ISO 9001 ISO 14001 ISO 45001 ISO 50001
Certified Company

THE RAMCO CEMENTS LIMITED

Kumarasamy Raja Nagar – 521457
Jaggayyapet Mandal, Krishna District,
Andhra Pradesh, India
Phone: 08654 224400-04
Fax: 08654 222352
E-mail: mcljpm@ramcocements.co.in

RCL/PCB/37/2023-2024

28th September 2023

The Environmental Engineer,
AP Pollution Control Board,
Regional Office,
Plot No. 41, Kanakadurga Officers Colony,
Opp. SBH, Gurunanak Road,
VIJAYAWADA – 520 008.

Dear Sir,

Sub: Submission of Environmental Statement in Form - V for Cement Plant, Thermal Power Plant & Waste Heat Recovery Plant for the Financial Year – 2022-2023 - Reg.

Please find enclosed herewith 2 copies of Environmental Statement in Form - V for Cement Plant, Thermal Power Plant & Waste Heat Recovery Plant for the Financial Year – 2022-2023 along with relevant enclosures.

This is for your kind information and records please.

Thanking you.

Yours faithfully,
For The Ramco Cements Limited,

S.V.R.K Murthy Rao,

(SVRK MURTHY RAO)
Sr. Vice President (Works)

Encl.: As above.

ENVIRONMENTAL STATEMENT (FORM – V)
FOR FINANCIAL YEAR 2022-2023

CEMENT PLANT,
THERMAL POWER PLANT
&
WASTE HEAT RECOVERY PLANT

An
QMS- IS/ISO 9001:2015,
EMS- IS/ISO 14001:2015,
OHSMS- IS/ISO 45001:2018,
EnMS – ISO 50001:2018
Certified Company

THE RAMCO CEMENTS LIMITED,
KUMARASAMY RAJA NAGAR – 521 457,
JAGGAIAHPET (M),
NTR DISTRICT, AP.

ENVIRONMENTAL STATEMENT (FORM – V)

(See rule 14)

Environmental statement for the financial year ending the 31st March 2023

PART – A

1.	Name and address of the owner / ~~occupier~~ of the industry operation or process	:	The Ramco Cements Limited Kumarasamy Raja Nagar - 521 457, Jaggaiahpet Mandal, Krishna Dt., A.P
	Industry operation or process	:	• Clinker manufacturing • Cement manufacturing • Generation of power from coal based thermal power plant • Generation of power from waste heat recovery boilers • Generation of DG power
2.	Industry category Primary – (STC Code) Secondary – (SIC Code)		
3.	Production capacity		Clinker – 4.685 Million TPA Cement – 3.65 Million TPA Thermal Power– 24 MW Waste Heat Recovery Power – 27 MW DG Power – 4 MW
4.	Year of Establishment		1986
5.	Date of the last environment audit report submitted	:	22nd September 2022

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(i) Water consumption m^3/day:

Cement Plant Cooling, TPP Cooling, Boilers & Domestic 4638.7 m^3/day

Total 4638.7 m^3/day

Name of the product(s)*	Water consumption per unit of products		
	Unit	During the current financial year (2021-2022)	During the current financial year (2022-2023)
Cement	m^3/Tonne	1.18	0.9878

* The clinker, cement & power production details are given in Annexure – I.

(ii) Raw material consumption:

(iii)

Sl. No.	Name of the raw material	Name of the product	Consumption of raw material, Tonne*	
			During the previous financial year (2021-2022)	During the current financial year (2022-2023)
1	Limestone (from captive mines)	Clinker	40,51,279	49,35,574
2	Laterite High Grade		0	1116.541
3	Laterite Low Grade		41,734	50181
4	Iron Rich Laterite		1,90,551	264780.459
4	Indian Coal		3,963.21	1,624.20
5	Imported Coal		2,29,613.81	67,415.72
6	Pet Coke (Indian or Imported)		1,19,596.73	289,926.28
7	Alternate Fuel		155.21	4433.98
8	Hazardous waste (solid)		16	11880.77
9	Hazardous waste (liquid)		0	2435.19

Sl. No.	Name of the raw material	Name of the product	Consumption of raw material, Tonne*	
			During the previous financial year (2021-2022)	During the current financial year (2022-2023)
10	Fly ash	Cement	123675	163,317.00
11	Gypsum		61,910.97	62960.01
12	Slag		78,481	115,669.00
13	Imported Coal	Thermal Power	51,985.96	11100.4
14	Indian Coal		57,464.41	85,050.87
15	Alternate Fuel		1,756.49	5,009.57

* Consumption of raw material in Tonne, as dry basis.

PART- C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

(1) Pollutants	Quantity of Pollutants discharged (mass/day)	Concentrations of Pollutants discharges (Mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water			
p^H	Thermal Power Plant Effluent	7.69 - 7.82	Well within the prescribed limits
TDS		940.4 mg/L	
TSS		35.1 mg/L	
COD		64.7 mg/L	
BOD		23.7 mg/L	
O & G		1.6 mg/L	
p^H	Sewage Treatment Plant Treated	7.58 - 7.79	Well within the prescribed limits
TDS		637.01 mg/L	
TSS		24.6 mg/L	
COD		35.0 mg/L	
BOD		8.2 mg/L	
O & G		1.6 mg/L	
p^H	Auto Garage Oil & Grease Trap	7.68 - 7.99	Well within the prescribed limits
TDS		939.3 mg/L	
TSS		75.7 mg/L	
COD		137.6 mg/L	
BOD		43.0 mg/L	
O & G		2.5 mg/L	
(b) Air			
i. Stack Monitoring			
PM	Kiln - I Bag House	17.6 mg/Nm^3	Well within the prescribed limits
	Coal Mill - I Bag House	9.5 mg/Nm^3	
	Cooler - I - ESP	16.2 mg/Nm^3	
	Kiln - II RABH	23.3 mg/Nm^3	
	Coal Mill - II Bag House	10.6 mg/Nm^3	
	Cooler - II - ESP	15.6 mg/Nm^3	
	Kiln - III Bag House	14.3 mg/Nm^3	
	Coal Mill - III Bag House	13.5 mg/Nm^3	
	Cooler - III - ESP	12.3 mg/Nm^3	
	Cement Mill Separator Bag House	15.2 mg/Nm^3	
	Cement Mill Vent Bag Filter	12.0 mg/Nm^3	
	Slag Mill Bag House	16.0 mg/Nm^3	
	Limestone Crusher Bag Filter	9.0 mg/Nm^3	
	Thermal Power Plant ESPs	24.5 mg/Nm^3	

(1) Pollutants	Quantity of Pollutants discharged (mass/day)	Concentrations of Pollutants discharges (Mass/volume)	Percentage of variation from prescribed standards with reasons
SO_2	Kiln - I Bag House	34.0 mg/Nm^3	Well within the prescribed limits
	Kiln - II RABH	28.2 mg/Nm^3	
	Kiln - III Bag House	35.1 mg/Nm^3	
	Thermal Power Plant ESPs	449.2 mg/Nm^3	
NOx	Kiln - I Bag House	442.8 mg/Nm^3	Well within the prescribed limits
	Kiln - II RABH	507.7 mg/Nm^3	
	Kiln - III Bag House	429.1 mg/Nm^3	
	Thermal Power Plant ESPs	321.1 mg/Nm^3	
ii. Ambient Air Quality Monitoring:			
PM_{10}	Near Temple	68.3 µg/m^3	Well within the prescribed limits
$PM_{2.5}$		28.3 µg/m^3	
SO_2		17.1 µg/m^3	
NOx		22.1 µg/m^3	
PM_{10}	Near Slag Shed	65.5 µg/m^3	Well within the prescribed limits
$PM_{2.5}$		28.2 µg/m^3	
SO_2		16.8 µg/m^3	
NOx		21.9 µg/m^3	
PM_{10}	Mines Office	65.4 µg/m^3	Well within the prescribed limits
$PM_{2.5}$		30.9 µg/m^3	
SO_2		16.8 µg/m^3	
NOx		22.1 µg/m^3	

The analysis data of treated waste water generated for the financial year 2022-2023 is narrated in Annexure - II. No deviation is observed (with respect to quality) for 3 Nos. of waste water sources viz., Thermal Power Plant Effluent Treatment Plant Treated Effluent, Sewage Treatment Plant Treated Waste Water, Auto Garage Oil & Grease Trap Treated Waste Water from Prescribed Standards in the financial year 2022-2023.

Details of month wise stack monitoring carried out in the financial year 2022-2023 (by MoEF&CC approved external monitoring agency) are enclosed as Annexure - III. No deviation is observed (with respect to quality) for stack monitoring data from Prescribed Standards in the financial year 2022-2023.

Details of month wise ambient air quality monitoring carried out near to the plant premises in the financial year 2022-2023 (by MoEF&CC approved environmental monitoring agency) are enclosed as Annexure - IV. Data on ambient air quality monitoring carried out in the nearby villages (9 locations) for the same period is enclosed in Annexure – IV. No deviation is observed (with respect to quality) for ambient air quality data (adjacent to plant & in surrounding villages) from Prescribed Standards in the financial year 2022-2023.

PART – D
HAZARDOUS WASTES

As specified under 1[Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008)]

Hazardous Waste	During the previous financial year (2021-2022)	During the current financial year (2022-2023)
Waste oil	Used within the premises. No disposal to outside agencies.	Used within the premises. No disposal to outside agencies.
Waste grease		
Waste lead acid batteries	74 Nos. to M/s. Rajdeep Energies (P) Ltd., Hyderabad	62 Nos. to M/s. R.Ess Iron and Steel Pvt. Ltd.
Waste Hi-chrome Grinding Media	No disposal to outside agencies.	No disposal to outside agencies.

- Form - 4 (copy submitted to APPCB) - Hazardous Waste generation / receipts and consumption / disposal details for plant for the financial year 2022-2023 is enclosed as Annexure - V.
- Part of the waste oil / lubricants is used along with fresh grease for reclaimers.

The details of hazardous wastes co-processed in our cement plant kilns in the financial year 2022-2023 are:

1	Quantity of waste received during the year:	
(i)	Domestic sources:	For Cement Plant - Through APEMCL portal: Hazardous waste (solid) - 20184.94 Tonne Hazardous waste (liquid) - 2465.26 Tonne
(ii)	Imported (if applicable):	Not applicable
2	Quantity in stock at the beginning of the year:	For Cement Plant: Hazardous waste (solid) – 95.37 Tonne Hazardous waste (liquid) – 0.0 Tonne
3	Quantity recycled or co-processed or used:	Co-processed in Cement Kilns: Hazardous waste (solid) – 20062.36 Tonne Hazardous waste (liquid) – 2435.19 Tonne
4	Quantity of products dispatched (wherever applicable):	Not applicable
5	Quantity of waste generated:	Not applicable
6	Quantity of waste disposed:	Not applicable
7	Quantity re-exported (whether applicable):	Not applicable
8	Quantity in storage at the end of the year:	For Cement Plant: Hazardous waste (solid) – 217.95 Tonne Hazardous waste (liquid) – 30.07 Tonne

Note: All these materials are received through APEMCL portal, from the sources located within Andhra Pradesh.

PART – E
SOLID WASTES

	During the current financial year (2021-2022)	During the current financial year (2022-2023)
(a) From process	No solid waste generated	No solid waste generated
(b) From pollution control facility		
From Cement Plant*	Not quantified	Not quantified
Fly Ash from Thermal Power plant**	39,647 Tonne	36,620 Tonne
Sludge Cake from STP##	26.0 m^3	15.0 m^3
Sludge & Top Layers from ETP##	201.6 Tonne	0 Tonne
Vermi-compost from colony garbage$	11.74 Tonne	3.0 Tonne
(c) (1) Quantity recycled or re-utilized within the unit		
From Cement Plant*	Total recycled	Total recycled
Fly Ash from Thermal Power plant**	39,647 Tonne	36,620 Tonne
Sludge Cake from STP##	19.0 m^3	15.0 m^3
Sludge &Top Layers from ETP##	201.6 Tonne	0 Tonne
Vermi-compost from colony garbage$	11.10 Tonne	2.0 Tonne
(2) Sold		
(3) Disposed		

* Dust collected from cement plant pollution control equipments is being totally recycled in the respective circuits to make it as a part of the product of the respective section. Thus there is no solid waste generation from cement plant.
** Fly ash collected from captive TPP pollution control equipment is being totally used in cement plant.
# Bottom Ash from Thermal Power Plant is being used as admixture for concrete pavements and for filling of low laying areas.

Dried sludge cake from STP and Sludge &Top Layer from ETP of TPP are used as manure for greenbelt, in place of chemical fertilizers.

$ Vermi-composting for colony garbage is being used for greenbelt activities as manure, in place of fertilizers.

In the financial year 2022-2023, we have utilized the following solid / non-hazardous wastes as alternate fuel in our plant brought out from various sources, to conserve the natural resources:

S. No.	Name of Alternate Fuel received	Source / Industry	Procured Quantity, Tonne
1	Black Gram Husk	Sri Raghavendra Swamy Minerals, Jaggaiahpet	97.14
2	Briquette	Godrej Agrovet limited, west Godavari	521.14
3	Burnt Maize Sticks	Sri Ambika Bio Fuels, Vijayawada	1,348.60
4	COC Feed	Sri Raghavendra Swamy Minerals, Jaggaiahpet	30.80
5	Corn Waste	Sri Raghavendra Swamy Minerals, Jaggaiahpet	28.52
6	Green Maize Sticks	Sri Ambika Bio Fuels, Vijayawada	6.89
7	Palm Fibre	Sri Chaitanya Traders, Nandyal	324.26
8	Palm Nut Shell	Godrej Agrovet limited, west Godavari	29.36
9	PP Waste	Coasta waste management, Vizag.	6.54
10	Saw Dust	Planet Energies, Hyderabad	17.26
11	Tyre Fibre	Thai Evergreen Industries Private Limited, Chennai	8.04
12	Bengal Gram Dust	Sri Raghavendra Swamy Minerals, Jaggaiahpet	217.95
13	Carbon Black	Sri Raghavendra Swamy Minerals, Jaggaiahpet	35.94
14	Wood Chips	1.Sri Ambika Bio Fuels, Vijayawada 2.Sri Chaitanya Traders, Nandyal 3.Planet Energies, Hyderabad	5,006.64
15	Wood Bark	Planet Energies, Hyderabad	611.50
16	Rice Husk	Sri Satyanarayana Swamy Entrp, Kodad	3,202.70
17	Chilli Spent	Chenguang Biotech (India) Pvt. Ltd., Khammam	192.44
18	Maize Oil Extracted Sticks	Sri Ambika Bio Fuels, Vijayawada	375.88
19	Wood Shives	Sri Ambika Bio Fuels, Vijayawada	760.44
20	Ground Nut Dust	Sri Ambika Bio Fuels, Vijayawada	208.95
21	Bagasse Waste	Sri Raghavendra Swamy Minerals, Jaggaiahpet	91.22
22	Coal Dust	Planet Energies, Hyderabad	320.00
		Total	**13,442.21**

PART – F

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

Type of waste	Quantity generated in 2022-2023	Disposal practice
Dust collected from cement plant pollution control equipment	Total recycled	Is being totally recycled / re-utilized in the respective circuits to make it as a part of the product of the respective section
Fly ash from TPP	36620 Tonne	Is being totally used in cement plant.
Top & Bottom Sludge collected from TPP ETP	0.0 Tonne	Is being used as manure in greenbelt activities, in place of chemical fertilizers (if generated).
Sludge collected from Sewage Treatment Plant	15 m^3	Is being used as manure in greenbelt activities, in place of chemical fertilizers.

Type of waste	Quantity generated in 2022-2023	Disposal practice
Colony garbage	2 Tonne of compost	By Vermi-composting and compost is being used for greenbelt activities as manure, in place of chemical fertilizers.
Kitchen waste from colony	676 kg of bio-gas generated	Kitchen waste is being composted in bio-gas plant. The generated bio-gas is used in industrial canteen, to partially replace the consumption of LPG.
MS and other metal scrap	645 Tonne	Is being sold to local vendors
E-waste	Generated - 0.4 Tonne	Disposed 0.4 Tonne of E-waste to APPCB authorized agency (M/s. Best E Waste Recyclers). Returns are being submitted annually to AP Pollution Control Board. Copy of the E-waste returns for the financial year 2022-2023 is enclosed as Annexure – VI. Total quantity by the end of FY 2022-2023 are: E-waste - 1.129 Tonne Printer Cartridges – 0.26532 Tonne
Hazardous waste – Waste oil & waste grease	No waste oil & waste grease disposed to external agencies.	Waste oil along with fresh fuel is being used for kiln firing while light up & waste grease for reclaimer lubrication. Excess waste oil & waste grease are sold to APPCB authorized agents. Returns are being submitted annually (Annexure – V).
Hazardous waste – Used hi-chrome grinding media	No waste oil & waste grease disposed to external agencies.	Waste oil along with fresh fuel is being used for kiln firing while light up & waste grease for reclaimer lubrication. Excess waste oil & waste grease are sold to APPCB authorized agents. Returns are being submitted annually to AP Pollution Control Board. Copy of the hazardous waste returns for the financial year 2022-2023 is enclosed as Annexure – V.
Hazardous waste – waste lead acid batteries	62 Nos.	Waste lead acid batteries are being disposed to the supplier on exchange basis or to APPCB authorized agency (M/s R. Ess Iron & Steel Pvt. Ltd.). Returns are being submitted annually to AP Pollution Control Board. Copy of the hazardous waste returns for the financial year 2022-2023 is enclosed as Annexure – V.
Plastic waste collected from colony, mines and plant	12.6 T	Being fired in the kilns.
HDPE waste	8.7 Tonne sold	Is being sold to local vendors
Bio-medical waste	Yellow – 105.41 kg Red – 24.12 kg White – 1.00 kg Blue – 4.94 kg	Operating Occupational Health Centre (OHC) to provide basic first aid facilities within the premises. Bio-medical waste from this OHC is being regularly collected by APPCB authorized agent, M/s Safenviron Bio-Medical Treatment Plant for onward treatment. The agency collects the bio-medical waste on 48-hour basis. Returns are being submitted annually (for the calendar year) to AP Pollution Control Board. Copy of Bio-Medical Annual Returns submitted for the calendar year 2022 is enclosed as Annexure – VII.

PART - G

Impact of the pollution control measures taken on concentration of natural resources and on the cost of production

- All the surrounding areas are kept free from pollution.
- The cost of power consumed for operation of various pollution control equipment operated in cement plant & thermal power plant in the financial year 2022-2023 (air & water pollution equipment) is Rs. 1104.77 lakh against Rs. 860.35 lakh in financial year 2021-2022 i.e., Rs. 64.45/tonne of cement in the financial year 2022-2023 against Rs. 55.80/tonne of cement in the financial year 2021-2022.
- Rs. 603.50 lakh incurred towards capital cost for various pollution control measures for cement plant, thermal power plant and mines in the financial year 2022-2023 against Rs. 1135.156 lakh investment for capital cost in the financial year 2021-2022.
- Total environmental protection expenditure made in the financial year 2022-2023 (for cement plant, thermal power plant and mines) is Rs. 2579.04 lakh against Rs. 3151.24 lakh in financial year 2021-2022, i.e., nearly Rs. 150.46/tonne of cement in financial year 2022-2023 against Rs. 204.38/tonne of cement in financial year 2021-2022.
- The expenditure details for Environment Protection covering various measures carried out in the financial year 2022-2023 are enclosed as Annexure - VIII.
- An amount of Rs. 1564.20 lakh is allocated towards Environment Management Activities for the financial year 2023-2024 towards capital as well as recurring costs for plant & mines and being spent.

PART – H

Additional measures / *investment proposal for environmental protection including abatement of pollution, prevention of pollution*

- The following air pollution control equipment are in operation in the present operating cement plant & thermal power plant to control process emissions as well as fugitive emissions from all vulnerable sources, etc.:
    - 125 Nos. of RABH / Bag Houses / Bag Filters
    - 5 Nos. of ESPs
    - 5 Nos. of Water Fogging Systems
- 26 Nos. of bag filters are erection and commissioning stage. These will be commissioned along with associated process equipment.
- All the air pollution control equipment for cement plant Line – I and Line – II are designed for particulate emission level of 30 mg/Nm^3, whereas for cement plant Line – III are designed for 20 mg/Nm^3.
- All the air pollution control equipment for TPP are designed for particulate emission level of 50 mg/Nm^3.
- To control the fugitive emissions, some of the bags are replaced in the air pollution control equipment.
- The dust collected from APCE is being totally recycled to the respective process / storage facility.
- All conveyers are covered with GI sheets.
- 3 Nos. of road sweepers, 2 Nos. of vacuum cleaners and 1 No. of mobile water sprinkler are in operation to maintain clean environment.

PART - I

Any other particulars for improving the quality of the environment

- Detailed environmental protection measures are enclosed as Annexure - I.
- Various Management Systems are being implemented in our premises, viz.,

Management System	Implemented from
Quality Management System - IS / ISO 9001:2015	1996
Environmental Management System - IS / ISO 14001:2015	2006
Occupational Health & Safety Management System – IS / ISO 45001:2018	2010
Energy Management System - ISO 50001:2018	2014
Work Place Management - 5S Certification	2016

ANNEXURE – I

ENVIRONMENTAL PROTECTION MEASURES

Ramco is a vibrant group of Companies with manufacturing activities in Cement, Textiles, Fibre-Cement Products, Wind Energy, Software Products, Surgical Dressings, Ready-Mix Concrete and Dry Mortar Plants.

The Ramco Cements Limited is a unit of the Ramco Group which has been growing steadily right from its inception with present capacity 16.5 Million Tonnes / Annum of cement. RCL, which has always been striving for Total Quality Management, possesses International Management System Certificates IS/ISO 9001:2015, IS/ISO 14001:2015, IS/ISO 45001:2018, ISO 50001:2018 and 5-S Workplace Management System.

The KSR Nagar plant was presented with an Award in recognition of practicing 'Cleaner Production Measures' from AP Pollution Control Board, Hyderabad for the year 2011-2012 on the eve of World Environment Day – 05th June 2012. Andhra Pradesh Pollution Control Board recommended for 'Better Environmental Practices Award - First in Cement Industry Category for the year 2016-2017 in the State of Andhra Pradesh'.

PRODUCTION DETAILS:

	Capacity	Production in the Financial Year 2021-2022	Production in the Financial Year 2022-2023
Clinker	46,85,000 TPA	3083782.026 Tonne	3749629 Tonne
Cement	36,50,000 TPA	1541860.91 Tonne	1714047 Tonne
Coal Based Thermal Power	24 MW	1646.20 Lakh units	1310.04 Lakh units
Waste Heat Recovery Power	27 MW	1065.51 Lakh units	1630.43 Lakh units

Part of the clinker produced is used in cement manufacturing within the premises and the balance clinker is exported to other cement grinding units.

AIR:

Air Pollution Control Measures:

The following air pollution control equipment are in operation in cement plant & thermal power plant to control process emissions as well as fugitive emissions at various transfer points, raw mill handling (unloading, conveying, transporting, stacking), vehicular movement, bagging and packing areas etc., as on 31.03.2023:

- 125 Nos. of RABH / Bag Houses / Bag Filters
- 5 Nos. of ESPs
- 5 Nos. of Water Fogging Systems
- 26 Nos. of bag filters are erection and commissioning stage. These will be commissioned along with associated process equipment.

In the event of pollution control equipment not working, the respective unit(s) being stopped automatically in phased manner with associated interlocks.

Online Stack Monitoring:

13 Nos. of major stacks are equipped with online stack monitors. On-line monitoring data is being transmitted to APPCB & CPCB websites. The details are:

Parameter	Location of online stack monitoring instrument	Make of present equipment	Year of installation	Details of earlier equipment, if any – Make / Year of installation
PM	Kiln – I Stack	IFI	2018	Forbes Marshall / 2010
	Kiln – II Stack	IFI	2018	Durag / 2009
	Kiln – III Stack	Sick	2021	
	Cooler - I Stack	IFI	2017	Durag / 2009
	Cooler – II Stack	IFI	2018	Durag / 2009
	Cooler - III Stack	Sick	2021	
	Coal Mill – I Stack	IFI	2017	Durag / 2009
	Coal Mill – II Stack	IFI	2016	Durag / 2009
	Coal Mill – II Stack	Sick	2021	
	Cement Mill Vent Stack	IFI	2016	Durag / 2009
	Cement Mill Separator Stack	IFI	2018	Durag / 2009
	Slag Mill Stack	IFI	2018	Forbes Marshall / 2012 & Baltec / 2005
	Thermal Power Plant Stack	IFI	2017	Forbes Marshall / 2008
SO_2	Kiln – I Stack	ABB	2017	
	Kiln – II Stack	ABB	2015	
	Kiln – III Stack	ABB	2021	
	Thermal Power Plant Stack	ABB	2015	
NOx	Kiln – I Stack	ABB	2017	
	Kiln – II Stack	ABB	2015	
	Kiln – III Stack	ABB	2021	
	Thermal Power Plant Stack	ABB	2015	

Remote calibration systems (of M/s Glens make) are installed for SO_2 and NOx analysers for Kiln – I, Kiln – II & Thermal Power Plant stacks in the year 2018 and for Kiln – III in the year 2021.

Stack Monitoring by MoEF&CC Approved External Agency:

Major stacks are being monitored by MoEF&CC approved external agency on monthly basis and reports are being submitted to the APPCB. Compiled data on stack monitoring in the financial year 2022-2023 is enclosed in Annexure - III. Compiled data of stack monitoring in the financial year 2022-2023 is as follows:

S. No.	Stack Attached to	Norm	Average values, mg/Nm^3	
			Financial Year 2021-2022	Financial Year 2022-2023
I.	**PM Concentration**			
1	Kiln - I Bag House	30	17.2	17.6
2	Coal Mill - I Bag House	30	9.3	9.5
3	Cooler - I - ESP	30	14.1	16.2
4	Kiln - II RABH	30	19.1	23.3
5	Coal Mill - II Bag House	30	15.1	10.6
6	Cooler - II - ESP	30	19.1	15.6
7	Kiln - III Bag House	20	13.3	14.3

S. No.	Stack Attached to	Norm	Average values, mg/Nm^3	
			Financial Year 2021-2022	Financial Year 2022-2023
8	Coal Mill - III Bag House	20	16.9	13.5
9	Cooler - III - ESP	20	15.9	12.3
10	Cement Mill Separator Bag House	30	13.7	15.2
11	Cement Mill Vent Bag Filter	30	12.8	12.0
12	Slag Mill Bag House	30	18.2	16.0
13	Limestone Crusher Bag Filter	30	7.9	9.0
14	Thermal Power Plant ESPs	50	30.6	24.5
II.	**SO_2 Concentration**			
1	Kiln - I Bag House	100	29.7	34.0
2	Kiln - II RABH	100	23.6	28.2
3	Kiln - III Bag House	100	BDL (DL: 3.0 mg/Nm^3)	35.1
4	Thermal Power Plant ESPs	600	303.3	449.2
III.	**NOx Concentration**			
1	Kiln - I Bag House	600	442.5	442.8
2	Kiln - II RABH	800	456.8	507.7
3	Kiln - III Bag House	600	417.0	429.1
4	Thermal Power Plant ESPs	450	338.6	321.1

Continuous Ambient Air Quality Monitoring:

2 Nos. of Continuous ambient air quality monitoring stations are installed. On-line monitoring data is being transmitted to APPCB website. The details of Online Continuous Ambient Air Quality Monitoring equipment are:

Location of continuous ambient air monitoring instrument	Parameter	Make of present equipment	Year of installation	Details of earlier equipment, if any
Time Office	PM_{10}	Metone	2013	
	$PM_{2.5}$	Metone	2013	
	SO_2	Horiba	2015	
	NOx	Horiba	2015	
Mines Office	PM_{10}	Metone	2020	DKK, Japan installed in the year 2010 at Time Office is shifted in the year 2013.
	$PM_{2.5}$	Metone	2014	
	SO_2	Horiba	2015	
	NOx	Horiba	2015	

Installation of 2 Nos. of Continuous Ambient Air Quality Monitoring Stations is under progress.

Ambient Air Quality Monitoring by MoEF&CC Approved External Agency – near to the plant boundary:

Ambient Air Quality is being monitored by MoEF&CC approved external agency on monthly basis at 3 locations (near to the boundary of the plant in 3 directions of the plant) and reports are

being submitted to the APPCB. Compiled data on Ambient Air Quality monitoring in the financial year 2022-2023 is enclosed in Annexure - IV.

Pollution Type	Unit	Pollution Board Norms	Near Temple		Mines Office		Near Slag Shed	
			2021-2022	2022-2023	2021-2022	2022-2023	2021-2022	2022-2023
PM_{10}	$\mu g/m^3$	100	61.2	68.3	62.1	65.4	58.8	65.5
$PM_{2.5}$	$\mu g/m^3$	60	24.7	28.3	25.3	30.9	23.8	28.2
SO_2	$\mu g/m^3$	80	14.9	17.1	14.8	16.8	13.7	16.8
NOx	$\mu g/m^3$	80	19.4	22.1	19.8	22.1	19.0	21.9

Ambient Air Quality Monitoring by MoEF&CC Approved External Agency – nearby villages:

Data on ambient air quality monitoring carried out in the nearby villages (9 locations) in the financial year 2021-2022 is enclosed in Annexure – IV. Average values of month wise ambient air quality monitoring carried out near to the plant are as follows:

Location / Norm	Average concentration of pollution type, $\mu g/m^3$									
	Financial Year 2021-22					Financial Year 2022-2023				
	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO
Pollution Board Norms	100	60	80	80	2000	100	60	80	80	2000
Dharmavarapupadu Thanda	50.86	20.58	12.73	15.38	212.50	56.0	22.70	14.70	17.40	239.9
Jayanthipuram Village	51.85	20.98	12.79	15.69	217.21	55.20	22.30	14.40	17.30	249.10
Chillakallu Village	50.53	20.45	13.20	16.10	220.75	55.80	22.60	14.40	17.30	247.50
K Agraharam Village	51.08	20.72	13.59	16.34	222.13	54.9	22.3	14.80	17.50	257.80
Jaggayyapet	51.86	21.13	13.68	16.38	242.25	56.10	22.90	14.40	17.10	254.70
Budawada Village	53.69	21.64	13.46	16.16	231.63	57.20	23.10	14.20	16.90	261.00
Vedadri Village	51.80	20.88	13.28	15.83	212.79	55.10	22.20	14.30	16.80	251.50
Pochampalli Village	50.50	20.58	13.05	15.65	206.13	54.80	22.30	14.20	16.80	247.60
Ravirala Village	50.75	20.68	12.83	15.78	209.33	53.30	21.70	14.40	17.30	244.40

WATER:

Water Requirement:

- Mine seepage water is the source for water requirements.
- Mine seepage water is being allowed to settle in mine sump. The sump outlet water is used for:
  - cement plant process requirements
  - thermal power plant & waste heat recovery system plant process requirements,
  - water sprinkling purpose,
  - greenbelt purpose,
  - domestic water requirements, etc.
- Panchayat Raj & Rural Development Department (nodal agency for Central Ground Water Dept) vide Lr. No. PRR05-11028/45/2018-SLNA-GIS-CORD dated 13.11.2021 (which is valid up to 12.11.2024) accorded permission for mine seepage water withdrawal @ 7000 m^3/day, for internal use.
- By considering 365 days of operation of plant, total water requirement for Cement Plant, Thermal Power Plant and for Domestic Purposes is 4638.7 m^3/day in the financial year 2022-2023 against 4982.42 m^3/day in the financial year 2021-2022.

- By considering 305 days of operation of mines, the total water requirement for Captive Mines is 513.0 m^3/day in the financial year 2022-2023 against 458.1 m^3/day is consumed for year 2021-2022.
- Total water requirement for Cement Plant, Thermal Power Plant, Captive Mines and for Domestic Purposes is 5151.7 m^3/day in the financial year 2022-2023 against 5440.57 m^3/day in the financial year 2021-2022.

Potable Water Supply System:

Reverse Osmosis (RO) plant is located at colony and purified water is being distributed to all offices, mines and colony houses. The analysis reports of RO plant inlet and outlet samples in the financial year 2022-2023 are enclosed as Annexure - IX.

Waste Water Treatment processes:

- No process effluent generation from cement manufacturing.
- TPP effluent is being treated in effluent treatment plant (neutralization tank). The wastewater from boiler blow down, DM plant regeneration, UF & RO rejects and cooling tower blow down of TPP are being neutralized in this neutralization tank.
- Sewage treatment plant is in operation to treat domestic sewage from colony, plant, canteen and offices.
- Auto garage wash water is being treated separately at Oil & Grease Trap.

Waste Water Quality Analysis by MoEF&CC Approved External Agency:

- 3 Nos. of treated outlet samples from are being analysed on monthly basis by MoEF&CC approved external agency and reports are being submitted to the Board regularly:
  - Sewage Treatment Plant (located at colony to treat sewage from plant & colony)
  - Effluent Treatment Plant (to treat Thermal Power Plant effluents)
  - Auto Garage Oil & Grease Trap.
- The analysis data (for the financial year 2022-2023) is narrated in Annexure - II.

Average values of month wise outlet samples analysis of TPP effluent treatment plant, sewage treatment plant and auto garage oil & grease trap are as follows:

(i) Thermal Power Plant Effluent Treatment Plant Treated Effluent:

Pollution Type	Unit	Pollution Board Norms	Average Value / Range (2021-2022)	Average Value / Range (2022-2023)
p^H		5.5 - 9.0	7.80 - 7.96	7.69 - 7.82
TDS	mg/L	2100	942.5	940.4
TSS	mg/L	100	29.8	35.1
COD	mg/L	250	64.5	64.7
BOD	mg/L	100	19.6	23.7
O & G	mg/L	10	1.5	1.6

(ii) Sewage Treatment Plant Treated Waste Water:

Pollution Type	Unit	Pollution Board Norms	Average Value / Range (2021-2022)	Average Value / Range (2022-2023)
p^H		5.5 - 9.0	7.42 - 7.78	7.58 - 7.79
TDS	mg/L	2100	600.5	637.01
TSS	mg/L	100	25.6	24.6
COD	mg/L	250	28.8	35.0
BOD	mg/L	100	8.0	8.2
O & G	mg/L	10	1.3	1.6

(iii) Auto Garage Oil & Grease Trap Treated Waste Water:

Pollution Type	Unit	Pollution Board Norms	Average Value / Range (2021-2022)	Average Value / Range (2022-2023)
p^H		5.5 - 9.0	7.77 - 7.89	7.68 - 7.99
TDS	mg/L	2100	960.5	939.3
TSS	mg/L	100	81.7	75.7
COD	mg/L	250	134.3	137.6
BOD	mg/L	100	41.5	43.0
O & G	mg/L	10	2.7	2.5

Online Effluent Quality Analysis:

1 No. of online effluent quality monitoring station is installed at thermal power plant effluent treatment plant outlet. On-line monitoring data is being transmitted to APPCB & CPCB websites. The details of online effluent quality monitoring station are:

Location of online effluent quality monitoring station	Parameter	Make of present equipment	Year of installation
Thermal Power Plant – Effluent Treatment Plant	pH	Daeyoon	2019
	Temperature	Daeyoon	2019
	TSS	Daeyoon	2019

Water Conservation and Utilization of Treated Effluent / Sewage:

Various measures initiated to conserve water reserves are:

- Water collected in mine pits is only being used for cement plant, thermal power plant, waste heat recovery boilers, mines and for domestic purposes. No ground water is being used.
- 48 Nos. of rain water harvesting structures are made to recharge the ground water in the colony by March 2023. 4 Nos. of rain water harvesting structures are made to recharge the ground water in the plant by March 2023. The locations of these pits are listed in Annexure - X.

- Part of mine seepage water is supplied for agricultural fields (nearly 120 acre) in the nearby areas, after settling in settling ponds.
- To maintain 'zero discharge', treated effluent / sewage utilization is as follows:

Source	Utilized at
TPP effluents are being neutralized in neutralization tank	○ Partially for cement plant process ○ Water sprinkling purpose ○ Greenbelt ○ Excess treated waste water, if any, is being passed to the artificial pond (about 0.5 ha area) in our own lands to uplift the water table nearby area
Sewage treatment plant is in operation to treat domestic sewage	○ Greenbelt (by pumping into elevated tank and then by gravity to the nearby plantation area) ○ Water sprinkling purpose
Auto garage wash water is being treated at Oil & Grease Trap	○ Greenbelt
RO plant outlet	○ Greenbelt

NOISE:

RCL is regularly monitoring noise levels internally. Ear plugs / muffs are provided to the concerned employees, who are working at high noisy areas.

OCCUPATIONAL HEALTH:

Occupational health check-ups are being carried out for new employees at the time of joining into the organization and occupational health surveillance programme is carried out for all the employees regularly. Full-fledged occupational health centre is established and services are being rendered by qualified occupational health specialist.

Occupational health checkup at the time of recruitment is being carried for all the employees as per Mines Rules, with the following tests:

- Lung function test
- ECG
- Chest X-ray
- Blood analysis test
- Urine analysis test
- Audiometry
- Checking colour blindness
- Stool Analysis
- Sputum (Optional)

The employees who are working at the time of initiation of this programme are covered for these tests. If any person failed in this health checkup, was not recruited. Like so, a baseline data on the health status of workmen in the Pre-recruitment stage was established. The same is being repeated periodically to update and to take action accordingly.

Occupational health surveillance on regular basis is being carried for all the employees, with the following tests:

- Clinical examination including Neurological assessment
- Lung function test
- ECG
- Chest X-ray
- Blood analysis test
- Urine analysis test
- Audiometry
- Checking colour blindness

If any person failed in this health checkup, he will be shifted / transferred to non-hazardous activities. Till now, no such case is observed.

Occupational Health Centre (with qualified Occupational Health Specialist) is established with the following facilities:

- X-ray
- ECG
- Spirometry (lung function test)
- Audiometry
- Semi-auto analyser to carryout bio-chemical tests
- Clinical lab for micro-biological tests (including sputum test)
- Checking colour blindness
- Dental chair
- Ambulance

First aid boxes are made available at various working areas of the plant for immediate treatment. First aid training is imparted to the selected employees regularly. The list of first aid members is being displayed at strategic places.

WASTE HANDLING & CLEANER PRODUCTION PRACTICES:

Type of waste	Quantity generated in 2022-2023	Disposal practice
Dust collected from cement plant pollution control equipment	Total recycled	Is being totally recycled / re-utilized in the respective circuits to make it as a part of the product of the respective section
Fly ash from TPP	36620 Tonne	Is being totally used in cement plant.
Top & Bottom Sludge collected from TPP ETP	0.0 Tonne	Is being used as manure in greenbelt activities, in place of chemical fertilizers (if generated).
Sludge collected from Sewage Treatment Plant	15 m^3	Is being used as manure in greenbelt activities, in place of chemical fertilizers.
Colony garbage	2 Tonne of compost	By Vermi-composting and compost is being used for greenbelt activities as manure, in place of chemical fertilizers.

Kitchen waste from colony	676 kg of bio-gas generated	Kitchen waste is being composted in bio-gas plant. The generated bio-gas is used in industrial canteen, to partially replace the consumption of LPG.
MS and other metal scrap	645 Tonne	Is being sold to local vendors
E-waste	Generated - 0.4 Tonne	Disposed 0.4 Tonne of E-waste to APPCB authorized agency (M/s. Best E Waste Recyclers). Returns are being submitted annually to AP Pollution Control Board. Copy of the E-waste returns for the financial year 2022-2023 is enclosed as Annexure – VI. Total quantity by the end of FY 2022-2023 are: E-waste - 1.129 Tonne Printer Cartridges – 0.26532 Tonne
Hazardous waste – Waste oil & waste grease	No waste oil & waste grease disposed to external agencies.	Waste oil along with fresh fuel is being used for kiln firing while light up & waste grease for reclaimer lubrication. Excess waste oil & waste grease are sold to APPCB authorized agents. Returns are being submitted annually (Annexure – V).
Hazardous waste – Used hi-chrome grinding media	No waste oil & waste grease disposed to external agencies.	Waste oil along with fresh fuel is being used for kiln firing while light up & waste grease for reclaimer lubrication. Excess waste oil & waste grease are sold to APPCB authorized agents. Returns are being submitted annually to AP Pollution Control Board. Copy of the hazardous waste returns for the financial year 2022-2023 is enclosed as Annexure – V.
Hazardous waste – waste lead acid batteries	62 Nos.	Waste lead acid batteries are being disposed to the supplier on exchange basis or to APPCB authorized agency (M/s R. Ess Iron & Steel Pvt. Ltd.). Returns are being submitted annually to AP Pollution Control Board. Copy of the hazardous waste returns for the financial year 2022-2023 is enclosed as Annexure – V.
Plastic waste collected from colony, mines and plant	12.6 T	Being fired in the kilns.
HDPE waste	8.7 Tonne sold	Is being sold to local vendors
Bio-medical waste	Yellow – 105.41 kg Red – 24.12 kg White – 1.00 kg Blue – 4.94 kg	Operating Occupational Health Centre (OHC) to provide basic first aid facilities within the premises. Bio-medical waste from this OHC is being regularly collected by APPCB authorized agent, M/s Safenviron Bio-Medical Treatment Plant for onward treatment. The agency collects the bio-medical waste on 48-hour basis. Returns are being submitted annually (for the calendar year) to AP Pollution Control Board. Copy of Bio-Medical Annual Returns submitted for the calendar year 2022 is enclosed as Annexure – VII.

The details of hazardous wastes co-processed in our cement plant kilns in the financial year 2022-2023 are:

1	Quantity of waste received during the year:	
(i)	Domestic sources:	For Cement Plant - Through APEMCL portal: Hazardous waste (solid) - 20184.94 Tonne Hazardous waste (liquid) - 2465.26 Tonne
(ii)	Imported (if applicable):	Not applicable
2	Quantity in stock at the beginning of the year:	For Cement Plant: Hazardous waste (solid) – 95.37 Tonne Hazardous waste (liquid) – 0.0 Tonne
3	Quantity recycled or co-processed or used:	Co-processed in Cement Kilns: Hazardous waste (solid) – 20062.36 Tonne Hazardous waste (liquid) – 2435.19 Tonne
4	Quantity of products dispatched (wherever applicable):	Not applicable
5	Quantity of waste generated:	Not applicable
6	Quantity of waste disposed:	Not applicable
7	Quantity re-exported (whether applicable):	Not applicable
8	Quantity in storage at the end of the year:	For Cement Plant: Hazardous waste (solid) – 217.95 Tonne Hazardous waste (liquid) – 30.07 Tonne

Note: All these materials are received through APEMCL portal, from the sources located within Andhra Pradesh.

Various cleaner production practices are initiated to control air emissions as well as fugitive emissions from sources. These practices are:

- For better housekeeping, '5-S – Work Place Management' is implemented.
- Fuel required for cement plant is mostly received through railway wagons to the plant premises.
- Fly ash generated from thermal power plant is being utilized in cement plant.
- 3 Nos. of road sweepers, 2 Nos. of vacuum cleaners and 1 No. of mobile water sprinkler are in operation to maintain clean environment. The operating cost of these is Rs. 30.96 lakh in the financial year 2022-2023 against Rs. 24.58 lakh in the financial year 2021-2022.
- Water spraying system installed ay limestone crusher hopper to control fugitive dust.
- The following air pollution control equipment are in operation in the present operating cement plant & thermal power plant to control process emissions as well as fugitive emissions from all vulnerable sources, etc.: as on 31.03.2023:
    - 125 Nos. of RABH / Bag Houses / Bag Filters
    - 5 Nos. of ESPs
    - 5 Nos. of Water Fogging Systems
    - 26 Nos. of bag filters are erection and commissioning stage. These will be commissioned along with associated process equipment.
- Duoflex Burners for kiln firing & low NOx calciners are used to reduce NOx levels.
- Usage of low grade limestone (of silica content up to 18%) to conserve the reserves in the captive limestone mines.
- Permanent Water Sprinkling System installed at mines haul road.
- Most of the internal roads are paved with concrete to arrest fugitive dust.
- Landscaping and Greenbelt development taken up in plant premises and township area for pleasant environment.

- Telescopic chute and hatch for the wagon loading spout are arranged at clinker truck loading and clinker wagon loading areas respectively to reduce the fugitive emission.

GREENBELT ACTIVITIES:

Greenbelt is developed in an area of 130.24 ha by March 2023. Emphasis is being made to maintain 130.24 ha greenbelt area in and around plant premises. Emphasis is also being made in planting dust capturing plants in consultation with local DFO to mitigate the effects of air emissions.

High Density Plantation (Miyawaki method):

High density plantation is initiated in the financial year 2019-2020. The details of high density plantation carried out in the plant, captive mines and colony up to March 2023:

- No. of saplings planted – 22335.
- Total area covered – 6040 m^2.

RECENT SOCIO - ECONOMIC MEASURES CARRIED OUT:

As part of Corporate Social Responsibility, various socio-economic measures are being carried out. Amount spent on various socio-economic activities for the surrounding villages in the financial year 2022-2023 is Rs. 1,20,10,873 /- against Rs. 1,18,27,267/- in the financial year 2021-2022.

EXPENDITURE INCURRED FOR ENVIRONMENT PROTECTION:

Various expenditures incurred in the financial year 2022-2023 for environment protection measures are listed in Annexure - VIII.

- The cost of power consumed for operation of various pollution control equipment operated in cement plant & thermal power plant in the financial year 2022-2023 (air & water pollution equipment) is Rs. 1104.77 lakh against Rs. 860.35 lakh in financial year 2021-2022 i.e., Rs. 64.45/tonne of cement in the financial year 2022-2023 against Rs. 55.80/tonne of cement in the financial year 2021-2022.
- Rs. 603.50 lakh incurred towards capital cost for various pollution control measures for cement plant, thermal power plant and mines in the financial year 2022-2023 against Rs. 1135.156 lakh investment for capital cost in the financial year 2021-2022.
- Total environmental protection expenditure made in the financial year 2022-2023 (for cement plant, thermal power plant and mines) is Rs. 2579.04 lakh against Rs. 3151.24 lakh in financial year 2021-2022, i.e., nearly Rs. 150.46/tonne of cement in financial year 2022-2023 against Rs. 204.38/tonne of cement in financial year 2021-2022.
- An amount of Rs. 1564.20 lakh is allocated towards Environment Management Activities for the financial year 2023-2024 towards capital as well as recurring costs for plant & mines and being spent.

ENERGY CONSERVATION:

- Certified for Energy Management System – ISO 50001:2018 and various initiates are being taken to optimize the energy consumption.
- The exit gases from kilns are being utilized for drying of raw materials while raw mills & coal mills. Vent gases from coolers are being utilized for cement grinding section.
- Waste Heat Boilers connected to Cement Plant Line – I, II & III and power is being produced from the excess waste heat recovered from these circuits.
- Pet coke (imported / indigenous) is being used in cement plant.
- Various alternate fuels received in the financial year 2022-2023:

S. No.	Name of Alternate Fuel received	Source / Industry	Procured Quantity, Tonne
1	Black Gram Husk	Sri Raghavendra Swamy Minerals, Jaggaiahpet	97.14
2	Briquette	Godrej Agrovet limited, west Godavari	521.14
3	Burnt Maize Sticks	Sri Ambika Bio Fuels, Vijayawada	1,348.60
4	COC Feed	Sri Raghavendra Swamy Minerals, Jaggaiahpet	30.80
5	Corn Waste	Sri Raghavendra Swamy Minerals, Jaggaiahpet	28.52
6	Green Maize Sticks	Sri Ambika Bio Fuels, Vijayawada	6.89
7	Palm Fibre	Sri Chaitanya Traders, Nandyal	324.26
8	Palm Nut Shell	Godrej Agrovet limited, west Godavari	29.36
9	PP Waste	Coasta waste management, Vizag.	6.54
10	Saw Dust	Planet Energies, Hyderabad	17.26
11	Tyre Fibre	Thai Evergreen Industries Private Limited, Chennai	8.04
12	Bengal Gram Dust	Sri Raghavendra Swamy Minerals, Jaggaiahpet	217.95
13	Carbon Black	Sri Raghavendra Swamy Minerals, Jaggaiahpet	35.94
14	Wood Chips	1.Sri Ambika Bio Fuels, Vijayawada 2.Sri Chaitanya Traders, Nandyal 3.Planet Energies, Hyderabad	5,006.64
15	Wood Bark	Planet Energies, Hyderabad	611.50
16	Rice Husk	Sri Satyanarayana Swamy Entrp, Kodad	3,202.70
17	Chilli Spent	Chenguang Biotech (India) Pvt. Ltd., Khammam	192.44
18	Maize Oil Extracted Sticks	Sri Ambika Bio Fuels, Vijayawada	375.88
19	Wood Shives	Sri Ambika Bio Fuels, Vijayawada	760.44
20	Ground Nut Dust	Sri Ambika Bio Fuels, Vijayawada	208.95
21	Bagasse Waste	Sri Raghavendra Swamy Minerals, Jaggaiahpet	91.22
22	Coal Dust	Planet Energies, Hyderabad	320.00
		Total	**13,442.21**

- The details of LED lights by the end of March 2022 are as follows:

Total LED light fittings	12921Nos.
Total rating of LED lights	578124 W
Amount invested on LED lights	Rs. 284.60 Lakh

- LED lights are being distributed to prize winners for all energy management system competitions to inculcate LED light usage in the residential areas located in colony as well as in nearby villages.

CELEBRATION OF WORLD ENVIRONMENT DAY:

- On the eve of World Environment Day – 5th June 2022, plantation activity conducted at plant premises, mines premises, colony premises and at surrounding areas.

Annexure - II/1

THE RAMCO CEMENTS LTD, KSR NAGAR
THERMAL POWER PLANT - EFLLUENT TREATMENT PLANT OUTLET QUALITY - YEAR 2022-2023

Parameter	Unit	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Norm	Average / Range	Min.	Max.
p^H		7.77	7.71	7.78	7.69	7.72	7.79	7.82	7.77	7.71	7.77	7.81	7.78	5.5 - 9.0	7.69 - 7.82	7.69	7.82
Total Dissolved Solids	mg/L	901	923	936	918	954	963	929	912	938	952	963	996	2100	940.4	901	996
Total Suspended Solids	mg/L	31.2	32.6	33.9	32.6	33.9	35.1	36.3	34.2	36.3	37.3	38.9	39.3	100	35.1	31.2	39.3
Chemical Oxygen Demand	mg/L	65.1	66.9	65.1	60.3	62.4	63.9	65.3	63.7	65.1	66.2	67.3	65.2	250	64.7	60.3	67.3
BOD (for 3 days at 27 ^{O}C)	mg/L	23.5	22.6	23.8	21.2	22.8	23.6	24.1	23.9	24.6	25.3	24.2	25.3	100	23.7	21.2	25.3
Oil & Grease	mg/L	1.8	1.7	1.8	1.7	1.8	1.7	1.8	1.6	1.5	1.4	1.5	1.4	10	1.6	1.4	1.8

THE RAMCO CEMENTS LTD, KSR NAGAR
SEWAGE TREATMENT PLANT OUTLET QUALITY - YEAR - 2022-2023

Parameter	Unit	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Norm	Average / Range	Min.	Max.
p^H		7.58	7.62	7.67	7.59	7.63	7.60	7.67	7.61	7.68	7.61	7.68	7.79	5.5 - 9.0	7.58 - 7.79	7.58	7.79
Total Dissolved Solids	mg/L	626	639	646	653	629	618	623	638	641	639	641	652	2100	637.1	618	653
Total Suspended Solids	mg/L	23.7	25.1	26.2	24.2	23.1	22.7	25.1	24.6	25.2	24.3	25.2	26.3	200	24.6	22.7	26.3
Chemical Oxygen Demand	mg/L	31.6	32.7	33.1	33.2	35.1	34.6	33.9	34.5	36.1	37.3	38.3	39.6	250	35.0	31.6	39.6
BOD (for 3 days at 27 ^{o}C)	mg/L	7.9	8.1	8.3	8.1	8.3	8	8.2	8.4	8.2	8.4	8.5	8.4	100	8.2	7.9	8.5
Oil & Grease	mg/L	1.2	1.4	1.5	1.3	1.5	1.7	1.9	1.7	1.5	1.7	1.8	1.7	10	1.6	1.2	1.9

Annexure - II/3

THE RAMCO CEMENTS LTD, KSR NAGAR
AUTO GARAGE OIL & GREASE TRAP OUTLET QUALITY - YEAR 2022-2023

Parameter	Unit	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Norm	Average / Range	Min.	Max.
p^H		7.79	7.83	7.91	7.99	7.91	7.84	7.78	7.77	7.68	7.71	7.83	7.91	5.5 - 9.0	7.68 - 7.99	7.68	7.99
Total Dissolved Solids	mg/L	912	923	936	926	938	921	903	923	955	969	976	989	2100	939.3	903	989
Total Suspended Solids	mg/L	77.3	78.9	79.6	78.3	76.9	75.4	74.3	75.2	71.4	72.3	73.5	75.1	200	75.7	71.4	79.6
Chemical Oxygen Demand	mg/L	129	136	129	132	129	136	129	133	141	148	151	158	250	137.6	129	158
BOD (for 3 days at 27 ^{o}C)	mg/L	40.6	42.3	41.6	40.3	42.3	43.1	40.6	41.8	43.8	45.1	46.2	48.3	100	43.0	40.3	48.3
Oil & Grease	mg/L	2.4	2.7	2.5	2.7	2.5	2.7	2.5	2.4	2.1	2.4	2.6	2.4	10	2.5	2.1	2.7

Annexure - III

THE RAMCO CEMENTS LTD., KSR NAGAR
STACK MONITORING DATA - FINANCIAL YEAR 2022-2023

S. No.	Stack Attached to	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Average	Norm
I.	**PM Concentration, mg/Nm^3**														
1	Kiln - I Bag House			20.4		7.6	20.1		22.9	20.7	11.9	17.3	20.1	17.6	30
2	Coal Mill - I Bag House			14.4		9.8	7.9		10.5	7.4	8.7		7.9	9.5	30
3	Cooler - I - ESP			16.6		9.7	19.9		14	19.2	16.9	13.5	19.9	16.2	30
4	Kiln - II RABH	21.4	19.1	21.1	25.6		23.1			27.1	17.8	28.2	26.5	23.3	30
5	Coal Mill - II Bag House	9.1	15.8	15.1	10.3		10.1			5.9	12.2	6.6	10.1	10.6	30
6	Cooler - II - ESP	14.6	12.2	18.7	13		11.6			15.6	14.9	25.1	15.1	15.6	30
7	Kiln - III Bag House	14.8	10	17.5	11.3	16	15.5	10.8	11.4	19.8	14.8	14	15.5	14.3	20
8	Coal Mill - III Bag House	17.9	14.3	16.2	6.4	14.1	16.5	16.3	8.1	11.3	13.6	13.3	14.2	13.5	20
9	Cooler - III - ESP	17.8	15.8	13.5	8.4	7.8	10.6	8.6	9	17.2	6.5	15	17.2	12.3	20
10	Cement Mill Separator Bag House	20.1	21.1	18.2	21.2	23	21.5	10.7	11.4	6.4	8.5	6.8	13.5	15.2	30
11	Cement Mill Vent Bag Filter	12.2	15.6	14.4	15.9	13.4	9.5	7.3	10.3	7.5	13.4	9.7	14.7	12.0	30
12	Slag Mill Bag House	22.4		24.4		18	17.9	9.2	10.8	15.8	9.2	14.9	17.2	16.0	30
13	Limestone Crusher Bag Filter	7.3	9.9	8.6		7.4	5.2			5.5	16.1	10.2	10.9	9.0	30
14	Thermal Power Plant ESPs	20.8	33.5	18.9	19.1	25.8	23.1	27.4	27.0	25.6	26.5	19.8	26.5	24.5	50
II.	**SO_2 Concentration,, mg/Nm^3**														
1	Kiln - I Bag House			76		BDL	14		BDL	BDL	BDL	BDL	12	34.0	100
2	Kiln - II RABH	31.5	BDL	66	16		7.7			BDL	BDL	BDL	20	28.2	100
3	Kiln - III Bag House	25	14	62	69	BDL	5.4	BDL	BDL	BDL	BDL	BDL	BDL	35.1	100
4	Thermal Power Plant ESPs	400	402	355	408	525	571	466	470	296	532	446	519	449.2	600
III.	**NOx Concentration,, mg/Nm^3**														
1	Kiln - I Bag House			453		589	500		390	398	339	421	452	442.8	600
2	Kiln - II RABH	517	570	615	441		595			423	415	398	595	507.7	800
3	Kiln - III Bag House	407	515	542	465	405	504	204	240	413	416	442	596	429.1	600
4	Thermal Power Plant ESPs	283	286	381	363	373	178	353	340	400	380	344	172	321.1	450

THE RAMCO CEMENTS LTD., KSR NAGAR
AMBIENT AIR QUALITY MONITORING DATA - YEAR 2022-2023

Month	Near Temple				Near Slag Shed				Mines Office			
	PM_{10}	$PM_{2.5}$	SO_2	NOx	PM_{10}	$PM_{2.5}$	SO_2	NOx	PM_{10}	$PM_{2.5}$	SO_2	NOx
Apr-22	63.8	25.2	16.2	21.6	65.1	26.3	15.6	18.9	66.9	27.1	15.3	19.6
May-22	72.4	29.3	16.9	22.3	69.7	28.0	17.3	23.8	75.1	30.7	16.2	22.8
Jun-22	78.9	28.6	17.1	23.9	73.7	29.7	17.9	25.1	79.6	33.8	17.8	24.6
Jul-22	63.1	25.3	16.3	20.7	62.9	27.3	16.2	21.6	60.7	30.6	15.9	20.2
Aug-22	64.8	26.8	16.8	21.3	65.2	28.9	16.5	22.7	63.1	31.2	16.4	21.8
Sep-22	63.9	25.4	15	20.6	61.2	27	15.9	21.4	60.7	30.6	15.3	20.3
Oct-22	60.8	26.9	15.6	21.4	62.9	28.3	16.1	22.3	63.3	31.6	16.7	21.2
Nov-22	64.2	27.1	16.2	20.9	63.5	29.7	16.9	21.6	66.2	32.3	17.1	23.4
Dec-22	68.3	29.6	17.1	21.2	62.7	26.2	15.4	19.1	58.9	30.6	15.2	20.5
Jan-23	70.1	31.6	18.3	22.3	63.8	28.9	16.2	20.8	61.6	32.3	16.7	21.6
Feb-23	73.2	32.9	19.3	23.8	65.1	29.6	17.1	21.2	63.8	33.9	17.3	22.7
Mar-23	75.9	30.8	20.1	24.6	69.7	28.5	19.9	23.9	65.1	26.4	21.6	26.1
Norm	100	60	80	80	100	60	80	80	100	60	80	80
Avg.	**68.3**	**28.3**	**17.1**	**22.1**	**65.5**	**28.2**	**16.8**	**21.9**	**65.4**	**30.9**	**16.8**	**22.1**

Note: All values are mentioned in $\mu g/m^3$.

Annexure - IV/2

THE RAMCO CEMENTS LTD., KSR NAGAR
AMBIENT AIR QUALITY MONITORING DATA - BUFFER ZONE VILLAGES
(PERIOD - APRIL 2022 TO MARCH 2023)

Location	Parameter	Apr-22		May'2022		Jun'2022		Jul'2022		Aug'2022		Sep'2022		Oct'2022		Nov'2022		Dec'2022		Jan'2023		Feb'2023		Mar'2023		Average	Limits
		I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night	I Fort-night	II Fort-night		
Dharmavarapupadu Tanda	PM 10	56.3	53.2	60.6	55.9	53.9	49.6	50.6	42.9	52.3	45.3	53.9	53.6	55.2	56.2	56.3	58.3	57.2	59.2	59.3	62.3	60.2	63.5	63.5	65.3	56.03	100
	PM 2.5	22.9	21.4	24.6	22.5	21.9	20.0	20.5	17.3	21.2	18.3	21.9	21.6	22.4	22.6	22.9	23.5	23.2	23.9	24.1	25.1	24.4	25.6	25.8	26.3	22.66	60
	SO_2	14.5	15.2	15.7	16.8	14.3	14.3	12.1	11.2	13.2	13.9	14.1	14.2	15.3	15.3	14.1	16.2	13.8	15.4	12.9	16.2	13.5	17.2	15.2	18.4	14.71	80
	NO_x	17.1	17.9	18.3	19.5	16.9	17.0	14.7	13.9	15.8	16.6	16.7	16.9	17.9	18.0	16.7	18.9	16.4	18.1	15.5	18.9	16.1	19.9	17.8	21.1	17.36	80
	CO	221.0	224.0	236.0	236.0	248.0	212.0	213	198.0	231.0	221.0	246.0	232.0	251.0	245.0	246.0	229.0	254.0	236.0	261.0	246.0	263.0	259.0	286.0	264.0	239.92	2000
Jayanthipuram	PM 10	59.1	55.1	62.3	57.3	52.7	52.3	48.3	43.8	50.4	45.2	51.6	55.1	53.4	57.9	55.2	60.6	53.1	58.3	55.1	59.6	57.8	58.6	58.9	62.1	55.16	100
	PM 2.5	23.7	22.5	25.0	23.4	21.1	21.3	19.4	17.9	20.2	18.4	20.7	22.5	21.4	23.6	22.1	24.7	21.3	23.8	22.1	24.3	23.2	23.9	23.6	25.3	22.31	60
	SO_2	13.9	15.3	15.6	16.1	15.2	15.9	13.2	10.9	12.9	11.6	13.5	12.8	14.6	13.9	14.3	14.1	13.9	14.9	14.1	15.3	14.9	16.1	15.5	16.9	14.39	80
	NO_x	16.8	18.2	18.5	19.0	18.1	18.8	16.1	13.8	15.8	14.5	16.4	15.7	17.5	16.8	17.2	17.0	16.8	17.8	17.0	18.2	17.8	19.0	18.4	19.8	17.29	80
	CO	252.0	253.0	242.0	269.0	253.0	253.0	221	187.0	238.0	229.0	252.0	241.0	263.0	252.0	259.0	261.0	249.0	248.0	254.0	252.0	268.0	263.0	249.0	271.0	249.13	2000
Chillakallu	PM 10	57.6	56.8	61.3	60.2	54.6	58.2	47.6	50.6	49.3	53.1	51.8	54.6	52.9	56.8	54.6	58.9	52.7	56.2	54.6	58.3	55.3	60.2	58.6	63.8	55.78	100
	PM 2.5	23.3	23.0	24.8	24.4	22.1	23.6	19.2	20.5	19.9	21.5	20.9	22.1	21.4	23.0	22.1	23.9	21.3	22.8	22.1	23.6	22.3	24.4	23.7	25.8	22.57	60
	SO_2	14.6	15.9	16.3	16.3	16.2	14.6	11.9	11.1	12.4	11.8	12.6	12.9	13.9	14.6	13.2	15.3	14.1	14.8	13.6	15.8	14.1	16.3	16.2	17.3	14.41	80
	NO_x	17.3	19.0	19.0	19.4	18.9	17.7	14.6	14.2	15.1	14.9	15.3	16.0	16.6	17.7	15.9	18.4	16.8	17.9	16.3	18.9	16.8	19.4	18.9	20.4	17.31	80
	CO	249.0	258.0	281.0	246.0	296.0	241.0	212	201.0	239	234.0	247.0	236.0	259.0	248.0	241.0	252.0	242.0	246.0	248.0	253.0	252	258.0	238.0	262.0	247.46	2000
K.Agraharam Village	PM 10	54.5	57.3	56.2	61.3	53.5	59.5	41.2	52.7	43.6	54.1	45.9	57.9	48.6	59.6	50.2	61.4	48.3	60.5	52.1	62.4	53.9	63.5	55.1	64.6	54.91	100
	PM 2.5	22.0	23.4	22.6	25.0	21.6	24.3	16.6	21.5	17.6	22.1	18.5	23.6	19.6	24.3	20.2	25.1	19.5	24.7	21.0	25.5	21.7	25.9	22.2	26.4	22.29	60
	SO_2	15.8	15.6	16.9	16.9	15.3	17.3	10.6	12.3	11.6	12.5	13.7	13.5	14.1	14.8	14.0	15.4	14.5	15.3	14.9	15.9	15.1	16.8	14.3	17.4	14.77	80
	NO_x	18.9	18.0	20.0	19.3	18.4	19.7	13.7	14.7	14.7	14.9	16.8	15.9	17.2	17.2	17.1	17.8	17.6	17.7	18.0	18.3	18.2	19.2	17.4	19.8	17.52	80
	CO	251.0	246.0	274.0	289.0	283.0	276.0	237	212.0	246	238.0	249.0	245.0	262.0	258.0	268.0	263.0	258.0	254.0	261.0	261.0	269	267.0	252.0	269.0	257.83	2000
Jaggayyapet	PM 10	56.8	68.2	58.9	70.2	49.6	68.3	43.1	61.9	45.1	63.8	46.2	53.6	49.3	55:1	51.8	57.6	49.6	56.3	53.5	58.9	55.2	59.1	56.3	58.4	56.12	100
	PM 2.5	23.3	27.6	24.2	28.4	20.4	27.6	17.7	25.0	18.5	25.8	19.0	21.7	20.3	22.3	21.3	23.3	20.4	22.7	22.0	23.8	22.7	23.9	23.1	23.6	22.86	60
	SO_2	14.9	15.8	16.7	16.4	15.9	15.4	11.2	11.2	12.3	11.9	13.8	12.6	14.3	13.9	13.7	14.5	13.2	14.1	13.7	14.6	16.3	15.9	17.1	16.5	14.41	80
	NO_x	17.3	18.8	19.1	19.4	18.3	18.4	13.6	14.2	14.7	14.9	16.2	15.6	16.7	16.9	16.1	17.5	15.6	17.1	16.1	17.6	18.7	18.9	19.5	19.5	17.11	80
	CO	253.0	301.0	263.0	321.0	274.0	302.0	221.0	214.0	229	226.0	239.0	233.0	248.0	249.0	251.0	259.0	247.0	241.0	249.0	258.0	253	261.0	263.0	258.0	254.71	2000
Budawada	PM 10	62.3	57.3	65.3	59.3	50.6	57.6	45.2	55.4	47.2	57.1	48.3	58.3	51.6	60.2	53.4	62.3	50.1	61.6	55.9	63.5	58.3	65.2	60.2	67.3	57.23	100
	PM 2.5	24.6	23.6	25.8	24.4	20.0	23.7	17.9	22.8	18.6	23.5	19.1	24.0	20.4	24.7	21.1	25.6	19.8	25.3	22.1	26.1	23	26.8	23.8	27.7	23.10	60
	SO_2	14.7	15.3	15.3	16.7	16.2	14.6	12.3	12.9	12.8	12.6	13.1	12.7	14.4	14.2	14.1	13.7	13.8	14.1	13.2	14.5	14.1	15.3	15.4	15.8	14.24	80
	NO_x	17.5	17.9	18.1	19.3	19.0	17.2	15.1	15.5	15.6	15.2	15.9	15.3	17.2	16.8	16.9	16.3	16.6	16.7	16	17.1	16.9	17.9	18.2	18.4	16.94	80
	CO	265.0	253.0	279.0	263.0	289.0	248.0	245.0	222.0	253	241.0	256.0	248.0	270.0	256.0	274.0	271.0	263	263.0	266	265	271	272.0	251.0	281.0	261.04	2000
Vedadri	PM 10	59.5	55.1	63.2	57.1	48.3	53.2	47.3	47.9	48.6	49.6	49.6	52.7	52.8	58.3	54.6	59.7	52.7	57.2	56.8	59.6	57.9	60.6	59.5	61.3	55.13	100
	PM 2.5	24.3	21.9	25.8	22.7	19.7	21.2	19.3	19.1	19.8	19.7	20.2	21.0	21.5	23.2	22.3	23.8	21.5	22.8	23.2	23.7	23.6	24.1	24.3	24.4	22.21	60
	SO_2	15.8	16.3	16.8	17.1	15.4	15.3	10.6	12.3	11.6	12.8	12.9	13.1	13.8	14.5	13.4	14.9	13.1	13.8	13.8	14.4	14.5	15.2	15.2	16.3	14.29	80
	NO_x	18.1	19.1	19.1	19.9	17.7	18.1	12.9	15.1	13.9	15.6	15.2	15.9	16.1	17.3	15.7	17.7	15.4	16.6	16.1	16.9	16.8	18.0	17.5	19.1	16.83	80
	CO	263.0	247.0	286.0	258.0	291.0	246.0	214.0	211.0	218	223.0	238.0	247.0	244.0	254.0	252.0	264.0	248	248.0	253	254	259	263.0	289.0	266.0	251.50	2000
Pochampalli	PM 10	60.2	59.6	62.3	62.3	51.2	59.3	41.8	50.6	44.1	52.1	45.3	55.1	53.5	57.6	55.1	58.3	53.5	56.9	54.1	55.1	56.2	57.1	58.4	56.3	54.83	100
	PM 2.5	24.6	24.2	25.5	25.3	20.9	24.1	17.1	20.5	18	21.2	18.5	22.4	21.9	23.4	22.5	23.7	21.9	23.1	22.1	22.4	23	23.2	23.9	22.9	22.35	60
	SO_2	16.2	15.8	16.9	16.3	15.3	14.9	11.1	11.6	11.5	12.1	12.6	13.7	13.2	14.3	13.9	14.6	13.5	14.2	13.3	14.3	14.1	15.8	14.8	16.4	14.18	80
	NO_x	19.1	18.1	19.8	18.6	18.2	17.2	14.0	13.9	14.4	14.4	15.5	16.0	16.1	16.6	16.8	16.9	16.4	16.5	16.2	16.6	17	18.1	17.7	18.7	16.78	80
	CO	264.0	256.0	274.0	262.0	283.0	236.0	215.0	199.0	221	212.0	241.0	215.0	256.0	229.0	259.0	238.0	264	227.0	277	239	278	248.0	296.0	253.0	247.58	2000
Ravirala	PM 10	58.3	57.3	60.9	60.9	52.8	58.2	40.9	48.3	43.9	49.8	44.9	52.9	50.6	53.8	52.9	55.1	49.6	53.2	51.2	56.8	53.1	58.3	55.1	60.2	53.29	100
	PM 2.5	23.7	23.4	24.8	24.8	21.5	23.7	16.6	19.7	17.9	20.3	18.3	21.6	20.6	22.0	21.5	22.5	20.2	21.7	20.8	23.2	21.6	23.8	22.4	24.6	21.72	60
	SO_2	15.3	16.8	17.1	17.4	16.2	14.6	12.4	10.9	12.9	11.6	13.7	12.9	14.1	13.8	14.5	14.1	14.1	13.8	14.5	13.9	14.9	14.6	15.4	15.8	14.39	80
	NO_x	18.3	19.7	20.1	20.3	19.2	17.5	15.4	13.8	15.9	14.5	16.7	15.8	17.1	16.7	17.5	17.0	17.1	16.7	17.5	16.8	17.9	17.5	18.4	18.7	17.34	80
	CO	258.0	257.0	263.0	263.0	277.0	212.0	223.0	183.0	233	209.0	250.0	202.0	278.0	223.0	284.0	240.0	271	221.0	283	229	296	233.0	257.0	221.0	244.42	2000

Note: All values are mentioned in $\mu g/m^3$

ANNEXURE - V

THE RAMCO CEMENTS LIMITED

ISO 9001 ISO 14001 ISO 45001 ISO 50001
Certified Company

Kumarasamy'Raja Nagar – 521457
Jaggayyapet Mandal, Krishna District,
Andhra Pradesh, India
Phone: 08654 224400-04
Fax: 08654 222352
E-mail: mcljpm@ramcocements.co.in

RCL/PCB/17/2023-2024

24th June 2023

The Environmental Engineer,
A .P. Pollution Control Board,
Regional Office, Plot No: 41,
Gurunanak Road,
Sri Kanakadurga Officers Colony,
Vijayawada – 521 018.

Dear Sir,

Sub: Submission of Annual Returns of Hazardous Wastes – Form – 4 for our cement plant and thermal power plant for the Financial Year 2022-2023 - Reg.

Ref: i. CFO order for plant No. APPCB/VJA/VJA/488/HO/CFO/2017- dated 02.11.2021.
ii. CFO amendment order for plant No. APPCB/VJA/VJA/488/HO/CFO/2017- dated 02.12.2021.
iii. CTO Amendment Order No. APPCB/VJA/VJA/488/CTO/HO/2019 dated 30.11.2022.

Please find enclosed herewith duly filled in Form – 4 - 'Form for Filling Annual Returns' of Hazardous Wastes for the financial year 2022-2023 for our Cement Plant and Thermal Power Plant.

This is for your kind information please.

Thanking you,

Yours faithfully,
for The Ramco Cements Limited,

(N RAVISHANKAR)
Sr. President (Mfg.)

Encl.: As above.

FORM 4

[See rules 6 (5), 13(8), 16(6) and 22 (2)]

FORM FOR FILLING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th June of every year for the preceding period April to March]

1	Name and address of facility:	The Ramco Cements Limited, Kumarasamy Raja Nagar - 521 457, Jaggayyapet (M), NTR Dist
2	Authorization No. and Date of issue:	Authorization No.: • CFO order for plant No. APPCB/VJA/VJA/488/HO/CFO/2017- and dated 02.11.2021. • CFO amendment order for plant No. APPCB/VJA/VJA/488/HO/CFO/2017- and dated 02.12.2021. • CTO Amendment Order No. APPCB/VJA/VJA/488/CTO/HO/2019 dated 30.11.2022.
3	Name of the authorized person and full address with telephone, fax number and e-mail:	N Ravi Shankar, Sr. President (Mfg.), The Ramco Cements Limited, Kumarasamy Raja Nagar - 521 457, Jaggayyapet (M), NTR Dist. Telephone: 08654 – 224400 to 04, Fax: 08654 – 222352, e-mail: mcljpm@ramcocements.co.in
4	Production during the year (product wise), whether applicable:	

Type of Product	Unit	Quantity in 2022-2023
Clinker	Tonne	37,49,629
Cement	Tonne	17,14,047
Thermal Power	kW/hr	13,10,04,061
Waste Heat Recovery Power	kW/hr	16,30,43,101

Part A. To be filled by hazardous waste generators

1	Total quantity of waste generated category wise:	From cement plant, thermal power plant, waste heat recovery plant and limestone mines:

Type of hazardous waste	Quantity (in Tonne / kL / Nos.)
Waste Oil	Nil
Waste Grease	Nil
Waste Hi-chrome Grinding Media	Nil
Waste Lead Acid Batteries	62 Nos.

2	Quantity dispatched:	
(i)	To disposal facility:	Not applicable

<table>
<tr><td>(ii)</td><td>To recycler to co-processors or pre-processor:</td><td>From cement plant, thermal power plant, waste heat recovery plant and limestone mines:
<table>
<tr><th>Type of hazardous waste</th><th>Recycler</th><th>Quantity (in Tonne / kL / Nos.)</th></tr>
<tr><td>Waste Oil</td><td>NA</td><td>Nil</td></tr>
<tr><td>Waste Grease</td><td>NA</td><td>Nil</td></tr>
<tr><td>Waste Hi-chrome Grinding Media</td><td>NA</td><td>Nil</td></tr>
<tr><td>Waste Lead Acid Batteries</td><td>R.Ess Iron and Steel Pvt. Ltd</td><td>62 Nos.</td></tr>
</table></td></tr>
<tr><td>(iii)</td><td>Others:</td><td>Not applicable</td></tr>
<tr><td>3</td><td>Quantity utilized in-house, if any:</td><td>The waste oil & waste grease generated in the cement plant, thermal power plant, waste heat recovery plant and limestone mines are totally re-used within the premises for:
Waste grease for lubrication of reclaimer chains along with fresh grease.
Waste oil for kiln light-up along with fresh HSD.</td></tr>
<tr><td>4</td><td>Quantity in storage at the end of the year:</td><td>From cement plant, thermal power plant, waste heat recovery plant and limestone mines:
<table>
<tr><th>Type of hazardous waste</th><th>Quantity (in Tonne / kL / Nos.)</th></tr>
<tr><td>Waste oil</td><td>Nil</td></tr>
<tr><td>Waste Grease</td><td>Nil</td></tr>
<tr><td>Waste Hi-chrome Grinding Media</td><td>Nil</td></tr>
<tr><td>Waste Lead Acid Batteries</td><td>Nil</td></tr>
</table></td></tr>
</table>

Part B. To be filled by Treatment, storage and disposal facility operators

1	Total quantity of received:	Not applicable
2	Quantity in stock at the beginning of the year:	
3	Quantity treated:	
4	Quantity disposed in landfills as such and after treatment:	
5	Quantity incinerated (if applicable):	
6	Quantity processed other than specified above:	
7	Quantity in storage at the end of the year:	

Part C. To be filled by recyclers or co-processors or other users

1	Quantity of waste received during the year:	
(i)	Domestic sources:	For Cement Plant - Through APEMCL portal: Hazardous waste (solid) - 20184.94 Tonne Hazardous waste (liquid) - 2465.26 Tonne
(ii)	Imported (if applicable):	Not applicable
2	Quantity in stock at the beginning of the year:	For Cement Plant: Hazardous waste (solid) – 95.37 Tonne Hazardous waste (liquid) – 0.0 Tonne
3	Quantity recycled or co-processed or used:	Co-processed in Cement Kilns: Hazardous waste (solid) – 20062.36 Tonne Hazardous waste (liquid) – 2435.19 Tonne
4	Quantity of products dispatched (wherever applicable):	Not applicable
5	Quantity of waste generated:	Not applicable
6	Quantity of waste disposed:	Not applicable
7	Quantity re-exported (whether applicable):	Not applicable
8	Quantity in storage at the end of the year:	For Cement Plant: Hazardous waste (solid) – 217.95 Tonne Hazardous waste (liquid) – 30.07 Tonne

Date: 24.06.2023
Place: KSR Nagar

Signature:
Designation: Sr. President (Mfg.)

ANNEXURE-VI

ISO 9001 ISO 14001 ISO 45001 ISO 50001
Certified Company

THE RAMCO CEMENTS LIMITED

Kumarasamy Raja Nagar – 521457
Jaggayyapet Mandal, Krishna District,
Andhra Pradesh, India
Phone: 08654 224400-04
Fax: 08654 222352
E-mail: mcljpm@ramcocements.co.in

RCL/PCB/04/2023-2024 04th May 2023

The Environmental Engineer,
A .P. Pollution Control Board,
Regional Office, Plot No: 41,
Gurunanak Road,
Sri Kanakadurga Officers Colony,
Vijayawada – 18.

Dear Sir,

Sub: Submission of Annual Returns of E-Wastes – Form – 3 for our Cement Plant, Thermal Power Plant & Waste Heat Recovery Plant for the Financial Year 2022-2023 - Reg.

Ref: i. CFO order for plant No. APPCB/VJA/VJA/488/HO/CFO/2017- dated 02.11.2021.
ii. CFO amendment order for plant No. APPCB/VJA/VJA/488/HO/CFO/2017- dated 02.12.2021.

Please find enclosed herewith duly filled in Form – 3 - 'Form for Filing Annual Returns' of E-Wastes for the financial year 2022-2023 for our Cement Plant, Thermal Power Plant & Waste Heat Recovery Plant.

This is for your kind information please.

Thanking you,

Yours faithfully,
for The Ramco Cements Limited,

(N RAVISHANKAR)
Sr. President (Mfg.)

Encl.: As above.

FORM-3

[See rules 4(5), 5(5), 8(6), 9(4), 10(8), 11(9), 13 (1) (xi), 13(2)(v), 13(3)(vii) and 13(4)(v)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted by producer or manufacturer or refurbisher or dismantler or recycler by 30th day of June following the financial year to which that return relates].

Quantity in Metric Tonnes (MT) and numbers

<table>
<tr><td>1</td><td>Name and address of the producer or manufacturer or refurbisher or dismantler or recycler</td><td>The Ramco Cements Limited,
Kumarasamy Raja Nagar - 521 457,
Jaggayyapet (M), NTR Dist.

For Cement Plant & Thermal Power Plant</td></tr>
<tr><td>2</td><td>Name of the authorised person and complete address with telephone and fax numbers and e-mail address</td><td>N Ravishankar, Sr. President (Mfg.),
The Ramco Cements Limited,
Kumarasamy Raja Nagar - 521 457,
Jaggayyapet (M), NTR Dist.
Telephone: 08654 – 224400 to 04,
Fax: 08654 – 222352,
e-mail: mcljpm@ramcocements.co.in</td></tr>
<tr><td>3</td><td>Total quantity of e-waste collected or channelised to recyclers or dismantlers for processing during the year for each category of electrical and electronic equipment listed in the Schedule I (Attach list) by PRODUCERS
Details of the above</td><td></td></tr>
<tr><td>3(A)*</td><td>BULK CONSUMERS: Quantity of e-waste</td><td>Cumulative quantity of generation in the financial year 2022-2023 for cement plant, thermal power plant & limestone mines:
<table>
<tr><td>Type</td><td>Quantity</td><td>No.</td></tr>
<tr><td>E-waste</td><td>Nil</td><td></td></tr>
<tr><td>Printer Cartridges</td><td>0.4 Tonne</td><td></td></tr>
</table></td></tr>
<tr><td>3(B)*</td><td>~~REFURBISHERS: Quantity of e-waste:~~</td><td></td></tr>
<tr><td>3(C)*</td><td>~~DISMANTLERS:~~
~~i Quantity of e-waste processed (Code wise);~~
~~ii. Details of materials or components recovered and sold;~~
~~iii. Quantity of e-waste sent to recycler;~~
~~iv. Residual quantity of e-waste sent to Treatment, Storage and Disposal Facility.~~</td><td></td></tr>
</table>

3(D)*	~~RECYCLERS:~~ ~~i. Quantity of e-waste processed (Code wise);~~ ~~ii. Details of materials recovered and sold in the market;~~ ~~iii. Details of residue sent to Treatment, Storage and Disposal Facility~~	
4	Name and full address of the destination with respect to 3(A)-3(D) above	In the financial year 2022-2023, 0.4 Tonne of e-waste is disposed to M/s Best E-Waste Recyclers Pvt. Ltd., Tumkur.
5	Type and quantity of materials segregated ~~or recovered~~ from e-waste of different codes as applicable to 3(A)-3(D)	Cumulative quantity available as on 31.03.2023 with respect to cement plant, thermal power plant & limestone mines: Type: E-waste — Quantity: 1.129 Tonne Type: Printer Cartridges — Quantity: 0.26532 Tonne

✓Enclose the list of recyclers to whom e-waste have been sent for recycling.

Place: KSR Nagar
Date: 04.05.2023

Signature of the authorised person

Note:-

(1) * Strike off whichever is not applicable.
(2) Provide any other information as stipulated in the conditions to the authoriser.
(3) In case filing on behalf of multiple regional offices, Bulk Consumers and Producers need to add extra rows to 1 & 3(A) with respect to each office.

ANNEXURE - VII

ISO 9001 ISO 14001 ISO 45001 ISO 50001
Certified Company

THE RAMCO CEMENTS LIMITED

Kumarasamy Raja Nagar – 521457
Jaggayyapet Mandal, Krishna District,
Andhra Pradesh, India
Phone: 08654 224400-04
Fax: 08654 222352
E-mail: mcljpm@ramcocements.co.in

RCL/PCB/63/2022-2023 06th March 2023

The Environmental Engineer
AP Pollution Control Board,
Regional Office, Plot No. 41,
Gurunanak Road,
Sri Kanakadurga Officers' Colony,
Vijayawada – 521 008.

Dear Sir,

Sub: Submission of Form – IV – Bio-Medical Waste Returns – Calendar Year 2022 – Reg.
Ref: Authorization Lr. No. BMW/APPCB/RO-VJA/2021-419 dated 05.08.2021.

This has reference to the above cited Bio-Medical Authorization letter issued for our Occupational Health Centre located at our cement plant. Please find enclosed herewith duly filled-in Form – IV – Bio-Medical Waste Returns for the period January 2022 to December 2022.

This is for your kind information and perusal please.

Thanking you,

Yours faithfully,
For The Ramco Cements Limited,

N Ravi Shankar
Sr. President (Mfg.)

Encl.: As above

Form – IV
(See rule 13)
ANNUAL REPORT

[To be submitted to the prescribed authority on or before 30th June every year for the period from January to December of the preceding year, by the occupier of Health Care Facility (HCF) or Common Bio-Medical Waste Treatment Facility (CBWTF)]

S. No.	Particulars	
1	Particulars of the Occupier	
	(i) Name of the authorised person (occupier or operator of facility)	Authorized Person - N Ravi Shankar Operator of Facility – Dr. S Raja Kesava Prasad
	(ii) Name of HCF or CBMWTF	Occupational Health Centre (The Ramco Cements Limited)
	(iii) Address for Correspondence	Kumarasamy Raja Nagar – 521 457, Jaggaiahpet Mandal, Krishna Dist., AP.
	(iv) Address of Facility	
	(v)Tel. No, Fax. No	Tel. No.: 08654 – 224400 - 04 Fax No.: 08654 - 222352
	(vi) E-mail ID	mcljpm@ramcocements.co.in
	(vii) URL of Website	www.ramcocements.in
	(viii) GPS coordinates of HCF ~~or CBMWTF~~	N - 16° 52' 28.7" E - 80 ° 07' 40.0"
	(ix) Ownership of HCF ~~or CBMWTF~~	The Ramco Cements Limited (~~State Government or~~ Private ~~or Semi Govt. or any other~~)
	(x) Status of Authorisation under the Bio-Medical Waste (Management and Handling) Rules	Authorisation No. BMW/APPCB/RO-VJA/2021-419 dated 05.08.2021 valid up to 30.09.2024.
	(xi) Status of Consents under Water Act and Air Act	Valid up to: 31.01.2027
2	Type of Health Care Facility	
	(i) Bedded Hospital	No. of Beds: 06 – Occupational Health Centre
	(ii) Non-bedded hospital (Clinic or Blood Bank or Clinical Laboratory or Research Institute or Veterinary Hospital or any other)	NA
	(iii) License number and its date of expiry	Factory Licence No. 9538 Expiry date: 31.12.2022
3	Details of CBMWTF	NA
	(i) Number healthcare facilities covered by CBMWTF	
	(ii) No. of beds covered by CBMWTF	
	(iii) Installed treatment and disposal capacity of CBMWTF	
	(iv) Quantity of biomedical waste treated or disposed by CBMWTF	
4	Quantity of waste generated or disposed in kg per annum (on monthly average basis)	Record of bio-medical waste generation is being maintained. Consolidated report (on month wise details) for the calendar year 2022 is enclosed as Annexure – I.
		• Yellow Category: 115.16 kg per annum
		• Red Category: 32.27 kg per annum

<table>
<tr><td>S. No.</td><td>Particulars</td><td></td></tr>
<tr><td></td><td></td><td>• White: 1.90 kg per annum</td></tr>
<tr><td></td><td></td><td>• Blue Category: 5.59 kg per annum</td></tr>
<tr><td></td><td></td><td>• General Solid waste: NA</td></tr>
<tr><td>5</td><td colspan="2">Details of the Storage, treatment, transportation, processing and Disposal Facility</td></tr>
<tr><td></td><td rowspan="3">(i) Details of the on-site storage facility</td><td>Size: Bins – 4 Nos.</td></tr>
<tr><td>Capacity: 20 L each – 4 Nos.</td></tr>
<tr><td>Provision of on-site storage (cold storage or any other provision) - Disposed to authorized treatment facility within stipulated time</td></tr>
<tr><td></td><td>disposal facilities</td><td>
<table>
<tr><th>Type of treatment equipment</th><th>No. of units</th><th>Capacity, kg/day</th><th>Quantity treated or disposed in kg per annum</th></tr>
<tr><td>Incinerators
Plasma Pyrolysis Autoclaves</td><td colspan="3">Not authorized</td></tr>
<tr><td>Microwave</td><td colspan="3">Not authorized</td></tr>
<tr><td>Shredder</td><td>01</td><td>----</td><td>----</td></tr>
<tr><td>Needle tip cutter or destroyer</td><td>01</td><td>----</td><td>----</td></tr>
<tr><td>Sharps encapsulation or concrete pit Deep burial pits</td><td colspan="3">Not authorized</td></tr>
<tr><td>Chemical disinfection</td><td>01</td><td>----</td><td>----</td></tr>
<tr><td>Any other treatment equipment</td><td colspan="3">Not authorized</td></tr>
</table>
</td></tr>
<tr><td></td><td>(iii) Quantity of recyclable wastes: sold to authorized recyclers after treatment in kg per annum</td><td>Consolidated report (on month wise details) recyclable waste sold to authorized recyclers after treatment for the calendar year 2022 is enclosed as Annexure – I.</td></tr>
<tr><td></td><td>(iv) No. of vehicles used for collection and transportation of biomedical waste</td><td>Vehicle of authorized treatment facility is used for transportation of biomedical waste.</td></tr>
<tr><td></td><td>(v) Details of incineration ash and ETP sludge generated and disposed during the treatment of wastes in kg per annum</td><td>
<table>
<tr><th></th><th>Quantity generated</th><th>Where disposed</th></tr>
<tr><td>Incineration ash
ETP sludge</td><td colspan="2">Not authorized</td></tr>
</table>
</td></tr>
<tr><td></td><td>(vi) Name of the Common Bio-Medical Waste Treatment Facility Operator through which wastes are disposed of</td><td>M/s Safenviron Bio-Medical Treatment Plant,
D. No. 29-3-14, Governorpet,
1st Venkateswara Rao Street,
Vijayawada, Krishna District.</td></tr>
<tr><td></td><td>(vii) List of member HCF not handed over bio-medical waste</td><td>NA</td></tr>
<tr><td>6</td><td>Do you have bio-medical waste management committee? If yes, attach minutes of the meetings held during the reporting period</td><td>No.</td></tr>
</table>

S. No.	Particulars	
7	Details trainings conducted on BMW	
	(i) Number of trainings conducted on BMW Management	Routine BMW awareness training programme is done to paramedics at our OHC. Any changes / amendments in the BMW Rules will be updated during consequent training programmes.
	(ii) number of personnel trained	06
	(iii) number of personnel trained at the time of induction	06
	(iv) number of personnel not undergone any training so far	NIL
	(v) whether standard manual for training is available?	Yes
	(vi) any other information	NA
8	Details of the accident occurred during the year	
	(i) Number of Accidents occurred	NIL
	(ii) Number of the persons affected	NIL
	(iii) Remedial Action taken (Please attach details if any)	NA
	(iv) Any Fatality occurred, details	NIL
9	Are you meeting the standards of air Pollution from the incinerator? How many times in last year could not met the standards?	Not authorized
	Details of Continuous online emission monitoring systems installed	Not authorized
10	Liquid waste generated and treatment methods in place. How many times you have not met the standards in a year?	Not authorized
11	Is the disinfection method or sterilization meeting the log 4 standards? How many times you have not met the standards in a year?	Not authorized
12	Any other relevant information	No

Certified that the above report is for the period from 01.01.2022 to 31.12.2022.

Date: 06.03.2023
Place: KSR Nagar

Name and Signature of the Head of the Institution
N Ravi Shankar
Sr. President (Mfg.)

The Ramco Cements Limited, Kumarasamy Raja Nagar
Details of Bio Medical Waste Handled
(Period - January 2022 to December 2022)

Sl. No	Month	Weight (in kilogram) of Used Linen & Dressing material (Yellow)	Weight (in kilogram) of Used Disposable Syringes (without needles & fixed needle syringes) & Intravenous sets (Red)	Weight (in kilogram) of Used Needles, needles from needle tip cutter & blades (White)	Weight (in kilogram) of Broken or discarded glass medicine vials& Ampoules (Blue)
1	Jan-22	0.3	0.1	0	0
2	Feb-22	5	4.1	0.45	0.35
3	Mar-22	4.45	3.95	0.45	0.3
4	Apr-22	1.1	6	0	0
5	May-22	1.5	4.45	0	0
6	Jun-22	6.74	6.25	0	0.35
7	Jul-22	28.88	1.45	0	0
8	Aug-22	12.16	1.23	0	1.6
9	Sep-22	12.4	1.34	0.5	1.31
10	Oct-22	13.57	0	0	0.38
11	Nov-22	12.85	0	0	0.7
12	Dec-22	16.21	3.4	0.5	0.6
	Grand Total	115.16	32.27	1.9	5.59
	Monthly average	9.597	2.689	0.158	0.466

ANNEXURE - I

Annexure - VIII

THE RAMCO CEMENTS LIMITED, KSR NAGAR
ENVIRONMENTAL PROTECTION EXPENDITURE FOR YEAR 2022-2023

S. No.	DESCRIPTION	Expenditure incurred in 2022-2023, Rs.	Budget for 2023-2024, Rs.
I.	**Recurring Cost - Plant**		
	Electrical units for operation of PCE (28996459*3.81)	110476509	
	Electrical units for operation of STP (68075*3.81)	259366	
	APPCB Analysis Charges	6380	
	CPCB & APPCB - Consent / authorization fees	50000	
	BF Maintenance - M/s Sri Ganesh Traders & Engineering Works	2892731	
	Road sweepers, vacuum cleanear, mobile water sprinkler & dozer	3095687	
	Environmental Monitoring Charges - Plant & Mines	1544743	120000000
	STP Operation charges - M/s Deepak Environs	1125051	
	CAAQMS AMC - M/s Swan	278400	
	CPCB & APPCB transmission - Yokogawa - AMC	81057	
	CPCB & APPCB transmission - Glens - AMC	87000	
	BMW handling charges - M/s Safenviron	16386	
	Operation of water treatment plant	378505	
	Operation of STP - chemicals & consumables	24380	
	Total (Rs.)	**120316195**	
II.	**Plant - APCE Modifications**		
	Replacement of filter bags, accessories, etc	7579805	300000
	Total (Rs.)	**7579805**	
III.	**Mines - Recurring**		
	Nonel detonators	6356000	
	Wet drilling	143000	21720000
	Reclamation	48529400	
	Water sprinkling	6400000	
	Total (Rs.)	**61428400**	
IV.	**Plantation (Plant & Mines)**		
	Mines - M/s Sri Laxmi Narasimha	2063631	
	Plant & Colony - Pragathi	2606010	
	Plant & Colony - Ramdasu Naik	1474956	
	Colony - Bharathi Contract Works	1430222	8000000
	Budawada - Bhavana Plantation	219594	
	Budawada - Hussain	159752	
	Purchase of sapplings from prative / government agencies	275000	
	Total (Rs.)	**8229165**	
V.	**Capital - Plant & Mines**		
	Sheds for limestone stock piles	31564243	
	Additioanl bag filters installed	20050000	
	Liquid haz. Waste feeding system	5558565	
	Solid haz. Waste shed side covering system	2594193	6400000
	Data transmission for Line - III online stacks	110200	
	Data transmission for 2 Nos. of CAAQMSs	95000	
	Seewage line cleaning machine	374559	
	Wood / Alternate fuel cutter	3650	
	Total (Rs.)	**60350410**	
	Grand Total (Rs.)	**257903975**	**156420000**

ANNEXURE - IX

Government of Andhra Pradesh

Rural Water Supply & Sanitation Department

State Level Water Testing Laboratory

O/o The Project Director

State Water Supply & Sanitation Mission

"C" Block,Vasudha shelter,LIC colony,Gollapudi,Vijayawada - 521225

TEST REPORT ON CHEMICAL ANALYSIS OF WATER(DRINKING)

General Physico- Chemical Parameters

Name and address : The Ramco Cements Ltd

Location : Jayanthipuram,Jaggayyapeta,NTR Dist.

Test Report ID No : SLL/SWSM/RWS/ Prvt/0105

Date of Reciept : 19-01-2023 Date of Issue : 25-01-2023

Description of the test items: Water Sample

Sl.No.	Physcio-Chemical Parameters	Units	Water Sample	As per IS (10500 - 2012)	
				Requirement (Acceptable Limit)	Permissible Limit (in the absence of alternative source)
1	Colour	Pt-Co	0	5	15
2	Turbidity	NTU	0	1	5
3	pH		6.58	6.5-8.5	No relaxation
4	Electrical Conductivity	micromhos/cm	143	-	-
5	Total Dissloved Solids	mg/lit	92	500	2000
6	Salinity	gm/lit	0.06	0.48	1.836
7	Total Alkalinity as $CaCO_3$	mg/lit	22	200	600
8	Total Hardness as $CaCO_3$	mg/lit	36	200	600
9	Calcium as Ca++	mg/lit	6	75	200
10	Magnesium as Mg++	mg/lit	5	30	100
11	Flouride as F^-	mg/lit	0.12	1.0	1.5
12	Chloride as Cl^-	mg/lit	17	250	1000
13	Nitrate as $NO3^-$	mg/lit	1.3	45	No relaxation
14	Sulphate as SO_4^{-2}	mg/lit	16.3	200	400
15	Total Iron as Fe	mg/lit	0.04	1.0	No relaxation
16	Sodium as Na+	mg/lit	11	-	-
17	Potassium as K+	mg/lit	3.2	-	-
18	Silica	mg/lit	3.6	-	-

S. Venkatesh
Lab.Chemist

Asst. Chemist
State Level Water Testing Laboratory
Rural Water Supply & Sanitation Dept. A.P
VIJAYAWADA.

Annexure - X

THE RAMCO CEMENTS LTD., KSR NAGAR
DETAILS OF RAIN WATER HARVESTING PITS

S. No.	LOCATION	TO ACCOMMODATE	PIT NUMBERING	No. OF PITS	ROOF TOP ARAES (m^2)	PAVED AREA (m^2)	UNPAVED AREA (m^2)	PIT DIMENSIONS		LATITUDE	LONGITUDE
								LENGTH, m	WIDTH, m		
I.	COLONY AREA										
1	C+ Qtrs buildings(C+1 -C+8)	Building roof top & Open yard	10	4	1200			3.45	1.5	16°52'26.55" N	80°07'45.85" E
			11					3.45	1.5	16°52'24.84" N	80°07'45.61" E
			12					3.45	1.5	16°52'25.05" N	80°07'44.10" E
			13					3.45	1.5	16°52'26.86" N	80°07'44.32" E
2	New school building	Building roof top & Open yard	1	4	3075			3.2	1.6	16°52'33.29" N	80°07'48.71" E
			2					3.1	1.8	16°52'32.42" N	80°07'46.66" E
			3					3.3	2.7	16°52'30.19" N	80°07'49.25" E
			4					2.2	3.2	16°52'28.98" N	80°07'47.78" E
3	Occupational Health Centre	Building roof water	6	2	200			3.3	1.7	16°52'28.03" N	80°07'39.85" E
			7					3.1	2.2	16°52'29.01" N	80°07'39.94" E
4	New Administration building	Building roof top & Open yard	9	1	540			3.2	2.4	16°52'30.10" N	80°07'35.84" E
5	Reading room	Building roof top water	8	1	120			1.1	1.8	16°52'26.79" N	80°07'41.36" E
6	D40 area	D40 quarter open yard	23	1			500	2.3	2.3	16°52'17.48" N	80°07'34.77" E
7	B Type quarter area (near B2 1 No. and B4 backside 1 No.)	School ground	21	2			1000	2.7	2.2	16°52'18.27" N	80°07'36.65" E
			22					1.7	1.7	16°52'20.10" N	80°07'36.08" E
8	C30	Open yard	15	1			200	2.3	2.5	16°52'26.13" N	80°07'43.14" E
9	Near Volley Ball ground	East of play ground	16	1		200		3.8	2	16°52'24.58" N	80°07'41.27" E
10	Near culvert @ Cricket ground	Open land near C ground	5	1			3000	3.4	2.7	16°52'32.07" N	80°07'44.40" E
11	Bachelor hostel area	Rain water collection pit through natural ground	14	2		550		2.1	2.3	16°52'26.75" N	80°07'31.59" E
			20					1.7	2.8	16°52'25.34" N	80°07'31.05" E
12	CMD guest house area	Building roof top & Open yard	17	3	1000			1.5	1.5	16°52'24.0" N	80°07'44.43" E
			18					0.6	0.9	16°52'23.71" N	80°07'43.52" E
			19					0.7	0.7	16°52'23.56" N	80°07'44.53" E
13	D - 1 block Apartment	D41 - D44 block roof top and open land	39	1	200			3	1.6	16°52'16.74" N	80°07'33.50" E
14	D - 2 block Apartment	D45 - D48 block roof top and open land	40	1	200			3.4	2.1	16°52'16.59" N	80°07'32.04" E
15	D - 3 block Apartment	D49 - D52 block roof top and open land	41	1	200			3.3	1.7	16°52'16.68" N	80°07'32.15" E
16	D -4 block Apartment	D53 - D56 block roof top and open land	42	1	200			2.6	1.8	16°52'16.55" N	80°07'33.28" E
17	D - 5 block Apartment	D57- D60 block roof top and open land	43	1	200			2.8	1.8	16°52'16.41" N	80°07'34.34" E
18	D - 6 block Apartment	D61 - D64 block roof top and open land	44	1	200			2	2	16°52'18.75" N	80°07'32.10" E
19	D - 7 block Apartment	D64 - D68 block roof top and open land	45	1	200			2.5	2	16°52'18.48" N	80°07'33.31" E
20	E - 1 Block Apartment	E41 - E52 block roof top and open land	27	2	295			3.3	1.7	16°52'20.92" N	80°07'30.66" E
			28					3.2	1.6	16°52'19.92" N	80°07'30.12" E
21	E - 2 Block Apartment	E53 - E64 block roof top and open land	25	2	295			3.3	2.1	16°52'22.31" N	80°07'30.97" E
			26					3.3	2.1	16°52'21.23" N	80°07'30.77" E
22	F - 1 Block Apartment	F75 - F86 block roof top and open land	29	2	293			3	2	16°52'18.04" N	80°07'30.41" E
			30					3.4	2.2	16°52'19.35" N	80°07'30.39" E
23	F - 2 Block Apartment	F87 - F98 block roof top and open land	31	2	293			3	2.1	16°52'16.38" N	80°07'30.18" E
			32					3	2.1	16°52'17.76" N	80°07'30.27" E
24	F - 3 Block Apartment	F99 - F110 block roof top and open land	33	2	293			3.3	2.3	16°52'16.53" N	80°07'28.64" E
			34					3	2.1	16°52'17.75" N	80°07'28.85" E
25	F - 4 Block Apartment	F111 - F122 block roof top and open land	35	2	293			2.9	1.3	16°52'18.33" N	80°07'28.98" E
			36					2.6	1.8	16°52'19.53" N	80°07'28.99" E
26	F - 5 Block Apartment	F123 - F134block roof top and open land	37	2	293			2.9	1.3	16°52'19.96" N	80°07'29.10" E
			38					2.4	1.5	16°52'21.09" N	80°07'29.33" E
27	STP Area	Rain water collection pit through natural ground	46	1		400	1000	1.5	1.5	16°52'20.61" N	80°07'34.85" E
28	C-Type quarters area	Rain water collection pit through natural ground	47	1			500	2.8	2.7	16°52'22.97" N	80°07'39.48" E
29	C-18 Quarter backside	Rain water collection pit through natural ground	48	1			1000	2.5	2.5	16°52'22.06" N	80°07'40.37" E
30	E3& E4 Block Apartments	Roof tp and open land	49	1	305			1.2	1.3	16°52'23.53" N	80°07'30.43" E
	COLONY TOTAL			48							
II.	PLANT AREA										
31	CCR	Roof top and open land	1	1	1100			3	2	16°52'33.16" N	80°07'19.21" E
32	Mines office	Roof top and open land	2	2	350			1.4	1.4	16°52'21.07" N	80°07'11.11" E
			3					1.5	1.5	16°52'21.58" N	80°07'11.82" E
33	Thermal Power Plant area	Cooling tower building surrounding surface water	4	1				1.5	1.5	16°52'26.34" N	80°07'11.11" E
	PLANT TOTAL			4							
	Total			52	11345	1150	7200				