JSW Cement Limited
Kalinganagar Industrial Complex,
Vill - Jakhapura, Tahasil - Danagadi,
Dist.- Jajpur, Odisha - 755026
GST - 21AABCJ6731B1Z8
Website : www.jswcement.in

JSWCL/JAJPUR/ENV/23-24/09

27th Sept 2023

To,
The Member Secretary,
Odisha State Pollution Control Board,
A/118, Nilakantha Nagar, Unit-VIII,
Bhubaneswar, Odisha-751012

Subject: Submission of Environmental Statement Report– Form V for FY 2022-2023 under Rule 14 of Environment (Protection) Rule, 1986 by JSW Cement Ltd., Jajpur (1.2 MTPA Cement Grinding unit).

Ref: Consent Order No. 5223/IND-I-6672 dated 31.03.2023 under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution) Act, 1981

Dear Sir,
With reference to the above cited subject and reference, we **JSW Cement Ltd., Jajpur** is hereby submitting the **"Environmental Statement" duly filled in Form V** for the financial year **2022-23**.

We trust the information enclosed is in order.

Thanking You,
Yours faithfully,

For JSW Cement Ltd.,

JSW Cement Ltd. Jajpur

Pankaj Kumar
Operation Head

CC:

1. **Regional Officer,**
   Odisha State Pollution Control Board,
   At- Dhabalagiri, Po- F.C Project,
   Jajpur Road, Dist – Jajpur
   Odisha – 755020
2. **DR. R. K. DEY, IFS,**
   Addl. Principal Chief Conservator of Forests (C),
   Ministry of Env., Forest and Climate Change,
   Regional Office (EZ), A/3,
   Chandersekharpur, Bhubaneswar – 751023
3. **Sh. M. K Biswas (Scientist E)**
   Regional Directorate - Kolkata
   Central Pollution Control Board
   South end Conclave, Block 502, 5th and 6th Floors,
   1582, Razidanga Main Road,
   Kolkata, West Bengal 700107

CIN-U26957MH2006PLC160839

Regd. Office :
JSW Centre, Opp. MMRDA Ground
Bandra Kurla Complex, Bandra (East)
Mumbai - 400 051
Ph (Direct) : +91 - 22 - 4286 5047
Fax : +91 - 22 - 2650 2001
Website : www.jswcement.in

ENVIRONEMENTAL STATEMENT
(FORM – V)

ENVIRONMENTAL STATEMENT FOR

FY 2022-23
JSW CEMENT LIMITED
JAJPUR

Kalinganagar Industrial Complex,
Village- Jakhapura,
Dist- Jajpur, Odisha

Introduction.

JSW Cement Ltd., Jajpur is cement manufacturing grinding unit of capacity 1.2 MTPA. The industry produces cement i.e. Composite Cement, Portland Slag Cement and Portland Pozzolana Cement, Granulated blast furnace Slag (GGBS) by using various industrial waste like Slag and Fly ash as a measure to conserve natural mineral reserves.

The plant is located within the existing plant premises of JSL at- Kalinganagar Industrial Complex, in Jajpur District of Odisha. The Latitude and Longitude of the site location are 20^{o} 57' 14.41''N and 86^{o} 02' 21.68''E respectively. The total land area of the unit is 15 Acres. The nearest national highway is NH-5, and is about 20 km East from the project site. The plant is bounded by East Coast Railway's line connecting Jakhapura and Daitari stations on the east and the Jajpur- Talcher state highway on the north. The nearest railway station is Sukinda Road on Jakhapura- Bansapani branch line passes just to the east of the project site. The Jajpur Keonjhar road railway station on Howrah- Kharagpur- Bhubaneswar-Vishakhapatnam line is about 12 km towards East of the site. The nearest seaport at Paradeep is about 102 kms from the site locationand the nearest airport is Biju Patnaik International Airport, Bhubaneswar which approximately 120 kms away from the industry.

The Plant has adopted most modern Roller Press Technology with high efficiency separator which is the state of art technology in the whole process of PSC / GGBS production line. These modern high technology features ensure high quality product, high yield in energy savings, environmental protection, as well as large- scale automation. The technical performance and equipment installed here are comparable to the best cement grinding plants in existence in other parts of the world. The unit is equipped with all the modern Air Pollution Control devices like baghouses & Bag filters.

The raw materials required to produce various products are Clinker, Gypsum, Slag, Fly Ash, Coal with a fuel (coal) consumption of 40 T/day. The total power requirement of the plant is 8 MVA and is met from distribution Company (NESCO).

The unit shares a common infrastructure facility with JSL for drawl of surface water from Brahamani River. The avg daily water consumption of the unit is 245 m^3. As the manufacturing process is based on dry process so no waste water will be generated from the process. The domestic effluent generated from the industry is around 8 m^3 which is being treated in the STP of the capacity 20 KLD. Zero liquid discharge concept has been adopted.

The policy for the abatement of pollution by the government of India provides for submission of environment statement by all the industries. Environmental Statement is therefore an output of Environmental Audit.

So an effort has been made in this report to explain Environmental Statement for the financial year ended 31st March 2023 as per Government of India notification GSR 329 (E), dated 13th March 1992 and amendment to Environmental (Protection) Rules 1986 and subsequent amendment there on.

QUALITY, ENVIRONMENT, HEALTH & SAFETY

MANAGEMENT POLICY

We commit to:

1. Be a customer centric and socially responsible organization.
2. Continually improve the effectiveness of management systems by integrating Quality, Environment, Energy & OHS criteria at the design, planning and operational stages of our activities.
3. Ensure availability of information and necessary resources to achieve our objectives and targets.
4. Comply with all applicable legal / statutory requirements.
5. Prevent injury & ill health and provide a safe and healthy workplace for all employees, workmen, contractors and visitors
6. Eliminate hazards and reduce OHS & environmental Risks through effective implementation of Best Available Technologies, Practices and Management Systems to achieve satisfaction of our stakeholders and create a sustainable organization.
7. Protection of the environment, prevention of pollution, sustainable resource use, climate change mitigation and adaptation, and protection of biodiversity and ecosystems.
8. Consultation and participation of workers in OHS matters
9. Promote spirit of Team Work at all levels.
10. Improve employee satisfaction within the organization.

Date: 14-07-2021

Wholetime Director

ENVIRONMENTAL STATEMENTS
FORM-V
(See Rule 14)

PART-A

I.	Name and address of the owner/ occupier of the industry, operation or process	:	**Nilesh Narwekar (CEO & Director)** JSW Cement Ltd., JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai-400051
I.	a) Authorized person for the Occupier	:	**Mr. Pankaj Kumar (Operation Head)** Kalinganagar Industrial Complex, Vill- Jakhapura, Tehsil- Danagadi, Dist- Jajpur
II.	Industry Category Primary/(STC code) Secondary (STC code)	:	Red/Large (Cement Manufacturing Unit) Primary STC
III.	Production Capacity	:	1.2 MTPA
IV.	Year of Establishment	:	August 2019
V.	Date of Last Environmental /Audit Report submitted	:	23rd Sep 2022

PART-B
Water and Raw Material Consumption

I. Water consumption in m^3/d

a) Process: Nil

b) Cooling: 63.27 (Average during FY 2022-23)

c) Domestic: 18.0 (Average during FY 2022-23)

Name of the Products	**Process water* consumption per unit of products (m3/t)**	
	During the Previous FY 2021-22	**During the current FY 2022-23**
Composite Cement	0.036	0.037
PSC		

***Cooling Purpose**

II. **Raw Material Consumption:**

Name of the Raw Materials	Name of the Products	Consumption of the Raw Material per unit of output (Cement)	
		During the Previous FY 2021-22	During the current FY 2022-23
Clinker	Composite Cement	0.49	0.36
Slag		0.45	0.38
Gypsum		0.04	0.04
Fly Ash		0.26	0.22
Clinker	PSC	0.33	0.30
Slag		0.46	0.67
Gypsum		0.03	0.03

PART-C

POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT (PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)

S.No.	Pollutants	Quantity of pollutants discharged (tone/day)	Concentrations of pollutants in discharged (mass/volume) (mg/Nm3)	Percentage of variation from prescribed standard with reason
a	Water	No waste water is being generated from process. Water is used for cooling purpose and it is recycled. Domestic waste water/sewage is treated in state of art technology STP of 20 KLD Capacity		
b	Air			
	Stack Emission			
I.	Slag/Cement Mill Stack	0.093	22.5	0
II.	Coal Mill_Stack	0.0058	16.4	0

PART-D

HAZARDOUS WASTES (As specified under Hazardous wastes/management, handling & Transboundary rule, 1989& its amendment 2016)

Hazardous Waste	Total Quantity (Kg)			
	During the current financial year 2021-22		During the current financial year 2022-23	
	Used Oil/Spent Oil	Wastes/residue containing oil	Used Oil/Spent Oil	Wastes/residue containing oil
a) From Process	1.60	1.09	0.13	0.24
b) From Pollution Control Facilities	Nil	Nil	Nil	Nil

PART-E

SOLID WASTE

S.No	Solid Waste	Total Quantity (Kg)	
		During the previous financial year 2021-22	During the previous financial year 2022-23
a.	From Process	No waste is generated in the manufacturing process	No waste is generated in the manufacturing process
b.	From Pollution Control Devices	Wastes (Dust collected from the pollution control devices are recycled/reutilized in the process.	Wastes (Dust collected from the pollution control devices are recycled/reutilized in the process.
c.	1.Quantity recycled/reutilize within the unit	100%	100%
	2.Sold	Nil	Nil
	3.Disposed	Nil	Nil

PART-F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous/Solid Waste	Characteristics	Method of disposal
Used Oil	Oily	To be sold to authorized recycler
Wastes/residue containing oil	Oily	incinerated in the HAG
Solid waste	Dust	Recycled/reutilized in the process

PART –G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production

JSW Cement is continuously making efforts to look for ways to reduce the dependency on the natural raw material. In order to do so, it enhances the mix optimization with the introduction of alternative, recycled materials to replace the use of natural resources.

Following measures have been taken on the conservation of natural resources and reducing the impact of the pollution:

1. **Utilization of Industrial Waste/By-products:** We are focused towards manufacturing of the 'green cement' products: Portland Slag Cement, Composite Cement. These products are manufactured by utilizing slag which is industrial by-product of the steel industry. The utilization of these by-products like Slag, Fly ash and chemical gypsum have not only led to conservation of natural resources but has also saved the ecological risk of industrial byproduct dumping.

2. **Air Pollution Control Measures.**
   Following measures have been taken to control the air pollution:

   a. **Installation of Baghouses and Bag filters.** The plant is equipped with all the modern pollution control devices to keep the emission level below the prescribed limit of 30mg/Nm^3. There are 49 bagfilters installed at all the transfer points to control the fugitive emission and 3 main baghouses attached to the process stack.

b. **Closed conveyor belts.** Closed conveyor belts have been provided for the transfer of raw materials to control the fugitive dust.

c. **Closed shed for Raw materials.** Closed yard with impervious platform have been provided for storage of coal and gypsum of the capacity 850 MT & 1500 MT respectively. Also, a closed silo of the capacity 45,000 MT has been provided for the storage of clinker.

d. **Paved internal roads.** All the internal roads have been paved in order to control the fugitive emission due to vehicle movement.

e. **Water Sprinkling Facility.** A mobile water tanker of capacity 5000 Liters has been provided for dust suppression on the internal roads.

f. **Closed silo for the final products.** There are 4 closed silo and 1 intermediate bin for the storage of final products and intermediate product. (OPC, PSC, GGBS & Composite Cement).

Coal and Gypsum Storage Yard

Clinker Storage Silo

Main baghouse of the Roller Press

Closed conveyor belt with bag filters at all transfer points

Closed Silo installed for Final Products

Fig 1. Air Pollution Control Measures

3. **Water conservation and water pollution control measures.** The approach for conservation of the water can be witnessed as:

   a. The cement manufacturing process is a completely dry process and the water used for cooling process is 100 % recycled and reused.

   b. The company has adopted a zero liquid discharge technology. There is no effluent discharged from the industry. Waste water generated from the domestic purpose is treated in the STP of capacity 20 KLD and the treated water is utilized for gardening /dust suppression.

Fig 2. Water pollution Control Measure (STP of capacity 20 KLD)

PART –H

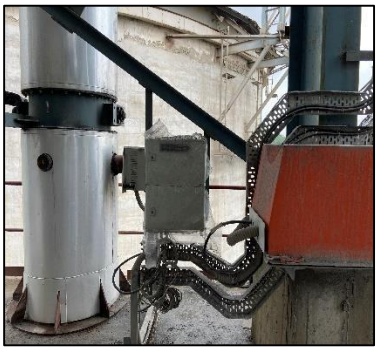
Additional Measures /investments proposed for environmental protection including abatement of pollution, prevention of pollution.

1. **Continuous monitoring of the ambient air quality.** 01 No. of CAAQMS (Continuous Ambient Air Quality Monitoring System) has been installed for monitoring of the ambient air quality. Parameters monitored through CAAQMS system are PM10, PM2.5, SO_2, NOx. Apart from this ambient air quality is being monitored through NABL accredited laboratory on monthly basis. Reports for the same has been enclosed as ***Annexure 1.***

2. **Continuous Emission Monitoring System.** 02 Nos. of continuous emission monitoring systems have been provided for both the major stacks i.e. Coal Mill and Slag/Cement Mill. The emission from the stack is monitored on continuous basis and data of the same is being transmitted to CPCB/SPCB servers.

Continuous Ambient Air Quality Monitoring System

Permanent AAQ Stations



CEMS installed for the major stacks

Fig 3. Air Quality/Emission Monitoring System

3.Green Belt Development. Green belt development is a continuous process and is being developed in a phase wise manner. A total of 33 % of the land area of the plant will be developed as green belt.

- The existing green belt as on 31st March 2023 is 4198 covering 4.36 Acres (29%) with 96% of Survival rate
- Greenbelt developed during 2023 monsoon- Total 1800 nos. of saplings planted in 1.8 Acre, which is now 6.16 acre (41%) green belt in total 15 Acre of land area.

The plantation has been carried out using the native broad leaved species in consultation with local DFO/Range officer.


GPS Map Camera
Nuagan, Odisha, India
SH 20, Nuagan, Odisha 755026, India
Lat 20.981282°
Long 86.019013°
06/09/23 04:16 PM GMT +05:30
Google


GPS Map Camera
Nuagan, Odisha, India
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Lat 20.981282°
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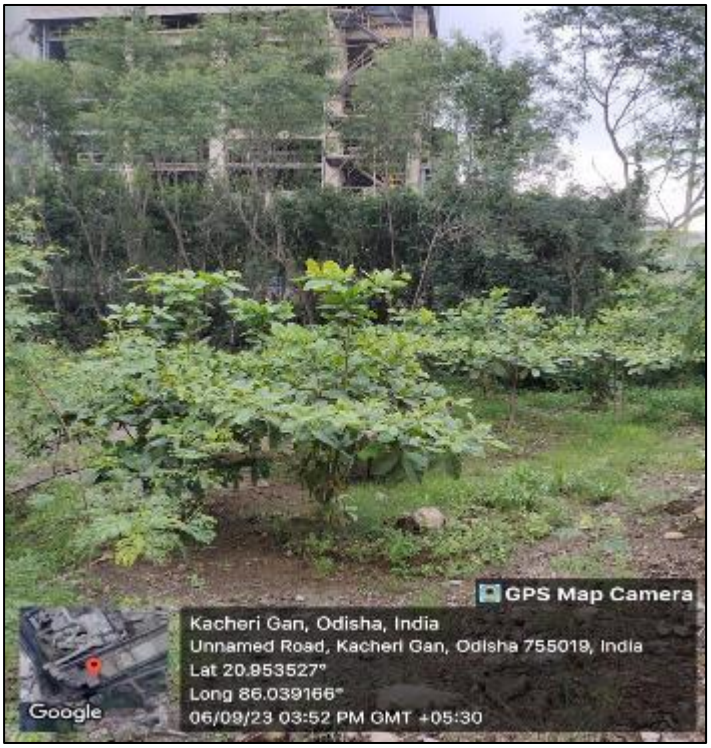
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GPS Map Camera
Jajpur, Odisha, India
Unnamed Road, Odisha 755019, India
Lat 20.953356°
Long 86.040343°
06/09/23 04:01 PM GMT +05:30
Google

Fig 4. Green Belt Development inside the plant premises

PART –I

Any other particulars for improving the quality of environment

1. **Significant energy saving & other measures implemented**

- Replacement of conventional lights with LED lights to save energy.
- Installation of 90 pieces of Solar street light inside the plant area that saves 10% of total plant lighting electricity consumption.
- Top soils from the project excavation work has been utilized for development of green belt.
- Acoustic enclosures have been provided at noise generating area to control noise pollution.
- Implementation of Rain Water Harvesting units which has capacity to recharge the ground water 3800M^3 per year.
- Bag house & bag filters have been installed to reduce the air pollution.
- Permanent water sprinkler has been installed to control the fugitive emission & Truck Mounted Mechanical Sweeping is engaged for sweeping of pucca road inside the plant.
- Use of personal protective Equipment: All employees are provided with personal protective Equipment (PPEs), as per the work requirement, such as workers working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear muff, safety boots gloves welding goggles, Goggles and safety helmet are also being provided as per the requirement.

2. **Environment Awareness and Plantation drive programme .**

- Awareness programs on protection of Environment was carried out by Environment department in the presence of Unit Head by involving all the Workmen & staff .
- Mass Plantation drive was carried out by JSW involving all the employees and workmen inside the JSW premises.

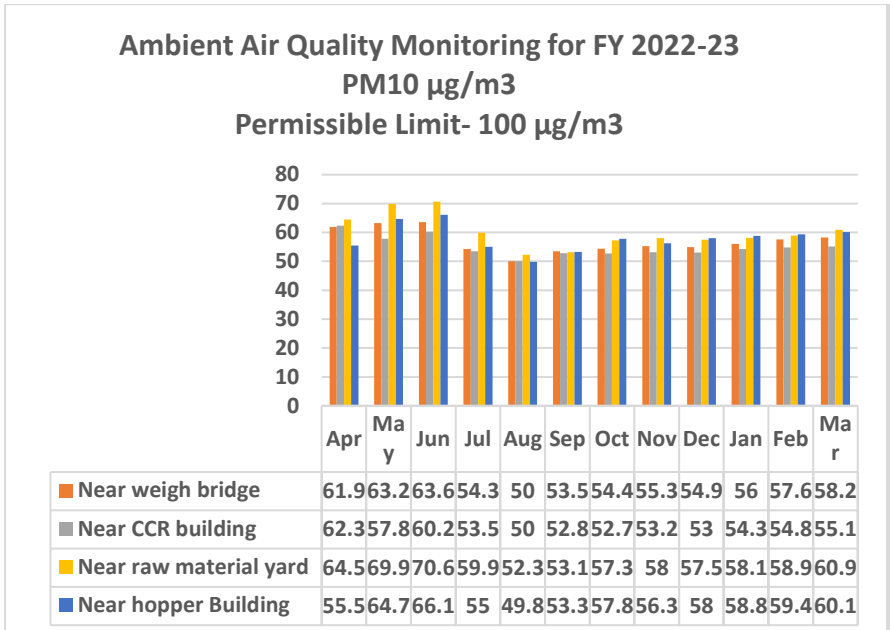
  "Van Mahotsav" was celebrated , in involving Local Communities & Dealers to create awareness on Plantation drive and its benefits to the Environment.

Fig 5. Plantation carried out on World Environment Day by JSW employees

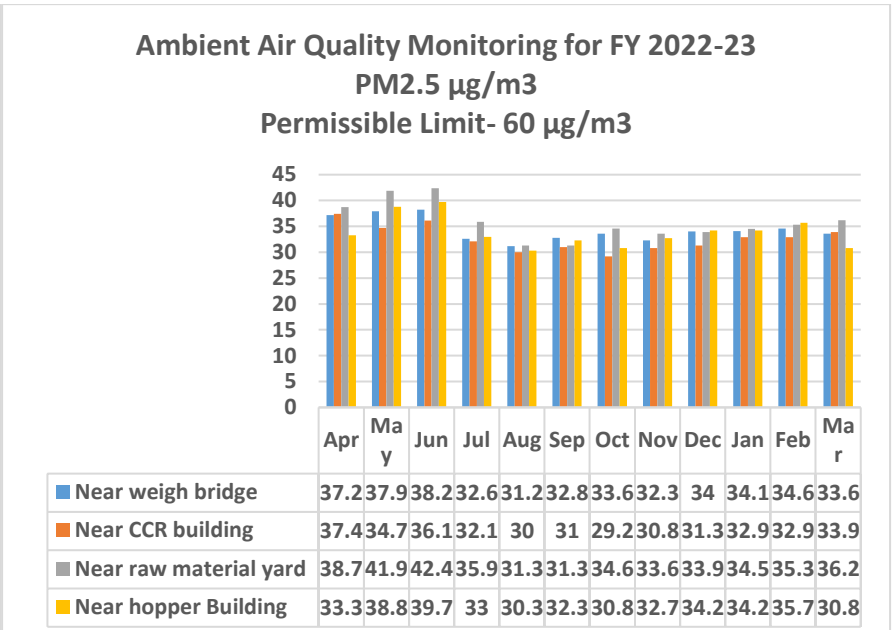
Fig 6. Mass Plantation carried out on the occasion of Van Mahotsav

Tabe-1 Ambient Air Quality Monitoring reports For the FY -2022-23													
Area	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Average**
	Ambient Air (PM10) (µg/m3)												
Near weigh bridge	61.9	63	63.6	54	50	53.5	54.4	55.3	54.9	56	57.6	58.2	56.9
Near CCR building	62.3	58	60.2	54	50	52.8	52.7	53.2	53	54.3	54.8	55.1	55.0
Near raw material yard	64.5	70	70.6	60	52.3	53.1	57.3	58	57.5	58.1	58.9	60.9	60.1
Near hopper Building	55.5	65	66.1	55	49.8	53.3	57.8	56.3	58	58.8	59.4	60.1	57.9
	Ambient Air (PM2.5)(µg/m3)												**57.5**
Near weigh bridge	37.2	38	38.2	33	31.2	32.8	33.6	32.3	34	34.1	34.6	33.6	34.34
Near CCR building	37.4	35	36.1	32	30	31	29.2	30.8	31.3	32.9	32.9	33.9	32.69
Near raw material yard	38.7	42	42.4	36	31.3	31.3	34.6	33.6	33.9	34.5	35.3	36.2	35.80
Near hopper Building	33.3	39	39.7	33	30.3	32.3	30.8	32.7	34.2	34.2	35.7	30.8	33.82
Ambient Air SO2(µg/m3)													**34.2**
Near weigh bridge	8.9	9.3	9.3	9.3	9	3.1	7.4	7.2	7.5	8.1	8.5	8.5	8.0

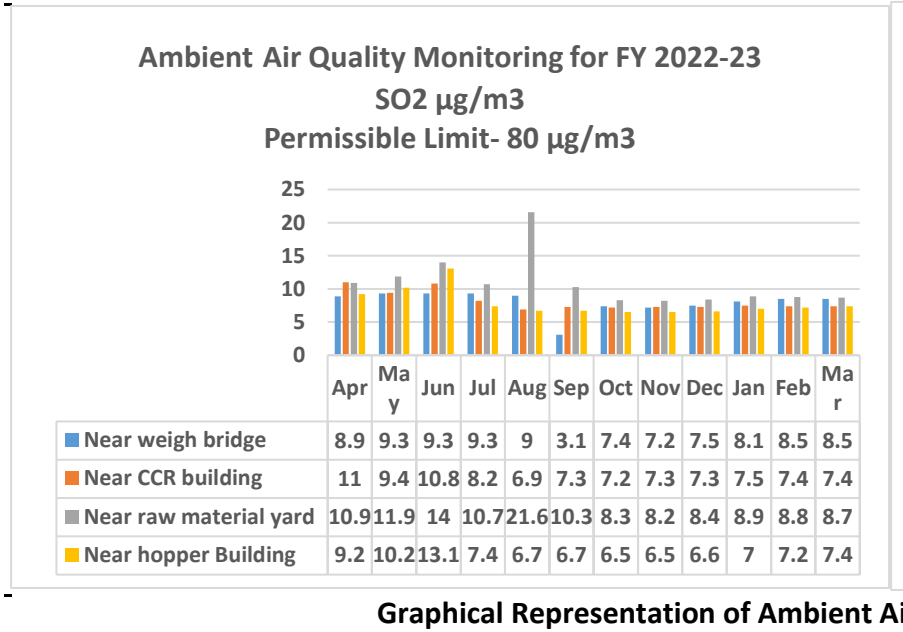
Near CCR building	11	9.4	10.8	8.2	6.9	7.3	7.2	7.3	7.3	7.5	7.4	7.4	8.1
Near raw material yard	10.9	12	14	11	21.6	10.3	8.3	8.2	8.4	8.9	8.8	8.7	10.9
Near hopper Building	9.2	10	13.1	7.4	6.7	6.7	6.5	6.5	6.6	7	7.2	7.4	7.9
Ambient Air NO2(µg/m3)													**8.7**
Near weigh bridge	15.4	15	16.5	13	12.6	12.9	13.9	13.9	14.3	14.5	14.5	14.5	14.3
Near CCR building	15.6	14	14.8	13	11.8	12.2	16.8	17	17	17.4	17.4	17.4	15.4
Near raw material yard	16.5	16	16.8	13	12.5	12.6	16.1	16	16.1	16.5	16.4	16.4	15.4
Near hopper Building	13.6	17	16.5	13	12.7	13.1	13.8	14	14.1	14.3	14.9	14.9	14.3
CO(mg/m3)													**14.8**
Near weigh bridge	0.52	0.5	0.53	0.4	0.37	0.4	0.65	0.65	0.66	0.67	0.67	0.66	0.6
Near CCR building	0.55	0.6	0.6	0.5	0.41	0.43	0.53	0.54	0.53	0.57	0.58	0.57	0.5
Near raw material yard	0.44	0.5	0.53	0.5	0.41	0.41	0.42	0.43	0.42	0.45	0.5	0.49	0.5
Near hopper Building	0.6	0.6	0.62	0.5	0.43	0.45	0.54	0.53	0.55	0.58	0.57	0.57	0.5



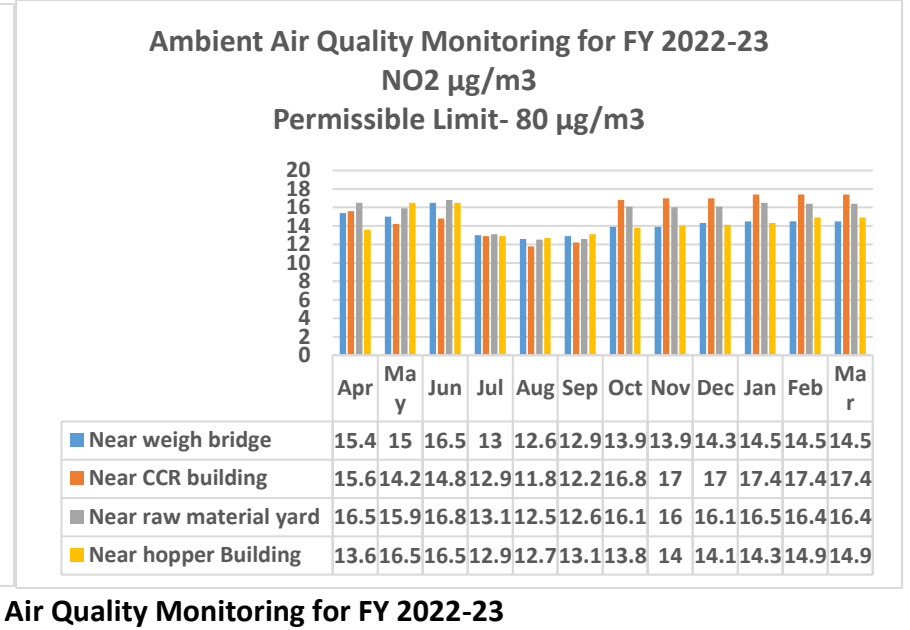
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	61.9	63.2	63.6	54.3	50	53.5	54.4	55.3	54.9	56	57.6	58.2
Near CCR building	62.3	57.8	60.2	53.5	50	52.8	52.7	53.2	53	54.3	54.8	55.1
Near raw material yard	64.5	69.9	70.6	59.9	52.3	53.1	57.3	58	57.5	58.1	58.9	60.9
Near hopper Building	55.5	64.7	66.1	55	49.8	53.3	57.8	56.3	58	58.8	59.4	60.1



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	37.2	37.9	38.2	32.6	31.2	32.8	33.6	32.3	34	34.1	34.6	33.6
Near CCR building	37.4	34.7	36.1	32.1	30	31	29.2	30.8	31.3	32.9	32.9	33.9
Near raw material yard	38.7	41.9	42.4	35.9	31.3	31.3	34.6	33.6	33.9	34.5	35.3	36.2
Near hopper Building	33.3	38.8	39.7	33	30.3	32.3	30.8	32.7	34.2	34.2	35.7	30.8



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	8.9	9.3	9.3	9.3	9	3.1	7.4	7.2	7.5	8.1	8.5	8.5
Near CCR building	11	9.4	10.8	8.2	6.9	7.3	7.2	7.3	7.3	7.5	7.4	7.4
Near raw material yard	10.9	11.9	14	10.7	21.6	10.3	8.3	8.2	8.4	8.9	8.8	8.7
Near hopper Building	9.2	10.2	13.1	7.4	6.7	6.7	6.5	6.5	6.6	7	7.2	7.4



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	15.4	15	16.5	13	12.6	12.9	13.9	13.9	14.3	14.5	14.5	14.5
Near CCR building	15.6	14.2	14.8	12.9	11.8	12.2	16.8	17	17	17.4	17.4	17.4
Near raw material yard	16.5	15.9	16.8	13.1	12.5	12.6	16.1	16	16.1	16.5	16.4	16.4
Near hopper Building	13.6	16.5	16.5	12.9	12.7	13.1	13.8	14	14.1	14.3	14.9	14.9

Graphical Representation of Ambient Air Quality Monitoring for FY 2022-23

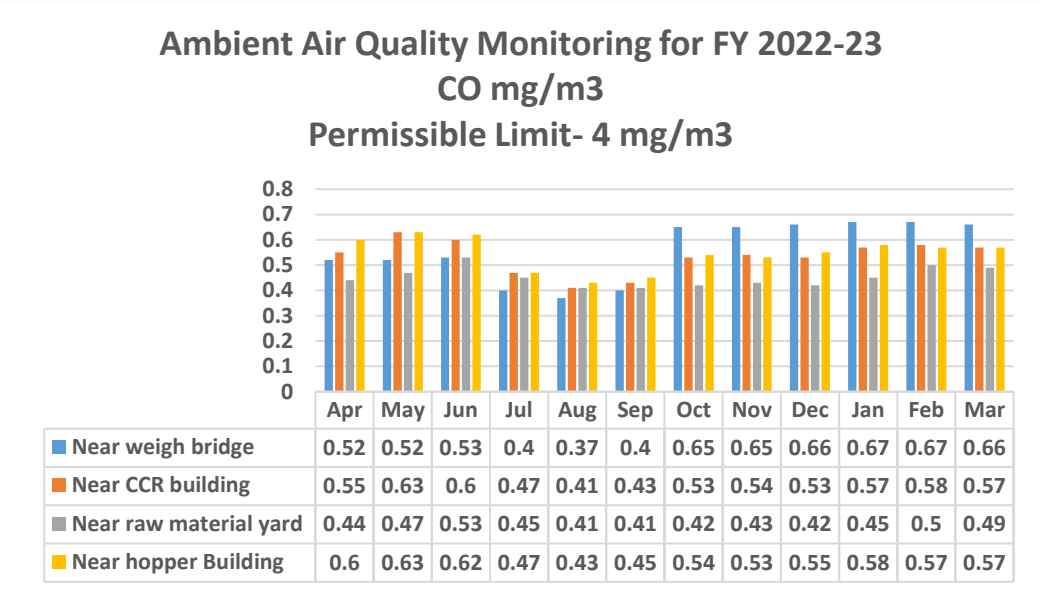


Table 2. Stack Emission Details during FY 2022-23

Stack Details	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
Stack Monitoring (mg/Nm3)													
Coal_Mill_Stack	16.9	17.2	17.8	16.8	16.4	17.3	15.5	16.1	16.1	16.5	14.8	15.3	16.4
Slag/Cement_Mill_Stack	25.6	27.2	24.8	21.6	21.2	21.7	21.7	22.3	21.5	22.3	21.8	18.8	22.5

Table 3. Ambient Noise Level during FY 2022-23 (Average Value)

Sampling Location	Unit	Average Noise Level	
		Day	Night
Near CCR	dB (A)	62.9	58.6
Near Weigh Bridge	dB (A)	62.8	58.2
Near Hopper Building	dB (A)	64.0	55.8
Near Canteen	dB (A)	62.9	55.7
Standard as per Noise Rule 2000	**dB (A)**	**75**	**70**