

ZCL/ENV/EC/MINES/2022/*May 15*

Date: 30.05.2022

To,
Ministry of Environment ,Forests & Climate Change,
IA Division, Paryavaran Bhavan,
C.G.O. Complex, Lodhi Road,
New Delhi-110003.

Dear Sir,

Sub: Environmental Clearance Six monthly Compliance conditions Report of our Lime Stone
Mine of M/s Zuari Cements Ltd, Yerraguntla, District Y.S.R Kadapa –A.P.

Ref: - Environment Clearance letter No. J-11015/523/2008-IA.II-(M) dated 06.07.2009.

With 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 2021 to
March 2022.

Thanking you,

Yours faithfully
For Zuari Cement Limited

V.Madhava Reddy
V.Madhava Reddy
AGM -Environment

Encl: As above

Cc to: - The Regional Director,
Integrated Regional Office,
Ministry of Environment, Forests & Climate Change,
Buckinghampetta,Vijayawada,
Andharabradesh -520002

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-11015/523/2008-IA.II (M), dated 06.07.2009.

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

(A) Specific Conditions

- i. *No two pits shall be simultaneously worked i.e before the first pit is exhausted and reclamation work completed, no mineral bearing area shall be worked.*

Presently we are working in one pit only. Whenever second pit is proposed, the above specific conditions will be strictly adhered.



- ii *After exhausting first mine pit and before starting mining operation in next pit, reclamation and plantation work in exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation are visible during first year of mining operation in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of the mine pit shall be completed before any ore bearing area is worked.*

Agreed Upon.

Presently we are working only one pit.

- iii Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.

Not applicable as it is only a single deposit.

- v Hydro-geological study of the area shall be reviewed annually and results submitted to the Ministry and concerned agency in the State Govt. In case adverse effect on ground water quality and quantity is observed mining shall be stopped and resumed only after mitigating steps to contain any adverse impact on ground water is implemented. Specific hydro-geological shall be conducted at the end of mining plan period i.e. at the end of the 5th year of mining, before proceeding to undertake mining in the 6th year. The report shall be submitted to the Regional Office of the Ministry.

Hydro-geological study has been conducted and reviewed annually & report is being submitting.

- vi A 50 m barrier of no mining zone all along the sides of the Pedda Vanka nallah passing through the lease area shall be demarcated and thick vegetation of native species raised. Status of implementation shall be submitted to the Regional Office of the Ministry on half yearly basis. It shall be ensured that no silt originating from mining activity is transported in the nallah / surface water course.

50 m barrier zone has been demarcated. Plantation done at side of peddavanka nallah. No discharge of water from quarry to Pedda Vanka Nalla. Hence, no silt is getting originated from the mining activity.



- vii The company shall ensure that no silt originating due to mining activity is transported in the surface water course / nallah flowing in the area.

No discharge of water from quarry to Pedda Vanka Nalla. Hence, no silt is getting originated from the mining activity.

- viii Option for setting up of covered conveyor belt from crusher located in the lease to loading point shall be explored within a reasonable period. Adequate justification if not possible shall be submitted to the ministry within six months. Expansion beyond the existing capacity 4.5MTPA shall not be carried out until the system is in place or until satisfactory justification as above is provided

We got exemption for this point vide MOEF letter no J-11015/523/2008-IA-II(M)

Dated 12.4.2010. However we are installed water sprinklers to minimize the dust emissions.



- ix *Need based assessment for the nearby villages shall be conducted to study economic measures which can help in upliftment of poor section of society. Income generating projects/tools such as development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs. Local employable youth shall be trained in skills relevant to the project for eventual employment in the project itself to the extent feasible.*

Noted.

Need base assessment has been conducted nearby villages and implemented self sustain income generating programmes candle making, Stitching & etc.

- x *Land-use pattern of the nearby villages shall be studied and action plan for abatement and compensation for damage to agricultural land / common property land (if any) in the nearby villages, due to mining activity shall be submitted to the Regional office of the Ministry within six months. Annual status of implementation of the plan and expenditure thereon shall be reported to the Regional Office of the Ministry from time to time.*

Complied.

Land-use pattern study has been conducted and report is submitted.

No damage to agricultural land / common property land due to mining activity.

- xi *Maintenance of village roads through which transportation of ores are undertaken shall be carried out by the company regularly at its own expenses. The roads shall be black topped.*

No mineral transportation on Village roads.

- xii Rain water harvesting shall be undertaken to recharge the ground water source Status of implementation shall be submitted to the Regional Office of the Ministry within six months and thereafter every year from the next consequent year.

Rain water harvesting is in practice. A sump of adequate capacity has been developed and rain harvested water is used for green belt development and for plant.

Mines Harvested Water



- xiii Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.

Measures have been taken to prevent soil erosion and plantation done on dumps with agavea plantation. Coir matting done on inactive dump portion and retaining wall also constructed.



Geo textile matting



- xiv *Trenches / garland drains shall be constructed at foot of dumps and coco filters installed at regular intervals to arrest silt from being carried to water bodies. Adequate number of Check Dams and Gully Plugs shall be constructed across seasonal / perennial nallahs (if any) flowing through the ML area and silts arrested. De-silting at regular intervals shall be carried out. Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.*

Rain water collected is used for watering the mine area, roads, green belt development and plant operations. Water so collected is not pumped out. Sump is of adequate capacity.

Garland Drains are made around the dump.



- xv *Ground water in the core zone shall be regularly monitored for contamination and depletion due to mining activity and records maintained. The monitoring data shall be submitted to the regional office of the Ministry regularly. Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water shall be set up and records maintained.*

Mine working has not intersected water table. Ground water is monitored on Quarterly basis in core and buffer zone.

- xvi *Cultivable waste land (within 5km of the lease) shall be identified and fodder farming or other suitable productive use of waste land shall be taken up in phased manner. Status of implementation shall be submitted to the Regional Office of the Ministry.*

Waste land available in the area is being taken up with suitable plants.

- xvii *Shelter Belt i.e. Wind Break of 30 m width and consisting of at least 5 tiers around lease facing the school / agricultural fields / human habitation etc. (if any in the vicinity) shall be raised.*

We are developing wind break green belt around the lease area.



xviii Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records submitted to the Regional Office of the Ministry.

All precautionary measures like wet drilling, water sprinkling on haul road, muck pile wetting, etc are in force to control dust emission. Dust monitoring is on regular monthly basis. Report is enclose for your reference.



WET DRILLING



MUCK PILE WETTING

Water sprinklers in Haul road



xix Monitoring of soil samples for assessment of transformation to acidic state or contamination due to mining activity (as applicable) shall be regularly conducted and records maintained.

Monitoring of soil is done on regular basis and maintained the records.

xx Dumpers used in the mine need not be covered with any tarpaulin but shall strictly follow the dust and sound mitigation measures prescribed inside the mine and or processing plants and loading points. However transport vehicles used for external transport over public places, habitations, forest areas etc as may be applicable in this case shall be covered with tarpaulin and proper maintenance and upkeep of these tippers or other types of trucks shall be done. No overloading of ores for transportation shall be carried.

Dust and sound mitigation measures are strictly followed, No overloading of ores for transportation is carried. Muck pile wetting is done before loading in to trucks.

- xxi *Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The company shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. Shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required.*

Various trainings have been and are being organized for the workers, on regular basis, as a Occupational and health safety measures to identify work related health hazards, malaria eradication, HIV and effect of mineral dust exposure on health. A well trained full time doctor remains available round the clock inside colony premises. Periodic monitoring for exposure to respirable mineral dust is conducted and record herewith is maintained. Various awareness programme has been organized on impact of mining on health and use of personal protective equipment. Medical checkup is done as per the requirement of law.

- xxii *Top soil / solid waste shall be stacked properly with proper slope and adequate safeguards and shall be utilized for backfilling (wherever applicable) for reclamation and rehabilitation of mined out are. Top soil shall be separately stacked for utilization later for reclamation and shall not be stacked along with over burden.*

Presently top soil is being utilized for plantation and remaining quantity stacked separately in the earmarked location.



- xxiii *Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10m and overall slope of the dump shall not exceed 280. The OB dump shall be backfilled. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests on six monthly basis.*

This mine does not produce any overburden. Presently there is no OB dumps. Active mining is under way and mine floor is yet to be fully exposed.

- xxiv *Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.*

Slope of the mining bench and ultimate pit limit is maintained as per the mining scheme approved by Indian Bureau of Mines.

- xxv *Adequate plantation shall be raised in the ML area, haul roads, OB dump sites etc. Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The density of the trees shall not be less than 2500 plants per ha. The company shall involve local people with the help of self help group for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Regional Office of the Ministry every year.*

Active mining is under way and mine floor is yet to be fully exposed. Mining activities has not reached to the ML boundary and thick bushes are there all along the mine boundary.

2020-21 Mines:1600 NO's



- xxvi *Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year – pre – monsoon (April-May), monsoon (August), Post-monsoon (November) and winter (July) and the data thus*

collected shall be regularly sent to MoEF, Central Ground Water Authority and Regional Director, Central Ground Water Board.

Piezometer bore wells established core zone and buffer zone and Ground water level is being carried out on quarterly basis, report is submitting regular basis.

- xxvii *Adequate air monitoring stations shall be installed in areas of human habitations near the mine and the results of ambient air quality shall be maintained and regularly submitted to the Regional Office of the Ministry. The monitored data of criteria pollutants shall be regularly uploaded on the company's website and also displayed at project site.*

Ambient air quality monitoring stations has been established and monitoring data is submitting regularl basis. Data is displayed at main gate.

Latest Report is enclosed attached as Annexure-I.

- xxviii *The waste water from the mine shall be treated to conform to the prescribe standards before discharging in to the natural stream. The discharged water from the Tailing, Dam (if any) shall be regularly monitored and report submitted to the Ministry of Environment & Forests, Central Pollution Control Board and the State Pollution Control Board.*

No water discharge outside. Collected water is being for green belt and plant operations.

- xxix *Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of ores and others shall have valid permissions and prescribed under Central Motor Vehicle Rules, 1989 and its amendments. The number of shifts for mine operations could be as prescribed in the approved Mine plan .However the no.of shifts or hours permissible for external vehicular traffic shall not exceed the limits in vogue for the area under consideration or in the event of passage through forest roads or public places,as may be applicable in this case. The limits prescribed by the local authorities shall not be exceeded.If no such guidelines for time restrictions are applicable,then external transport shall be preferably confined to two shifts.*

Vehicular emissions are regularly monitored and under control. Vehicles used in mines have valid permissions. The number of shifts are as per the approved mining plan. The mineral transportation is from mine workings to crusher and not in any forest roads or public roads.

- xxx *Prior permission from the Competent Authority shall be obtained for extraction of ground water, if any.*

Andharapradesh state does not come under purview of CGWA and industries need to obtain permission from state government.

We have obtained state board permission.

xxxii Action plan with respect to suggestions / improvements and recommendations made during public consultation / hearing shall be submitted to the Ministry and the State Govt. within six months.

Complied.

xxxiii A final mine closure plan, along with details of Corpus Fund, shall be submitted to the Ministry of Environment & Forests, 5 years in advance of final mine closure off approval

Will Comply.

B. General Conditions

i No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.

Noted and being complied.

There is no change in mining technology and scope of working.

ii No change in the calendar plan including excavation, quantum of mineral and waste shall be made.

Noted and being complied.

There is no change in the Calendar Plan for the production of Quantum of Mineral Limestone and Waste

iii Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.

Adequate measures like water sprinklers, wet drilling, water spraying etc, are in use. Water sprinkling Arrangement has been made on hauls roads, loading and unloading and transfer points to avoid dust generation.



iv Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM2.5, SO2, NOX monitoring. Location of the stations

should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

Ambient air quality monitoring stations have been established as per requirement and monitored on monthly basis.

- v *Data on ambient air quality (PM10, PM2.5, SO2 and NOX) should be regularly submitted to the Ministry including its Regional office located at Bangalore and the State Pollution Control Board / Central pollution Control Board once in six months. The monitored data of criteria pollutants mentioned above shall be regularly uploaded on the company's website and also displayed at project site.*

Ambient air quality is monitored on monthly basis and report being submitted to concerned authority as per condition stipulated. Said data is displayed at the project site.

- v *Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc., shall be provided with ear plugs / muffs*

Adequate measures like proper maintenance of vehicle, air conditioned cabin, etc has been provided to keep the noise level below prescribed limit. All workers engaged in operation of HEMM have been provided with ear plugs/muffs. Noise levels are monitored and maintained within the prescribed limits and reports enclosed for your reference.

- vi *Industrial waste water (workshop and waste water from the mine) should 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. Oil and grease trap shall be installed before discharge of workshop effluents.*

**The workshop waste water is being collected in Oil and Grease trap (3 chamber tank) and after settling and clean water is utilizing for dust suppression over haulage road.
No discharge of water from mine to outside**

- vii *Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects.*

All personnel working in mines are provided with protective and safety equipment. They are also provided adequate training and information on safety and health aspects. Health status also periodically monitored as per Mines/Act Rules. Occupational health surveillance is being carried periodically.

- Viii *Provision shall be made for the housing the laborers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.*

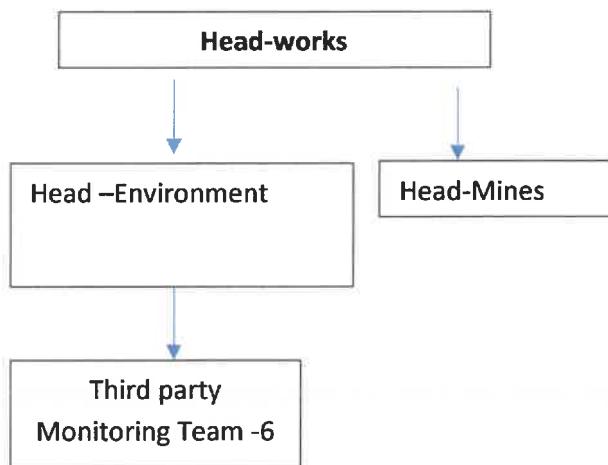
Complied.

Necessary facilities are provided for work force.



- ix *A separate Environmental Management Cell with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.*

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.



- x The project authorities shall inform to the Regional Office of the Ministry located at Bangalore regarding data of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

Complied.

- xi The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bangalore.

A separate account for year-wise expenditure on environmental protection measures is maintained. 2021-22 Expenditure is attached as Annexure-II

- xii The project authorities shall inform to the Regional Office of the Ministry located at Bangalore regarding data of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

Noted.

- xiii The Regional Office of the Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite date / information / monitoring reports.

Complied.

- xiv The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forest, its Regional Office, Bangalore, Central Pollution Control Board and State Pollution Control Board. The Project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests, Bangalore.

Complied.

Six monthly submitting Environment clearance point wise condition compliance report to ministry and APPCB. Data uploading on our company website and MOEF website. E-mail also sending to ministry and APPCB.

- xv A copy of clearance letter will be marked to concerned Panchayat / Local NGO, if any, from whom suggestion / representation has been received while processing the proposal. The clearance letter shall also be put on the website of the company.

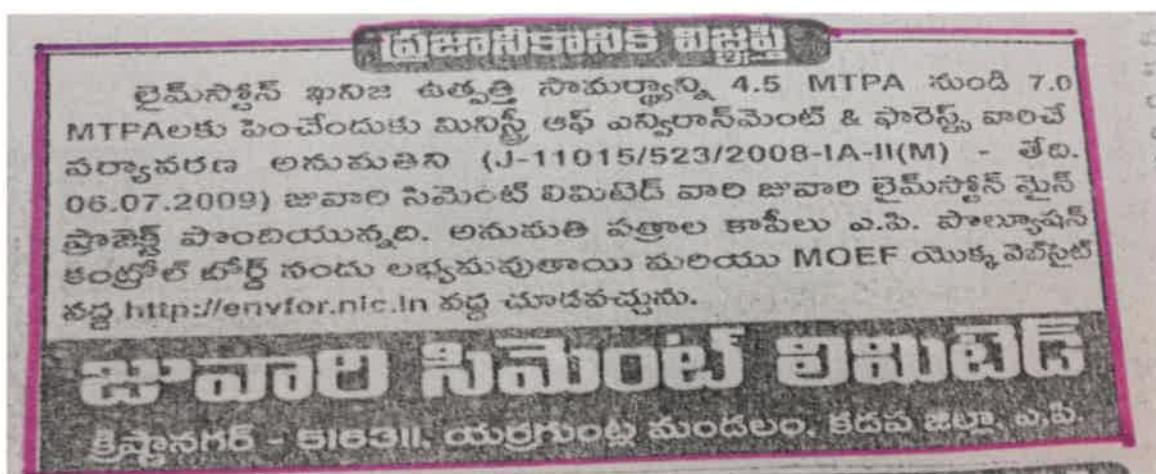
Complied.

- xvi State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office / Tehsildar's Office for 30 days.

Complied

- xvii *The Project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same shall be forwarded to the Regional Office of the Ministry located in Bangalore.*

Complied.



6K

Annexure -I



Zuari Cement
HEIDELBERGCEMENT Group

ZCL/ YA/ EM /MINES/2021/ NOV03
Date: 16.11.2021

Zuari Cement Limited
CIN: U26942AP2000PLC050415
Krishna Nagar, Yerraguntla,
District Kadapa,
Andhra Pradesh - 516311,
Tel: +91 85632 75107 / 08
Fax: +91 85632 75101 / 64
www.zuaricements.com

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.

Dear Sir,

Please find enclosed the Ambient Air, Noise & Water Quality reports of Zuari Limestone mines of Zuari Cement Ltd –Yerraguntla for the month of Oct 2021.

Thanking you,

Yours faithfully
For Zuari Cement Ltd

V. Madhava Reddy

AGM-Environment

Encl: As above

cc :

The Environment Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office, 2nd Floor,
D.No.1/2277, Rajiv Park Road,
A.P. Housing Board Colony,
Kadapa – 516003.

ZUARI LIMESTON MINE OF M/S ZUARI CEMENTS LTD

KRISHNAGAR, YERRAGUNTLA, KADAPA -DISTRICT -516311(A.P).

Monitoring Data for the Month of Oct 2021.

Location	Mines Office	Near Loading	Near Drilling	Haul Road	Vallasapalli	Koduru	Peddannapadu	Tummalapalli
Limit	I	II	I	II	I	II	I	II
PM ₁₀ µg/m ³	100	52.2	55.9	61.3	63.4	46.4	61.6	61.5
PM _{2.5} µg/m ³	60	20.4	20.5	24.1	19.8	19.2	18.8	21.8
SO ₂ µg/m ³	80	7.2	9.6	9.6	11.4	8.7	10.5	10.8
NOX µg/m ³	80	16.3	17.5	21.5	22.3	18.9	23.9	23.2

II. Quality of Discharge Water:- Zero Discharge Water From Mines								
Mines harvested water is being used for Cement Plant Operations.								
1	Total Dissolved Solid (TDS)	mg/ltr				1224		
2	BOD for 3 days at 27 C	mg/ltr				07		
3	PH					7.81		
4	Total Suspended solids (TSS)	mg/ltr				24		

III. Ambient Noise level/s:-								
1.	Mines Boundary -East	61.9			56.3			
2.	Mines Boundary -West	65.8			60.2			
3.	Mines Boundary -North	62.8			57.7			
4.	Mines Boundary -South	63.7			58.6			



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

Recognised by Ministry of Environment Forest & Climate Change (MoEF & CC), GOI, New Delhi
& Laboratory Accredited by NABL

ISO 9001, 14001 & 45001
CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/003/2021

ANNEXURE-1
Date: 23-10-2021

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-9	A-10	A-11	A-12	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	15-10-2021 to 16-10-2021	15-10-2021 to 16-10-2021	15-10-2021 to 16-10-2021	15-10-2021 to 16-10-2021		
Starting Time	8.15 am	8.35 am	9.10 am	9.45 am		
Ending Time	8.15 am	8.35 am	9.10 am	9.45 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	52.2	61.3	46.4	61.5	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	20.4	24.1	19.2	21.8	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.2	9.6	8.7	10.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.3	21.5	18.9	23.2	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

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CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/004/2021

ANNEXURE-1

Date: 23-10-2021

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-13	A-14	A-15	A-16	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	16-10-2021 to 17-10-2021	16-10-2021 to 17-10-2021	16-10-2021 to 17-10-2021	16-10-2021 to 17-10-2021		
Starting Time	10.10 am	10.40 am	11.00 am	11.30 am		
Ending Time	10.10 am	10.40 am	11.00 am	11.30 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	44.6	61.9	58.8	50.8	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	16.9	20.5	22.3	19.3	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	6.5	9.2	8.8	7.6	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.9	19.6	18.7	22.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/001/2021

ANNEXURE-1
Date: 02-11-2021

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-1	A-2	A-3	A-4	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	26-10-2021 to 27-10-2021	26-10-2021 to 27-10-2021	26-10-2021 to 27-10-2021	26-10-2021 to 27-10-2021		
Starting Time	8.00 am	8.30 am	8.45 am	9.05 am		
Ending Time	8.00 am	8.30 am	8.45 am	9.05 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM₁₀	55.9	63.4	61.6	64.5	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	20.5	19.8	18.8	20.1	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	9.6	11.4	10.5	8.7	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	17.5	22.3	23.9	24.6	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/002/2021

ANNEXURE-1
Date: 02-11-2021

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-5	A-6	A-7	A-8	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	27-10-2021 to 28-10-2021	27-10-2021 to 28-10-2021	27-10-2021 to 28-10-2021	27-10-2021 to 28-10-2021		
Starting Time	9.30 am	10.00 am	10.45 am	11.15 am		
Ending Time	9.30 am	10.00 am	10.45 am	11.15 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	50.8	51.2	48.7	52.1	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	19.30	20.7	18.5	20.3	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	6.9	9.5	7.8	10.5	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	17.6	18.8	21.4	20.9	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 mg/m ³ (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

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4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



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CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/WW/006/2021

ANNEXURE-3

Date: 02-11-2021

WASTE WATER ANALYSIS

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Date of Collection : 27-10-2021
Date of Analysis : 28-10-2021
PROTOCOL : A.P.H.A. 23rd Edition, 2017 & IS 3025

SNo.	Parameters	PROTOCOL	MINES PIT	
			Mines Pit Water	GSR 422E (Inland surface water)
1	Colour (Hazen Units)	IS:3025 (Part-4)	<5	See Note - 1
2	Odour	IS:3025 (Part-5)	Agreeable	See Note - 1
3	pH	IS:3025 (Part-11)	7.81	5.5 – 9.0
4	Oil & Grease, mg/l	IS:3025 (Part-39)	<1.0	10
5	Total Suspended Solids, mg/l	IS:3025 (Part-17)	24	100
6	Total Dissolved Solids at 105 °C, mg/l	IS:3025 (Part-16)	1,224	2,100
7	Bio Chemical Oxygen Demand for (3 days at 27°C), mg/l	IS:3025 (Part-44)	07	30
8	Chemical Oxygen Demand, mg/l	IS:3025 (Part-58)	21	250
9	Chlorides as Cl, mg/l	IS:3025 (Part-32)	193	1,000
10	Fluorides as F, mg/l	4500 F-D APHA 23 rd Edn 2012	0.27	2.0
11	Dissolved Phosphate as P, mg/l	IS:3025 (Part-31)	0.47	5.0
12	Percent Sodium	IS:2296-1982	25.4	----
13	Sulphide as S, mg/l	IS:3025 (Part-29)	0.08	2.0
14	Boron as B, mg/l	IS:3025 (Part-57)	0.12	2.0
15	Residual Sodium Carbonate, mg/l	IS:11624	Nil	----
16	Sulphates as SO ₄ , mg/l	IS:3025 (Part-24)	239	1,000
17	Iron as Fe, mg/l	IS:3025 (Part-53)	0.22	3.0
18	Total Volatile Suspended Solids, mg/l (TVSS)	IS:3025 (Part-18)	8.04	----

Note: All the values except pH are expressed in mg/L.



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CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/NOISE/005/2021

ANNEXURE-2
Date: 02-11-2021

NOISE LEVEL DATA

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

S.No	Locations	Date of Monitoring	Equivalent Noise Levels in dB(A)	
			Day Time	Night Time
1	Mines Boundary - East	26-10-2021	61.90	56.30
2	Mines Boundary - West	26-10-2021	65.80	60.20
3	Mines Boundary - North	26-10-2021	62.80	57.70
4	Mines Boundary - South	26-10-2021	63.70	58.60
5	Mines Office	26-10-2021	64.20	59.10

- Note:**
1. Instrument Make: Lutron SL-4001/G-49271, Calibrated on 24-02-2021, Due on 23-02-2022.
 2. Day time is reckoned in between 6.0 am and 10.0 pm – Limit 75 dB (A).
 3. Night time is reckoned in between 10.0 pm and 6.0 am – Limit 70 dB (A).



AUTHORISED SIGNATORY

o/c



Zuari Cement
HEIDELBERGCEMENT Group

ZCL/ YA/ EM /MINES/2021/*Deos*

Date: 19.12.2021

Zuari Cement Limited
CIN: U26942AP2000PLC050415
Krishna Nagar, Yerraguntla,
District Kadapa,
Andhra Pradesh - 516311,
Tel: +91 85632 75107 / 08
Fax: +91 85632 75101 / 64
www.zuaricements.com

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

Dear Sir,

Please find enclosed the Ambient Air, Noise & Water Quality reports of Zuari Limestone mines of Zuari Cement Ltd –Yerraguntla for the month of Nov 2021.

Thanking you,

Yours faithfully
For Zuari Cement Ltd

V. Madhava Reddy
V. Madhava Reddy
AGM-Environment

Encl: As above

cc :

The Environment Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office, 2nd Floor,
D.No.1/2277, Rajiv Park Road,
A.P. Housing Board Colony,
Kadapa – 516003.

ZUARI LIMESTON MINE OF M/S ZUARI CEMENTS LTD

KRISHNAGAR, YERRAGUNTLA, KADAPA -DISTRICT -516311(A.P).

Monitoring Data for the Month of Nov 2021

Location	Mines Office	Near Loading	Near Drilling	Haul Road	Velasapalli	Koduru	Peddaannapadu	Tummalapalli
Limit	I	II	I	II	I	II	I	II
PM ₁₀ µg/m ³	100	48.6	51.4	65.8	68.7	53.9	65.2	57.9
PM _{2.5} µg/m ³	60	18.4	19.5	25.1	26.1	20.4	24.7	22.1
SO ₂ µg/m ³	80	6.0	7.4	11.7	10.6	9.4	8.8	8.4
NOX µg/m ³	80	17.8	16.3	19.6	21.4	21.5	19.6	24.8
II. Quality of Discharge Water: Zero Discharge Water From Mines								
Mines harvested water is being used for Cement Plant Operations.								
1	Total Dissolved Solid (TDS)		mg/ltr		1346			
2	BOD for 3 days at 27 °C mg/l		mg/ltr		8			
3	PH				7.58			
4	Total Suspended solids (TSS)		mg/ltr		26			
III. Ambient Noise levels:								
1.	Mines Boundary -East		Day time		Night time		Day -Limit	Night -Limit
2.	Mines Boundary -West			63.4	58.5			
3.	Mines Boundary -North			64.9	59.2		75dB	70dB
4.	Mines Boundary -South			60.3	55.6			
				66.1	61.3			



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TEST REPORT

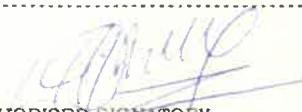
REF.NO: LAWN/ZCL/AAQ/003/2021

ANNEXURE-1
Date: 11-11-2021

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-9	A-10	A-11	A-12	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	02-11-2021 to 03-11-2021	02-11-2021 to 03-11-2021	02-11-2021 to 03-11-2021	02-11-2021 to 03-11-2021		
Starting Time	8.05 am	8.30 am	8.45 am	9.05 am		
Ending Time	8.05 am	8.30 am	8.45 am	9.05 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	48.6	65.8	53.9	57.9	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	18.4	25.1	20.4	22.1	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	6.0	11.7	9.4	8.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	17.8	19.6	21.5	24.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method


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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/004/2021

ANNEXURE-1
Date: 11-11-2021

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-13	A-14	A-15	A-16	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	03-11-2021 to 04-11-2021	03-11-2021 to 04-11-2021	03-11-2021 to 04-11-2021	03-11-2021 to 04-11-2021		
Starting Time	9.30 am	9.50 am	10.15 am	10.50 am		
Ending Time	9.30 am	9.50 am	10.15 am	10.50 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	40.4	56.3	52.9	59.4	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	15.4	21.4	20.2	22.6	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	9.4	10.3	7.7	8.2	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	18.2	20.3	16.4	19.5	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method


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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/001/2021

ANNEXURE-1
Date: 27-11-2021

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-1	A-2	A-3	A-4	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	17-11-2021 to 18-11-2021	17-11-2021 to 18-11-2021	17-11-2021 to 18-11-2021	17-11-2021 to 18-11-2021		
Starting Time	8.20 am	8.45 am	9.15 am	9.40 am		
Ending Time	8.20 am	8.45 am	9.15 am	9.40 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	51.4	68.7	65.2	58.6	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	19.5	26.1	24.7	22.2	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.4	10.6	8.8	9.5	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gacke Method
NO ₂	16.3	21.4	19.6	23.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

G.M. AY
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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/002/2021

ANNEXURE-1

Date: 27-11-2021

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-5	A-6	A-7	A-8	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	18-11-2021 to 19-11-2021	18-11-2021 to 19-11-2021	18-11-2021 to 19-11-2021	18-11-2021 to 19-11-2021		
Starting Time	10.00 am	10.15 am	10.35 am	11.20 am		
Ending Time	10.00 am	10.15 am	10.35 am	11.20 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM₁₀	46.7	42.8	53.5	57.9	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	17.7	16.2	20.3	22.0	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	8.5	10.1	7.3	9.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	15.9	20.7	18.8	22.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 mg/m ³ (8 hrs)	CO Analyzer Method


AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

Recognised by Ministry of Environment Forest & Climate Change (MoEF & CC), GOI, New Delhi
& Laboratory Accredited by NABL

ISO 9001:14001 & 45001
CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/WW/006/2021

ANNEXURE-3

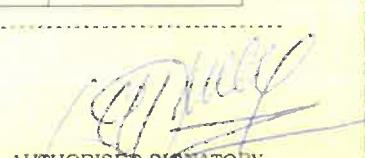
Date: 27-11-2021

WASTE WATER ANALYSIS

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Date of Collection : 19-11-2021
Date of Analysis : 20-11-2021
PROTOCOL : A.P.H.A. 23rd Edition, 2017 & IS 3025

SNo.	Parameters	PROTOCOL	MINES PIT	
			Mines Pit Water	GSR 422E (Inland surface water)
1	Colour (Hazen Units)	IS:3025 (Part-4)	<5	See Note - 1
2	Odour	IS:3025 (Part-5)	Agreeable	See Note - 1
3	pH	IS:3025 (Part-11)	7.58	5.5 – 9.0
4	Oil & Grease, mg/l	IS:3025 (Part-39)	<1.0	10
5	Total Suspended Solids, mg/l	IS:3025 (Part-17)	26	100
6	Total Dissolved Solids at 105 °C, mg/l	IS:3025 (Part-16)	1,346	2,100
7	Bio Chemical Oxygen Demand for (3 days at 27°C), mg/l	IS:3025 (Part-44)	08	30
8	Chemical Oxygen Demand, mg/l	IS:3025 (Part-58)	23	250
9	Chlorides as Cl, mg/l	IS:3025 (Part-32)	212	1,000
10	Fluorides as F, mg/l	4500 F-D APHA 23 rd Edn 2012	0.32	2.0
11	Dissolved Phosphate as P, mg/l	IS:3025 (Part-31)	0.51	5.0
12	Percent Sodium	IS:2296-1982	27.9	----
13	Sulphide as S, mg/l	IS:3025 (Part-29)	0.09	2.0
14	Boron as B, mg/l	IS:3025 (Part-57)	0.13	2.0
15	Residual Sodium Carbonate, mg/l	IS:11624	Nil	----
16	Sulphates as SO ₄ , mg/l	IS:3025 (Part-24)	263	1,000
17	Iron as Fe, mg/l	IS:3025 (Part-53)	0.18	3.0
18	Total Volatile Suspended Solids, mg/l (TVSS)	IS:3025 (Part-18)	8.84	----


AUTHORISED SIGNATORY



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

TEST REPORT

REF.NO: LAWN/ZCL/NOISE/005/2021

ANNEXURE-2

Date: 27-11-2021

NOISE LEVEL DATA

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

S.No	Locations	Date of Monitoring	Equivalent Noise Levels in dB(A)	
			Day Time	Night Time
1	Mines Boundary - East	17-11-2021	63.40	58.50
2	Mines Boundary - West	17-11-2021	64.90	59.20
3	Mines Boundary - North	17-11-2021	60.30	55.60
4	Mines Boundary - South	17-11-2021	66.10	61.30
5	Mines Office	17-11-2021	65.90	60.40

Note: 1. Instrument Make: Lutron SL-4001/G-49271, Calibrated on 24-02-2021, Due on 23-02-2022.
2. Day time is reckoned in between 6.0 am and 10.0 pm – Limit 75 dB (A).
3. Night time is reckoned in between 10.0 pm and 6.0 am – Limit 70 dB (A).


Authorised Signatory

O/C



Zuari Cement
HEIDELBERGCEMENT Group

ZCL/ YA/ EM /MINES/2022/Tumos'

Date: 09.01.2022

Zuari Cement Limited
CIN: U26942AP2000PLC050415
Krishna Nagar, Yerraguntla,
District Kadapa,
Andhra Pradesh - 516311.
Tel: +91 85632 75107 / 08
Fax: +91 85632 75101 / 64
www.zuaricements.com

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.

Dear Sir,

Please find enclosed the Ambient Air, Noise & Water Quality reports of Zuari Limestone mines of Zuari Cement Ltd –Yerraguntla for the month of Dec 2021.

Thanking you,

Yours faithfully
For Zuari Cement Ltd

V.Madhava Reddy
AGM-Environment

Encl: As above

cc :

The Environment Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office, 2nd Floor,
D.No.1/2277, Rajiv Park Road,
A.P. Housing Board Colony,
Kadapa – 516003.

ZUARI LIMESTON MINE OF M/S ZUARI CEMENTS LTD

KRISHNAGAR, YERRAGUNTLA, KADAPA -DISTRICT -516311(A.P).

Monitoring Data for the Month of Dec 2021.

Location	Mines Office	Near Loading	Near Drilling	Haul Road	Velasapalli	Koduru	Peddannapadu	Tummalapalli
Limit	I	II	I	II	I	II	I	II
PM ₁₀ µg/m ³	100	50.9	56.8	62.7	64.9	58.1	60.5	54.8
PM _{2.5} µg/m ³	60	19.3	21.5	23.8	24.6	22.1	22.9	20.8
SO ₂ µg/m ³	80	7.5	6.7	9.8	11.5	8.3	9.8	10.5
NOX µg/m ³	80	16.3	15.8	20.9	22.6	18.7	20.4	22.9

III.Quality of Discharge Water: Zero Discharge Water From Mines
Mines harvested water is being used for Cement Plant Operations.

1	Total Dissolved Solid (TDS)	mg/Ltr	1211
2	BOD for 3 days at 27 C mg/l	mg/Ltr	07
3	PH		7.35
4	Total Suspended solids (TSS)	mg/Ltr	23

III.Ambient Noise level/s:

	Day time	Night time	Day -Limit	Night -Limit
1.	Mines Boundary -East	61.7	56.5	
2.	Mines Boundary -West	63.9	58.3	
3.	Mines Boundary -North	58.4	53.2	75dB
4.	Mines Boundary -South	59.3	54.7	70dB



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

Registration No.: M/S/LAWN/ENV/2010/001 | Environmental Audit & Monitoring Services [EAM] |

X Laboratory Accredited by NABL

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/003/2021

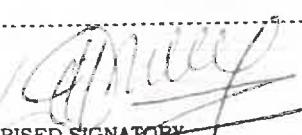
ANNEXURE-1

Date: 15-12-2021

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh - 516 311.

Code	A-9	A-10	A-11	A-12	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	06-12-2021 to 07-12-2021	06-12-2021 to 07-12-2021	06-12-2021 to 07-12-2021	06-12-2021 to 07-12-2021		
Starting Time	8.30 am	9.00 am	9.45 am	10.20 am		
Ending Time	8.30 am	9.00 am	9.45 am	10.20 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	50.9	62.7	58.1	54.8	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	19.3	23.8	22.1	20.8	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.5	9.8	8.3	10.5	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.3	20.9	18.7	22.9	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method


AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



LAWN ENVIRO ASSOCIATES
 Engineers & Consultants in Pollution Control
 Building No. 184 C, Vengalrao Nagar, Hyderabad - 500 038, (T.S.) INDIA. Tel.: 040-66730925, 66730926, Fax: 040-66730926
 & E-mail: lawnenviro@yahoo.co.in, Website: www.lawnenviro.com

TEST REPORT

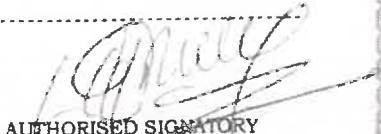
REF.NO: LAWN/ZCL/AAQ/004/2021

ANNEXURE-1
 Date: 15-12-2021

**AMBIENT AIR QUALITY DATA
 (BUFFER ZONE)**

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
 Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
 Andhra Pradesh - 516 311.

Code	A-13	A-14	A-15	A-16	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	07-12-2021 to 08-12-2021	07-12-2021 to 08-12-2021	07-12-2021 to 08-12-2021	07-12-2021 to 08-12-2021		
Starting Time	10.40 am	11.05 am	11.30 am	11.50 am		
Ending Time	10.40 am	11.05 am	11.30 am	11.50 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	46.5	51.9	56.3	42.8	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	17.6	19.7	21.3	16.2	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	6.5	8.9	7.2	9.6	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.7	19.5	18.7	21.3	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method


 AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351 DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755 DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

TEST REPORT

ANNEXURE-1

Date: 31-12-2021

REF.NO: LAWN/ZCL/AAQ/001/2021

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh - 516 311.

Code	A-1	A-2	A-3	A-4	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	21-12-2021 to 22-12-2021	21-12-2021 to 22-12-2021	21-12-2021 to 22-12-2021	21-12-2021 to 22-12-2021		
Starting Time	8.15 am	8.35 am	9.00 am	9.45 am		
Ending Time	8.15 am	8.35 am	9.00 am	9.45 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM₁₀	56.8	64.9	60.5	66.8	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	21.5	24.6	22.9	25.3	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	6.7	11.5	9.8	10.6	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gacke Method
NO₂	15.8	22.6	20.4	18.5	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method


AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
 2. RESPIRABLE DUST SAMPLER MODEL/SL.NO RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
 3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
 4. RESPIRABLE DUST SAMPLER MODEL/SL.NO RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
 2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
 3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
 4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

P.O. Box No. 1000, 1st Floor, 10th Main Road, Kukatpally, Hyderabad - 500 082
In Laying & Testing of Test.

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/002/2021

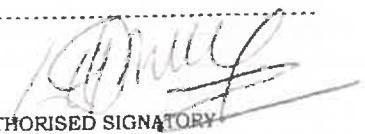
ANNEXURE-1

Date: 31-12-2021

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh - 516 311.

Code	A-5	A-6	A-7	A-8	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	22-12-2021 to 23-12-2021	22-12-2021 to 23-12-2021	22-12-2021 to 23-12-2021	22-12-2021 to 23-12-2021		
Starting Time	10.15 am	10.45 am	11.05 am	11.55 am		
Ending Time	10.15 am	10.45 am	11.05 am	11.55 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	49.8	40.1	50.5	55.2	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	18.9	15.2	19.1	20.9	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.9	9.5	10.7	8.1	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.4	19.3	20.4	17.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 mg/ m^3 (8 hrs)	CO Analyzer Method


AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506. CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 02-01-2021, DUE ON 01-01-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL NO. 755 DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL NO. 912 DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

Hyderabad, Mumbai, Bangalore, Chennai, Trivandrum, Pondicherry,
Chennai, Bangalore, Hyderabad, Mumbai, Bangalore, Chennai, Trivandrum, Pondicherry

TEST REPORT

ANNEXURE-3

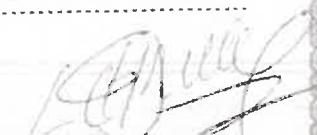
Date: 31-12-2021

WASTE WATER ANALYSIS

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
 Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
 Andhra Pradesh - 516 311.

Date of Collection : 23-12-2021
 Date of Analysis : 24-12-2021
 PROTOCOL : A.P.H.A. 23rd Edition, 2017 & IS 3025

SNo.	Parameters	PROTOCOL	MINES PIT	
			Mines Pit Water	GSR 422E (Inland surface water)
1	Colour (Hazen Units)	IS:3025 (Part-4)	<5	See Note - 1
2	Odour	IS:3025 (Part-5)	Agreeable	See Note - 1
3	pH	IS:3025 (Part-11)	7.35	5.5 – 9.0
4	Oil & Grease, mg/l	IS:3025 (Part-39)	<1.0	10
5	Total Suspended Solids, mg/l	IS:3025 (Part-17)	23	100
6	Total Dissolved Solids at 105 °C, mg/l	IS:3025 (Part-16)	1,211	2,100
7	Bio Chemical Oxygen Demand for (3 days at 27°C), mg/l	IS:3025 (Part-44)	07	30
8	Chemical Oxygen Demand, mg/l	IS:3025 (Part-58)	21	250
9	Chlorides as Cl, mg/l	IS:3025 (Part-32)	191	1,000
10	Fluorides as F, mg/l	4500 F-D APHA 23 rd Edn 2012	0.36	2.0
11	Dissolved Phosphate as P, mg/l	IS:3025 (Part-31)	0.45	5.0
12	Percent Sodium	IS:2296-1982	25.1	----
13	Sulphide as S, mg/l	IS:3025 (Part-29)	0.08	2.0
14	Boron as B, mg/l	IS:3025 (Part-57)	0.11	2.0
15	Residual Sodium Carbonate, mg/l	IS:11624	Nil	----
16	Sulphates as SO ₄ , mg/l	IS:3025 (Part-24)	237	1,000
17	Iron as Fe, mg/l	IS:3025 (Part-53)	0.15	3.0
18	Total Volatile Suspended Solids, mg/l (TVSS)	IS:3025 (Part-18)	7.95	----


AUTHORISED SIGNATORY



LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

100, Gachibowli Main - Hyderabad - 500 038, Tel: 040-66730925, 66730926, Fax: 040-66730926
E-mail: lawnenviro@yahoo.co.in, Website: www.lawnenviro.com

TEST REPORT

REF.NO: LAWN/ZCL/NOISE/005/2021

ANNEXURE-2

Date: 31-12-2021

NOISE LEVEL DATA

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh - 516 311.

S.No	Locations	Date of Monitoring	Equivalent Noise Levels in dB(A)	
			Day Time	Night Time
1	Mines Boundary - East	22-12-2021	61.70	56.50
2	Mines Boundary - West	22-12-2021	63.90	58.30
3	Mines Boundary - North	22-12-2021	58.40	53.20
4	Mines Boundary - South	22-12-2021	59.30	54.70
5	Mines Office	22-12-2021	62.60	57.10

Note: 1. Instrument Make: Lutron SL-4001/G-49271, Calibrated on 24-02-2021, Due on 23-02-2022.
2. Day time is reckoned in between 6.0 am and 10.0 pm - Limit 75 dB (A).
3. Night time is reckoned in between 10.0 pm and 6.0 am - Limit 70 dB (A).



AUTHORISED SIGNATORY

D/C

Zuari Cement
HEIDELBERGCEMENT Group

Zuari Cement Limited
CIN: U26942AP2000PLC050415
Krishna Nagar, Yerraguntla,
District Kadapa,
Andhra Pradesh - 516311,
Tel: +91 85632 75107 / 08
Fax: +91 85632 75101 / 64
www.zuaricements.com

ZCL/ YA/ EM /MINES/2022/ *Fe806*
Date: 19.02.2022

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.

Dear Sir,

Please find enclosed the Ambient Air, Noise & Water Quality reports of Zuari Limestone mines of Zuari Cement Ltd –Yerraguntla for the month of Jan 2022.

Thanking you,

Yours faithfully
For Zuari Cement Ltd

V.Madhava Reddy
V.Madhava Reddy
AGM-Environment

Encl: As above

cc :

The Environment Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office, 2nd Floor,
D.No.1/2277, Rajiv Park Road,
A.P. Housing Board Colony,
Kadapa – 516003.

ZUARI LIMESTON MINE OF M/S ZUARI CEMENTS LTD

KRISHNAGAR, YERRAGUNTLA, KADAPA -DISTRICT -516311(A.P).

Monitoring Data for the Month of Jan 2022.

Location	Mines Office	Near Loading	Near Drilling	Haul Road	Vallasapalli	Koduru	Peddannapadu	Tummalapalli
Limit	I	II	I	II	I	II	I	II
PM ₁₀ µg/m ³	100	46.5	52.2	65.9	67.8	60.7	63.2	57.3
PM _{2.5} µg/m ³	60	17.6	19.8	25.1	25.7	23.1	24.1	21.8
SO ₂ µg/m ³	80	8.4	7.2	10.2	12.5	9.5	10.7	11.7
NOX µg/m ³	80	17.6	16.9	21.3	24.3	19.2	21.9	23.8

II. Quality of Discharge Water: Zero Discharge Water From Mines
Mines harvested water is being used for Cement Plant Operations.

1	Total Dissolved Solid (TDS)	mg/Ltr	1090
2	BOD for 3 days at 27 °C mg/l	mg/Ltr	6
3	PH		7.81
4	Total Suspended solids (TSS)	mg/Ltr	21

III. Ambient Noise levels:

	Day time	Night time	Day -Limit	Night -Limit
1.	Mines Boundary -East	63.4	58.1	
2.	Mines Boundary -West	65.1	60.4	
3.	Mines Boundary -North	61.9	56.7	75dB
4.	Mines Boundary -South	60.2	55.3	70dB



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LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

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& Laboratory Accredited by NABL

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/003/2022

ANNEXURE-1
Date: 17-01-2022

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-9	A-10	A-11	A-12	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	05-01-2022 to 06-01-2022	05-01-2022 to 06-01-2022	05-01-2022 to 06-01-2022	05-01-2022 to 06-01-2022		
Starting Time	8.20 am	8.50 am	9.40 am	10.30 am		
Ending Time	8.20 am	8.50 am	9.40 am	10.30 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM₁₀	46.5	65.9	60.7	57.3	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	17.6	25.1	23.1	21.8	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	8.4	10.2	9.5	11.7	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	17.6	21.3	19.2	23.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



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CERTIFIED COMPANY

LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

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& Laboratory Accredited by NABL

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/004/2022

ANNEXURE-1
Date: 17-01-2022

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-13	A-14	A-15	A-16	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	06-01-2022 to 07-01-2022	06-01-2022 to 07-01-2022	06-01-2022 to 07-01-2022	06-01-2022 to 07-01-2022		
Starting Time	10.30 am	11.00 am	11.25 am	11.45 am		
Ending Time	10.30 am	11.00 am	11.25 am	11.45 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM₁₀	41.9	47.5	50.2	56.6	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	15.9	18.1	19.1	21.5	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	7.2	9.1	8.4	10.3	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	15.5	17.5	16.8	20.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



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TEST REPORT

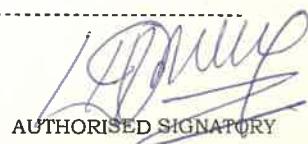
REF.NO: LAWN/ZCL/AAQ/001/2022

ANNEXURE-1
Date: 04-02-2022

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-1	A-2	A-3	A-4	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	25-01-2022 to 26-01-2022	25-01-2022 to 26-01-2022	25-01-2022 to 26-01-2022	25-01-2022 to 26-01-2022		
Starting Time	8.00 am	8.30 am	8.55 am	9.30 am		
Ending Time	8.00 am	8.30 am	8.55 am	9.30 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	52.2	67.8	63.2	60.4	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	19.8	25.7	24.1	22.9	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.2	12.5	10.7	9.8	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.9	24.3	21.9	17.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method


AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
2. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
3. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022
4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



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CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/AAQ/002/2022

ANNEXURE-1
Date: 04-02-2022

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : M/s. ZUARI CEMENT LIMITED.,
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-5	A-6	A-7	A-8	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	26-01-2022 to 27-01-2022	26-01-2022 to 27-01-2022	26-01-2022 to 27-01-2022	26-01-2022 to 27-01-2022		
Starting Time	10.00 am	10.30 am	10.50 am	11.20 am		
Ending Time	10.00 am	10.30 am	10.50 am	11.20 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	46.4	43.5	56.1	52.6	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	17.6	16.5	21.3	19.9	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	8.2	10.2	9.3	7.5	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	19.5	22.6	23.2	16.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 mg/m ³ (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

- RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
- RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040507, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
- RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040140, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022
- RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022

- FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
- FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
- FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
- FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022



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[Engineers & Consultants in Pollution Control]

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CERTIFIED COMPANY

TEST REPORT

REF.NO: LAWN/ZCL/WW/006/2022

ANNEXURE-3
Date: 04-02-2022

WASTE WATER ANALYSIS

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Date of Collection : 27-01-2022
Date of Analysis : 28-01-2022
PROTOCOL : A.P.H.A. 23rd Edition, 2017 & IS 3025

SNo.	Parameters	PROTOCOL	MINES PIT	
			Mines Pit Water	GSR 422E (Inland surface water)
1	Colour (Hazen Units)	IS:3025 (Part-4)	<5	See Note - 1
2	Odour	IS:3025 (Part-5)	Agreeable	See Note - 1
3	pH	IS:3025 (Part-11)	7.81	5.5 – 9.0
4	Oil & Grease, mg/l	IS:3025 (Part-39)	<1.0	10
5	Total Suspended Solids, mg/l	IS:3025 (Part-17)	21	100
6	Total Dissolved Solids at 105 °C, mg/l	IS:3025 (Part-16)	1,090	2,100
7	Bio Chemical Oxygen Demand for (3 days at 27°C), mg/l	IS:3025 (Part-44)	06	30
8	Chemical Oxygen Demand, mg/l	IS:3025 (Part-58)	19	250
9	Chlorides as Cl, mg/l	IS:3025 (Part-32)	172	1,000
10	Fluorides as F, mg/l	4500 F-D APHA 23 rd Edn 2012	0.48	2.0
11	Dissolved Phosphate as P, mg/l	IS:3025 (Part-31)	0.39	5.0
12	Percent Sodium	IS:2296-1982	22.4	----
13	Sulphide as S, mg/l	IS:3025 (Part-29)	0.06	2.0
14	Boron as B, mg/l	IS:3025 (Part-57)	0.09	2.0
15	Residual Sodium Carbonate, mg/l	IS:11624	Nil	----
16	Sulphates as SO ₄ , mg/l	IS:3025 (Part-24)	213	1,000
17	Iron as Fe, mg/l	IS:3025 (Part-53)	0.19	3.0
18	Total Volatile Suspended Solids, mg/l (TVSS)	IS:3025 (Part-18)	7.15	----


AUTHORISED SIGNATORY



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[Engineers & Consultants in Pollution Control]

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& Laboratory Accredited by NABL

TEST REPORT

REF.NO: LAWN/ZCL/NOISE/005/2022

ANNEXURE-2

Date: 04-02-2022

NOISE LEVEL DATA

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

S.No	Locations	Date of Monitoring	Equivalent Noise Levels in dB(A)	
			Day Time	Night Time
1	Mines Boundary - East	25-01-2022	63.40	58.10
2	Mines Boundary - West	25-01-2022	65.10	60.40
3	Mines Boundary - North	25-01-2022	61.90	56.70
4	Mines Boundary - South	25-01-2022	60.20	55.30
5	Mines Office	25-01-2022	64.80	59.60

Note: 1. Instrument Make: Lutron SL-4001/G-49271, Calibrated On 24-02-2021, Due On 23-02-2022.
2. Day time is reckoned in between 6.0 am and 10.0 pm – Limit 75 dB (A).
3. Night time is reckoned in between 10.0 pm and 6.0 am – Limit 70 dB (A).

AUTHORISED SIGNATORY

O/C



ZCL/ YA/ EM /MINES/2022/ Maroy

Date: 19.03.2022

Zuari Cement Limited
CIN: U26942AP2000PLC050415
Krishna Nagar, Yerraguntla,
District Kadapa,
Andhra Pradesh - 516311,
Tel: +91 85632 75107 / 08
Fax: +91 85632 75101 / 64
www.zuaricements.com

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.

Dear Sir,

Please find enclosed the Ambient Air, Noise & Water Quality reports of Zuari Limestone mines of Zuari Cement Ltd –Yerraguntla for the month of Feb 2022.

Thanking you,

Yours faithfully
For Zuari Cement Ltd

A handwritten signature in blue ink, appearing to read "Dr. Mddy".

V.Madhava Reddy
AGM-Environment

Encl: As above

cc :

The Environment Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office, 2nd Floor,
D.No.1/2277, Rajiv Park Road,
A.P. Housing Board Colony,
Kadapa – 516003.

ZUARI LIMESTON MINE OF M/S ZUARI CEMENTS LTD

KRISHNAGAR, YERRAGUNTLA, KADAPA -DISTRICT -516311(A.P).

Monitoring Data for the Month of Feb 2022.

Location	Mines Office	Near Loading	Near Drilling	Haul Road	Velasapalli	Koduru	Peddannapadu	Tummalapalli
	Limit	I	II	I	II	I	II	I
PM ₁₀ µg/m ³	100	49.7	50.7	68.4	64.2	60.7	54.7	57.9
PM _{2.5} µg/m ³	60	18.5	18.4	26.7	24.6	24.9	23.3	20.1
SO ₂ µg/m ³	80	7.9	6.7	12.5	10.3	11.7	8.9	12.6
NOX µg/m ³	80	16.4	15.5	24.7	21.4	21.5	23.8	20.4

III. Quality of Discharge Water: Zero Discharge Water From Mines
Mines harvested water is being used for Cement Plant Operations.

1	Total Dissolved Solid (TDS)	mg/Ltr	964
2	BOD for 3 days at 27 °C mg/l	mg/Ltr	08
3	PH		7.59
4	Total Suspended solids (TSS)	mg/Ltr	18

III. Ambient Noise levels:

1.	Mines Boundary -East	Day time	Night time	Day -Limit	Night -Limit
2.	Mines Boundary -West			60.8	
3.	Mines Boundary -North			61.2	
4.	Mines Boundary -South			75dB	70dB



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CERTIFIED COMPANY

LAWN ENVIRO ASSOCIATES

[Engineers & Consultants in Pollution Control]

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TEST REPORT

ANNEXURE-1
Date: 12-02-2022

REF.NO: LAWN/ZCL/AAQ/003/2022

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-9	A-10	A-11	A-12	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	03-02-2022 to 04-02-2022	03-02-2022 to 04-02-2022	03-02-2022 to 04-02-2022	03-02-2022 to 04-02-2022		
Starting Time	8.30 am	8.45 am	9.00 am	9.45 am		
Ending Time	8.30 am	8.45 am	9.00 am	9.45 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	49.7	68.4	64.2	54.7	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	18.5	26.7	24.9	20.1	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.9	12.5	11.7	8.9	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	16.4	24.7	21.5	20.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

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1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
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TEST REPORT

ANNEXURE-1

Date: 12-02-2022

REF.NO: LAWN/ZCL/AAQ/004/2022

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-13	A-14	A-15	A-16	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	04-02-2022 to 05-02-2022	04-02-2022 to 05-02-2022	04-02-2022 to 05-02-2022	04-02-2022 to 05-02-2022		
Starting Time	10.15 am	10.45 am	11.10 am	11.35 am		
Ending Time	10.15 am	10.45 am	11.10 am	11.35 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	44.6	56.2	53.4	61.7	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	17.8	22.9	20.6	24.5	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	6.6	8.7	10.5	9.2	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	17.2	19.5	22.2	21.3	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/001/2022

ANNEXURE-1
Date: 03-3-2022

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-1	A-2	A-3	A-4	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	19-02-2022 to 20-02-2022	19-02-2022 to 20-02-2022	19-02-2022 to 20-02-2022	19-02-2022 to 20-02-2022		
Starting Time	8.15 am	8.35 am	9.00 am	9.45 am		
Ending Time	8.15 am	8.35 am	9.00 am	9.45 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM ₁₀	50.7	64.2	60.7	57.9	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	18.4	24.6	23.3	21.3	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	6.7	10.3	11.3	12.6	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	15.5	21.4	23.8	24.9	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/002/2022

ANNEXURE-1
Date: 03-3-2022

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-5	A-6	A-7	A-8	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	20-02-2022 to 21-02-2022	20-02-2022 to 21-02-2022	20-02-2022 to 21-02-2022	20-02-2022 to 21-02-2022		
Starting Time	10.10 am	10.25 am	10.45 am	11.15 am		
Ending Time	10.10 am	10.25 am	10.45 am	11.15 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	51.6	48.7	59.2	55.2	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	20.2	18.2	23.5	21.6	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO ₂	7.5	9.5	8.1	6.9	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO ₂	17.3	23.5	21.5	18.2	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 mg/m ³ (8 hrs)	CO Analyzer Method


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Head Office : "LAWN HOUSE", #184-C, Vengalrao Nagar, Hyderabad - 500 038. (T.S.) INDIA. Tel : 040-66730925, 66730926, Fax : 040-66730926

Branch Office : H.No.18/2, Ground Floor, Phase-1, Vuda Nagar, Rajiv Nagar Road, Kurmannapalem, Visakhapatnam - 530046. (A.P) Tel : +91-9030029925

E-mail : lawnenviro@yahoo.co.in, Website : www.lawnenviro.com



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TEST REPORT

REF.NO: LAWN/ZCL/WW/006/2022

ANNEXURE-3

Date: 03-3-2022

WASTE WATER ANALYSIS

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Date of Collection : 21-02-2022
Date of Analysis : 22-02-2022
PROTOCOL : A.P.H.A. 23rd Edition, 2017 & IS 3025

SNo.	Parameters	PROTOCOL	MINES PIT	
			Mines Pit Water	GSR 422E (Inland surface water)
1	Colour (Hazen Units)	IS:3025 (Part-4)	<5	See Note - 1
2	Odour	IS:3025 (Part-5)	Agreeable	See Note - 1
3	pH	IS:3025 (Part-11)	7.59	5.5 – 9.0
4	Oil & Grease, mg/l	IS:3025 (Part-39)	<1.0	10
5	Total Suspended Solids, mg/l	IS:3025 (Part-17)	18	100
6	Total Dissolved Solids at 105 °C, mg/l	IS:3025 (Part-16)	964	2,100
7	Bio Chemical Oxygen Demand for (3 days at 27°C), mg/l	IS:3025 (Part-44)	08	30
8	Chemical Oxygen Demand, mg/l	IS:3025 (Part-58)	22	250
9	Chlorides as Cl, mg/l	IS:3025 (Part-32)	165	1,000
10	Fluorides as F, mg/l	4500 F-D APHA 23 rd Edn 2012	0.42	2.0
11	Dissolved Phosphate as P, mg/l	IS:3025 (Part-31)	0.35	5.0
12	Percent Sodium	IS:2296-1982	20.3	----
13	Sulphide as S, mg/l	IS:3025 (Part-29)	0.04	2.0
14	Boron as B, mg/l	IS:3025 (Part-57)	0.07	2.0
15	Residual Sodium Carbonate, mg/l	IS:11624	Nil	----
16	Sulphates as SO ₄ , mg/l	IS:3025 (Part-24)	204	1,000
17	Iron as Fe, mg/l	IS:3025 (Part-53)	0.16	3.0
18	Total Volatile Suspended Solids, mg/l (TVSS)	IS:3025 (Part-18)	6.84	----

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TEST REPORT

REF.NO: LAWN/ZCL/NOISE/005/2022

ANNEXURE-2
Date: 03-3-2022

NOISE LEVEL DATA

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

S.No	Locations	Date of Monitoring	Equivalent Noise Levels in dB(A)	
			Day Time	Night Time
1	Mines Boundary - East	21-02-2022	65.90	60.80
2	Mines Boundary - West	21-02-2022	66.10	61.20
3	Mines Boundary - North	21-02-2022	63.40	58.50
4	Mines Boundary - South	21-02-2022	62.80	57.10
5	Mines Office	21-02-2022	61.70	56.30

- Note:**
1. Instrument Make: Lutron SL-4001/G-49271, Calibrated On 24-02-2021, Due On 23-02-2022.
 2. Day time is reckoned in between 6.0 am and 10.0 pm – Limit 75 dB (A).
 3. Night time is reckoned in between 10.0 pm and 6.0 am – Limit 70 dB (A).

AUTHORISED SIGNATORY

Ole



Zuari Cement
HEIDELBERGCEMENT Group

ZCL/ YA/ EM /MINES/2022/ *AP204*
Date: 20.04.2022

Zuari Cement Limited
CIN: U26942AP2000PLC050415
Krishna Nagar, Yerraguntla,
District Kadapa,
Andhra Pradesh - 516311,
Tel: +91 85632 75107 / 08
Fax: +91 85632 75101 / 64
www.zuaricements.com

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.

Dear Sir,

Please find enclosed the Ambient Air, Noise & Water Quality reports of Zuari Limestone mines of Zuari Cement Ltd –Yerraguntla for the month of March 2022.

Thanking you,

Yours faithfully
For Zuari Cement Ltd

V.Madhava Reddy

V.Madhava Reddy
AGM-Environment

Encl: As above

cc :

The Environment Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office, 2nd Floor,
D.No.1/2277, Rajiv Park Road,
A.P. Housing Board Colony,
Kadapa – 516003.

ZUARI LIMESTON MINE OF M/S ZUARI CEMENTS LTD

KRISHNAGAR, YERRAGUNTLA, KADAPA -DISTRICT -516311(A.P).

Monitoring Data for the Month of March 2022.

Location	Mines Office	Near Loading	Near Drilling	Haul Road	Vallasapalli	Koduru	Peddannapadu	Tummalapalli
Limit	I	II	I	II	I	II	I	II
PM ₁₀ µg/m ³	100	57.6	56.9	63.2	69.5	60.8	64.7	52.4
PM _{2.5} µg/m ³	60	20.2	20.3	23.8	26.7	21.7	24.8	17.8
SO ₂ µg/m ³	80	6.5	7.9	10.3	9.8	8.4	10.5	12.4
NOX µg/m ³	80	17.9	16.3	21.9	22.5	19.6	20.9	23.7
II. Quality of Discharge Water: Zero Discharge Water From Mines								
Mines harvested water is being used for Cement Plant Operations.								
1	Total Dissolved Solid (TDS)		mg/Ltr			868		
2	BOD for 3 days at 27 C	mg/l		mg/Ltr		07		
3	PH					7.32		
4	Total Suspended solids (TSS)		mg/Ltr			16		
III. Ambient Noise level/s:								
1.	Mines Boundary -East			Day time		Night time		Night - Limit
2.	Mines Boundary -West			63.7		58.2		
3.	Mines Boundary -North			64.8		59.6		
4.	Mines Boundary -South			62.6		57.1		70dB
				65.9		60.4		



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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/003/2022

ANNEXURE-1
Date: 12-03-2022

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-9	A-10	A-11	A-12	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	02-03-2022 to 03-03-2022	02-03-2022 to 03-03-2022	02-03-2022 to 03-03-2022	02-03-2022 to 03-03-2022		
Starting Time	8.10 am	8.35 am	8.55 am	9.30 am		
Ending Time	8.10 am	8.35 am	8.55 am	9.30 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM₁₀	57.6	63.2	60.8	52.4	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	20.2	23.8	21.7	17.8	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	6.4	10.3	8.4	12.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	17.9	21.9	19.6	23.7	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

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Date: 12-03-2022

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

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Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-13	A-14	A-15	A-16	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	03-03-2022 to 04-03-2022	03-03-2022 to 04-03-2022	03-03-2022 to 04-03-2022	03-03-2022 to 04-03-2022		
Starting Time	10.00 am	10.30 am	11.00 am	11.30 am		
Ending Time	10.00 am	10.30 am	11.00 am	11.30 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM ₁₀	49.5	52.8	55.9	59.4	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM _{2.5}	16.7	20.4	22.7	23.8	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
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4. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040139, CALIBRATED ON 01-01-2022, DUE ON 31-12-2022

1. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1354-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
2. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 1351-DTF-2013), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
3. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 755-DTH-2011), CALIBRATED ON 02-06-2021, DUE ON 01-06-2022
4. FINE PARTICULATE SAMPLER/APM 550 (SL.NO. 912-DTH-2011), CALIBRATED ON 12-08-2021, DUE ON 11-08-2022

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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/001/2022

ANNEXURE-1
Date: 29-03-2022

AMBIENT AIR QUALITY DATA (CORE ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-1	A-2	A-3	A-4	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	18-03-2022 to 19-03-2022	18-03-2022 to 19-03-2022	18-03-2022 to 19-03-2022	18-03-2022 to 19-03-2022		
Starting Time	8.30 am	8.50 am	9.15 am	9.50 am		
Ending Time	8.30 am	8.50 am	9.15 am	9.50 am		
Locations	Mines Office	Near Loading Area	Near Drilling Area	Haulage Road		
PM₁₀	56.9	69.5	64.7	60.2	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	20.3	26.7	24.8	22.7	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	7.9	9.8	10.5	11.4	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	16.3	22.5	20.9	23.7	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 (mg/m^3) (8 hrs)	CO Analyzer Method

AUTHORISED SIGNATORY

1. RESPIRABLE DUST SAMPLER MODEL/SL.NO. RDS 9000 / 040506, CALIBRATED ON 19-05-2021, DUE ON 18-05-2022
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TEST REPORT

REF.NO: LAWN/ZCL/AAQ/002/2022

ANNEXURE-1
Date: 29-03-2022

AMBIENT AIR QUALITY DATA (BUFFER ZONE)

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

Code	A-5	A-6	A-7	A-8	NAAQ Standards (24 hourly standard)	PROTOCOL/ TEST METHOD
Date	19-03-2022 to 20-03-2022	19-03-2022 to 20-03-2022	19-03-2022 to 20-03-2022	19-03-2022 to 20-03-2022		
Starting Time	10.30 am	10.50 am	11.15 am	11.50 am		
Ending Time	10.30 am	10.50 am	11.15 am	11.50 am		
Locations	Valasapalli Village	Koduru Village	Paddannapadu	Thumalapalli		
PM₁₀	46.3	52.6	57.4	59.8	100 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-23); 2017 / Gravimetric Method
PM_{2.5}	17.4	20.8	21.5	23.9	60 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-24); 2019 / Gravimetric Method
SO₂	8.2	10.1	11.7	9.3	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-2); 2018 / New West & Gaeke Method
NO₂	18.2	21.8	23.9	20.1	80 ($\mu\text{g}/\text{m}^3$)	IS-5182 (Part-6); 2017 / JACOB & Hochheiser Method
CO	<1.0	<1.0	<1.0	<1.0	2.0 mg/m ³ (8 hrs)	CO Analyzer Method


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TEST REPORT

REF.NO: LAWN/ZCL/WW/006/2022

ANNEXURE-3
Date: 29-03-2022

WASTE WATER ANALYSIS

Name of the Industry & : M/s. ZUARI CEMENT LIMITED.,
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh - 516 311.

Date of Collection : 19-03-2022
Date of Analysis : 21-03-2022
PROTOCOL : A.P.H.A. 23rd Edition, 2017 & IS 3025

SNo.	Parameters	PROTOCOL	MINES PIT	
			Mines Pit Water	GSR 422E (Inland surface water)
1	Colour (Hazen Units)	IS:3025 (Part-4)	<5	See Note - 1
2	Odour	IS:3025 (Part-5)	Agreeable	See Note - 1
3	pH	IS:3025 (Part-11)	7.32	5.5 – 9.0
4	Oil & Grease, mg/l	IS:3025 (Part-39)	<1.0	10
5	Total Suspended Solids, mg/l	IS:3025 (Part-17)	16	100
6	Total Dissolved Solids at 105 °C, mg/l	IS:3025 (Part-16)	868	2,100
7	Bio Chemical Oxygen Demand for (3 days at 27°C), mg/l	IS:3025 (Part-44)	07	30
8	Chemical Oxygen Demand, mg/l	IS:3025 (Part-58)	20	250
9	Chlorides as Cl, mg/l	IS:3025 (Part-32)	149	1,000
10	Fluorides as F, mg/l	4500 F-D APHA 23 rd Edn 2012	0.46	2.0
11	Dissolved Phosphate as P, mg/l	IS:3025 (Part-31)	0.31	5.0
12	Percent Sodium	IS:2296-1982	18.27	----
13	Sulphide as S, mg/l	IS:3025 (Part-29)	0.05	2.0
14	Boron as B, mg/l	IS:3025 (Part-57)	0.09	2.0
15	Residual Sodium Carbonate, mg/l	IS:11624	Nil	----
16	Sulphates as SO ₄ , mg/l	IS:3025 (Part-24)	184	1,000
17	Iron as Fe, mg/l	IS:3025 (Part-53)	0.19	3.0
18	Total Volatile Suspended Solids, mg/l (TVSS)	IS:3025 (Part-18)	6.15	----


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TEST REPORT

REF.NO: LAWN/ZCL/NOISE/005/2022

ANNEXURE-2

Date: 29-03-2022

NOISE LEVEL DATA

Name of the Industry & : **M/s. ZUARI CEMENT LIMITED.,**
Address : Krishna Nagar P.O, Yerraguntla, Kadapa (Dist),
Andhra Pradesh – 516 311.

S.No	Locations	Date of Monitoring	Equivalent Noise Levels in dB(A)	
			Day Time	Night Time
1	Mines Boundary - East	18-03-2022	63.70	58.20
2	Mines Boundary - West	18-03-2022	64.80	59.60
3	Mines Boundary - North	18-03-2022	62.60	57.10
4	Mines Boundary - South	18-03-2022	65.90	60.40
5	Mines Office	18-03-2022	66.30	61.70

- Note:**
1. Instrument Make: Lutron SL-4001/G-49271, Calibrated On 23-02-2022, Due On 22-02-2023.
 2. Day time is reckoned in between 6.0 am and 10.0 pm – Limit 75 dB (A).
 3. Night time is reckoned in between 10.0 pm and 6.0 am – Limit 70 dB (A).



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Environmental Cost:2021-22

S.No	Particulars	Expenses (Rs in Lakhs)
1	Construction of Parapet Walls/Retaining wall at toe of dumps	4.63
2	Geo-Textiles	3.30
3	Green belt development	14.25
4	Environmental Monitoring	4.17