

## DURGA CEMENT WORKS

### Registered Post with Acknowledgement Due

ACL/DCW/ENV/2018-19/ 395

Date: 12/09/2019

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

**Sub: Submission of Environment statement for Cement Division of Durga Cement Works for the financial year ending 31<sup>st</sup> March 2019.**

**Ref: Consent Order No: APPCB/HO/UH-IV/CFO: VJA/Auto Renewal-4/2016 Dt.20.06.2016, valid for the period up to Dt.30.06.2019.**


Dear Sir,

With reference to your Consent to operate vide order no. APPCB/HO/UH-IV/CFO:VJA/Auto Renewal-4/2016 of Durga Cement Works a unit of Andhra Cements limited, we hereby submit the Environment statement (Form-V) for the financial year 2018 -2019.

This is for your kind information and acknowledgement please.

Thanking You

Yours faithfully,  
For **Durga Cement Works**  
(A unit of Andhra Cements Limited)

  
(N.B Singh)  
Advisor (Technical)

Encl: a/a

CC:

The Environmental Engineer  
Regional Office, Andhra Pradesh Pollution Control Board  
Door No.4-5-4/5C (EAST), Navbharatnagar, Ring Road,  
Guntur-522007, Andhra Pradesh

Additional Principal Chief Conservator of Forests,  
Ministry of Environment, Forest and Climate Change,  
Regional Office (SEZ),  
1st and 11nd Floor, Handloom Export Promotion Council,  
34, Cathedral Garden Road, Nungambakkam,  
Chennai - 34

The Director  
Regional Office, (South Zone) MoEF, Govt. of India  
Regional Office (SEZ),  
1st and 11nd Floor, Handloom Export Promotion Council,  
34, Cathedral Garden Road, Nungambakkam,

Scientist & Incharge

Central Pollution Control Board

1st and 2nd Nisarga Bhavan, 7th D Main Road

Thrimmaiah Rd, Shivanagar, A-Block, Bengaluru, Karnataka 560079

Regd. Office & :  
Factory

### ANDHRA CEMENTS LIMITED

Durga Cement Works, Durgapuram, Srinagar (P.O.),  
Dachepalli - 522 414, Guntur Dt. Andhra Pradesh  
Ph : +91-8649-257428-29, Fax : +91-8649-257449

  
**JAYPEE**  
GROUP

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# Environmental Statement Report

## Form-V

[Financial Year 2018-2019]



### **Durga Cement Works A Unit of Andhra Cements Limited**

Gamalapadu (V), Dachepalli (M)  
Guntur District, Andhra Pradesh  
Pin Code - 522414

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## FORM-V

See Rule-14

Environment Statement Report for the financial year ending the March 31, 2019

### PART- A

i.	Name and address of the owner /Occupier of Industry operation or process	Shri Naveen Kumar Singh Director Durga Cement Works (A Unit of Andhra Cements Limited) Durgapuram, Gamalapadu (V), Dachepalli (M) Dist- Guntur, AP Pin-522414
ii.	Industry Category Primary (SIC CODE) Secondary (SIC CODE)	RED, Large Primary (3241)
iii.	Production Capacity (Units)	Clinker : 2.00 MTPA Cement : 2.31 MTPA
iv.	Year of Establishment	1983
v.	Date of last Environmental Statement submitted	Letter No. ACL/DCW/ENV/2018/1578 Dt.14/08/2018



## PART- B

### Water and Raw material consumption

#### A. Water

(i) Water consumption m<sup>3</sup>/day

Process m <sup>3</sup> /day	:	244.50 (Average during 2018-19)
Domestic m <sup>3</sup> /day	:	167.81 (Average during 2018-19)

(ii) Consumption per unit of production

Name of product	Process water consumption per unit of product-output (KL/MT)	
	During the previous financial year (2017-2018)	During the current financial year (2018-2019)
1. Clinker	0.0616	0.0643
2. Cement	0.0060	0.0059

#### B. Raw material consumption

Name of the raw material	Name of product	Consumption of raw material per unit product output (MT of Cement)	
		During the previous financial year (2017-2018)	During the current financial year (2018-2019)
Limestone	Clinker	1.367	1.408
Laterite	Clinker	0.070	0.092
Clinker	Cement	0.869	0.832
Gypsum	Cement	0.031	0.035
Fly Ash	PPC Cement	0.100	0.133

Name		Quantity		Unit
Product	Ordinary Portland cement (OPC)	Production	492185.64	MT/Year
	Portland Pozzolana cement (PPC)	Production	349162.36	MT/Year
	Clinker	consumption	699585.00	MT/Year
Raw material	Limestone	consumption	972787.20	MT/Year
	Laterite	consumption	63831.80	MT/Year
	Gypsum	Consumption	29760.00	MT/Year
	Fly Ash	Consumption	112003.00	MT/Year



**PART -C**

**Pollutant discharge to Environment/unit of output  
(Parameter as specified in the consent issued)**

S.N	Pollutants	Quantity of pollutants discharged (Mass/day) (tone/day)	Concentrations of pollutants in discharged (mass/volume) (kg/m <sup>3</sup> )	Percentage of variation from prescribed standard with reason
A	Water	No waste water is generated from process. Water is used for cooling purpose and it is recycled. Domestic waste water treated in STP and used for gardening & dust suppression.		
B	Air			
(a) Ambient Air monitoring				
	PM <sub>10</sub>	8.328x10 <sup>-8</sup>	5.228x10 <sup>-8</sup>	12.87 % less
	PM <sub>2.5</sub>	6.901x10 <sup>-10</sup>	3.013x10 <sup>-8</sup>	24.69 % less
	SO <sub>2</sub>	1.294x10 <sup>-9</sup>	9.639x10 <sup>-9</sup>	80.72 % less
	NO <sub>2</sub>	1.800x10 <sup>-8</sup>	1.322x10 <sup>-8</sup>	66.95 % less
(B) Stack emission				
	Kiln & Raw Mill	0.289	2.597x10-5	37.99 % less
	Cooler ESP	0.173	4.132x10-5	17.71 % less
	Coal Mill	0.035	2.395x10-5	33.06 % less
	Cement Mill -1	0.014	2.644x10-5	28.31% less
	Cement Mill -2	0.017	2.686x10-5	27.20 % less

**PART-D**

**HAZARDOUS WASTES**

(As specified under Hazardous wastes/management & handling rule, 1989)

Hazardous waste	Total Quantity (Kg)	
	During the previous financial year <b>2017-2018</b>	During the current financial year <b>2018-2019</b>
(a) From process	Used oil	Used oil
	100 Liters	100 Liters
(b) From pollution control facility	Nil	Nil

**PART-E**

**SOLID WASTE**

S. N	Solid Waste	Total Quantity (Kg.)	
		During the previous financial year <b>(2017-2018)</b>	During the current financial year <b>(2018-2019)</b>
a	From Process	No solid waste is generated from the Cement manufacturing process	No solid waste is generated from the Cement manufacturing process
b	From Pollution control facility	All the collected material is recycled in process	All the collected material recycled in process
c	(i) Quantity recycled or reused	All the collected swept solid waste is reused in process.	All the collected swept solid waste is reused in process.
	(ii) solid	Nil	Nil
	(iii) Disposed	Nil	Nil

### PART -F

Please specify the characterizations (in terms of composition quantity and Quantum) of hazardous as well as solid waste and indicates disposal practice adopted for both these categories of wastes.

Hazardous waste, Used oil :	100 Liters
Solid waste :	Nil

### PART -G

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

Following measures have been adopted for abatement of pollution conservation of natural resources:-

- 1. Limestone Conservation:** Limestone is being used for manufacturing of Cement by proper blending of low grade Limestone and high grade limestone for preparation of proper raw mix to produce a good quality of Clinker & Cement. The Raw Mix design is being prepared in such a way that it reduces the lime saturation factor by which substantial quantity of Limestone has been conserved.
- 2. Conservation of Mineral Gypsum:** Utilization of Chemical Gypsum.  
We have used fertilizer industry by product which is waste in nature and its chemical properties are as good as Gypsum. The chemical Gypsum is used for cement manufacturing process; almost 21165.0 MT of Chemical Gypsum has been consumed in cement manufacturing process during the financial year of **2018-2019**.
- 3. Water Conservation :** Company is adopting best possible approaches to conserve water, which can be witnessed as:

#### **Dry Cement manufacturing process:**

- i. The process water is used for machinery cooling and it is recycled to maintain Zero Waste Water Discharge.



- ii. Rain water harvesting is being carried out and all the Plant and Colony drainage connected to Mine's pit which is used as water reservoir to meet water demand of the plant.
- iii. Collected rain water also recharges the ground water table of the surroundings areas. (Encl. Annexure -I)
- iv. Sewage Treatment Plant of capacity 300 KLD has been constructed for the treatment of effluent water of the colony - all the treated water is being used in dust suppression, tree plantation etc. (Encl. Annexure -I)

#### **4. Air Pollution Control Measures:**

Following measures have being taken to control of air pollution:

- a) RABH, Bag House, & ESP, Bag Filters Installed in the plant for the control of Air Pollution. (Encl. Annexure -II)

#### **Schedule Maintenance and Monitoring of Air Pollution Control Devices:**

All the Air Pollution Control Devices have been maintained in good health by following scheduled maintenance by dedicated technical team and monitoring of all these are done regularly as per APPCB Norms. (Encl. Annexure -III)

- b) All the Raw materials are being stored in cover sheds & Silo. Belt conveyors are fully covered. (Encl. Annexure-IV)
- c) Roads are concreted in factory and colony premises. (Encl. Annexure-V)
- d) Regular water sprinkling is being carried out on roads and water spray systems have been installed at Crushers & transfer points for the control of dust emission. (Encl. Annexure-V)
- e) Regular Stack Emission & Ambient Air Quality Monitoring is being carried out to cross check the emission levels. The results show that the emissions like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and NO<sub>2</sub> are well within limits. (Encl. Annexure-VI)
- f) 3. Nos. of Online Real Time CAAQM system installed in the plant premises for monitoring of the surrounding Ambient Air Quality Level. CAAQM data are being continually displayed at the main gate of the factory and the same data also transmitted to APPCB & CPCB website. (Encl. Annexure-VII)
- g) 5 No's of Continuous Online Stack Emission Monitoring System (CEMS) installed at all the major stacks for the checking the emission level. (Encl. Annexure-VIII)

### 5. Green belt development:

Total Land area	Total Plantation in year 2018-2019	Species planted in year 2018- 2019	Total Plantation area	Green belt status in DCW
141.574 (Hectares)	500 (Nos )	Azadirachta indica (Neem), Terminalia catappa (Indian Almond), Pongamia pinnapa (Kanuga), Rain tree	49.01 (Hectares)	Encl. Annexure-IX

Plantation is being developed in following manner:

S. No.	Form of Plantation	Description
1.	Shelter Belt Plantation	All around the plant boundary 3 rows of saplings is being planted to form a greenbelt. Preference is being given to fast growing species including locally dominant species such as Neem, Pongamia, Alstonia etc
2.	Avenue Plantation	Parks of Township, Administration Building, Temple area, Internal Roads of Factory Premises & Colony.
3.	Block Plantation	Vacant Land inside the premises has been developed.

**Greenbelt development will serve following purposes:**

- Increase in fresh Oxygen supply
- Acting as carbon sink thereby combating global warming through reduction in CO<sub>2</sub> emissions.
- Improving microclimate, contributing to cooling effect and improve green cover in the surrounding areas improving QOL (Quality of Life) with increase in lung space and promoting healthy lifestyle.
- Noise Pollution Control
- Aesthetics
- Optimum use of Waste Land

### 6. Solid Waste Management

Following strategy is being implemented to handle solid waste of all kinds.

**Practicing principle of 2Rs i.e. Reduces & Reuse**

- All the waste will be segregated on the basis on degradability/recyclability, than accordingly they will be disposed.
- Bio degradable waste from township & plant Area will be composted and the Manure will be used for horticulture purpose.
- All the hazarded waste will be disposed through the authorized recyclers.

### **7. Use of Alternative Fuel**

Provision is being made for use of PET Coke in the Cement Production, which is otherwise waste end product for refineries.

### **8. Good House Keeping**

Following measures have been taken for good housekeeping at plant.

- a) Regular roads sweeping is being carried out.
- b) All the roads of plant and colony have been concreted as well as flowers and Plantation has been done side by the roads for the beautification.
- c) Plantation and development of greenery.
- d) Development of Parks.

### **9. Socio-Economic Benefit**

- a) Indirect employment to entrepreneurs
- b) Direct employment to local residents
- c) Growth of local market and development of nearby villages in terms of CSR

M/s Durga Cement Works (Cement plant) is being operated on Dry Process Technology, which is advantage of cost effective and Environmentally Clean and also fuel economy and less Water consumption.

The Particulate Matter emission from stacks is being controlled by installed adequate equipment like RABH (Reverse Air Bag House), Electrostatic Precipitator & Bag House. In addition, Pulse Jet Bag Filters have been installed at various Material Transfer Points to arrest the Fugitive Emission and sustain the clean Environment. The dust (Particulate Matter) collected in the Air Pollution Control Equipment is being recycled in process and neutralizing the cost of operation of pollution control equipments and hence no cost impact on the production cost.



## PART – H

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

Environmental protection Measures /Investments during the period 2013 - 2019		Amount Rs. (Crores)
(A)	Capital Cost investment in Pollution control Measure during 2013-14	50.9
(B)	Capital Cost investment in Pollution control Measure during 2014-15	1.2072
(C)	Capital Cost investment in Pollution control Measure during 2015 -16	0.0225
(D)	Capital Cost investment in Pollution control Measure during 2016 -17	0.0284
(E)	Capital Cost investment in Pollution control Measure during 2017 -18	1.2078

S. No.	Environmental protection Activities	Recurring Cost 2018-19 (Rs. Lakhs)	Capital Cost 2018-2019 (Rs. Lakhs)
1	<b>Air Pollution Control</b>		
	APCD (Bag house/ Bag filters) maintenance	5.00	24.43
	Cost of Electricity Consumption on Air Pollution Control Devices	519.57	-
	Road Maintenance/Housekeeping for fugitive emission control	17.28	-
	Water Sprinkling arrangements for control of fugitive emission (Water Tankers & water sprinklers)	0.26	-
2	<b>Water Pollution Control</b>		
	Electricity consumption for STP operation	5.05	-
	STP Operation & Maintenance by Third Party	8.16	-
	Water Meter, Strainer & 2.5 hp submersible pump for STP	0.34	-
	Power Consumption on operation of Electromagnetic (Domestic, Industrial) water flow meters	0.029	-
3	<b>Pollution Monitoring</b>		
	Power Consumption for operation of online Pollution Monitoring CAAQMS & CEMS Stations	4.62	-
	CAAQMS (03 Nos.) & CEMS (05 Nos.) spares, maintenance ,IT & Internet & other service	5.01	12.89
	Annual Maintenance /Testing/Calibration of Manual AAQ monitoring equipment	0.66	-
	Ambient Air & Stack emission Manual Monitoring and Testing from outside laboratory	1.19	-
4	<b>Green belt development</b>		
	Horticulture (Gardening/Plantation/ Manpower /Vehicle Fuel/ Maintenance of gardening equipments)	0.57	-
	<b>Total Expenditure =</b>	<b>567.74</b>	<b>37.32</b>

**Various CSR Activities are being carried out in the surrounding villages**

S. No.	Description	Amount (Rs. in Lakhs)
1	Drinking Water Supply scheme for four village (Srinagar, Ramapuram, Gamalpadu, Batrupalem)	1.2
2	Drinking water supply scheme for village Srinagar & Dandivagu lift Irrigation Co. Society (Rs 60,000/-each) on 01/12/18	1.2
3	75 bags Cement supplied to Dachepalli village.	0.15
4	Providing Medical check ups to students at Durga Public school with free medical help and energy food to lower class (weekly twice)	0.8
5	Providing free R.O. water (including supply of regular water in times of power/water supply failure), emergency medical services and ambulance and fire services in surrounding villages like Madinapadu, Srinagar, Ramapuram, Gamalapadu, Batrupalum.	0.5
6	Cost of Temple renovation & maintainance work outside Andhra Cements Ltd , for uplift, security of temple area , temple coming under Gamalapadu panchayat area , Dachepalli Mandal, Distt. A.P -522414.	6.5
7	Maintenance work ( civil & steel work), providing cover to stage with steel tins to School Stage at Durga Public School for Children Function and other school activity.	0.5
8	Maintenance of Class room benches meant for students of Durga Public school..	0.55
9	Supply of 264Tons of filling material for Road making at Srinagar , in July 2018 , Gamalapadu Panchayat, Guntur Distt.	0.37
10	Contribution to Temple/Church for Maintenance/Puja at Village Ramapuram (2000/-PM Srinagar(3000/-PM/ Gamalapadu 3000/-PM	0.48
11	Fire tender service provided during urgent requirement in Dachepalli/ Village Srinagar.	0.15
12	Extension of Five Class rooms , Construction & completion work at DPS School Dachepalli Mandal, Distt Guntur	6.5
13	Maintenance work, providing at DPS for children function and other school activities	0.5
14	Maintenance of class room benches for students of DPS.	0.55
15	Boarding & lodging arrangement for Kabaddi Team organized by National Kabaddi Sports Authority Dachepalli for 30 Nos. for 5days at Township Durgapuram Andhra Cements	0.75
16	200 bags donated for Sri Krishna Temple at Machavarum village, Distt Guntur on 7/11/18	0.6
17	200 bags donated for Church at Village: Julakallu, Distt Guntur	0.6
18	400 bags donated for Maddeliah Temple Dacheppali Mandal, Distt Guntur.	1.2
<b>Total Expenditure =</b>		<b>23.1</b>

## **PART -I**

### **Any other particulars for improving the Quality of Environment**

1. With compliance to the conditions of Environment Clearance obtained from MoEF Govt. of India the following monitoring is also being done on regular interval:
  - a) Checking of ground Water level every season in surrounding villages.
  - b) Checking of water quality in surrounding areas on quarterly basis.
  - c) Meteorological data collection on daily basis.
2. Top Soils conservation during excavation and utilized the soil for nursery development and Tree plantation.
3. Installation of new Bulk Loading System for Cement.
4. Regular maintenance of vehicles for control of vehicular pollution.
5. Constructed Pneumatic Fly Ash handling system and Fly Ash Silo.
6. Installation of new Coal handling stacker reclaimer & Limestone stacker reclaimer.
7. Acoustic enclosures are provided at noise generating area to control of noise pollution
8. Safety Awareness: See Annexure -11 All employees are provided with personal protective Equipments(PPEs), as per the requirement, such as workers working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear muff ,safety boots ,hand gloves welding goggles, Goggles and safety Helmet are also being provided as per the requirement.



Environment Management cell has been set up under the control of Advisor (Tech.) to carry out various Environment related activities.

**JAIPRAKASH ASSOCIATES LIMITED**

Durga Cement Works, Andhra Cements Ltd  
Office Order: Environment Management Cell


03/March/2019

DCW/00/Environ/2

1. With immediate effect revised Environment Management Cell is set up at Durga Cement Works, for implementation and monitoring adherence to statutory norms relating to environmental protection, in DCW, and promoting environmental awareness, etc. around the plant.
2. The Environment Management Cell(EMC) Will comprise of -
  - a) EMC Leader (Shri) i. N. B. Singh Advisor (Tech.)
  - b) EMC Members (Shri) i. K. Veena Baba V.P. Mech.,  
ii. K. Krishnath GM (Genl.)  
iii. A. K. Gema G.M (Prod. & Q.C.)  
iv. Y. Ravi AGM (Elect.)  
v. P. Suresh AGM (Inst.)  
vi. Amit Kumar Dixit Officer (Env.)

The Environment Management Cell (EMC) Will be responsible for -

- 1) Ensuring serviceability of all environmental monitoring equipment
- 2) Initiating and implementing eco friendly procedures and plans.
- 3) Promoting Environmental awareness in the employees of DCW, by organizing quarterly environmental awareness lectures, presentations & competitions.
- 4) Promoting environmental awareness in the children and villagers around the plant by organizing environmental awareness lectures, presentations and competitions for them in nearby schools.
- 5) Proper Record of these events to be maintained by Environment officer.

  
N. B. Singh  
Advisor (Tech.)



300 KLD Sewage Treatment Plant Installed near DCW Colony



Plant & Colony: Domestic Water Meter



Glimpse of STP area

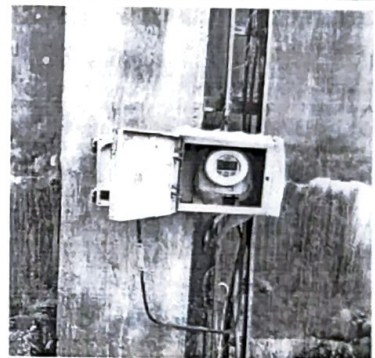


(1)



(2)

Sewage Treatment plant Inlet (1) & Outlet (2) water Meter



Plant :Industrial Water Meter

Durga Cement Works has adopting best possible approaches to conserve water

✓

# Drinking Water Test Report

## Test Report

Nature of samples: Water  
 Sample received date: 06/03/2019  
 Sample analysis date: 06/03/2019  
 Sample analyzed at: In house Laboratory (Captive Power Plant)

Location		Srinagar Village	Ganapadu Village	Colony	Club	Krishna River	Plant	IS 10500 Drinking Water Standards Limit
Type of Water		Bore						Drinking Water
S. No	Parameter	Unit	Results					
1	pH		7.1	7.2	7.5	8	8.2	6.5 to 8.5
2	Conductivity	µS	438	1230	1349	1519	686	NA
3	Turbidity	NTU	1.21	1.2	1.3	1.3	1.3	NA
4	Total Hardness	mg/l	320	216	204	229	216	5-10
5	Calcium Hardness	mg/l	180	145	121	160	136	300
6	Magnesium Hardness	mg/l	80	72	63	79	79	75
7	TDS	mg/l	583	900	879	988	446	30
8	TSS	mg/l	-	-	-	-	-	2000
9	Alkalinity	mg/l	146	150	140	180	101	100
10	Chlorides	mg/l	40	46	37	50	47	200
11	Fluorides	mg/l	0.33	0.24	0.31	0.3	0.4	1.5
12	Arsenic	mg/l	0.003	0.003	0.003	0.004	0.02	0.05

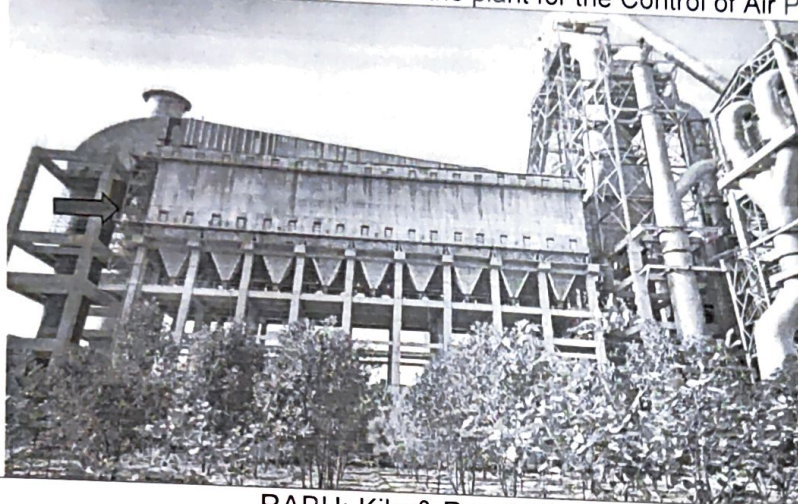
Analyzed Signature  
 (C Prasad)  
 Jr Chemist

# STP Outlet Test Report

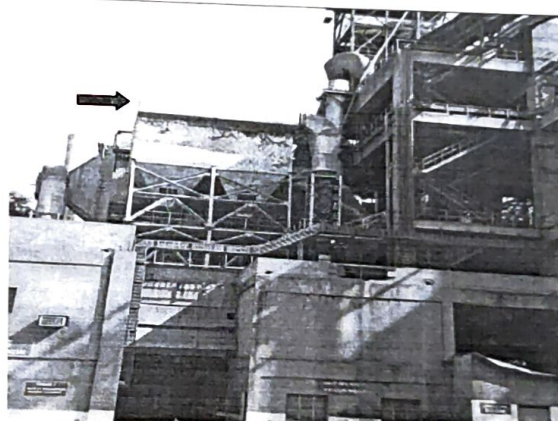
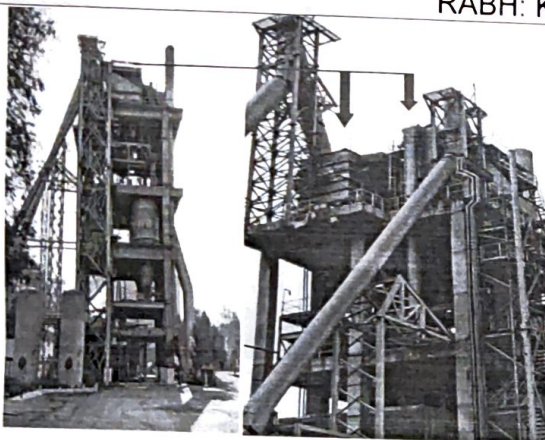
STARTECH LABS PVT. LTD.  
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RABH, Bag House, & ESP installed in the plant for the Control of Air Pollution.

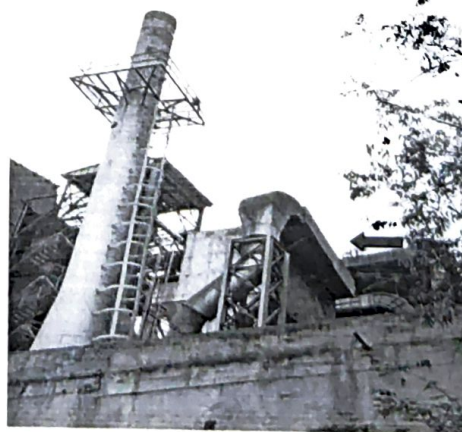


RABH: Kiln & Raw Mill



Bag House: Coal Mill 1 & 2

Bag House : Cement Mill – II



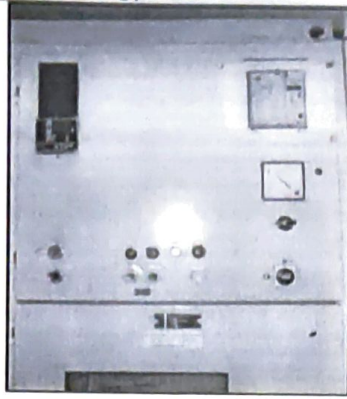
Electrostatic Precipitator : Cooler

Bag House : Cement Mill – I

## Energy Meters for Fan



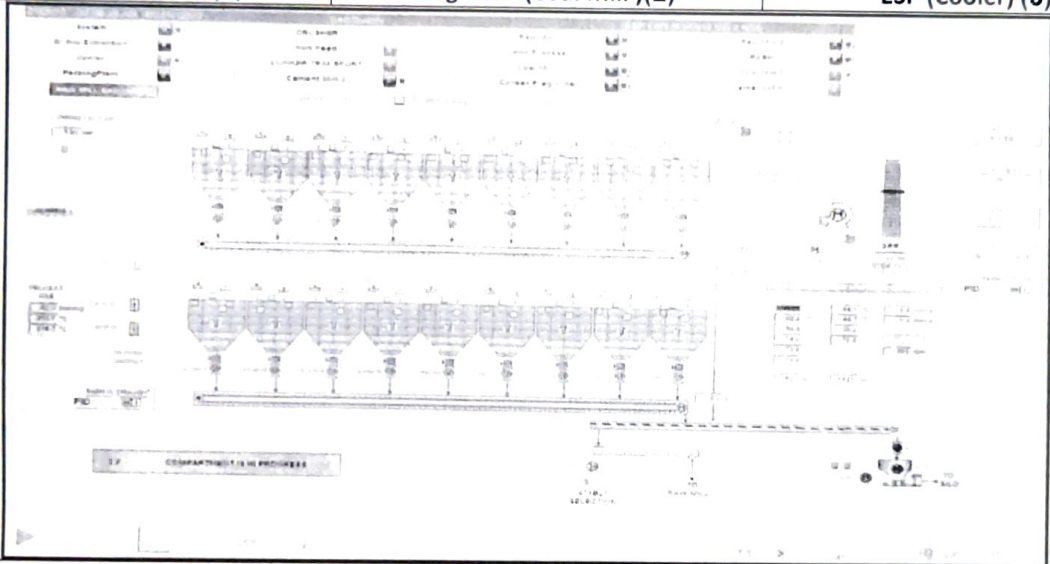
RABH (Kiln Raw Mill )(1)



Bag filter (Coal Mill )(2)



ESP (Cooler) (3)



Reverse Air Bag House (RABH)



Interlocking System installed with Air pollution Control Equipments



# List of Bag Filters - Year 2018

Annex

S.No	Department	Eqpt No.	Installed Status	Description	Model	Volume (m3/h)	No. of bags	No. of solenoid valves	Kw/rpm	Supplier	
1	LS Crusher	211BF1	Yes	211BC-1 discharge venting	AJ-120-360	17500	120	12	37/1470	Thermax	
2	LS Crusher	211BF2	Yes	211BC-2 discharge venting (Secondary crusher Building top)	AJ-120-360	17500	120	12	22/1470	Thermax	12 mtr M
3	LS Crusher	211BF3	Yes	211BC-3 discharge venting	CE-02-030 FM X 3.6	4000	30	-		Clair	
4	Stacker & Recliner	331BF1	Yes	331BC-1 discharge venting	CE-02-030 FM X 3.6	4000	30	-		Clair	
5	Stacker & Recliner	331BF2	Yes	331BC-2 discharge venting	CE-02-030 FM X 3.6	4000	30	-		Clair	
6	Pregrinder, RM-1	361BF1	Yes	RM Hopper venting	AJ-144-360	22000	144	-		Thermax	
7	Pregrinder, RM-1	361BF2	Yes	361BC1 discharge venting	CE-02-120x3.6	17500	120	-		Clair	
8	Pregrinder, RM-1	361BF3	Yes	RM-1 (VRPM) venting	AJ-360-360	39600	360	30	45/1470	Thermax	11.5 mtr M
9	Pregrinder, RM-1	361BF4	Yes	RM-1 venting (Ball mill vent bag filter)	CE-02-330x3.6	50000	330	22	55/985	Clair	11.5 mtr M
10	Pregrinder, RM-1	361BF5	Yes	Pregrinder department (361BC1, 361BE3, 361BC4) venting	AJ-120-360	17500	120	12	37/1470	Thermax	11.5 mtr M
11	Pregrinder, RM-1	391BF1	Yes	Raw Meal Silo & Feed Elevator Venting	CE-02-064x3.6	10000	64	8	15/1450	Clair	66.6 mtr M
12	Pregrinder, RM-1	391BF2	Yes	Raw Meal Silo-1 top			120	12			Flush Mounted
13	Silo extraction & kiln feed	393BF1	Yes	Raw meal Silo discharge enmass	CE-02-036x3.6	3000	36	6	5.5/2905	IKN	10.5 mtr M
14	Silo extraction & kiln feed	393BF2	Yes	Raw meal Silo discharge enmass	CE-02-036x3.6	3000	36	6	5.5/2905	IKN	10.5 mtr M
15	Silo extraction & kiln feed	393BF3	Yes	Kiln feed Bin venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	30 mtr M
16	Silo extraction & kiln feed	393BF4	Yes	Kiln feed Bin venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	30 mtr M
17	Silo extraction & kiln feed	393BF5	Yes	PH bucket elevator air slide venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	10 mtr M
18	Silo extraction & kiln feed	393BF6	Yes	PH bucket elevator air slide venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	10 mtr M
19	Silo extraction & kiln feed	393BF7	Yes	PH Top Bucket elevator venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	51.5 mtr M
20	Silo extraction & kiln feed	393BF8	Yes	Raw meal Recirculation venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	5 mtr M
21	Coal Unloading & Transportation	411BF1	Yes	Screening section venting (Limestone)	AJ-144-360	22000	144	-		Thermax	
22	Coal Unloading & Transportation	411BF2	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
23	Coal Unloading & Transportation	411BF3	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
24	Coal Mill-1	421BF1	Yes	Coal Mill-1 Vent bag house	TP-336-360	34650	336	24	75/1450	Thermax	32.2 mtr M
25	Coal Mill-1	431BF1	Yes	Coal mill department venting bag filter	CE-02-040x3.6	6000	40	5	5.5	Clair	32.2 mtr M
26	Coal Mill-2	422BF1	Yes	Coal Mill-2 VRM Vent bag house	CE-02-3x300x3.6	90000	900	60	360/780	Clair	32.2 mtr M
27	Coal Crusher		Yes	Coal Crusher vent bag filter		6600	132	12	9.3/1455	Clair	
28	Clinker storage & transportation	491BF1	Yes	491DP1 discharge transfer point (cooler DPC)	CE-02-030 FM X 3.6	4000	30	5	5.5/1450	Clair	18.9 mtr M
29	Clinker storage & transportation	491BF2	Yes	Clinker Silo	AJ-168-360	25000	168	16	30/1450	Thermax	42.5 mtr M
30	Clinker storage & transportation	511BF1	Yes	Clinker silo discharge DPC transfer point (511DPC3)	CE-02-030 FM X 3.6	4000	14	3	3.7/2850	Clair	
31	Clinker storage & transportation	511BF2	Yes	Clinker silo discharge belt conveyor transfer point (511BC4)	CE-02-030 FM X 3.6	4000	30	5	30/1475	Clair	
32	Clinker storage & transportation	511BF3	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
33	Clinker storage & transportation	511BF4	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
34	Clinker storage & transportation	511BF5	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
35	Clinker storage & transportation	511BF6	Yes	Cement Mill Hoppers Venting	CE-02-040X3.6	6000	40	-		Clair	
36	Clinker Pregrinder	561BF1	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	



37	Clinker Pregrinder	5010F2	Yes	Clinker Pregrinder Venting VAPM	TP-080-300	10400	100	42		Thames	
38	Clinker Pregrinder	5010F1	Yes	Clinker Pregrinder Separator Venting VAPM	TP-100-300	12400	100	57		Thames	
39	Cement Mill 1	5020F1	Yes	Cement mill 1 Mill Venting	TP-400-300	40000	400	30	15/000	Thames	
40	Cement Mill 1	5020F2	Yes	Cement mill 1 Separator Venting	TP-400-300	40000	400	30		Thames	
41	Cement Mill 2	5020F1	Yes	Cement mill 2 Mill Venting	TP-400-300	40000	400	30	15/000	Thames	10 m/s
42	Cement Mill 2	5020F2	Yes	Cement mill 2 separator venting	TP-400-300	40000	400	30		Thames	10 m/s
43	Cement Mill	5010F1	Yes	Cement Mill 100 feed bucket elevator hood venting			50	5			10 m/s
44	Cement Mill	5020F1	Yes	Cement mill mill 1 top (Rush mounted)			140	5	5.5" x 400	Clear	10 m/s
45	Cement Mill	5020F2	Yes	Cement mill mill 2 top (Rush mounted)			140	5	5.5" x 400	Clear	10 m/s
46	Packind Plant	612 BF1	Yes	Packer 1 venting			100	15	30" x 75"		10 m/s
47	Packind Plant	612 BF2	Yes	Packer 2 venting			100	15		Thames	10 m/s
48	Packind Plant	612 BF2A	Yes	Packer 2 Bucket elevator venting			100	15		Thames	10 m/s
49	Packind Plant	612BF3	Yes	Packer 3 venting	200 TA 1200	200	10	50" x 400			10 m/s
50	Packind Plant	612BF4	Yes	Packer 3 venting	121 TA 1200	121	11	30" x 475"			10 m/s
51	Bulk Loading			Clinker							
52	Bulk Loading			Cement Mill 2 on line							
53	Bulk Loading			Cement							
54	Fly Ash Feeding			Bottom							
55	Fly Ash Feeding			Silo Top							
56	Fly Ash Feeding			Bin							
57	Fly Ash Feeding			Trough							
58	Coal BRC										
59	New Coal Crusher										
60	Limestone Crusher		Yes	vibrating screen	AJ 120-300	17500	10	30" x 475"	Thames		

*Signature*

*Signature*



Raw Meal Silo



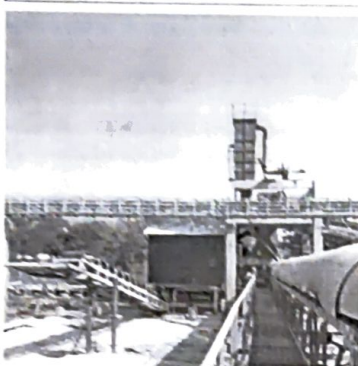
Clinker Silo



Fly Ash Silo



Laterite Hopper



Limestone feeding Belt to Mill Hoppers



Coal Crushers

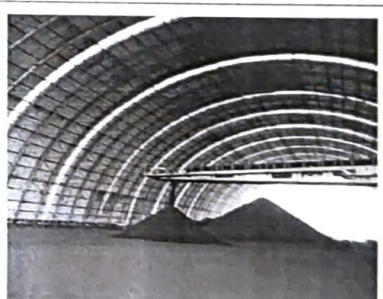
Material Storage Silos and transfer points alongwith installed nuisance bag filters



Gypsum Storage Shed



Laterite storage Shed



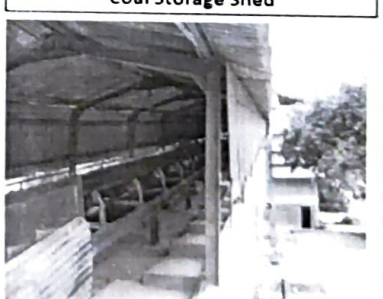
Coal Storage Shed



Laterite belt



Limestone Reclaimer belt



Raw Meal Silo Transfer Belt

Covered raw material storage sheds & transfer points





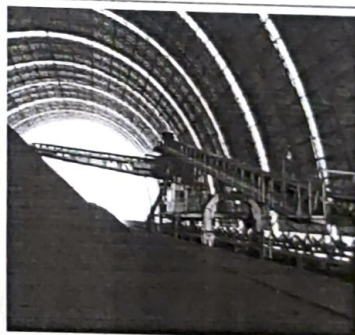
Water Sprinkling arrangements at Factory main gate



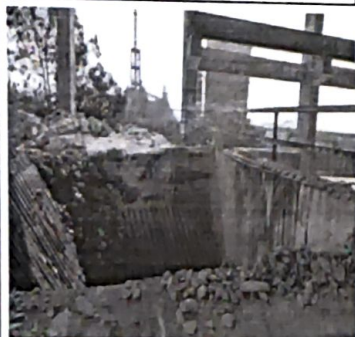
Coal Stacker belt



Coal Hopper



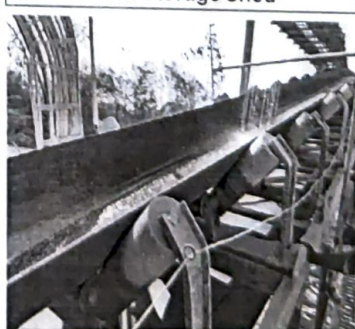
Coal Storage shed



Limestone Hopper



Limestone Stacker boom belt



Limestone Transfer Belt

Water spray systems have been Installed at crushers & transfer points for the control of dust emission





Coal Mill area



Cement Mill area



Dispatch Office Area



Fly ash silo area



Main gate truck stand area

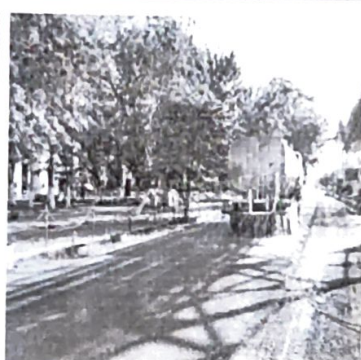


Clinker Silo area

Water Sprinkling Arrangements in Plant premises



Factory Main gate area



Road adjacent to Raw Meal Silo



Road near raw material storage shed



Time Office & Dispatch gate area



Weigh bridge to Packing plant road



Limestone Mines area

Water tankers deployed for water sprinkling in Plant premises for pollution control

**Andhra Cements Limited  
Durga Cement Works**

**Water Sprinklers Location**

Annexure -V			
S. No.	Area	Location	No. of Points
1	Limestone Crusher	Limestone Dump Hopper	2
		Crusher lime stone carry Belt conveyor (211-BC2)	2
		Limestone - Stacker Belt 211-BC4	2
		Limestone - Boom belt	1
2	Clinker Silo Area	Near BC 5 Belt	1
3	Raw Mill Area	Laterite feeding belt conveyor	1
		Weigh feeders	2
		RABH side garden	8
4	Kiln	Drag Chain No.1	1
		Drag Chain No.2	2
5	Coal Ckt	Coal bulk receiving Unit - CBRU	1
		Coal feeding belt - BC	1
		Coal Stacker Belt	3
		Coal Reclaimer belt	1
		Coal yard	2
		Coal Mill	1
6	Clinker feeding	Clinker feeding - (DBC-1)	1
		Clinker feeding - (DBC-2)	1
		Clinker feeding belt conveyor BC4	1
7	Cement Mill	Shift Office	2
8	Factory Gate -2	Dispatch Office	1
9	Factory Gate -1	Temple	2
		Road Side	3
Total			42



# Annexure-VI

**Durga Cement Works**  
(Cement Plant)  
A Unit of Andhra Cements Limited  
Gamalapadu(V), Dachepalli(M), Dist- Guntur (AP)

## Ambient Air Quality Monitoring Report

Location -1 Near Mine Pit-1 (Cross Wind)	Parameter	PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )		Period: April, 2018 to March, 2019	
	Maximum	37.34		65.55		SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )
	Minimum	23.36		43.44		16.16	29.60
	Average	29.32		53.10		4.12	2.19
Location -2 Near Naguleru River Pump House (Cross Wind)	Parameter	PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )	
	Maximum	41.73		66.88		22.39	NO <sub>2</sub> (µg/m <sup>3</sup> )
	Minimum	23.63		39.54		1.14	26.55
	Average	30.57		53.12		10.57	8.78
Location -3 Near CPP (Towards Gamalapadu Village) (Up Wind)	Parameter	PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )	
	Maximum	40.80		69.54		15.27	NO <sub>2</sub> (µg/m <sup>3</sup> )
	Minimum	25.03		40.83		1.26	4.50
	Average	33.13		53.47		8.12	11.80
Location -4 Colony Area (Towards Sri Nagar Village ) (Down Wind)	Parameter	PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )		SO <sub>2</sub> (µg/m <sup>3</sup> )	
	Maximum	35.85		61.91		32.86	NO <sub>2</sub> (µg/m <sup>3</sup> )
	Minimum	23.23		37.86		0.58	19.74
	Average	27.49		49.43		9.76	8.28
							13.13

## Stack Emission Monitoring Report

April, 2018 to March, 2019

Stack	(1) RABH	(2) Cooler ESP	(3) Coal Mill	(4) Cement Mill- I	(5) Cement Mill- II
Parameter			Particulate Matter (mg/Nm <sup>3</sup> )		
Maximum	26.90	28.90	25.39	26.53	27.05
Minimum	14.63	17.60	14.17	15.58	15.24
Average	20.29	25.25	20.54	21.51	21.84



**DURGA CEMENT WORKS**  
A Unit of Andhra Cements Limited  
Gamalapadu(V), Dachepalli(M), Dist- Guntur (AP)

**Ambient Noise Level Monitoring Report**

(Cement Plant)

April, 2018 to March, 2019

Location	1. Colony area		2. Near Time Office		3. Crusher area		4. Raw Mill area	
Time	Day	Night	Day	Night	Day	Night	Day	Night
Concentration	dB(A)Leq							
Maximum	55.8	47.3	58.4	47.4	69.9	61.6	68.5	63.9
Minimum	39.3	37.9	39.9	37.2	54.8	40.5	50.2	47.3
Average	44.2	41.6	44.9	41.7	63.2	52.6	60.3	55.2

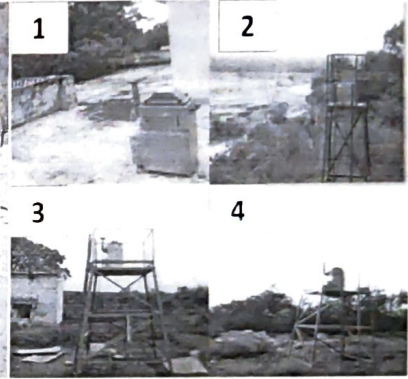
Location	5. Kiln & Cooler area		6. Coal Mill area		7. Cement Mill area		8. Packing Plant	
Time	Day	Night	Day	Night	Day	Night	Day	Night
Concentration	dB(A)Leq							
Maximum	68.6	64.5	66.2	64.2	67.7	64.9	67.1	61.0
Minimum	52.3	46.2	49.5	43.6	55.1	50.9	53.7	48.5
Average	60.2	55.6	57.0	51.8	62.3	57.3	60.0	55.6



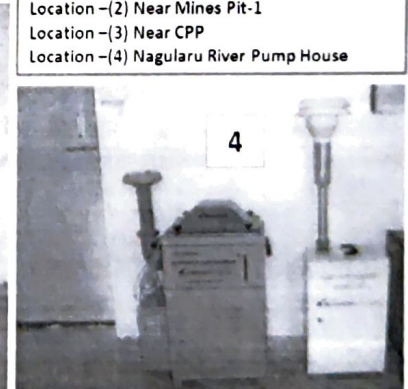
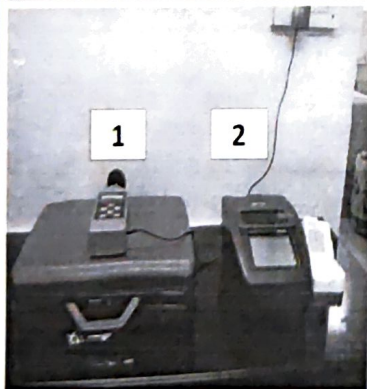
Stack Emission Monitoring during CPCB Audit



Ambient Noise Level Monitoring



AAQ Manual Monitoring Stations  
Location -(1) Colony area  
Location -(2) Near Mines Pit-1  
Location -(3) Near CPP  
Location -(4) Nagularu River Pump House



(1) Sound Level Meter (2) Spectrophotometer (3) Stack Monitoring Kit (4) Respirable Dust Sampler (PM10 & PM2.5)

**Environmental Monitoring by our internal team**

A



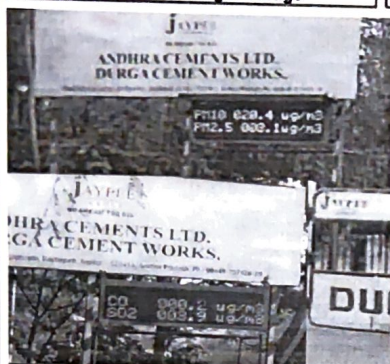
### Annexure-VII



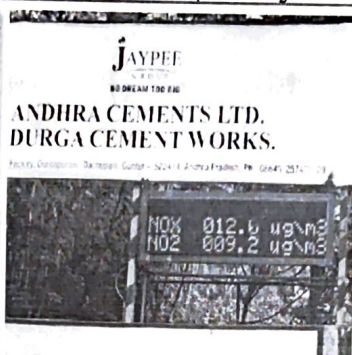
CAAQM Station -1 (UP Wind)  
Towards Srinagar village



CAAQM Station -2 (Down Wind)  
Towards Gamalapadu village

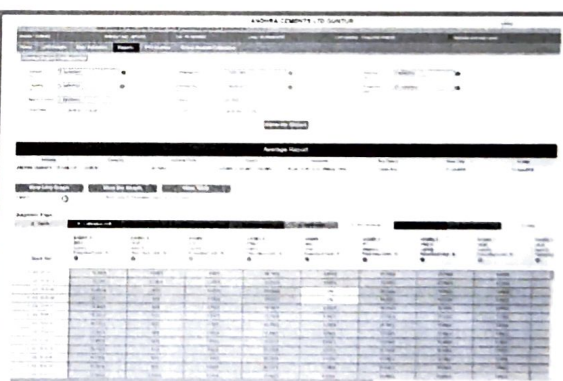
CAAQM Station -3 (Cross Wind)  
Limestone Mines area

On-line CAAQM parameters data is being displayed at the main gate of factory



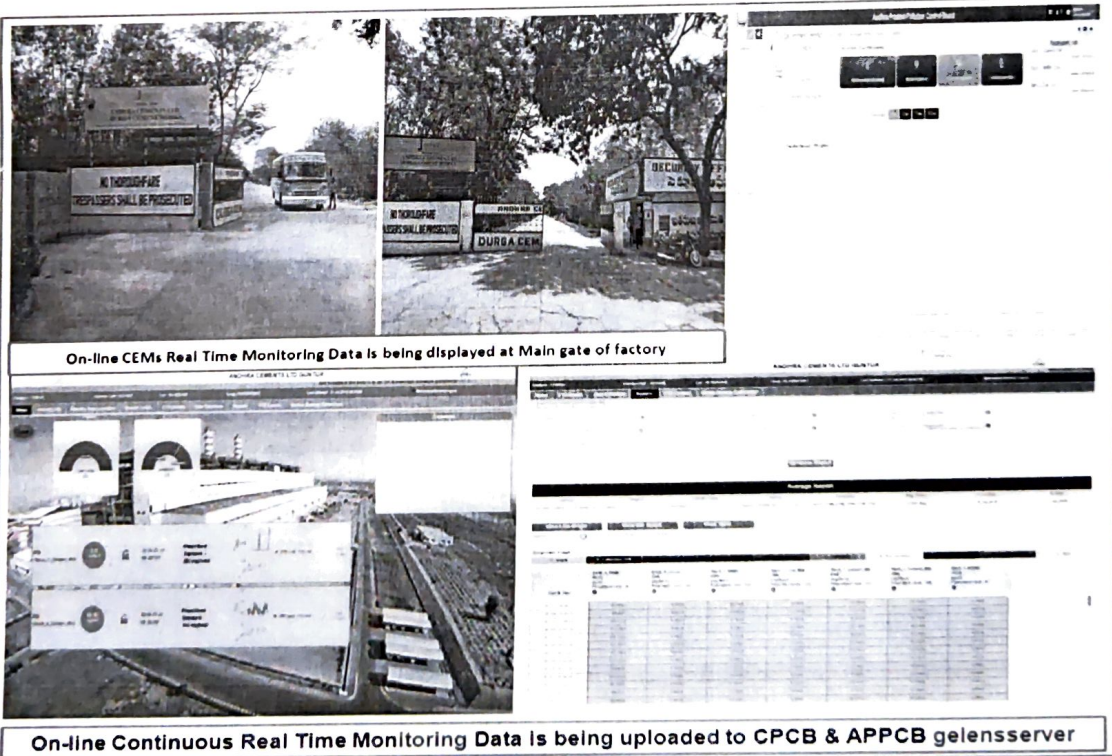
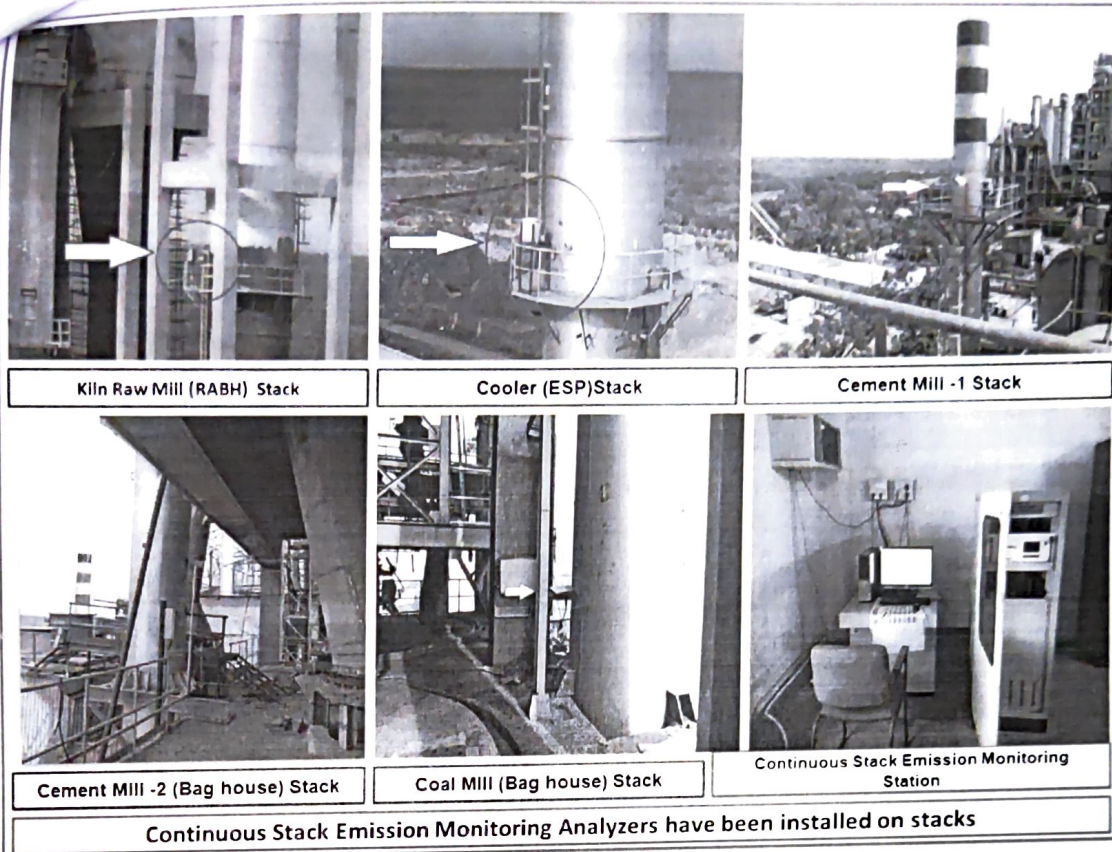
### Wind direction, Speed & Rainfall Monitors

3 Nos. of On-line CAAQMS have been installed and the real time monitoring data is being transmitted to APPCB & CPCB website



CAAQM data are being continually transmitted to APPCB & CPCB website.







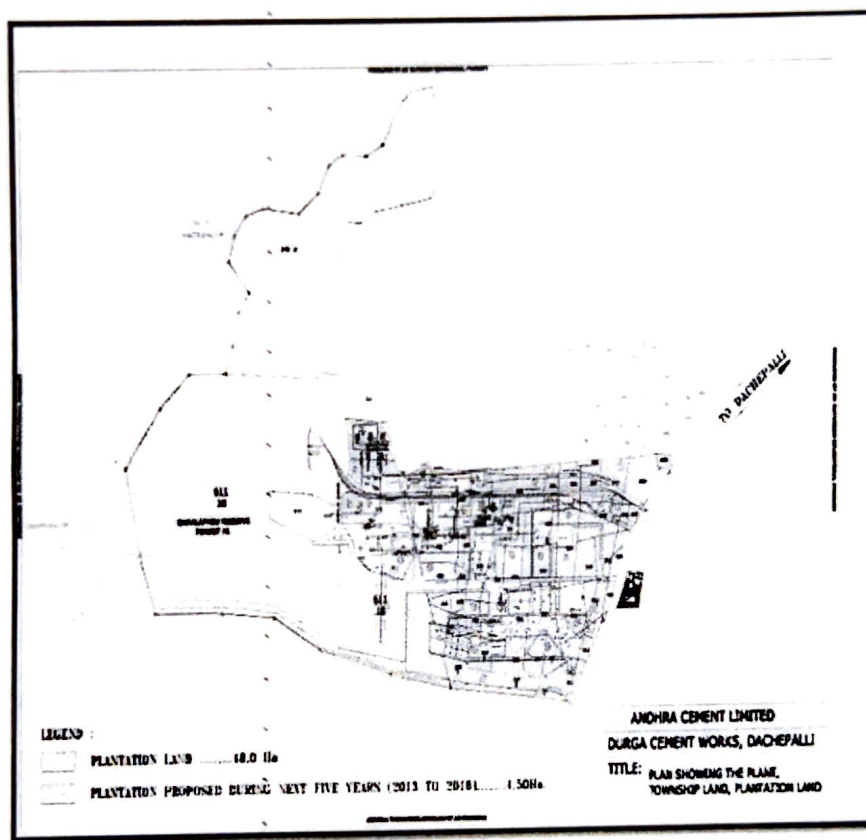
**Andhra Cements Limited  
Durga Cement Works  
(Cement Plant)**

**Status of Existing green belt:**

- a. Total Industrial area : 141.574 hectares.
- b. Total Green belt area : 49.0 hectares. (34.61% of total plant area)

**Steps taken to protect plantation:**

- a. Skilled team is deputed for care of plantation.
- b. Water sprinklers & water tankers are provided to skilled manpower team for watering.
- c. Barricading/fencing maintained to protect plantation from animals/trespassers.



**The species selected and planted on the basis of the following benefits.**

- Mitigation of fugitive emission
- Noise pollution control
- Improve green Cover in the Surrounding areas improving Quality of Life with Increase in lung space and promoting healthy lifestyle.
- Improving the local ecosystem
- Arresting the soil erosion
- Improving the landscape area
- Balancing eco-environment
- Low Water requirement

S. No.	Identified Species Name	Area
1.	Pongamia pinnata /Kanuga ( Indian Beech )	Green belt developed and maintained inside Plant boundary & premises, mines area, STP area and inside of plant colony.
2.	Cocos nucifera(Coconut)	
3.	Musa (Banana)	
4.	Phyllanthus emblica (Indian gooseberry/ Amla/ vusiri)	
5.	Syzygium cumini(Neredu/Jamun)	
6.	Annona squamosa (Sitafal)	
7.	Muntingia calabura (Panama berry/Singapore cherry)	
8.	Aegle marmelos (bilva patra tree)	
9.	Psidium guajava (Guava)	
10.	Tamarindus indica( Chinta pandu)	
11.	Moringa oleifera (Drumstick / Mulaga)	
12.	Borassus flabellifer ( Palm wine)	
13.	Carica papaya (Boppayi)	
14.	Couroupita guianensis (Nagalingam/ cannonball tree)	
15.	Cassia fistula (Golden shower)	
16.	Tabebuia argentea (Yellow Tabebuia, Golden Bell)	
17.	Nerium oleander roseum	
18.	Tecoma Smili	
19.	Mangifera indica(Mango)	
20.	Adenium obesum	
21.	Peltapharum pterocarpum (yellow poinciana)	
22.	Lawsonia inermis (henna/Mehandi /Gorinta aaku)	
23.	Delonix regia (Gulmohar/royal Poinciana)	
24.	Nyctanthes arbor-tristis (Shetalika /Parijaat /Harsingar)	
25.	Hibiscus (cannabinus / rosa-sinensis) - (Mandaar)	
26.	Azadirachta indica ( Neem/Vepa)	
27.	Terminalia catappa(Indian-almond)	
28.	Sapindus mukorossi ( Reetha - Soapnut)	
29.	Acacia concinna (Shikakai)	
30.	Vachellia nilotica (Babul/gum tree)	
31.	Conocarpus erectus (Dubai Tree)	
32.	Tectona grandis (Teak)	
33.	Polyalthia longifolia ( False Ashoka)	
34.	Thespesia populnea( Indian Tulip / Ganga raavi)	
35.	Ficus elastic(Rubber)	
36.	Ficus benghalensis(Banyan/Fig)	
37.	Ficus religiosa ( sacred fig/ ashwattha / Raavi )	
38.	Dalbergia sissoo ( Indian rosewood)	
39.	Eucalyptus Saligna (Neelagiri)	
40.	Astonia scholaris (saptaparni)	





Factory to Highway connecting road



Dispatch office to Main gate road



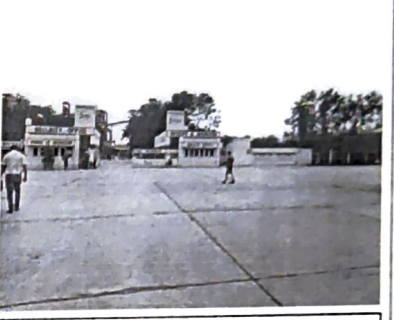
Main gate to Colony & canteen road



concreted road of factory & greenbelt



Factory main road with green belt



Concreted road at factory entrance gate

### Greenbelt status inside factory premises



DCW Colony entrance



View of colony road



Tree plantation near DCW Dispensary



Sapling plantation in DCW colony



World Environment Day 5th June 2018 Celebration



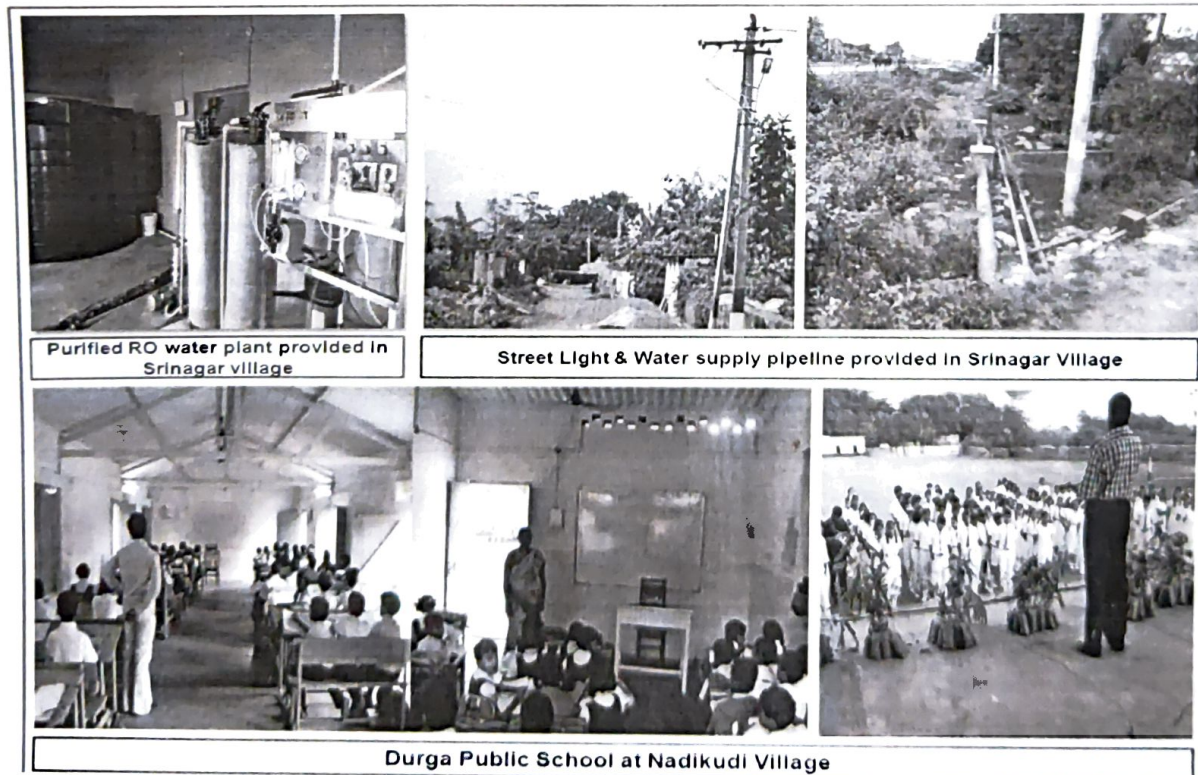
### Greenbelt development and environmental awareness activities in our premises



Various CSR Activities are undertaken by DCW



**Medical Checkup**



**Purified RO water plant provided in Srinagar village**

**Street Light & Water supply pipeline provided in Srinagar Village**

**Durga Public School at Nadikudi Village**

*Handwritten signature*



mess: All employees are provided with personal protective Equipments(PPEs), as per the requirement, such as working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear muff, safety boots, hand welding goggles, Goggles and safety Helmet are also being provided as per the requirement.



## Andhra Cements Limited Durga Cement Works

Durgapuram Srinagar(PO), Dachepalli, Mandal Guntur District (AP)-522 414



Address by Director -Technical



Flag hosting By  
(Director-Technical)



Safety Pledge in Hindi & Telugu



Selection of winners Safety-poster, Slogan Telugu & English.



Address by ACL Management & Safety Message by  
Unit Mechanical Head Shri A.K. Kushwah Ji on Concluding Day



Address by Safety Engineer



Fire Safety Exhibition



Fire Drill Competition



Awards and Appreciation letters to winner of various competitions



Distribution of Awards and Appreciation letters to winner of various competitions