



Zuari Cement
HEIDELBERGCEMENT Group

ZCL/ENV/EC/PLANT/2020/May06
Date: 25.05.2020

Zuari Cement Limited
Kirshna Nagar - 516 311
Yerraguntla, Dist - Kadapa
Andhra Pradesh, India
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To,
Ministry of Environment, Forests & Climate Change,
IA Division, Paryavaran Bhavan,
C.G.O.Complex, Lodhi Road,
New Delhi-110003.

Sub: Environmental Clearance Six monthly Compliance conditions Report of M/s Zuari Cements Ltd, located in Krishnagar, Yerraguntla, District Y.S.R Kadapa – A.P.

Ref: - Environment Clearance letter No. J-11011/310/2008-IA-II-(I) dated 22 .09.2008.

Dear Sir,

In reference to the above subject and referred letter, we are submitting herewith the point wise compliance of conditions of above environmental clearance letter for the period from Oct 2019 to March 2020.

Thanking you,

Yours faithfully
For Zuari Cement Limited


V.Madhava Reddy
Sr.Manager -Environment

Encl: As above

Cc to: Ministry of Environment, Forests & Climate Change,
Regional office (South Eastern zone), 1st & 2nd Floor, HEPC Building, No-34,
Cathedral Garden Road, Nungambakkam,
Chennai -600034

The Member Secretary
Andhra Pradesh Pollution Control Board,
D No:33-26-14 D/2, Near Sunrise Hospital,
Puspha Hotel Centre, Chalamavari Street,
Kasturibaipet, Vijayawada-520010

**COMPLIANCE OF CONDITIONS OF ENVIRONMENT CLEARANCE
LETTER NO. J-11011/310/2008-IA-II-(I) dated 22.09.2008**

Of M/s Zuari Cement Ltd, located in Krishnagar, Yerraguntla, District Y.S.R Kadapa –A.P.

(A) Specific Conditions

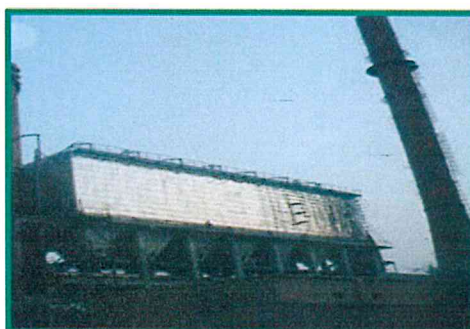
- i. *The company shall provide Electrostatic Precipitator (ESP) to Kiln , Raw Mill, Cement Mill in existing plant and bag filters to the Cement Mill, Raw Mill, Crushers, storage silos etc for control of Particulate emissions. The stack emissions from various sources shall not exceed 50mg/NM3.*

Complied.

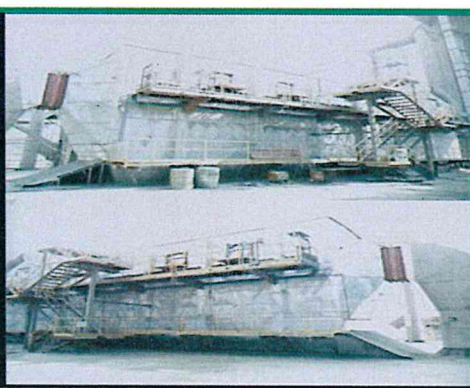
We have installed Bag filters /Bag house in the place of ESP for line-1 Kiln, Calcliner, cement mill-2, and Cement mill -3 to controlling of source emissions.



Replaced L-1 C line ESP by Baghouse



Replaced L-1 K line ESP by Baghouse



Replaced Cement Mill-2&3 ESPs by Baghouse

The stack Outlet particulate concentrations are well within the limit.

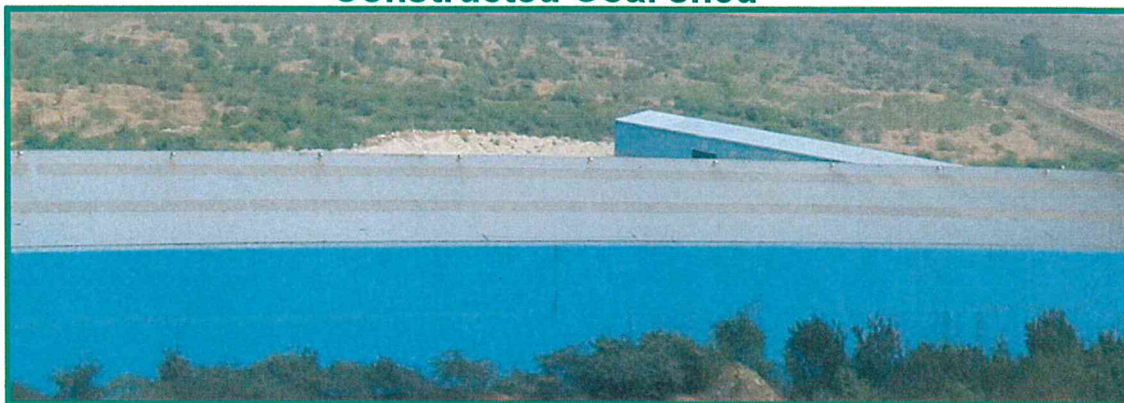
The Monitoring Report is Enclosed for your reference

- ii. *Bag House / Filter shall be provided to control the fugitive emissions generated during material transfer, packing, loading and unloading. The project authorities shall store all raw materials except limestone in covered sheds to control emissions.*

Complied.

Additional Bag filters /dust collectors are installed at various transfer points to reduce the fugitive emissions

Constructed Coal shed



Storage Sheds



Lime stone Shed



Additives Shed



Coal Shed



Gypsum Shed



Flyash Silo



Clinker Silo

- iii. *The location of Ambient Air Quality Monitoring stations shall be set up as per statutory requirement in consultation with the Andhara Pradesh Pollution Control Board (APPCB) and additional stations will be installed if required in the downwind direction as well as where maximum ground level concentrations are anticipated.*

Complied

Ambient air quality stations are installed down wind, upwind and max. ground level concentration locations in consultation with APPCB. Ambient air monitoring & Stack

emission monitoring has been monitored on monthly basis and same is submitting to APPCB and half yearly submitting to the ministry. Latest Report is enclosed for your reference.

3 nos. of Online Ambient Air Quality Monitoring Stations are installed in Down wind & up wind direction.

- Main gate
- School
- Store

Ambient Air Quality and Stack Emission data connected to APPCB and CPCB website.

Latest Report is Enclosed as Annexure-I

- iv. *Total Ground water requirement shall not exceed 1500KLD. The project authorities shall install Sewage treatment plant to treat domestic sewage and treated water shall be utilized for green development. No waste water shall be discharged outside of the premises and 'zero' discharge shall be ensured.*

Complied.

We are meeting our water requirement from our mine pit only(harvested water)

No Process waste water is generated in the cement manufacturing process.

The Domestic waste water generated from the ZCL colony is treated at the existing Sewage Treatment Plant (STP) and the treated waste water is being utilized for Green belt development. Hence 'Zero Discharge' is achieved.

Mines Harvested Water



Sewage Treatment Plant

- v. *The company shall obtain prior permission for draw of ground water from the Central Ground Authority /Central Ground Water Board and a copy shall be submitted to the Ministry's regional office in Bangalore within three months from date of issue of this letter.*

CGWA does not Issue NOC for Groundwater withdrawal in Andhra Pradesh and industries need to obtain NOC from state govt bodies.

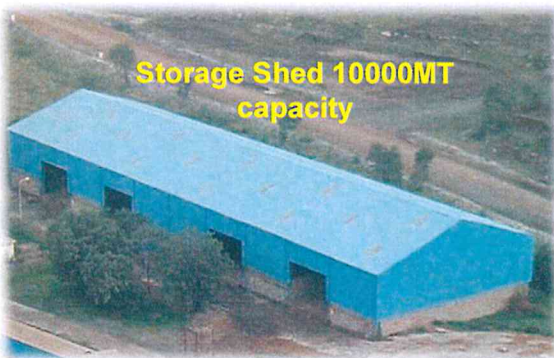
We have obtained State board permission.

**We are meeting our water requirement from our mine pit only (harvested water).
No ground water is using for industrial purpose.**

- vi. *The project authorities shall make all out efforts to use high calorific value hazardous waste in the Kiln and accordingly, necessary provisions in Kiln shall be made.*

**We are using Tyre Chips ,RDF & Pharma wastes as Alternative Fuel in our kiln.
Plant has covered storage shed with Solid & Liquid waste feeding System as per standard.**

Solid Alternative Fuel Handling System



Liquid Alternative Fuel Handling System



- vii. *The Fly ash generated from Captive Power Plant shall be handled in dry silos and shall be utilized 100% for manufacture of Pozzolana Cement.*

There is no CPP in our plant, hence not applicable.

- viii. *The project authorities shall transport Raw Materials and product in covered mean.*

Complied

- ix. *The green belt shall be developed in minimum 33% of the project area as per the guide lines of Central Pollution Control Board to mitigate the effect of fugitive emission.*

Being adhered to.

Tree plantation is our on-going process and we had developed green belt 41% of the plant area. 2019-20 plantation: Plant:1200 & Mines:2275 NO's.



- x. *The project authorities shall provide a health centre with all emergency medicines and ambulance along with full time doctor. Occupational health surveillance of the worker shall be carried on a regular basis and record shall be maintained as per the factories act.*

Complied.

The OHC Centre is equipped clinical laboratory, ECG, X-ray, spirometer, audiometer, ultrasound scanning, eye testing equipment and nebulizer. Once in a six months lung function test & sputum analysis is being done and all records are maintained.

Hospital Staff: Total 7 Members which include one male and one female doctor's qualification with MBBS, 3 male nurses, 1 sister, 1 dresser, 1 female attendant. Our health centre building consists of 2 consultation rooms for doctors, 3 in patient beds, one emergency room with all emergency equipment to deal all emergency cases, 1 dressing room, 1 pharmacy store room

Health Centre



- xi. *The company shall comply with all the stipulations made in the environmental clearances issued to the plant by the Ministry.*

Noted.

- xii. *The company shall prepare the conservation plan for the reserve/protected forest located within a radius 5 Km from the plant and submit to State forest department A.P. and recommendations, if any shall be implemented.*

Noted and being complied.

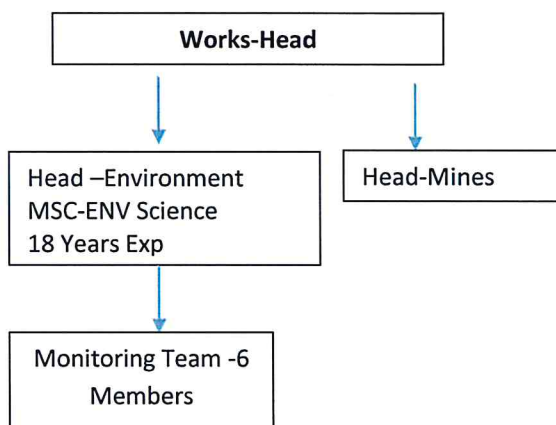
- xiii. *All the recommendations mentioned in the CREP guidelines for cement shall be followed and complied.*

Complied.

CREP Guidelines point wise status is enclosed for your reference.

- xiv. *The company shall obtain separate environmental clearance for the limestone mines from the Ministry for the enhanced capacity.*

A separate Environmental Management cell is established under the control of senior executive and direct reporting to the head of the organization who is responsible for environmental management of Mines.



(B) General Conditions

- i. *The project authorities shall strictly adhere to the stipulations of the APPCB/State Government or any other statutory body.*

Being adhered to.

We are strictly following APPCB stipulated conditions.

- ii. *No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forest. In case of deviations or alterations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of the condition imposed and to add additional environmental protection measures required, if any.*

Noted & will be complied.

- iii. *The gaseous emissions (So₂/NO_x) and particulate matter levels from various process units shall conform to standards prescribed by the concerned authorities from time to time. At no time, the emissions shall not exceed the prescribed limits. In the event of failure of any*

pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.

Noted and Complied.

- iv *The company shall undertake following Waste Minimization measures:-*

Reuse of by-products from the process at raw materials or as raw material substitutes in other processes. Use of "Closed pneumatic" system for transport of line Material. All venting systems shall be connected with dust arresting equipments. dust collected in pollution control equipment's shall be reused.

Noted and Complied.

Material / Dust collected from pollution control equipment's is reused in process.

- v *Fugitive emissions in the work zone environment, product, and raw materials storage area shall be regularly monitored. The emissions shall conform to the limits stipulated by the state Pollution Control Boards/Central Pollution Control Board.*

Complied

TPS machine & truck mounted system are operated for road sweeping in plant and colony. Apart from this manually operated floor sweeping machines are in operation for good housekeeping. Fugitive dust monitoring is done on regular basis and all measures taken to control fugitive dust emissions.



Lime stone Shed



Additives Shed



Coal Shed



Gypsum Shed



Flyash Silo



Clinker Silo

- vi *The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc., on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz., 75dBA (day time) and 70 dBA (night time).*

Complied.

Noise generating sources like Blowers and Compressors have been segregated and housed in secluded buildings.

The Monitoring Report is Enclosed for your reference.

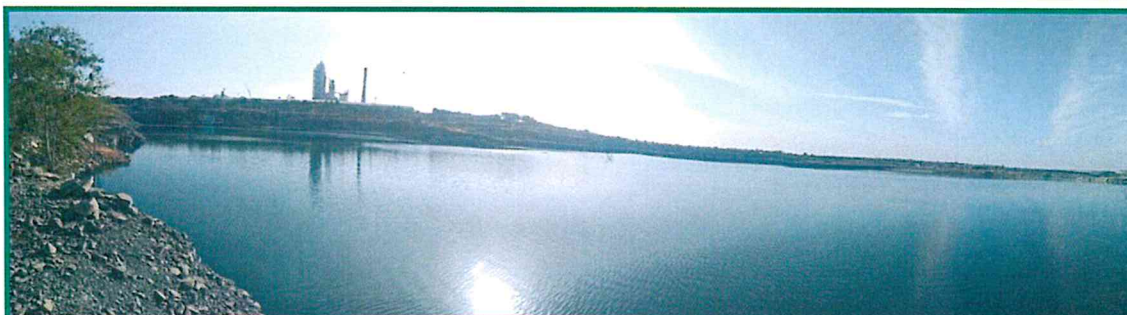
- vii *The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended and Hazardous waste (Management and Handling) Rules 1989 as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage and disposal of hazardous wastes.*

Complied

- viii *Rain water harvesting shall be done within the premises. Ground water recharge structures shall be installed around the plant area in consultation with local authorities to contain the ground water table.*

Complied.

Rainwater Harvesting





- ix *The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-development plan should be submitted to the SPCB within three months of receipt of this letter for approval.*

Eco-development measures has been taken including implementation of self sustain income generating programmes candle making, Stitching & etc.

Roads are constructed and RO water facility has been provided for near by villages.

Implemented self sustain income generating programmes candle making, Stitching & etc.

Laying of CC Roads at nearby villages – Developing the rural Roads





మహిళలకు ఉచితంగా కుట్టు శిక్షణ



కుట్టుమీసల్ కట్టణ కేంద్రంలోని మహిళలతో జానారీ ప్రదర్శన రిసార్

విజయవాడ, మార్చి 12: విజయవాడ మున్సిపల్ రోడ్ జానారీ నిమిత్తం కుట్టుమీసల్ కట్టణ కేంద్రంలో భాగంగా మహిళలకు ఉచితంగా కుట్టు శిక్షణ అందించే ఉద్దేశ్యంతో కట్టణ కేంద్రంలో జానారీ ప్రదర్శన ఏర్పడింది. కట్టణ కేంద్రంలోని మహిళలతో జానారీ ప్రదర్శన రిసార్.

మొదట మహిళలకు జానారీ యాజ్ మాస్టర్ ప్రజ్ఞా కార్యక్రమంలో భాగంగా అనేక కార్యక్రమాలు చేపట్టబడ్డాయి. నెరపారు కుట్టుమీసల్ కట్టణ కేంద్రంలో కట్టణ కేంద్రంలోని మహిళలకు కుట్టు శిక్షణ అందించబడుతుంది. ఈ కార్యక్రమంలో మహిళలకు ఉచితంగా కుట్టు శిక్షణ అందించబడుతుంది. కట్టణ కేంద్రంలోని మహిళలకు ఉచితంగా కుట్టు శిక్షణ అందించబడుతుంది.

ఆంధ్రప్రదేశ్ News, 13 March 2019
<https://apaper.amthrapradesh.com/6737542654>



Imparting skill for making of candles to improve the wellbeing of rural women



Books distributed to govt school students

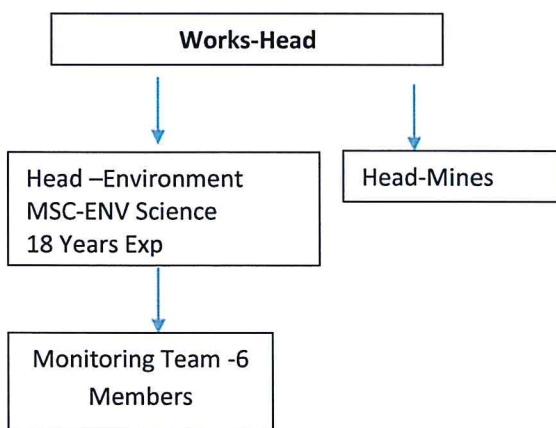
RO Water plant provided nearby villages

- x *The project authorities shall earmark the adequate fund to implement the conditions stipulated by the Ministry of Environment and Forests as well as the state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.*

Complied.

- xi *Separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.*

A separate Environmental Management cell is established under the control of senior executive and direct reporting to the head of the organization who is responsible for environmental management of Mines.



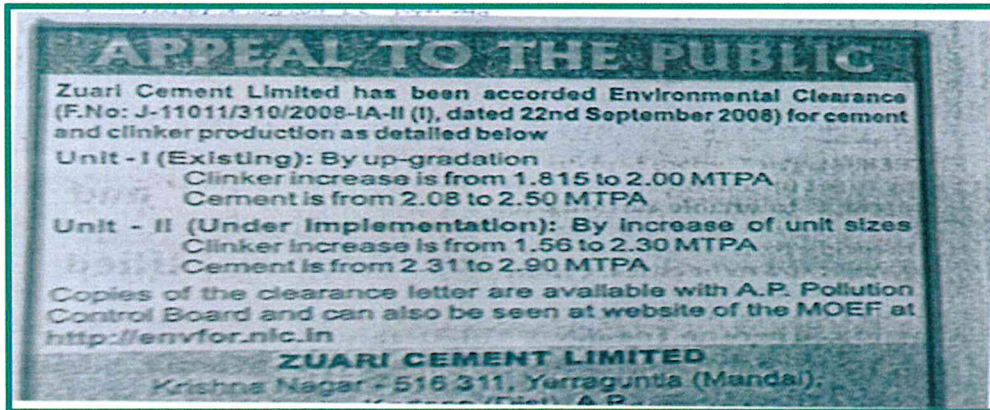
- xii *The implementation of the project vis-à-vis environmental action plans Shall be monitored by the concerned Regional Office of the ministry/SPCB/CPCB. A six monthly compliance status reports shall be submitted to monitoring agencies and shall be posted on the website of the Company.*

Being adhered to.

- xiii *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 at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned regional Office of the Ministry.*

Complied.

EC Paper Advertisement

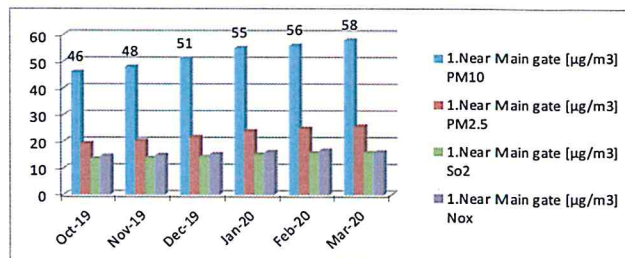


- xiv *The project authorities shall inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.*

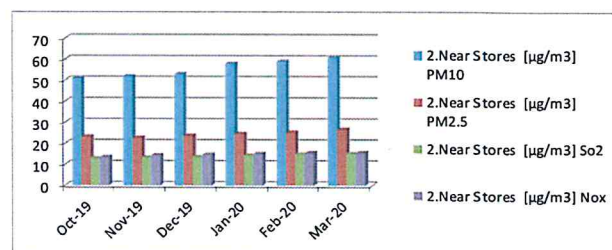
Being adhered to.

ZUARI CEMENT LTD
Krishnagar, Yerraguntla, Kadapa –Dist -516311(A.P).
Ambient Air Monitoring Report Oct 2019 to March 2020

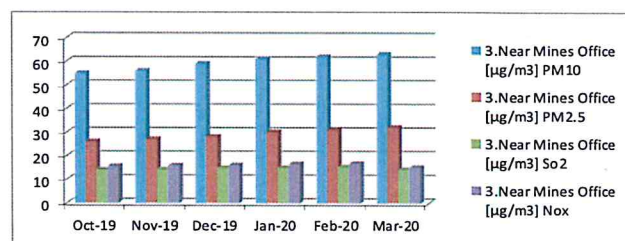
1.Near Main gate [µg/m ³]					
year	Date	PM ₁₀	PM _{2.5}	So ₂	Nox
Oct-19	28.10.2019	46	19.2	13.5	14.6
Nov-19	28.12.2019	48	20.2	13.8	14.9
Dec-19	19.12.2019	51	21.6	14.2	15.3
Jan-20	23.01.2020	55	23.8	15.1	16
Feb-20	24.02.2020	56	24.8	15.6	16.7
Mar-20	09.03.2020	58	25.6	15.8	16
MAXIMUM		58	25.6	15.8	16.7
MINIMUM		46	19.2	13.5	14.6



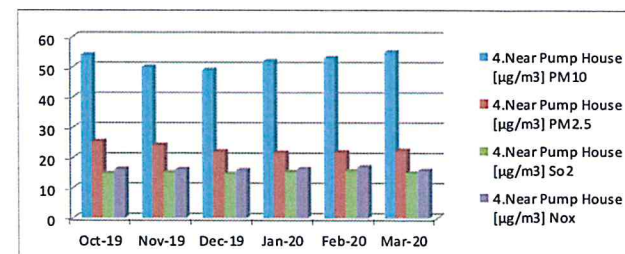
2.Near Stores [µg/m ³]					
year	Date	PM ₁₀	PM _{2.5}	So ₂	Nox
Oct-19	29.10.2019	51	23.1	12.9	13.5
Nov-19	29.12.2019	52	22.6	13.2	14.4
Dec-19	20.12.2019	53	23.6	13.5	14.7
Jan-20	24.01.2020	58	24.6	14.3	15.1
Feb-20	24.02.2020	59	25.3	14.8	15.5
Mar-20	09.03.2020	61	26.7	15.1	15.6
MAXIMUM		61	26.7	15.1	15.6
MINIMUM		51	22.6	12.9	13.5



3.Near Mines Office [µg/m ³]					
year	Date	PM ₁₀	PM _{2.5}	So ₂	Nox
Oct-19	28.10.2019	55	26	14.1	15.6
Nov-19	28.11.2019	56	27	14.2	15.9
Dec-19	19.12.2019	59	28	14.8	16.1
Jan-20	23.01.2020	61	30	14.9	16.6
Feb-20	23.02.2020	62	31	15.2	16.8
Mar-20	10.03.2020	63	32	14.2	15.1
MAXIMUM		63	32	15.2	16.8
MINIMUM		55	26	14.1	15.1

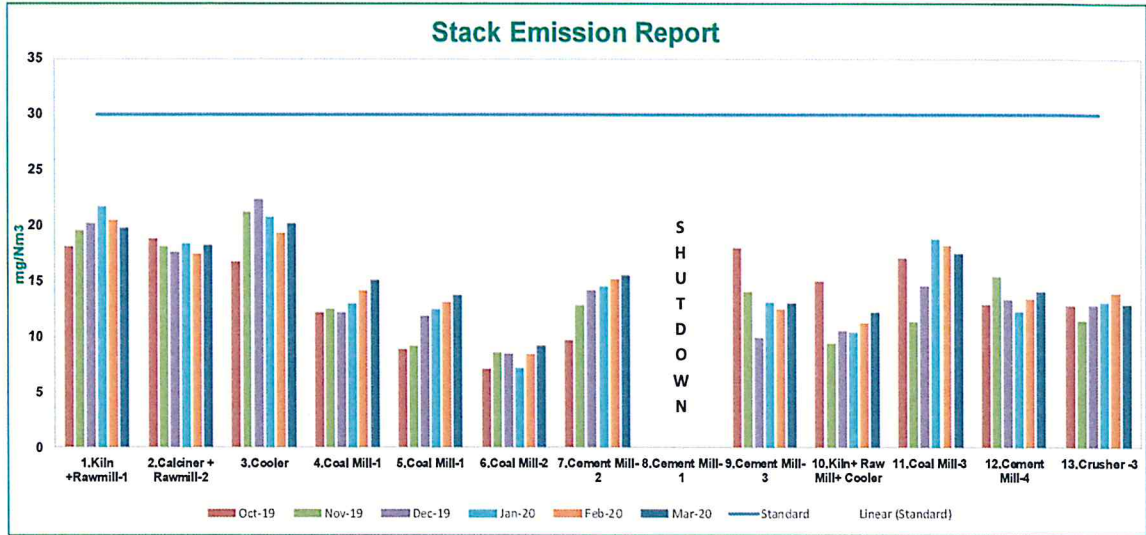


4.Near Pump House [µg/m ³]					
year	Date	PM ₁₀	PM _{2.5}	So ₂	Nox
Oct-19	29.10.2019	54	25.3	14.7	16.2
Nov-19	29.12.2019	50	24.1	15	16.1
Dec-19	20.12.2019	49	22	14.6	15.8
Jan-20	25.01.2020	52	21.6	15.2	16.2
Feb-20	25.02.2020	53	21.8	15.5	16.9
Mar-20	11.03.2020	55	22.3	14.8	15.7
MAXIMUM		55	25.3	15.5	16.9
MINIMUM		49	21.6	14.6	15.7



ZUARI CEMENT LTD
Krishnagar, Yerraguntla, Kadapa –Dist -516311(A.P).
Stack Emission Report October - 2019 to March - 2020

STACKS	Month	Standard	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
1.Kiln +Rawmill-1	PM	30	18.1	19.6	20.2	21.8	20.5	19.8
2.Calciner + Rawmill-2	PM	30	18.9	18.1	17.6	18.4	17.5	18.2
3.Cooler	PM	30	16.8	21.2	22.4	20.8	19.4	20.2
4.Coal Mill-1	PM	30	12.2	12.5	12.2	13	14.2	15.1
5.Coal Mill-1	PM	30	8.9	9.2	11.9	12.5	13.1	13.8
6.Coal Mill-2	PM	30	7.1	8.6	8.5	7.22	8.5	9.2
7.Cement Mill-2	PM	30	9.7	12.8	14.2	14.6	15.2	15.5
8.Cement Mill-1	PM	30	0	0	0	0	0	0
9.Cement Mill-3	PM	30	18	14.1	9.9	13.1	12.5	13
10.Kiln+ Raw Mill+ Cooler	PM	30	15	9.4	10.6	10.5	11.3	12.2
11.Coal Mill-3	PM	30	17.1	11.4	14.6	18.9	18.2	17.5
12.Cement Mill-4	PM	30	12.9	15.4	13.4	12.3	13.5	14.1
13.Crusher -3	PM	30	12.8	11.5	12.8	13.2	14	12.9



Krishnagar, Yerraguntla, Kadapa –Dist -516311(A.P).
Stack Emission Report October - 2019 to March - 2020

		Oct-19		Nov-19		Dec-19		Jan-20		Feb-20		Mar-20	
		D	N	D	N	D	N	D	N	D	N	D	N
N-1	Plant Boundary- East	66.9	58.4	65.8	57.6	64.6	58.3	67.4	59.8	66.3	58.5	67.3	57.4
N-2	Plant Boundary-West	70.4	56.9	71.2	58.2	70.5	59.1	69.2	57.3	68.5	56.9	69.1	54.3
N-3	Plant Boundary-North	67.3	57.1	66.3	54.3	67.3	55.2	66.5	54.5	65.2	55.7	66.8	56.7
N-4	Plant Boundary-South	71.2	66.5	72.0	68.9	71.0	66.9	70.6	67.7	69.4	63.1	69.9	62.1
N-5	Near Health Centre	62.8	52.0	61.4	51.7	62.2	50.5	61.2	51.2	60.0	52.2	59.6	53.3
N-6	Near New Guest House	53.7	49.0	54.1	49.5	53.6	49.8	54.3	47.5	54.0	49.8	53.5	50.2
	MAX	71.2	66.5	72.0	68.9	71.0	66.9	70.6	67.7	69.4	63.1	69.9	62.1
	MIN	53.7	49.0	54.1	49.5	53.6	49.8	54.3	47.5	54.0	49.8	53.5	50.2

D-DAY TIME
N-NIGHT TIME

AMBIENT AIR QUALITY STANDARDS w.r.t NOISE	DAY	NIGHT
	TIME	TIME
	75	70

CORPORATE RESPONSIBILITY FOR ENVIRONMENTAL PROTECTION (CREP)

Zuari Cement Ltd –Yerraguntla

- 1. Cement plants which are not complying* with notified standards shall do the following to meet the standards. Augmentation of existing Air pollution control devices- by July 2003. Replacement of existing air pollution control devices- by July 2004. (* Non complying units shall give bank guarantee to respective SPCBs)**

Current status: Not applicable to our industry as we are complying the standards.

Action plan: Nil.

- 2. Cement plants located in critically polluted or urban areas (including 5 km distance outside urban boundary) will meet 100 mg/Nm³ limit of particulate matter by December, 2004 and continue working to reduce the emission of particulate matter to 50 mg/Nm³.**

Action plan: we are not exceeding the limit prescribed by CPCB /APPCB

- 3. The new cement kilns to be accorded NOC/Environmental clearance w. e. f. 01.04.2003 will meet the limit of 50 mg/Nm³ for particulate matter emissions.**

Our Line-I&II are meeting the standards.

- 4. CPCB will evolve load based standards by Dec. 2003.**

Current status: Our Line-I&II are meeting the standards.

- 5. CPCB & NCBM will evolve SO₂ and NO_x emission standards by June 2004.**

We are are meeting the standards and installed online emission monitoring system at Line-I & II for PM, SO₂ & NO_x measurement.

Also installed SNCR system for NO_x emission control

- 6. The Cement industries will Control fugitive emissions from all the raw material and products storage and transfer points by Dec. 2003. However, the feasibility for the control of fugitive emissions from limestone and coal storage areas will be decided by the National Task Force (NTF). The NTF shall submit its recommendations within three months.**

To control the fugitive emissions we have provided closed sheds for raw material storage and regular Water spraying on belts also all our internal roads are concreted.

- 7. CPCB, NCBM, BIS and Oil refineries will jointly prepare the policy on use of petroleum coke as fuel in cement kiln by July 2003.**

Current status: Presently we are using coal, RDF, Tyre chips, biomass and pharma wastes fuel in kiln.

- 8. After performance evaluation of various types of continuous monitoring equipment and feed back from industries and equipment manufacturer's, NTF will decide feasible unit-operations / sections for installation of continuous monitoring equipment. The industry will install the continuous monitoring systems (CMS) by December 2003**

Current status: We have installed 10 numbers of continuous monitoring equipment at all major stacks.

Data is connected to APPCB and CPCB, website.

- 9. Tripping in kiln ESP to be minimized by July 2003 as per the recommendation of NTF.**

Current status: We have replaced ESP's by Baghouse in Line-1 Kiln, calciner, Cement mill-2&3 and there is no trappings found in Baghouse.

- 10. Industries will submit the target date to enhance the utilization of waste material by April 2003.**

We are using maximum fly ash to produce PPC cement.

- 11. NCBM will carry out feasibility study on hazardous waste utilization in cement kiln by December 2003.**

Present we are using RDF, Tyre chips, biomass and Pharma waste as alternative fuel.

- 12. Cement industry will carry out feasibility study and submit target dates to CPCB for Co-generation of power by July 2003.**

Current status: WHRB proposal under progress.

Environmental Expenditure-2019

S.NO	Details	Capital cost-Rs.	Recurring Cost-Rs.
1	Air pollution control Equipments	755328628	2848989
2	RO plants	710712	625594
3	Environmental monitoring	1080000	
4	Cover sheds	1157773624	
5	Roads Concrete	26745172	
6	Sewage Treatment Plant	1576126	320000
7	Alternative Fuel handling System	168003711	
8	SNCR System	24712000	
9	Online Monitoring Systems(CEMS/CAAQMS)	49209700	4381533
	Total	2185139673	8176116