifunctional body, with the capacity to provide redressal for environmental exigencies. Accordingly, the principles of environmental justice and environmental equity must be explicitly acknowledged as pivotal threads of the NGT's fabric. The NGT must be seen as a *sui generis* institution and not *unus multorum*, and its special and exclusive role to foster public interest in the area of environmental domain delineated in the enactment of 2010 must necessarily receive legal recognition of this Court.
>
> xxx xxx xxx
>
> 102. In circumstances where adverse environmental impact may be egregious, but the community affected is unable to effectively get the machinery into action, a forum created specifically to address such concerns should surely be expected to move with expediency, and of its own accord. The potentiality of disproportionate harm imposes a higher obligation on authorities to preserve rights which may be waylaid due to such restrictive access. It is also noteworthy that the "*global impacts of climate change will fall disproportionately on minority and low-income communities*".[12] Thus, an affirmative role, beyond mere adjudication at the instance of applicant, is certainly required for *serving the ends of environmental justice*, as the statute itself requires of the NGT. We cannot validate an argument which furthers uncertainty to justify the role of a spectator, if not inaction, and would most assuredly result in injustice.
>
> 103. The NGT, with the distinct role envisaged for it, can hardly afford to remain a mute spectator when no-one knocks on its door. The forum itself has correctly identified the need for collective stratagem for addressing environmental concerns. Such a society centric approach must be allowed to work within the established safety valves of the principles of natural justice and appeal to the Supreme Court. The hands-off mode for the NGT, when faced with exigencies requiring immediate and effective response, would debilitate the forum from discharging its responsibility and this must be ruled out in the interest of justice."

20. In *Pahwa Plastics Pvt. Ltd.*, an establishment had been set up pursuant to CTE and CTO from the concerned statutory authority. The establishment applied for ex-post facto Environmental Clearance. In these circumstances, this Court held that ex-post Environmental Clearance should not ordinarily be granted but it cannot be declined with pedantic rigidity, regardless of the consequences of stopping the operation. Hence, the order of the Tribunal to close the units was found to be erroneous. The order of closure of establishments for the lack of Environmental Clearance was set aside by this Court, *inter alia*, for the reason that whether the unit contributing to the economy and providing livelihood to hundreds of people set up in pursuance to requisite approvals of the concerned statutory authorities should be closed down for the technical irregularity or want of prior Environmental Clearance. This Court held as under:

> "54. The manufacturing units of the Appellants appoint about 8,000 employees and have a huge annual turnover. An establishment contributing to the economy of the country and providing livelihood ought not to be closed down only on the ground of the technical irregularity of not obtaining prior Environmental Clearance irrespective of whether or not the unit actually causes pollution.

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xxx xxx xxx

56. As held by this Court in *Electrosteel Steels Limited* (supra) *ex post facto* Environmental Clearance should not ordinarily be granted, and certainly not for the asking. At the same time *ex post facto* clearances and/or approvals and/or removal of technical irregularities in terms of a Notification under the EP Act cannot be declined with pedantic rigidity, oblivious of the consequences of stopping the operation of mines, running factories and plants.

57. The 1986 Act does not prohibit *ex post facto* Environmental Clearance. Grant of ex post facto EC in accordance with law, in strict compliance with Rules, Regulations, Notifications and/or applicable orders, in appropriate cases, where the projects are in compliance with, or can be made to comply with environment norms, is in our view not impermissible. The Court cannot be oblivious to the economy or the need to protect the livelihood of hundreds of employees and others employed in the project and others dependent on the project, if such projects comply with environmental norms.

xxx xxx xxx

60. Even though this Court deprecated ex post facto clearances, in *Alembic Pharmaceuticals Ltd.* (supra), this Court did not direct closure of the units concerned but explored measures to control the damage caused by the industrial units. This Court held:—

> *"However, since the expansion has been undertaken and the industry has been functioning, we do not deem it appropriate to order closure of the entire plant as directed by the High Court."*

xxx xxx xxx

63. *Ex post facto* environmental clearance should not be granted routinely, but in exceptional circumstances taking into account all relevant environmental factors. Where the adverse consequences of denial of *ex post facto* approval outweigh the consequences of regularization of operations by grant of *ex post facto* approval, and the establishment concerned otherwise conforms to the requisite pollution norms, *ex post facto* approval should be given in accordance with law, in strict conformity with the applicable Rules, Regulations and/or Notifications. The deviant industry may be penalised by an imposition of heavy penalty on the principle of 'polluter pays' and the cost of restoration of environment may be recovered from it.

64. The question in this case is, whether a unit contributing to the economy of the country and providing livelihood to hundreds of people, which has been set up pursuant to requisite approvals from the concerned statutory authorities, and has applied for *ex post facto* EC, should be closed down for the technical irregularity of want of prior environmental clearance, pending the issuance of EC, even though it may not cause pollution and/or may be found to comply with the required norms. The answer to the aforesaid question has to be in the negative, more so when the HSPCB was itself under the misconception that no environment clearance was required for the units in question. HSPCB has in its counter affidavit before the NGT clearly stated that a decision was taken to regularize units such as the Apcolite Yamuna Nagar and Pahwa Yamuna Nagar Units, since requisite approvals had been granted to those units, by the concerned authorities on the misconception that no EC was required.

xxx xxx xxx

66. *Ex post facto* EC should not ordinarily be granted, and certainly not for the asking. At the same time *ex post facto* clearances and/or approvals cannot be declined with pedantic rigidity, regardless of the consequences of stopping the operations. This Court is of the view that the NGT erred in law in directing that the units cannot be allowed to function till compliance of the statutory mandate."

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21. The judgment in *Common Cause* referred to by Ms. Shenoy is of no help to support her arguments as the question was whether illegal mining can be said to be within the leased area for mining. It was held that illegal mining takes within its fold excess extraction of a mineral over the permissible limit even within the mining lease area under the Mines and Minerals (Development and Regulation) Act, 1957.

22. In *Hanuman Laxman Aroskar*, this Court held that the EIA notification of the year 2006 demonstrates an increasing awareness of the complexities of the environment and the heightened scrutiny required to ensure its continued sustenance, for today and for generations to come. It embodies a commitment to sustainable development. It was held as under:

> "56. The 2006 Notification embodies the notion that the development agenda of the nation must be carried out in compliance with norms stipulated for the protection of the environment and its complexities. It serves as a balance between development and protection of the environment : there is no trade-off between the two. The protection of the environment is an essential facet of development. It cannot be reduced to a technical formula. The notification demonstrates an increasing awareness of the complexities of the environment and the heightened scrutiny required to ensure its continued sustenance, for today and for generations to come. It embodies a commitment to sustainable development. In laying down a detailed procedure for the grant of an EC, the 2006 Notification attempts to bridge the perceived gap between the environment and development."

23. In *Alembic Pharmaceuticals Limited*, the validity of circular dated 14.5.2002 was in question. This Court found that such circular is contrary to the EIA notification of 1994. It was decided by the Ministry that the industrial units which had gone into production without obtaining an EC would have to apply for and obtain an ex-post facto EC. The said judgment has no applicability to the facts of the present case where the Ministry itself is of the opinion that there was an ambiguity in the EIA notification of 2006. Such ambiguity has been removed only when the EIA notification was subsequently amended on 20.7.2022. Therefore, the judgments referred to by Ms. Shenoy are not applicable to the facts of the present case.

24. We are constrained to point out that out of 1689 units in the country, the applicant has chosen the Project Proponent as it appears to be a motivated petition to target the Project Proponent though the Cold Steel Rolling Mills in the country were operating under the same regime. Not only the Project Proponent, but the country also has suffered immensely on account of closure of the unit which was export oriented unit. It may be noticed that the Gujarat State Pollution Control Board has chosen the Project Proponent to serve with a closure notice on 25.6.2021. The unit is lying closed since then. In view of the amendment in the EIA notification dated 20.7.2022, the unit has time to seek Environmental Clearance in terms of the time line mentioned in the notification. Therefore, the order of closure of the unit cannot be sustained.

25. In view of the said fact, Civil Appeal No. 3116 of 2020 is dismissed. I.A. No. 81563 of 2021 in Civil Appeal No. 3576 of 2020 challenging the closure notice issued by Gujarat State Pollution Control Board dated 25.6.2021 is allowed and the closure notice is quashed. The Civil Appeal No. 3576 of 2020 stands disposed of In the above terms.

———

[1] For short, the 'Applicant'

[2] For short, the 'Tribunal'

[3] For short, the 'Ministry'

[4] For short, the 'EAC'

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[5] For short, the 'NGT Act'

[6] For short, the 'Environment Act'

[7] (2017) 9 SCC 499

[8] (2019) 15 SCC 401

[9] (2020) 17 SCC 157

[10] 2021 SCC OnLine SC 897

[11] 2022 SCC OnLine SC 362

[12] Scott La Franchi, Surveying the Precautionary Principle's Ongoing Global Development : *The Evolution of an Emergent Environmental Management Tool*, [32 B.C. Envtl. Aff. L. Rev. 679 (2005)

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Annexure 15

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-27072023-247634
CG-DL-E-27072023-247634

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 3227] नई दिल्ली, बुधवार, जुलाई 26, 2023/श्रावण 4, 1945
No. 3227] NEW DELHI, WEDNESDAY, JULY 26, 2023/SHRAVANA 4, 1945

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 26 जुलाई, 2023

का.आ. 3372(अ).—केन्द्रीय सरकार, अधिसूचना संख्यांक का.आ.3250(अ), तारीख 20 जुलाई, 2022 द्वारा यह निर्देशित करती है कि सभी स्टैंड अलोन री-रोलिंग इकाईयां या कोल्ड रोलिंग इकाईयां, जो इस अधिसूचना की तारीख को यथास्थिति, संबद्ध राज्य प्रदूषण बोर्ड या संघ राज्यक्षेत्र प्रदूषण नियंत्रण समिति से स्थापन की विधिमान्य सहमति और प्रचालन की सहमति के साथ इस अधिसूचना की तारीख को विद्यमान हैं और प्रचालन में हैं, पर्यावरण अनापत्ति के अनुसरण में निर्देश निबंधन (टीओआर) अनुदत्त करने के लिए ऑनलाइन आवेदन करेंगी और उक्त इकाईयों को भारत सरकार के तत्कालीन पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना संख्यांक का.आ.1533(अ) तारीख 14 सितम्बर, 2006 की मद 3 (क) के अनुसार मानक निदेश निबंधन अनुदत्त किए जाएंगे और उन्हें लोक परामर्श की अपेक्षा से छूट प्राप्त होगी, परंतु टीओआर अनुदत्त करने के लिए आवेदन, इस अधिसूचना की तारीख से एक वर्ष की अवधि के भीतर किया जाएगा।

और, केन्द्रीय सरकार जो आवश्यक समझे उक्त अवधि के छह मास की और अवधि बढा सकती है ;

अतः अब, केन्द्रीय सरकार, पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना संख्यांक का.आ. 3250 (अ), तारीख 20 जुलाई, 2022 में निम्नलिखित संशोधन करती है, अर्थात् :-

उक्त अधिसूचना के पैरा 1 में, परंतुक में, "एक वर्ष" शब्दों के स्थान पर "एक वर्ष और छह मास" शब्द रखे जाएंगे।

[फा. सं. आईए-जे-11013/8/2019-आईए.II(I)]

डॉ. सुजीत कुमार बाजपेयी, संयुक्त सचिव

टिप्पण:- मूल अधिसूचना, भारत के राजपत्र, असाधारण, भाग 2, खंड 3, उपखंड (ii), अधिसूचना का.आ. 3250 (अ), तारीख 20 जुलाई, 2022 द्वारा प्रकाशित की गई थी ।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 26th July, 2023

S.O. 3372(E).—WHEREAS, the Central Government, vide notification number S.O. 3250(E), dated the 20th July, 2022, directed that all the standalone re-rolling units or cold rolling units, which are in existence and in operation as on the date of this notification, with valid Consent to Establish and Consent to Operate from the concerned State Pollution Control Board or the Union territory Pollution Control Committee, as the case may be, shall apply online for grant of Terms of Reference (ToR) followed by Environment Clearance and the said units shall be granted Standard Terms of Reference as per item 3(a) of the notification of the Government of India in the, erstwhile Ministry of Environment, Forest and Climate Change number S.O 1533(E), dated the 14th September, 2006 and shall be exempted from the requirement of public consultation, provided that the application for the grant of ToR shall be made within a period of one year from the date of the said notification.

AND WHEREAS, the Central Government deems it necessary to extend the said period by a further period of six months;

NOW, THEREFORE, in exercise of the powers conferred by section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following amendment in the notification of the Government of India in the Ministry of Environment, Forest and Climate Change number S.O. 3250(E), dated the 20th July, 2022, namely:-

In the said notification, in paragraph 1, in the proviso, for the words, "one year" the words "one year and six months" shall be substituted.

[F. No. IA-J-11013/8/2019-IA.II (I)]

Dr. SUJIT KUMAR BAJPAYEE, Jt. Secy.

Note.- The principal notification was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) vide notification S.O.3250 (E), dated the 20th July, 2022.

Uploaded by Dte. of Printing at Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054. SARVESH KUMAR SRIVASTAVA

BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

APPEAL NO.31 OF 2023

Arunkumar Sermakkani
S/o. Shri. Sermakkani
& 8 others

... Applicants

Versus

Union of India
Ministry of Environment, Forest & Climate Change
and 3 others

...Respondents

REPLY FILED BY THE 4TH RESPONDENT

MR. R.RAJMOHAN

COUNSEL FOR RESPONDENT NO. 4