



JSWCL/JAJPUR/ENV/22-23/09

JSW Cement Limited

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

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

19th Sept 2022

Subject: Submission of Environmental Statement Report– Form V for FY 2021-2022 under Rule 14 of Environment (Protection) Rule, 1986 by JSW Cement Ltd., Jajpur (1.2 MTPA Cement Grinding unit).

Ref: Consent Order No. 3806/IND-I-6672 dated 21.03.2020 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 **2021-22**.

We trust the information enclosed is in order.

Thanking You,
Yours faithfully,

For JSW Cement Ltd.,


Ravi Gaur
Unit 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,
Chandersekharapur, 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



Part of O.P. Jindal Group



**ENVIRONMENTAL
STATEMENT
(FORM – V)**



**ENVIRONMENTAL
STATEMENT FOR
FY 2021-22
JSW CEMENT LIMITED
JAJPUR**

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



Introduction.

JSW Cement Ltd., Jajpur is cement manufacturing grinding unit of the capacity 1.2 MTPA. The industry produces cements 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° 57' 14.41''N and 86° 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 of 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 location. And 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 connected power 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 unit requires a daily water consumption of 245 m³. 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 m³ 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 2022 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.



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.

Kishu Kaurvekar

Wholetime Director

Date: 14-07-2021



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. Ravi Gaur (Unit 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	:	24 th Sep 2021

PART-B

Water and Raw Material Consumption

I. Water consumption in m³/d

- a) Process: Nil
- b) Cooling: 62.24 (Average during FY 2021-22)
- c) Domestic: 18.0 (Average during FY 2021-22)

Name of the Products	Process water* consumption per unit of products (m ³ /t)	
	During the Previous FY 2020-21	During the current FY 2021-22
Composite Cement	0.041	0.036
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 2020-21	During the current FY 2021-22
Clinker	Composite Cement	0.36	0.49
Slag		0.39	0.45
Gypsum		0.03	0.04
Fly Ash		0.22	0.26
Clinker	PSC	0.37	0.33
Slag		0.60	0.46
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/Nm ³)	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 having 20 KLD Capacity		
b	Air			
	Stack Emission			
I.	Slag/Cement Mill Stack	0.092	20.9	-2.4
II.	Coal Mill Stack	0.0063	16.7	-9.33

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 2020-21		During the current financial year 2021-22	
	Used Oil/Spent Oil	Wastes/residue containing oil	Used Oil/Spent Oil	Wastes/residue containing oil
a) From Process	3 Metric Tonnes	Nil	1.60	1.09
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 2020-21	During the previous financial year 2021-22
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 equipment with all the modern pollution control devices to keep the emission level below the prescribed limit of 30mg/Nm³. There are 49 bag filters 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 the 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 the 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 the capacity 20 KLD and the treated water is utilized for gardening work or dust suppression.



Fig 2. Water pollution Control Measure (STP of the 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 the CAAQMS system are PM10, PM2.5, SO₂, NO_x. Apart from this ambient air quality is being monitored through a 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 has started in the phase wise manner. Phase 1 & 2 has been completed during the FY 21-22. It is planned to be developed in 33 % of the total land area of the plant.

Details of the Green belt development plan is as below:

FY	No. of Trees	Survival Rate
FY 19-20	625	98%
FY 20-21	1920	95%
FY21-22	1080	96%
Total	3610	97%

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



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 LED Lamps in street light.
- 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.
- 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 on Environment Protection by Unit Head & Environment Head.
- Plantation carried out by JSW employee inside the JSW premises.
- “Van Mahotsav” was celebrated , in Consultation with Local Communities & Dealers to aware of Plantation drive.





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



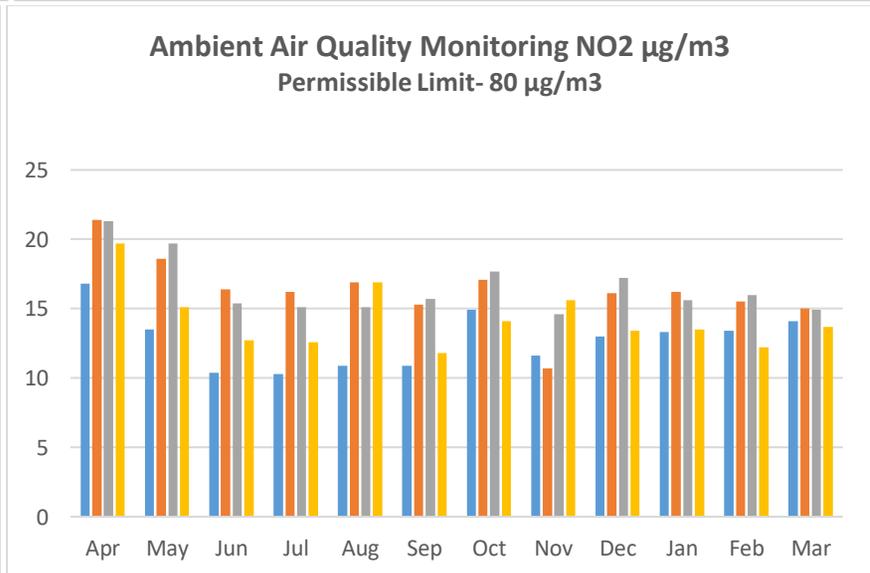
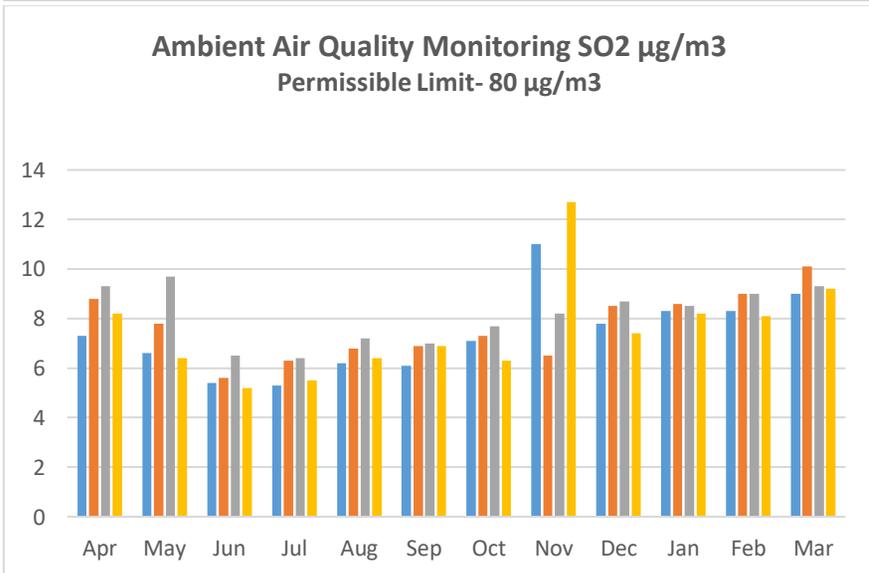
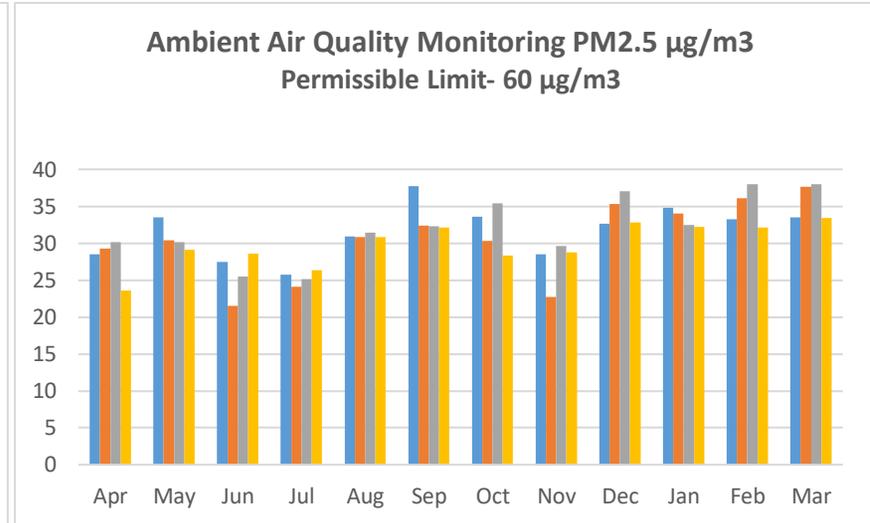
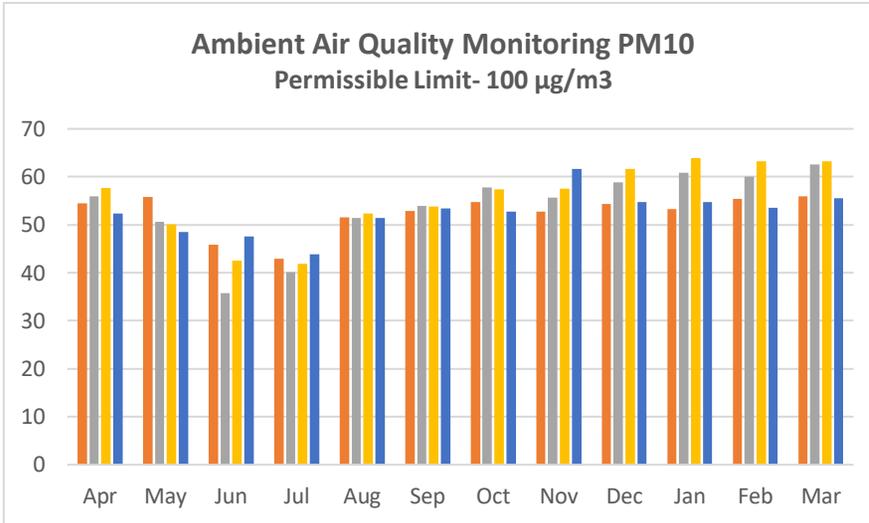
Fig 6. Mass Plantation carried out on the occasion of Van Mahotsav



Tab-1 Ambient Air Quality Monitoring reports For the FY -2021-22													
Area	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
Ambient Air (PM10) (µg/m3)													
Near weigh bridge	54.5	56	45.8	43	51.5	52.9	54.7	52.7	54.3	53.3	55.4	55.9	52.5
Near CCR building	55.9	51	35.8	40	51.4	54	57.8	55.7	58.8	60.9	60.1	62.6	53.6
Near raw material yard	57.6	50	42.5	42	52.4	53.8	57.4	57.5	61.7	63.9	63.3	63.3	55.5
Near hopper Building	52.4	49	47.6	44	51.4	53.4	52.7	61.7	54.7	54.8	53.5	55.6	52.5
Ambient Air (PM2.5)(µg/m3)													53.5
Near weigh bridge	28.5	34	27.5	26	30.9	37.7	33.6	28.5	32.6	34.8	33.2	33.5	31.67
Near CCR building	29.3	30	21.5	24	30.8	32.4	30.3	22.7	35.3	34	36.1	37.6	30.38
Near raw material yard	30.1	30	25.5	25	31.4	32.3	35.4	29.6	37	32.5	38	38	32.08
Near hopper Building	23.6	29	28.6	26	30.8	32.1	28.3	28.8	32.8	32.2	32.1	33.4	29.84
Ambient Air SO2(µg/m3)													31.0
Near weigh bridge	7.3	6.6	5.4	5.3	6.2	6.1	7.1	11	7.8	8.3	8.3	9	7.4



Near CCR building	8.8	7.8	5.6	6.3	6.8	6.9	7.3	6.5	8.5	8.6	9	10.1	7.7
Near raw material yard	9.3	9.7	6.5	6.4	7.2	7	7.7	8.2	8.7	8.5	9	9.3	8.1
Near hopper Building	8.2	6.4	5.2	5.5	6.4	6.9	6.3	12.7	7.4	8.2	8.1	9.2	7.5
Ambient Air NO2($\mu\text{g}/\text{m}^3$)													7.7
Near weigh bridge	16.8	14	10.4	10	10.9	10.9	14.9	11.6	13	13.3	13.4	14.1	12.8
Near CCR building	21.4	19	16.4	16	16.9	15.3	17.1	10.7	16.1	16.2	15.5	15	16.3
Near raw material yard	21.3	20	15.4	15	15.1	15.7	17.7	14.6	17.2	15.6	16	14.9	16.5
Near hopper Building	19.7	15	12.7	13	16.9	11.8	14.1	15.6	13.4	13.5	12.2	13.7	14.3
CO(mg/m^3)													15.0
Near weigh bridge	0.4	0.5	0.4	0.5	0.5	0.61	0.67	0.61	0.59	0.63	0.62	0.49	0.5
Near CCR building	0.5	0.4	0.37	0.4	0.51	0.47	0.57	0.39	0.58	0.58	0.51	0.47	0.5
Near raw material yard	0.4	0.5	0.49	0.4	0.42	0.43	0.44	0.44	0.49	0.45	0.51	0.5	0.5
Near hopper Building	0.5	0.5	0.42	0.5	0.51	0.62	0.57	0.69	0.58	0.63	0.59	0.53	0.5



Graphical Representation of Ambient Air Quality Monitoring for FY 2021-22

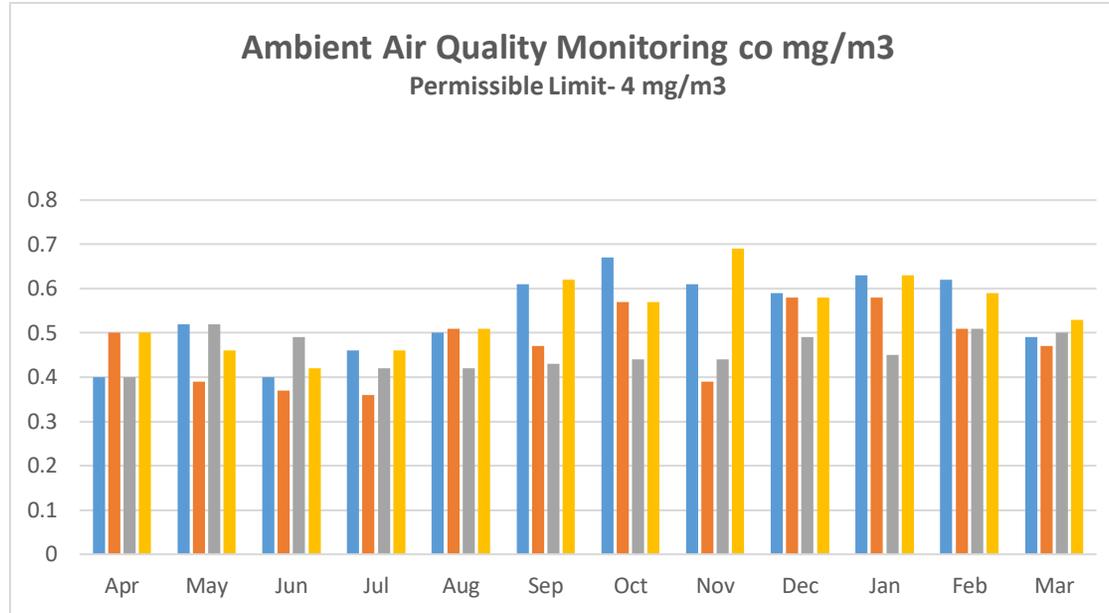


Table 2. Stack Emission Details during FY 2021-22													
Stack Details	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
Stack Monitoring (mg/Nm³)													
Coal_Mill_Stack	15.6	Plant was under Shut Down	14.8	20.8	14.8	14.6	15.2	18.6	17.7	17.1	16.4	19.6	16.7
Slag/Cement_Mill_Stack	20.8		19.4	16.7	18.6	20.8	21.4	16.5	22.8	23.6	24.2	24.8	20.9



Table 3. Ambient Noise Level during FY 2021-22

Sampling Location	Unit	Average Noise Level	
		Day	Night
Near CCR	dB (A)	65.8	56.6
Near Weigh Bridge	dB (A)	66.7	56.7
Near Hopper Building	dB (A)	65.8	59.6
Near Canteen	dB (A)	62.8	57.2
Standard as per Noise Rule 2000	dB (A)	75	70