Six Monthly Environmental Compliance Status Report
(July 2022 - Dec 2022)

INTRODUCTION:

M/s. Evonith Metallics Limited (EML), formerly known as M/s Uttam Galva Metallics Limited (UGML) is steel manufacturing company. The name of the company has been changed from UTTAM GALVA METALLICS LIMITED to EVONITH METALLICS LIMITED with effect from the date 28/12/2022 and the copy of ROC is enclosed. The unit is located at Village- Bhugaon, Wardha District in Maharashtra state. The Consent to Establish granted from MPCB vides Consent No.1.0/ BO/CAC-Cell/EIC No. NG-11846-14/CAC- 8160, dated 23.07.2015 and the Revalidation of said Consent to Establish for expansion granted from MPCB vides Consent No.-Format1.0/CAC/UAN No. 0000104214/CR-2111000387, dated 10.11.2021. Consent to operate is granted with amalgamation with existing plant by MPCB vide Consent No. 1.0/CAC/UAN No. MPCB-CONSENT-0139809/C0/2209001207, dated 19/09/2022, valid up to 30/06/2024.

The environmental clearance from MOEF is granted vide letter No. F.No. J-11011/358/2012-IA II (I) dated, 04.09.2014 and its amendment vide dated 12.02.2015.

Presently, the installation of Blast Furnace, Sinter plant & Coke oven plant of the project work is completed. In the last two years the work was totally held up due to financial crises. Now the company is taken over by the new management from NCLT proceedings. The new management has re-started the balance work for its completion.

Compliances of Conditions of EC No. J-11011/358/2012-I A II (I) Dated: 4th September 2014

S. No.	Points	Compliance
A.	**SPECIFIC CONDITIONS**	
i.	The company shall adopt dry quenching of coke. The prescribed standards for emissions from coke oven plants as notified vide Notification No. GSR (E) dated 3rd February 2006 and subsequent amendment thereto shall be complied with.	The method of dry quenching of coke and the prescribed standards for emissions from coke oven plants as notified vide Notification No.GSR (E) dated 3rd February 2006 and subsequent amendment thereto has been compiled by the company.

ii.	On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz., Electrostatic precipitator (ESP), bag filter, etc shall be provide to keep the emission levels below 50mg/Nm3 by installing energy efficient technologies.	We have installed On-line ambient air quality monitoring and continuous stack monitoring facilities has been provided for all the stacks. The sufficient air pollution control devices viz., Electrostatic precipitator (ESP), bag filter, etc has been provided to keep the emission levels below 50mg/Nm3 by installing energy efficient technologies.
iii.	In-Plant control measures such as bag filters, de-dusting and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression systems shall be provided at all the transfer points, coal handling plant and coke sorting plant of coke oven plant. Bag filters shall be provided to hoods and dust collectors to coal and coke handling to control dust emissions. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials, etc.	Bag Filter, De-dusting and dust suppression system has provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression systems has provided at all thetransfer points, coal handling plant and coke sorting plant of coke oven plant. Bag filters to hoods and dust collectors to coal and coke handling to control dust emissions, water sprinkling system to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials, etc. has provided.
iv.	Gaseous emissions levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits if MOEF Notification GSR 414 (E) dated 30th May 2008 and regularly monitored. Guidelines/Code of Practice issued by CPCB shall be followed.	Secondary fugitive emission from all sources is controlled and regularly monitor as per the guideline issued by CPCB.

v.	Multi-stage scrubber, cyclone and bag filters, etc to control particulate emissions within the prescribed limits from coke oven shall be provided. Carbon Monoxide (CO) shall also be monitored along with other parameters and standards notified under Environment (Protection) Act 1986,shall be followed.	Multi-stage scrubber, cyclone and bag filters, etc has provided to control particulate emissions from coke oven. Carbon Monoxide (CO) has monitored along with other parameters and standards notified under Environment (Protection) Act 1986.
vi.	Hot gases from DRI kiln shall be passed though Dust Settling Chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely and used in Waste HeatRecovery Boiler (WHRB). The gas shall then be cleaned in ESP before dispersion out into the atmosphere through ID fan and stack. ESP shall be installed to control the particulate emissions from the WHRB.	Shall be adhered to the condition and shall be complied.
vii.	Total make-up water requirement shall not exceed 21,195m3/d. The water consumption shall not exceed as per the standards prescribed for sponge iron plants and steel plants.	Total make up water requirement is within the limit. Total water consumption for Blast Furnace- II and Sinter Plant-II is 5000 CMD.
viii.	Efforts shall be made to use maximum water from rainwater harvestingsources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement and thebalance shall be met from other sources. Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption and water requirement shall be modifiedaccordingly.	We have provided extra reservoir.
ix.	All the effluents shall be treated andused for dust suppression and for green belt development. No effluents shall be discharged and 'zero' discharge shall be adopted. Domestic wastewater shall be treated in sewage treatment plant.	All the effluents are treated at ETP and used for dust suppression and for green belt development. No effluents discharged outside the plant premises. And 'zero' discharge has adopted. Six STPs are provided for treatment ofall Domestic wastewater.

x.	Regular monitoring of effluent and effluent surface, sub-surface and ground water shall be ensured and treated waste water shall meet the norms prescribed by the state pollution control board or prescribed under E (P) act 2006, whichever is more stringent. Leachate study for the effluent generated and analysis shall also be regularly carried out and report submitted to Ministry's regional office at Bhopal ,SPCB and CPCB	Agreed and being complied. All the analysis reports shall submitted to Ministry's regional office at Nagpur, MPCB and CPCB.
xi.	Sulphur and ash content of coal shall not exceed 0.65% and 9.5% respectively.	Agreed and being complied.
xii.	In case source of coal supply is to be changed at a later stage (now proposed imported coal from Australia), the project proponent shall intimate the Ministry well in advance along with necessary requisite documents for its concurrence for allowing the change.	Being complied. Any changes in coal supply will intimate well in advance along with necessary requisite documents for its concurrence for allowing the change.
xiii.	Risk and Disaster management Plan along with mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office at Bhopal, SPCB and CPCB within 3 months of issue of environmental clearance letter.	Being implemented.
xiv.	All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization. Flue dust from pellet plant, sinter plant, DRI and SMS and sludge from BF shall be re-used in Sinter Plant. Coke breeze from coke oven plant shall be used in sinter and pellet plant. SMS slag shall be given for metal recovery or utilized. All the other solid waste including broken refractory mass shall be properly disposed off in environmentally friendly manner.	Slag from blast furnace is sold to cement manufacturing units. All the solid waste is utilized and disposed off as per the condition.

xv.	A time-bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	Disposal & utilization of solid waste has been accomplished as per above condition.
xvi.	Coal and coke fines shall be recycled and reused in the process. The breeze coke and dust from air pollution controlsystem shall be reused in sinter plant. The sinter dust shall be recycled in the sinter plant. The waste oil shall be properly disposed of as per the Hazardous Waste (management, Handling and Trans-boundary Movement) Rules, 2008.	Being Complied. Waste oil has disposed off to authorized Re-processor/re-cycler.
xvii.	Green belt shall be developed in 33% of the plant area within 3 years of grant of environmental clearance. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO/expert.	Presently out of 140 ha total land, around 30 ha has been developed with green belt. The balance area shall be developed in coming two years.
xviii.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for Steel Plant and Coke Oven Plants shall be implemented.	Being Complied and implemented.
xix.	At least 5% of the total cost of the project shall be earmarked towards Enterprise Social Commitment (ESC) based on locals' needs and the activity- wise details and village-wise details along with time-schedule for implementation shall be prepared and Submitted to the Ministry's Regional Office at Bhopal. Implementation of such programme shall be ensured accordingly in a time-bound manner.	Industry regularly conducts CSR Activity & Submits the details regarding the same to the Ministry.

xx.	The Company shall submit within 3 months, their policy towards Corporate Environment Responsibility, which shall *inter-alia* addresses: (i) Standard operating process/procedure to being into focus any infringement/deviation/violation of environmental or forest laws/ norms / conditions, (ii) Hierarchical system or Administrative order of the company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of non-compliance/violation of environmental norms to the Board of Directors of the company and/or stakeholders orshareholders.	We have submitted the policy towards Corporate Environment Responsibility for the previous management. As the new management has taken charge recently, we will submit new policy as per the condition.
xxi.	All the commitments made in the Public Hearing/Public Consultation meeting held on 21.11.2013 shall be satisfactorily implemented and a separate budget for implementing thesame shall be allocated and information submitted to the Ministry's Regional Office at Bhopal.	We have implemented the commitments made in the Public Hearing/Public Consultation meeting held on 21.11.2013.
xxii.	Provision shall be made for housing of construction labour within the site with all necessary infrastructure and facilities such as cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche, etc. The housing and infrastructure may be in the form of temporary structures to be removed after the completion period.	Being adhered to the provision of facilities for construction labors. The housing and infrastructure shall be removedafter the completion of the project.
B.	**GENERAL CONDITIONS**	
i.	The project authorities must strictly adhere to the stipulations made by the Maharashtra State Pollution Control Board and the State Government.	Agreed.

ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Agreed.
iii.	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM_{10}, $PM_{2.5}$, SO_2 and NO_X are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the SPCB/CPCB once in six months.	Being Complied. At present 04 numbers of AAQ monitoring stations are installed.
iv.	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.	Waste water is properly collected and treated in adequate size ETP. Result of treated waste water meet with the standard prescribed norms. The treated waste water is utilized for plantation purpose & Slag cooling.
v.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Noise level is measured at points selected as per guideline and all results are well within the prescribed norms. Company provides PPF, (ear muff/ plug) to workers who work in high noise level areas.
vi.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Being complied.
vii.	The company shall develop surface water harvesting structures to harvestthe rain water for utilization in the lean season besides recharging the ground water table.	Being complied.

viii.	The project proponent shall alsocomply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like communitydevelopment programmes, educational programmes, drinking water supply and health care etc.	Agreed and implemented. We have provided the Medical van with free medicine distribution at Five villages, free heath checkup camp for ladies, digital display at five ZP school, agriculture production activities etc.
ix.	Requisite amount shall be earmarkedtowards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry ofEnvironment and Forests as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry. The funds so provided shall not be diverted for any other purpose.	Requisite amount is earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government.
x.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/MunicipalCorporation, Urban Local Body and thelocal NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	The copy of clearance letter sent to the concerned offices.

xi.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM_{10}, $PM_{2.5}$, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	We are complying with condition for existing plant and expansion project regularly.
xii.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry / CPCB / SPCB shall monitor the stipulated conditions.	Complying with the condition for existing plant. We are now submitting for expansion project which is in progress.
xiii.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MOEF by e-mail.	Shall be adhered to the condition.

xiv.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.inThis shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that arewidely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of thesame should be forwarded to the Regional office at Bhubaneswar.	The advertisement published in two local news papers as per the condition.
xv.	Project authorities 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 and the date of commencing the land development work.	Noted.

Monitoring Reports and data interpretation

Pollution Control Measures

EML is well versed with their corporate responsibilities and are very keen in undertaking various steps tocontrol the pollution from different environment attribute viz air, noise & water etc.

Air Pollution Control

Installed adequate APC device such as Electrostatic Precipitator (ESP), gas cleaning plant, bag filters are available at plant to achieve emission.

Green Belt Development

A comprehensive plan is envisaged for development of Green Belt around the perimeter and inside the plant. An experienced horticulturist has been engaged for carrying out the plantation program.

- The Green belt development help in controlling the dust emissions as well as acts as barriers for reducing the noise levels.
- Dense tree belts, Lawns & Gardens are developed in & around the plant and colony.
- Trees have been planted on the either side of the inside roads used for transportation to arrest the air born dust.

Noise Pollution Control:

Other than the regular maintenance of the various equipments, the ear plugs & ear muffs are provided to all employees working close to the noise generating units. Apart from this, the following steps have been undertaken for reduction of noise level:

- Frequent lubrication of pumps.
- Encasement of noise generating equipment.
- Provided noise proof cabins to operators.

ENVIRONMENTAL DATA ANALYSIS

Meteorology:

Meteorological data was collected along with the ambient air quality monitoring. The CAAQMS & meteorological is installed in the plant at the locations finalized by MPCB. Wind speed, wind direction, relative humidity and temperatures were recorded at hourly intervals continuously.

Methodology of Sampling

Micro-meteorological data, wind direction, wind speed, temperature and Relative humidity values were recorded by using CAAQMS & Micro-meteorological station installed in the plant.

Observations on Primary Data

The site specific data is presented in Table- 2.1 and is discussed below:

TABLE – 2.1
SUMMARY OF THE METEOROLOGICAL DATA GENERATED AT SITE
(July 2022 – December 2022)

Month	Temperature(°C)		Relative Humidity (%)	
	Max.	Min.	Max.	Min.
July -2022	41	22.5	96.2	38.0
August-2022	35.2	23.4	94.2	47.3
September -2022	34.7	25.3	88.4	55.0
October -2022	35.3	22.3	87.6	34.9
November -2022	31.3	15.6	72.9	24.9
December -2022	32.3	13.4	88.5	27.1

1. Temperature

It was observed that the temperature ranged from 15.6 °C to 41 °C. The maximum temperature was recorded in the month July 2022 as 41°C and minimum temperature was recorded in the month of November -2022 as 15.6°C. The monthly variations in the temperature are presented in Table 2.1.

2. Relative Humidity

During the period of observation the relative humidity recorded was moderately low to high and range from 24.9% to 96.2%. The maximum humidity 96.2% was observed in the month July 2022.The lowest 24.9% recorded in the month of November. The monthly variation in the relative humidity is presented in Table – 2.1.

3. Wind Speed / Direction

The predominant winds along with wind speeds during the study period are discussed below:

- **Wind Pattern during July 2022**

The wind speed observed in the period is in the range from calm to 0.2-13.2 m/s wind. The predominant wind directions were from NE to SW for 49 % of the total time.

- **Wind Pattern during August 2022**

The wind speed observed in the period is in the range from calm to 0.5-11.6 m/s wind. The predominant wind directions were from NE to SW for 71 % of the total time.

- **Wind Pattern during September 2022**

The wind speed observed in the period is in the range from calm to 0.3-5 m/s winds. The predominant wind directions were from NE to SW for 47 % of the total time.

- **Wind Pattern during October 2022**

The wind speed observed in the period is in the range from calm to 0.2-8.6 m/s winds. The predominant wind directions were from SW to NE for 35 % of the total time.

- **Wind Pattern during November 2022**

The wind speed observed in the period is in the range from calm to 0.5-7.4 m/s winds. The predominant wind directions were from SW to NE for 43 % of the total time.

- **Wind Pattern during December 2022**

The wind speed observed in the period is in the range from calm to 0.4 -8.1 m/s winds. The predominant wind directions were from SW to NE for 45 % of the total time.

Ambient Air Quality

The ambient air quality with respect to the study zone around the plant forms the baseline information. All the sampling locations fall within 10 km radial distance from the plant. To assess the effect of plant activities on the air, environmental parameters like Particulate Matter (PM10) & (PM2.5), Sulphur Dioxide (SO2) and Nitrogen Dioxide (NO2) were monitored. The results of monitoring carried out for study period (July 2022 – December 2022) are presented. The details of the sampling locations with respect to the Plant are given below in Table –2.2 (A)

TABLE-2.2 (A)
AMBIENT AIR QUALITY SAMPLING LOCATIONS

Sampling Code	Locations	Sampling Height (mt)	Location Details
AAQ1	Near Time Office	3.5	Represents Core zone air quality
AAQ2	Near Bapukuti Sewagram Village	3.5	Represents air quality
AAQ3	Near Ugml Canteen	3.5	Represents Core zone air quality

Methodology of Sampling

Sampling was carried out continuously for twice a week at each station during the study period using pre-calibrated respirable dust Samplers. In each of the stations earmarked, samples were collected for SO2, NOx, Particulate Matter (PM10) & (PM2.5). Samples were collected at twenty-four hourly intervals and it was sent to Laboratory for analysis.

Analytical Procedure

WHATMAN GF/A filter paper was used in High-volume sampler for PM10 & PM 2.5 and weighed in electronic balance and computed as per standard methods.

Ambient Air samples were analyzed for SO2 concentration levels using Improved West – Geake method using pre-programmed HACH spectrophotometer at a wavelength of 560 nm. NOx concentration levels were estimated using Jacob and Hocheiser modified (Na-As) method using pre-programmed HACH spectrophotometer at a wavelength of 540 nm. The survey results of all the sampling locations are presented in Table-2.2(I) & 2.2 (II). Various statistical parameters like maximum and minimum values have been computed from the observed raw data for all the AAQ monitoring stations. The summary of these results for all the locations is presented in Table – 2.2 (B). These are compared with the standards prescribed by Central Pollution Control Board (CPCB).

2.2.3.1 Observation based on Primary Data

- **AAQ1: Near Time office**

The values for PM10 & PM2.5 ranged from 44 to 86 µg/ m3 & 16 to 55 µg/ m3 during the study period. Similarly SO2 and NO2 levels were recorded in the range of 7.90 to 17.42 µg/m3 & 9.4 to 18.2 µg/m3 respectively.

- **AAQ2: Bapukuti (Sewagram Village)**

The values for PM10 & PM2.5 ranged from 50 to 76 µg/m3 and 17 to 49 µg/m3 during the study period. Similarly SO2 and NO2 levels were recorded in the range of 8.4 to 20.1 µg/m3, and 8.7 to 18.6 µg/m3 respectively.

- **AAQ3: Near Ugml Canteen**

The values for PM10 & PM2.5 ranged from 55 to 84 µg/m3 and 30 to 57 µg/m3 during the study period. Similarly SO2 and NO2 levels were recorded in the range of 8.6 to 18.61 µg/m3, and 9.15 to 16.8 µg/m3 respectively.

TABLE – 2.2 (B)
SUMMARY OF AMBIENT AIR QUALITY RESULT
(July 2022 –December 2022)

Location	PM10		PM 2.5		SO2		NO2	
	Max	Min	Max	Min	Max	Min	Max	Min
Near Time office	86	44	55	16	17.42	7.90	18.2	9.4
Bapukuti (Sewagram Village)	76	50	49	17	20.1	8.4	18.6	8.7
Near Canteen	84	55	57	30	18.61	8.6	16.8	9.15

Note: All values are expressed in µg/m3.

TABLE – 2.2 (I)
AMBIENT AIR QUALITY
LOCATION: NEAR TIME OFFICE

Week	Date of Monitoring	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)
JULY- 2022					
I	07/07/2022	75	45	10.5	12.6
	08/07/2022	72	42	11.9	14.4
II	14/07/2022	76	46	14.6	12.3
	15/07/2022	73	41	12.5	10.6
III	22/07/2022	69	38	13.0	14.2
	23/07/2022	72	42	11.5	12.4
IV	29/07/2022	73	38	10.8	10.6
	30/07/2022	70	40	9.4	12.4
AUGUST- 2022					
I	05/08/2022	73	46	12.6	10.5
	06/08/2022	74	48	11.8	13.1
II	12/08/2022	68	41	10.8	9.4
	13/08/2022	65	38	9.5	10.8
III	19/08/2022	69	39	14.5	12.5
	20/08/2022	64	36	16.5	10.8
IV	26/08/2022	72	42	12.8	13.2
	27/08/2022	70	37	11.9	14.8
SEPETEMBER- 2022					
I	04/09/2022	75	45	12.5	14.5
	05/09/2022	72	38	10.6	12.7
II	14/09/2022	44	16	7.9	10
	15/09/2022	70	35	13.8	12.1
III	21/09/2022	68	32	10.6	13.8
	22/09/2022	65	29	13.4	10.5
IV	28/09/2022	73	39	14.9	11.4
	29/09/2022	70	37	12.1	10.6
OCTOBER- 2022					
I	03/10/2022	68	52	10.45	16.20
	04/10/2022	64	50	13.85	12.15
II	10/11/2022	66	49	12.05	10.29
	11/11/2022	62	51	16.59	14.16
III	17/10/2022	64	50	12.42	18.20
	18/10/2022	63	49	14.58	16.22
IV	24/10/2022	73	55	16.28	13.28

	25/10/2022	70	51	17.42	10.26
NOVEMBER- 2022					
I	04/11/2022	65	42	10.45	11.52
	05/11/2022	75	49	9.5	16.24
II	14/11/2022	86	55	16.12	14.25
	15/11/2022	74	50	14.18	10.26
III	21/11/2022	82	52	15.20	14.28
	22/11/2022	69	43	12.16	16.24
IV	28/11/2022	74	47	13.21	10.26
	29/11/2022	79	49	10.25	11.05
DECEMBER-2022					
I	05/12/2022	72	43	13.2	12.5
	16/12/2022	78	35	16.7	17.2
II	12/12/2022	65	32	17.3	10.2
	13/12/2022	68	35	15.3	11.5
III	19/12/2022	60	30	13.2	10.6
	20/12/2022	75	51	15.8	11.5
IV	26/12/2022	85	33	17.2	15.3
	27/12/2022	72	39	16.2	12.2
Limit		**100**	**60**	**80**	**80**

As per National Ambient Air Quality Standards – S.O. 384(E), Notification 11.4.1994 as amended 18.11.2009

TABLE – 2.2.(II)

AMBIENT AIR QUALITY

LOCATION: SEWAGRAM NEAR BAPUKUTI

Week	Date of Monitoring	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)
JULY- 2022					
I	07/07/2022	59	35	12.4	11.0
	08/07/2022	56	32	10.5	17.8
II	14/07/2022	55	31	16.4	16.5
	15/07/2022	58	30	14.5	13.4
III	22/07/2022	53	33	12.9	11.9
	23/07/2022	50	29	10.9	14.2
IV	29/07/2022	58	35	11.5	12.6
	30/07/2022	54	30	14.4	10.5

AUGUST- 2022					
I	05/08/2022	58	38	9.7	8.7
	06/08/2022	53	35	9.5	8.9

II	12/08/2022	51	32	10.5	9.7
	13/08/2022	52	34	11.6	10.6
III	19/08/2022	55	30	15.6	13.5
	20/08/2022	58	38	11.4	11.8
IV	26/08/2022	56	36	10.6	12.5
	27/08/2022	54	32	8.9	10.4
SEPETEMBER-2022					
I	04/09/2022	58	22	10.4	12.6
	05/09/2022	55	17	13.4	10.5
II	14/09/2022	53	19	8.4	9.7
	15/09/2022	50	17	9.1	10.9
III	21/09/2022	56	23	10.8	12.8
	22/09/2022	52	20	8.6	10.2
IV	28/09/2022	56	24	12.5	10.9
	29/09/2022	53	21	10.5	11.4
OCTOBER -2022					
I	03/10/2022	65	49	10.56	13.25
	04/10/2022	52	45	11.68	14.05
II	10/11/2022	53	43	13.28	16.54
	11/11/2022	56	47	10.48	11.94
III	17/10/2022	50	45	9.78	12.25
	18/10/2022	59	48	9.16	10.29
IV	24/10/2022	57	46	13.36	13.25
	25/10/2022	53	44	14.29	11.29
NOVEMBER - 2022					
I	04/11/2022	68	42	10.24	11.52
	05/11/2022	64	45	12.65	12.04
II	14/11/2022	69	47	11.25	14.26
	15/11/2022	76	46	10.29	13.25
III	21/11/2022	64	43	8.9	11.85
	22/11/2022	69	42	16.24	10.26
IV	28/11/2022	59	41	14.25	13.29
	29/11/2022	67	44	13.29	11.28
DECEMBER – 2022					
I	05/12/2022	64	38	15.8	9.2
	16/12/2022	50	37	17.2	18.6
II	12/12/2022	55	28	16.2	15.3
	13/12/2022	68	35	10.2	9.2
III	19/12/2022	60	29	18.9	18.6
	20/12/2022	50	37	20.1	15.3
IV	26/12/2022	55	28	14.2	9.2
	27/12/2022	58	36	16.4	11.2

Limit	**100**	**60**	**80**	**80**

*** As per National Ambient Air Quality Standards – S.O. 384(E), Notification 11.4.1994 as amended 18.11.2009.*

TABLE- 2 (III)
AMBIENT AIR QUALITY
LOCATION: NEAR EML CANTEEN

Week	Date of Monitoring	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)
NAAQMS STANDARD		**100**	**60**	**80**	**80**
JULY- 2022					
I	07/07/2022	69	40	14.4	10.2
	08/07/2022	64	39	16.5	13.1
II	14/07/2022	55	36	10.3	11.9
	15/07/2022	59	34	12.5	13.2
III	22/07/2022	67	42	9.1	16.1
	23/07/2022	65	38	12.6	14.6
IV	29/07/2022	63	36	11.5	10.6
	30/07/2022	64	33	10.6	12.4
AUGUST- 2022					
I	05/08/2022	65	38	11.5	12.6
	06/08/2022	63	34	12.6	14.8
II	12/08/2022	56	30	8.6	13.4
	13/08/2022	57	31	13.4	12.6
III	19/08/2022	68	42	11.9	13.4
	20/08/2022	65	40	13.6	10.5
IV	26/08/2022	62	38	14.5	16.8
	27/08/2022	59	34	12.6	13.7
SEPTEMBER- 2022					
I	04/09/2022	68	39	12.4	13.6
	05/09/2022	63	35	14.4	11.5
II	14/09/2022	59	34	9.4	12.7
	15/09/2022	57	32	10.1	13.9
III	21/09/2022	63	36	13.8	11.8
	22/09/2022	68	35	14.6	13.2
IV	28/09/2022	64	38	10.5	15.9
	29/09/2022	62	34	13.5	14.4
OCTOBER- 2022					
I	03/10/2022	70	57	13.45	11.63
	04/10/2022	73	52	16.25	14.28

II	10/11/2022	68	49	18.61	11.29
	11/11/2022	64	50	14.29	10.49
III	17/10/2022	61	51	12.24	9.15
	18/10/2022	67	53	13.26	14.20
IV	24/10/2022	69	48	10.35	16.48
	25/10/2022	64	46	11.62	14.29
NOVEMBER- 2022					
I	04/11/2022	76	49	12.21	11.42
	05/11/2022	72	47	13.64	10.43
II	14/11/2022	68	43	11.29	13.24
	15/11/2022	64	41	10.24	9.24
III	21/11/2022	73	48	16.24	10.37
	22/11/2022	69	46	12.46	16.52
IV	28/11/2022	65	42	14.34	12.29
	29/11/2022	64	40	11.12	10.94
DECEMBER- 2022					
I	05/12/2022	84	47	9.3	11.5
	16/12/2022	72	48	10.2	15.3
II	12/12/2022	82	52	9.0	12.2
	13/12/2022	63	35	11.2	14.2
III	19/12/2022	72	48	10.4	15.6
	20/12/2022	55	46	11.5	14.4
IV	26/12/2022	72	39	9.4	10.2
	27/12/2022	59	48	16.2	12.7
Limit		**100**	**60**	**80**	**80**

Source Emission Monitoring

There are 6 No. of stacks at various sections to control particulate and gaseous emissions. The technical details are tabulated in Table No. 2.3 (A)

TABLE 2.3 (A)
Details of Stack and Control Equipments

1	Stack Attached to.	Blast Furnace	Sinter Plant exhaust gas dedusting	Sinter Plant dedusting system(Tail ESP)	Metallurgical Coke Oven	Steam Generating Boiler	Waste Heat Recovery Steam Generator
2	Stack height	60 mtr	100 mtr	50 mtr	90 mtr	60 mtr	60 mtr
3	Stack diameter	3.2	4.7	3.2	4.0	3.6	2.62
4	Material Of Construction	RCC	RCC	Steel	RCC	RCC	RCC
5	Type of fuel	Coke	Waste Flue Gas	NA	COG	Coal	Blast Furnace gas
6	Consumption of Fuel	750 MT/Day	5000 Nm3/hr	NA	12500 Nm3/hr	400 TPD	70000 Nm3/hr
7	Control Equipment	Bag Filter	ESP	ESP	Cyclone Dust Collector	ESP	Bag Filter
8	Nature of Pollutants likely to be present	PM,SO2	PM,SO2	PM	PM,SO 2	PM,SO2	PM,SO2

Methodology of Sampling

The stack sampling was carried out using **ISO-KINATIC METHOD** using pre-calibrated stack kit. Cellulose and Glass Fiber thimbles were used for collecting particulate matter. The Sulphur Dioxide is estimated as per IS: 11255 Part –II. NOx is estimated as per IS: USEPA (PDSA Method).

Result and Discussions

Stack emission monitoring was carried out. The emission rates were meeting the limits Prescribed by MPCB and results were tabulated in Table-2.3 (B) to (G).

TABLE - 2.3 (B)
MONTH: - JULY - 2022
STACKS EMISSION REPORT

Sr. No.	Sections	SPM (mg/Nm³)		SO_2 (mg/Nm³)	
		NORMS	ACTUAL	NORMS	ACTUAL
1	Blast Furnace Stove (Phase I)	30	14	250	35
2	Blast Furnace Cast House	50	28	-	-
3	Sinter Plant exhaust gas de-dusting	50	21	500	17
4	Sinter Plant de-dusting system (Tail ESP)	50	26	-	-

5	Metallurgical Coke Oven	50	28	500	11
6	Steam Generating Boiler	50	31	50 ppm	38
7	Waste Heat Recovery Steam Generator (CPP)	50	12	50 ppm	10
8	Blast Furnace DG Set	-	26	-	

TABLE - 2.3 (C)
MONTH: - AUGUST- 2022
STACKS EMISSION REPORT

Sr. No.	Sections	SPM (mg/Nm³)		SO_2 (mg/Nm³)	
		NORMS	ACTUAL	NORMS	ACTUAL
1	Blast Furnace Stove (Phase I)	30	25	250	40
2	Blast Furnace Cast House	50	26	-	-
3	Sinter Plant exhaust gas de-dusting	50	21	500	17
4	Sinter Plant de-dusting system (Tail ESP)	50	26	-	-
5	Metallurgical Coke Oven	50	27	500	28
6	Steam Generating Boiler	50	34	50 ppm	40
7	Waste Heat Recovery Steam Generator (CPP)	50	20	50 ppm	33
8	Blast Furnace DG Set	-	24	-	

TABLE - 2.3 (D)
MONTH: - SEPETEMBER - 2022
STACKS EMISSION REPORT

Sr. No.	Sections	SPM (mg/Nm³)		SO_2 (mg/Nm³)	
		NORMS	ACTUAL	NORMS	ACTUAL
1	Blast Furnace Stove (Phase II)	30	27	250	226
2	Blast Furnace Cast House	50	32	-	-
3	Sinter Plant exhaust gas de-dusting	50	26	500	15
4	Sinter Plant de-dusting system (Tail ESP)	50	23	-	-
5	Metallurgical Coke Oven	50	27	500	10
6	Steam Generating Boiler	50	36	50 ppm	31
7	Waste Heat Recovery Steam Generator (CPP)	50	14	50 ppm	15
8	Blast Furnace DG Set 650kVA (Phase II)	-	28	-	

TABLE - 2.3 (E)
MONTH: - OCTOBER - 2022
STACKS EMISSION REPORT

Sr. No.	Sections	SPM (mg/Nm³)		SO_2 (mg/Nm³)	
		NORMS	ACTUAL	NORMS	ACTUAL
1	Blast Furnace Stove (Phase II)	30	24	250	188
2	Blast Furnace Cast House	50	20	-	
3	Sinter Plant exhaust gas de-dusting	50	26	500	27
4	Sinter Plant de-dusting system (Tail ESP)	50	19	-	
5	Metallurgical Coke Oven	50	30	500	55
6	Steam Generating Boiler	50	25	50 ppm	35
7	Waste Heat Recovery Steam Generator (CPP)	50	22	50 ppm	33
8	Blast Furnace DG Set 650kVA (Phase II)	-	22	-	

TABLE - 2.3 (F)
MONTH: - NOVEMBER - 2022
STACKS EMISSION REPORT

Sr. No.	Sections	SPM (mg/Nm³)		SO_2 (mg/Nm³)	
		NORMS	ACTUAL	NORMS	ACTUAL
1	Blast Furnace Stove (Phase II)	30	23	250	193
2	Blast Furnace Cast House	50	25	-	-
3	Sinter Plant exhaust gas de-dusting	50	16	500	66
4	Sinter Plant de-dusting system (Tail ESP)	50	24	-	-
5	Metallurgical Coke Oven	50	23	500	127
6	Steam Generating Boiler	50	27	50 ppm	38
7	Waste Heat Recovery Steam Generator (CPP)	50	22	50 ppm	45
8	Blast Furnace DG Set 650kVA (Phase II)	-	25	-	

TABLE - 2.3 (G)
MONTH: - DECEMBER - 2022
STACKS EMISSION REPORT

Sr. No.	Sections	SPM (mg/Nm³)		SO_2 (mg/Nm³)	
		NORMS	ACTUAL	NORMS	ACTUAL
1	Blast Furnace Stove (Phase II)	30	25	250	232
2	Sinter Plant exhaust gas de-dusting	50	24	500	83
3	Sinter Plant de-dusting system (Tail ESP)	50	28	-	-
4	Metallurgical Coke Oven	50	29	500	121
5	Steam Generating Boiler	50	22	50 ppm	29
6	Waste Heat Recovery Steam Generator (CPP)	50	14	50 ppm	29
7	Blast Furnace DG Set 650kVA (Phase II)	-	28	-	-

Waste Water Quality:

ETP effluents were found to be confirmed to the limits prescribed by the MPCB. Analysis results during the study period are shown in Table – 2.4

TABLE – 2.4
WASTE WATER QUALITY – ETP (Treated)

Parameters	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Limits as per MPCB
pH	7.3	7.5	8.2	7.5	7.3	8.5	5.5 – 9.0
Total Suspended Solids (mg/l)	5	8	7	15	BQL (LOQ:5)	11	100
Total Dissolve Solids (mg/l)	239	217	280	285	384	336	2100
Chloride (mg/l)	31.0	19.0	28.0	15	32	19.0	600
Sulphate(mg/l)	25.2	20.2	17.0	22.6	54	27.7	1000
BOD (3 days at 27 °C) (mg/l)	10	3.9	4.8	10	2.8	6.9	100
COD (mg/l)	32	12	16	32	10	24	250
Oil and Grease (mg/l)	BQL (LOQ :1)	BQL (LOQ :1)	BQL (LOQ :1)	BQL (LOQ:1)	BQL (LOQ:1)	BQL (LOQ:1)	10
Iron (mg/l)	0.49	0.45	0.47	0.48	0.122	0.178	5.0

ND-Not Detected

Noise Levels

Work place Noise measured at time office. The ambient noise levels were also measured at four locations viz. Southern, Northern, Eastern & Western Boundary, during the study period (July 2022 to December 2022). The details of the noise sampling locations are given in Table - 2.5 A & B

- **Methodology of Sampling**

The noise monitoring was carried out continuously on hourly basis over a period of one day at each location. The noise levels monitoring was carried out using an analog noise level meter.

TABLE- 2.5 (A)

NOISE LEVEL MONITORING LOCATIONS IN SIDE THE PLANT

Sample Code	Locations
NL1	Time Office
NL 2	Blast Furnace

TABLE- 2.5 (B)

AMBIENT NOISE LEVEL MONITORING LOCATIONS

Sample Code	Locations
NL3	Southern Boundary
NL4	Northern Boundary
NL5	Eastern Boundary
NL6	Western Boundary

- **Result and Discussions**

The noise levels recorded at different locations around the plant during the study period (July 2022 –December 2022) are given in Table 2.5 C to H and Table 2.5 I & J

a. Day time Noise Levels (L day)

Industrial Zone: The day time noise levels at all the industrial locations were observed in the range of 68.8 dB (A) to 72.7 dB (A). The lowest 68.8 dB (A) was observed at Western Boundary in the month of August 2022, while the maximum of 72.7 dB (A) was recorded at the Western Boundary in the month of November 2022. The noise levels are within the permissible limits of 75 dB (A) during the study period.

b. Night Noise Levels (L night)

Industrial Zone: The night noise levels in all the industrial locations were observed to be in the range of 60.8 dB (A) to 68.1 dB (A). The lowest 60.8 dB was observed at Eastern Boundary in the month of December 2022, while the maximum of 68.1 dB (A) was recorded at the Eastern Boundary in the month of August 2022. The noise levels are within the permissible limits of 70 dB (A) during the study period.

c. Work Zone Noise Levels

The noise levels recorded at the different workplaces in the plant are given in Table-2.5 (I & J). Noise levels near the work zone measured at 4.0 mtr distance from the machineries, were found in the range of 68.7 db to 89.1 dB (A), against the OSHA prescribed limits of 90 dB (A) for 8 Hrs. exposure noise level, the lowest 68.7 dB was observed in the month of September 2022 at Blast Furnace-2 Near D.G set 650 KVA, while the maximum of 89.1 dB (A) was recorded in the month of December 2022 at Waste Heat Recovery Boiler (CPP) Front. However, workers at the work zone near the machineries are provided with earmuffs.

TABLE – 2.5 (C) NOISE LEVEL
July-2022

Locations	Noise Level dB(A)			
	L day	Standards	L night	Standards
Eastern Boundary	71.5	75.0	63.4	70.0
Western Boundary	72.1	75.0	65.2	70.0
Northern Boundary	70.5	75.0	66.4	70.0
Southern Boundary	72.5	75.0	62.6	70.0

TABLE – 2.5 (D) NOISE LEVELS
August – 2022

Locations	Noise Level dB(A)			
	L day	Standards	L night	Standards
Eastern Boundary	71.5	75.0	68.1	70.0
Western Boundary	72.7	75.0	65.6	70.0
Northern Boundary	70.8	75.0	64.4	70.0
Southern Boundary	70.2	75.0	66.3	70.0

TABLE – 2.5 (E) NOISE LEVELS
September-2022

Locations	Noise Level dB(A)			
	L day	Standards	L night	Standards
Eastern Boundary	70.4	75.0	64.2	70.0
Western Boundary	72.3	75.0	65.6	70.0
Northern Boundary	71.1	75.0	62.6	70.0
Southern Boundary	70.5	75.0	63.3	70.0

TABLE – 2.5 (F) NOISE LEVELS
October - 2022

Locations	Noise Level dB(A)			
	L day	Standards	L night	Standards
Eastern Boundary	71.1	75.0	62.6	70.0

Western Boundary	70.4	75.0	63.5	70.0
Northern Boundary	69.8	75.0	65.4	70.0
Southern Boundary	72.2	75.0	64.3	70.0

TABLE – 2.5 (G) NOISE LEVELS
November - 2022

Locations	Noise Level dB(A)			
	L day	Standards	L night	Standards
Eastern Boundary	70.3	75.0	63.3	70.0
Western Boundary	68.8	75.0	64.8	70.0
Northern Boundary	71.6	75.0	62.7	70.0
Southern Boundary	71.5	75.0	66.4	70.0

TABLE – 2.5 (H) NOISE LEVELS
December -2022

Locations	Noise Level dB(A)			
	L day	Standards	L night	Standards
Eastern Boundary	71.1	75.0	60.8	70.0
Western Boundary	70.4	75.0	65.2	70.0
Northern Boundary	72.2	75.0	64.5	70.0
Southern Boundary	70.8	75.0	67.1	70.0

TABLE – 2.5 (I)
WORK PLACE NOISE LEVELS dB (A)
WORK PLACE NOISE LEVELS dB (A) (July 2022 to September 2022)

Sr. No.	Location	July 2022		August 2022		September 2022	
		Min	Max	Min	Max	Min	Max
1	Blast Furnace-2 Front Near Cast house	79.7	83.8	81.4	85.9	81.4	85.7
2	Blast Furnace-2 Near Stock house	75.8	81.6	82.6	87.8	78.4	84.4
3	Blast Furnace-2 Near D.G set 650 KVA	82.7	86.9	82.5	86.4	68.7	73.5
4	Coke Oven Battery Near D.G Set	74.8	83.1	84.7	87.9	79.1	84.3
5	Coke Oven Battery Front	75.8	81.5	82.2	84.9	78.5	81.6

6	Coke Oven Battery Rear	74.3	80.8	85.4	87.7	75.8	80.6
7	RMHS Near Store	76.6	86.1	80.2	82.4	76.3	81.8
8	Sinter Main lD Fan	79.7	85.4	85.2	88.2	81.3	86.2
9	Sinter Rear Near MND	83.4	87.7	78.5	81.3	77.4	80.2
10	PCM	81.2	84.6	81.2	85.6	76.5	78.9
11	Waste Heat Recovery Boiler (CPP) Front	82.2	85.4	79.5	87.6	75.4	78.7
12	Waste Heat Recovery Boiler (CPP) Turbine	80.4	82.6	85.2	85.6	74.8	80.5

TABLE – 2.5 (J)
WORK PLACE NOISE LEVELS dB (A) (October 2022 to December 2022)

Sr. No.	Location	October 2022		November 2022		December 2022	
		Min	Max	Min	Max	Min	Max
1	Blast Furnace-2 Front Near Cast house	80.8	83.6	82.5	86.1	81.1	84.3
2	Blast Furnace-2 Near Stock house	76.9	82.8	77.8	85.2	80.4	87.1
3	Blast Furnace-2 Near D.G set 650 KVA	79.2	82.7	80.4	84.2	79.5	83.8
4	Coke Oven Battery Near D.G Set	81.3	86.2	84.2	88.6	82.8	86.5
5	Coke Oven Battery Front	76.3	79.8	75.8	81.5	77.4	80.7
6	Coke Oven Battery Rear	77.4	81.6	78.7	80.8	75.8	83.8
7	RMHS Near Store	73.1	82.4	77.4	81.8	79.6	83.3
8	Sinter Main lD Fan	80.6	84.5	82.3	86.7	81.1	84.2
9	Sinter Rear Near MND	77.4	82.2	80.2	83.6	79.1	82.4
10	PCM	74.	76.2	75.6	78.4	73.5	78.7
11	Waste Heat Recovery Boiler (CPP) Front	74.3	76.4	76.6	88.4	84.3	89.1
12	Waste Heat Recovery Boiler (CPP) Turbine	76.7	80.3	78.7	82.7	80.2	84.5