O/C

Coromandel International Limited
Post Box No. 1116, Sriharipuram, Malkapuram Post
Visakhapatnam - 530 011, Andhra Pradesh, India
Tel : 91-891-2578400
DID : 91-891-2893+Extn No
Website : www.coromandel.biz
CIN : L24120AP1961PLC000892
GSTIN : 37AAACC7852K1ZC

Date:27.09.2024

RN541800066IN IVR:827854180006
RL MALKAPURAM S.O <530011>
Counter No:1.27/09/2024.14:14
To:THE MEMBER SE.APPCB VIJAYAWADA
PIN:520010. Venkateswarapuram S.O
From:EHS HOD COR.FORM 5 CIL VIZAG
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Amt:90.86.Tax:13.86.Amt.Paid:91.00(Cash)
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<Dial 1800266868> <Wear Masks. Stay Safe>

EHS/APPCB/2024-097

To
The Member Secretary,
A.P. Pollution Control Board,
D.No.33-26-14D/2, Near Sunrise Hospital,
Pushpa Hotel Centre,
Chalamalavari Street, Kasturibaipet,
Vijayawada-520 010

Sub: Submission of Environmental Statement in Form-V for the financial year 2023-24 as per the Environmental Protection Act -1986 reg.

Ref: 1. Consent Order No: APPCB/VSP/65/CFO/HO/1967 - 04/08/2023

Dear Sir,

We are enclosing herewith the Environment Statement for the financial year 2023-24 ending with 31st March 2024 in prescribed Form-V with respect to Coromandel International Ltd. along with relevant annexures.

This is submitted as per the guidelines of Environment protection act -1986

Thanking you

Yours faithfully
For Coromandel International Limited

M. Gnanasundaram
VP & Head - Manufacturing

NAG

G. Raju 27/9/24

A.P. Pollution Control Board, Visakhapatnam, Zonal Office

Encl: As above

Cc: 1. The Joint Chief Environmental Engineer, Zonal Office, APPCB, Visakhapatnam-18

2. The Environmental Engineer, Regional Office, APPCB, Visakhapatnam-18

A.P. Pollution Control Board, Regional Office, Visakhapatnam
27.9.24

Coromandel International Limited
Post Box No. 1116, Sriharipuram, Maikapuram Post
Visakhapatnam - 530 011, Andhra Pradesh, India
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To
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Yours faithfully
For Coromandel International Limited

M. Gnanasundaram
VP & Head - Manufacturing

NAG

Encl: As above

Cc: 1. The Joint Chief Environmental Engineer, Zonal Office, APPCB, Visakhapatnam-18

2. The Environmental Engineer, Regional Office, APPCB, Visakhapatnam-18

FORM – V
(See rule 14)

Environmental Statement (Audit Report) for the financial year ending 31st March 2024

PART – A

I)	Name and address of the owner/occupier of the industry, operation or process.	Coromandel International Limited Post Box No. 1116, Sriharipuram, Malkapuram Post Visakhapatnam-530 011
		Occupier: Mr. Sankarasubramanian (MD & CEO)
II	Production Capacity	Complex Plant / Customised/ Water Soluble Fertiliser / Micro Nutrients / Chelated Nutrients / Micronised Sulphur / Urea Phosphate : 4210 TPD Sulfuric Acid Plant-I & II : 2100 TPD Sulfuric Acid Plant – III : 2000 MTPD Phosphoric Acid Plant : 1600 MTPD Bentonite Sulfur : 200 MTPD Sulpho Zinc/Boron : 50 MTPD Fertilizer Pilot Plant : 19 MTPD Phosphoric Acid Pilot Plant : 0.83 TPD By Products: Gypsum : 8000 MTPD Hydrofluorosilicic Acid : 40 MTPD
III	Year of Establishment	1967
II)	Date of the last Environmental Audit Report submitted.	28/09/2023

PART – B
Water and Raw Material Consumption

I)	**Water consumption m^3/d (average break-up) year 2023-24**			
	Process : 6331 DM WATER : 2744 Cooling : 1971 Domestic : 625		SEAWATER : 84600 (Apr-Jul-23) 100600 (Aug-23 -Mar-24)	
			Water consumption per unit of products M^3/MT	
	Name of products		During the previous financial year	During the current financial year
			(1) 2022-23	(2) 2023-24
	Complex Fertilizer		3.37	3.79
II	Raw material consumption			
	Name of raw materials	Name of products	Consumption of raw material per unit of output (MT/MT)	
			During the current financial year 2022-23	During the current financial year 2023-24
	Ref: **Annexure – 1**			

PART – C

Pollution generated

(Parameters as specified in the consent issued)

I)	Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants discharges (mass/Volume)	Percentages of variation from prescribed standards with reasons
	(a) Water (b) Air	**Ref: Annexure – 2**		

PART – D

Hazardous Wastes

(As specified under hazardous wastes Management and Handling Rules, 1989 and amendment 2016)

Stream	Name of the Hazardous waste	Total Quantity	
		During the previous financial year 2022-23	During the current financial year 2023-24
a) From process			
34.2 of Schedule-I	Acid residues (Tank bottom sludge)	43.5	25
34.2 of Schedule-I	LSHS Sludge	12.87	
Class B (Sl. No. 37) of Schedule-II	Sulfur muck (sulfur sludge)	695	940
18.1 of Schedule-I	Spent catalyst	56.088	48.820
5.1 of Schedule-I	Used lubricating oil/Drained oil	12.125	13.620
33.1 of Schedule-I	Detoxified containers and container liners	0	2438
37.1 of Schedule-I	Scrubbing sludge	695	395
35.3 of Schedule - I	ETP Sludge	755	490
28.4 of Schedule –I	Off specified, expired chemicals & lab chemicals etc.	0	0
--	Glass Wool	0	0
--	Insulation Waste	0	0
b) From pollution control facilities			

Note: All the above the Investment data including Sulphuric acid storage & handling facilities at Wharf Area (Consent Order No: APPCB/VSP/VSP/65/HO/CFO/2020 – 23/12/2020) and Visakha Terminal (Consent Order No: 7055/VSP/APPCB/ZOVSP/CFO/2021- 01/11/2021)

PART –E
Solid Wastes

		Total Quantity (MT)	
		During the previous financial year 2022-23	During the current financial year 2023-24
a)	From process	Not Applicable	
b)	Process pollution control facilities		
c)	Quantity recycled or re-utilized i) sold ii) Disposed		

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

a) Maintaining **Form-3 and Form-10** (Hazardous Manifest) according to Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
b) **Form-IV** Hazardous waste annual returns regularly furnishing to APPCB.

S NO	HAZ Cat. No	Hazardous Waste	Disposal Practice
1	34.2 of Schedule-I	Acid residues (Tank bottom sludge)	Reused in the phosphoric acid plant
2	34.2 of Schedule-I	LSHS Sludge	TSDF for incineration or authorized cement manufacturing units for co processing
3	Class B (Sl. No. 37) of Schedule-II	Sulfur muck (sulfur sludge)	Reused into granulation plant after grinding
4	18.1 of Schedule-I	Spent catalyst	Authorized recyclers or TSDF
5	5.1 of Schedule-I	Used lubricating oil/Drained oil	Re-processors or recyclers of waste oil
6	33.1 of Schedule-I	Detoxified containers and container liners	No net generation
7	37.1 of Schedule-I	Scrubbing sludge	Reused in the granulation plant
8	35.3 of Schedule - I	ETP Sludge	Reused in Phosphoric acid plant
9	28.4 of Schedule –I	Off specified, expired chemicals & lab chemicals etc.	TSDF for incineration or authorized cement manufacturing units for co processing
10	33.2 of Schedule-I	Glass wool	TSDF for incineration

11	33.2 of Schedule-I	Insulation puf	TSDF for incineration

Note : All the above the Investment data including Sulphuric acid storage & handling facilities at Wharf Area (Consent Order No: APPCB/VSP/VSP/65/HO/CFO/2020 – 23/12/2020) and Visakha Terminal (Consent Order No: 7055/VSP/APPCB/ZOVSP/CFO/2021- 01/11/2021)
Ref: Annexure – 3

PART – G

Impact of the pollution control measures on conservation of natural resources and consequently on the cost of production.

On account of pollution control measures implemented in last two years following savings could be realized.

Material saved	Savings(Rs. Lakhs/annum)	Quantity(per annum)
Water recycled by rain water harvesting	19.22	29622 m3

PART – H

Additional investment proposal for environmental protection including abatement of pollution:

Sl No	Title of Project	Year	Annual Electrical Saving (kWh)	Electrical Saving kW	Electrical Energy Savings Rs Million	Total Energy Savings MTOE	Total Energy Savings Rs Million	Investment Rs Million	Payback months	Comments
1	Installation of Waste Heat Boiler and Captive Steam Turbo Generator in SAP-III	2023-24	72765000	8570	466	20811	466	4300.0	111	Installation of 87.5 MT/Hr Waste heat Boiler at 69kgf/cm2g & 485 oC & 15.25 MW Condensing Steam Turbo Generator III. High pressure & temperature steam turbine results in lower Specific Steam Consumption of 4.0 MT / MWH. Old Condensing turbine was medium pressure 31kgf/cm2g 315oC with 5.8 MT/MW Specific Steam Consumption. Innovation enabled higher power generation
2	Installation of 11KV Automatic Power Factor controlling system	2023-24	1703451	194	11	487	11	29.5	32	Installation of 11KV Automatic Power Factor controlling system. New generation technology considered as an alternative to conventional technology / method to limit the short circuit levels & control power factor at existing substations. Existing grid power factor maintaining at 0.97 lag, it needs to be 0.995 lag
3	**Replacement of age old rewound motors by IE3 motors**	**2023-24**	168102	21	1.08	48	**1.1**	**4.4**	49	**Replacement of 16 age old rewound motors by IE3 motors**
4	Replacement of 41 nos age old window AC units with 3 star rating units	**2023-24**	48441	11	0.31	14	**0.31**	**2.384**	92	Deployed 3 star rating Units replacing 41 nos age old window AC units

5	Kaizen - Installation of AC controls, close to respective AC Units	2023-24	21406	5	0.14	6	0.14	0	0	Kaizen - Installation of AC controls, closure to respective AC Units, helped avoid contnuous run of other Air Conditioner
	TOTAL		74706400	8802	478.1	21366	478.1	4336.3	109	

Note : All the above the Investment data including Sulphuric acid storage & handling facilities at Wharf Area (Consent Order No: APPCB/VSP/VSP/65/HO/CFO/2020 – 23/12/2020) and Visakha Terminal (Consent Order No: 7055/VSP/APPCB/ZOVSP/CFO/2021- 01/11/2021)

Environment Improvement Measures Refer Annexure - 04

PART – I

Any other particulars in respect of environment protection and abatement of pollution:

A report covering various efforts made by Coromandel International Limited for control of environmental pollution along with details of processes adopted in various units is given in savings made by some other activities and savings through Energy Conservation.

Refer Annexure - 05 & 06

Accolades

2023-24

Certifications

ISO50001 Certification


This is to certify that the management system of

Coromandel International Limited

Unit Name: Visakhapatnam, Main Road, Sriharipuram, Malkapuram-Post, Visakhapatnam - 530 011, Andhra Pradesh, India

has been found to conform to the Energy Management System standard:

ISO 50001:2018

This certificate is valid for the following scope:

Manufacture of Sulphuric Acid, Strong & Weak Phosphoric Acid, Complex Fertiliser, by-product Gypsum, hydro fluorosilicic acid, Wharf Activities and Ammonia Storage and Handling, maintenance of Utilities.

NABL Accreditation to Quality Laboratory


INTERNATIONAL LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

SRIHARIPURAM, MALKAPURAM (POST), VISAKHAPATNAM, ANDHRA PRADESH, INDIA

in the field of

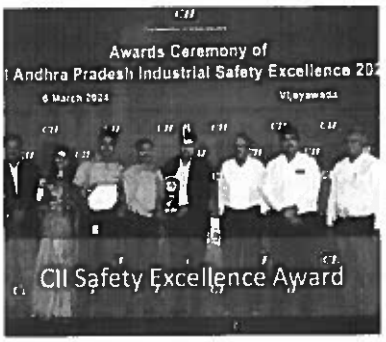
TESTING

Name of Legal Identity: COROMANDEL INTERNATIONAL LIMITED

Signed for and on behalf of NABL

Safety, Health & Environment


British Safe... Council Sw... nour



CII Safety Excellence Award


IQEMS Kalinga Safety Award Platinum Category

IGBC Green Building Gold Award


Visak Port Authority Swach Award

5S Model Plant Award by ABK

2024-25


Visak Port Authority Swatchata Award 2024

Shortlisted CII Energy Award 2024

Your faithfully,
For Coromandel International Limited,

M. Gnanasundaram
VP & Head – Manufacturing

Annexure-1

Raw Material	Product Name/ Complex Grade	Financial Year 2021-22 MT/MT	Financial Year 2022-23 MT/MT	Financial Year 2023-24 MT/MT
Sulfuric acid	28:28:00	0.0378	0.0230	0.0198
Phosphoric acid	28:28:00	0.2869	0.2842	0.2853
Ammonia	28:28:00	0.1320	0.1271	0.1235
Urea	28:28:00	0.4012	0.4104	0.4171
Ammonia	14:35:14	0.1730	0.1730	No Production
Potash	14:35:14	0.2419	0.2452	
Phosphoric acid	14:35:14	0.3607	0.3612	
Ammonia	20:20:00	0.2290	0.2254	0.2260
Phosphoric acid	20:20:00	0.2051	0.2030	0.2038
Sulfuric acid	20:20:00	0.3936	0.3498	0.3995
Ammonium Sulphate	20:20:0	0	0.044	0
Urea	20:20:00	0.0337	0.0418	0.0397
Sulfur	Sulfuric acid	0.3291	0.3266	0.3258
sulfuric acid	Phosphoric acid	2.7884	2.8137	2.8074
Rock phosphate	Phosphoric acid	3.3597	3.402	3.441
Ammonia	10:26:26	0.1236	0.1183	No Production
Potash	10:26:26	0.4472	0.4581	
Phosphoric acid	10:26:26	0.2670	0.2636	
Ammonia	15.15.15.9	No Production	0.1621	
Phosphoric acid	15.15.15.9		0.1529	
Potash	15.15.15.9		0.2651	
Sulfuric acid	15.15.15.9		0.2636	
Phosphoric acid	24.24.00.8S	0.2488	0.2479	0.2474
Sulfuric acid	24.24.00.8S	0.1763	0.1140	0.0995
Ammonia	24.24.00.8S	0.1513	0.1482	0.1460
Urea	24.24.00.8S	0.2812	0.2826	0.2867
Sulfur	24.24.0.8S	0.0792	0.0542	0.0505
Phosphoric acid	UAP 20-20-0	0.2077	No Production	No Production
Sulfuric acid	UAP 20-20-0	0.3537		
Ammonia	UAP 20-20-0	0.1930		
Urea	UAP 20-20-0	0.1039		

Annexure - 2

	Environment Quality Report- Effluent: 2023-24				
I)	**Pollutants**	**Quantity of pollutants discharged (mass/day)**	**Concentrations of pollutants discharges (mass/Volume)**	**APPCB limit mg / lt.**	**Percentages of variation from prescribed standards with reasons**
	Water				
1	pH	--	7.50	6.5 – 8.5	No Variation from Standards
2	Ammonical Nitrogen	--	13.92	50 mg/l	
3	Free Ammonical Nitrogen	--	0.1	4 mg/l	
4	Total Kjeldahl Nitrogen	--	23.17	75 mg/l	
5	Nitrate Nitrogen	--	0.1	20 mg/l	
6	Cyanide as CN	--	BDL	0.1 mg/l	
7	Vanadium as V	--	BDL	0.2 mg/l	
8	Arsenic as As	--	BDL	0.2 mg/l	
9	Phosphate as P	--	0.75	5 mg/l	
10	Suspended solids	--	19.67	100 mg/l	
11	Oil and Grease	--	BDL	10 mg/l	
12	Fluoride as F	--	0.94	10 mg/l	
13	Hexavalent Chromium as Cr	--	BDL	0.1 mg/l	
14	Total Chromium as Cr	--	BDL	2.0 mg/l	
15	BOD	--	10.83	30 mg/l	
16	COD	--	58.50	250 mg/l	
	Air				
		Emissions, TPA	**Emissions, mg/Nm^3**	**APPCB limit mg/Nm^3**	No Variation from Standards
1	**Complex plant A**				
	Ammonia	126.20	68.79	165	
	Fluoride	0.03	0.71	4	
	SPM	30.47	16.61	45	
2	**Complex plant B**				
	Ammonia	138.78	75.70	165	
	Fluoride	0.04	0.85	4	
	SPM	27.65	15.10	45	

3	**Complex plant C**				
	Ammonia	69.55	37.22	165	
	Fluoride	0.03	0.73	4	
	SPM	13.29	7.11	45	
4	**Phosphoric acid plant-I**				
	Total Fluoride	0.1	2.05	20	
	SPM	7.65	6.22	50	
5	**Phosphoric acid plant -II**				
	Total Fluoride	0.14	2.72	20	
	SPM	0.96	3.87	50	
6	**Sulfuric acid plant-I**				
	Sulfur di oxide	7.02	7.69	1 kg/ MT of product	
	Sulfur trioxide	-	Nil	0.35 kg/ MT of product	
	Acid mist	-	Nil	20	
7	**Sulfuric acid plant- II**				
	Sulfur di oxide	2.04	7.64	0.65 kg/ MT of product	
	Sulfur trioxide	-	Nil	0.35 kg/ MT of product	
	Acid mist	-	Nil	20	
8	**Sulfuric acid plant- III**				
	Sulfur di oxide	3.91	5.57	1 kg/ MT of product	
	Sulfur trioxide	-	Nil	0.35 kg/ MT of product	
	Acid mist	-	Nil	20	
8	Boiler-PM	2.20	8.42	115	

EFFLUENT DISCHARGE STANDARDS	
Parameter	**PCB Standards**
pH	6.5 – 8.5
Ammonical Nitrogen	50 mg/l
Free Ammonical Nitrogen	4 mg/l
Total Kjeldahl Nitrogen	75 mg/l
Nitrate Nitrogen	20 mg/l
Cyanide as CN	0.1 mg/l
Vanadium as V	0.2 mg/l
Arsenic as As	0.2 mg/l
Phosphate as P	5 mg/l
Suspended solids	100 mg/l
Oil and Grease	10 mg/l
Fluoride as F	10 mg/l
Hexavalent Chromium as Cr	0.1 mg/l
Total Chromium as Cr	2.0 mg/l
BOD	30 mg/l
COD	250 mg/l
Temp: - Not more than 5 ^{0}C higher than intake water.	

AIR EMISSION STANDARDS		
S.No	Parameter	APPCB limit mg/Nm3
1	Complex plants	
	Ammonia	165
	Fluoride	4
	SPM	45
2	Phosphoric acid plants	
	Total Fluoride	20
	Particulate matter	50
3	Sulfuric acid plant-I	
	Sulfur di oxide	1 kg/MT of prod
	SO3	0.35 kg/MT of prod
	Acid mist	20
4	Sulfuric acid plant- II	
	Sulfur di oxide	0.65 kg/MT of prod
	SO3	0.35 kg/MT of prod
	Acid mist	20
	Sulfuric acid plant- III	
	SO2 (Sulfur di oxide)	1 Kg/MT of Product
	SO3	SO3
5	Acid mist	Acid mist
6	Rock Grinding	50
7	Boiler Stack	115

O/C

Coromandel
FUTURE POSITIVE

Coromandel International Limited
Post Box No. 1116, Sriharipuram, Malkapuram Post
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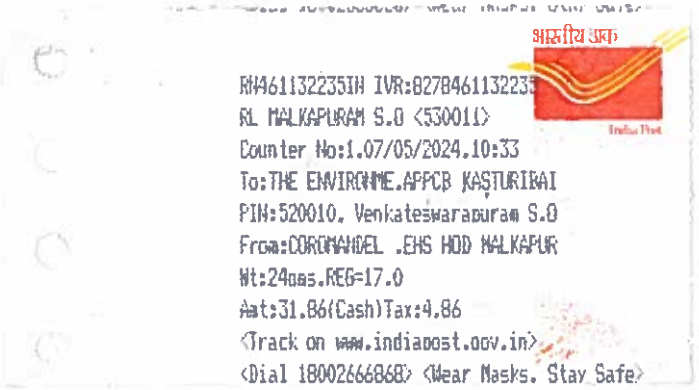
GSTIN : 37AAACC7852K1ZC

EHS/APPCB/2024-040

Date: 06.05.2024



To
The Environmental Engineer,
A.P. Pollution Control Board,
D.No. 33-26-14 D/2,
Near Sunrise Hospital,
Pushpa Hotel Centre,
Chalamalavari Street,
Kasturibaipet, Vijayawada – 520010

Dear Sir,

Sub: Coromandel International Limited- Visakhapatnam–Submission of Hazardous Waste Annual Returns in Form-4 – FY2023-2024 - Regarding.

Ref: Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

We are herewith furnishing annual returns (for the period April'23 to March'24) in **Form-4** as per **"Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016" and amendment thereof under E (P) Act, 1986.**

Kindly acknowledge the receipt of same.

Thanking you,

Yours Truly,

For COROMANDEL INTERNATIONAL LIMITED

Gnanasundaram M
Vice President & Head Manufacturing.

NAG/DNR

Encl. As above

CC to: i) The Environmental Engineer, Regional Office, APPCB, Visakhapatnam.

Registered Office : Coromandel House, 1-2-10
Sardar Patel Road, Secunderabad-500 003
Telangana, India

Tel : 91-40-27842034 / 27847212
Fax : 91-40-27844117
E-mail : mail@coromandel.murugappa.com

murugappa

Coromandel
FUTURE POSITIVE

Coromandel International Limited
Post Box No. 1116, Sriharipuram, Malkapuram Post
Visakhapatnam - 530 011, Andhra Pradesh, India
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CIN : L24120AP1961PLC000892
GSTIN : 37AAACC7852K1ZC

EHS/APPCB/2024-040 **Date: 06.05.2024**

To
The Environmental Engineer,
A.P. Pollution Control Board,
D.No. 33-26-14 D/2,
Near Sunrise Hospital,
Pushpa Hotel Centre,
Chalamalavari Street,
Kasturibaipet, Vijayawada – 520010

Dear Sir,

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Ref: Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

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Kindly acknowledge the receipt of same.

Thanking you,

Yours Truly,

For COROMANDEL INTERNATIONAL LIMITED

Gnanasundaram M
Vice President & Head Manufacturing.

NAG/DNR

Encl. As above

CC to: i) The Environmental Engineer, Regional Office, APPCB, Visakhapatnam.

Registered Office : Coromandel House, 1-2-10
Sardar Patel Road, Secunderabad-500 003
Telangana, India

Tel : 91-40-27842034 / 27847212
Fax : 91-40-27844117
E-mail : mail@coromandel.murugappa.com

murugappa

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILING ANNUAL RETURNS

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

1	Name and address of facility:	:	**Coromandel International Limited,**		
			Sriharipuram, Malkapuram (PO), Visakhapatnam-530011, Andhra Pradesh, India.		
			Phone: 0891-2578400		
2	Authorisation No. and Date of issue:	:	Authorization no. APPCB/VSP/65/CFO/HO/1967		
			Issued date: 30.09.2022 Valid Upto 31.08.2027		
3	Name of the authorised person and full address with telephone, fax number and e-mail:	:	**M. Gnanasundaram**		
			VP-Head Manufacturing		
			Sriharipuram, Malkapuram (PO), Visakhapatnam-530011, Andhra Pradesh, India.		
			Phone: 0891-2578400		
4	Production during the year (product wise), wherever applicable	:	Complex plant	1165048	MT/Annum
		:	Sulphuric acid	861859	
		:	Phosphoric acid	370617	

Part A. To be filled by hazardous waste generators

1	Total quantity of waste generated category wise		:	**Name of the Hazardous waste**	**Quantity generated**	
				1) Acid residues (Tank bottom sludge)	25.000	MT
				2) Sulphur muck (Sulphur sludge)	940.000	MT
				3) Spent Catalyst	48.820	MT
				4) Used lubricating oil/drained oil	13.620	KL
				5) Detoxified Containers	2438.000	No's
				6) LSHS Sludge	4.070	MT
				7) Scrubbing sludge	395.000	MT
				8) ETP sludge	490.000	MT
				9) Off specified ,expired chemicals & lab chemicals etc.	0.000	MT
				10) Glass wool	0.000	MT
				11) Insulation Puf	0.000	MT
2	Quantity dispatched	(i) to disposal facility (Ramky)	:	**Name of the Hazardous waste**	**Quantity dispatched**	
				1) Spent Catalyst	33.820	MT
				2) LSHS Sludge	6.770	MT
				3) Off specified ,expired chemicals & lab chemicals etc.	0	MT
				4) Glass wool	0	MT
				5) Insulation Puf	0	MT
		(ii) to recycler or co-processors or pre-processor		1) Used lubricating oil/drained oil	14.020	KL
				2) Detoxified Containers and container liners	2348	No's
		(iii) Others		---	---	

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILING ANNUAL RETURNS

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

3	Quantity utilised in-house, if any -	:	**Name of the Hazardous waste**	**Quantity utilised**	
			1) Acid residues (Tank bottom sludge)	28	MT
			2) Sulphur muck (Sulphur sludge)	995	MT
			3) Scrubbing sludge	410	MT
			3) ETP sludge	560	MT
4	Quantity in storage at the end of the year –	:	**Name of the Hazardous waste**	**Quantity Storage**	
			1) Acid residues (Tank bottom sludge)	0	MT
			2) Sulphur muck (Sulphur sludge)	0	MT
			3) Spent Catalyst	15	MT
			4) Used lubricating oil/drained oil	0	KL
			5) Detoxified Containers and container liners	90	No's
			6) LSHS Sludge	0	MT
			7) Scrubbing sludge	25	MT
			8) ETP sludge	0	MT
			9) Off specified ,expired chemicals & lab	0	MT
			10) Glass wool	0	MT
			11) Insulation Puf	0	MT

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

1	Total quantity received -	:	
2	Quantity in stock at the	:	
3	Quantity treated –	:	
4	Quantity disposed in landfills as such and after treatment –	:	Not applicable
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	:	
2	Quantity in stock at the beginning of the year -	:	
3	Quantity recycled or co-processed or used –	:	Not applicable
4	Quantity of products dispatched (wherever applicable) –	:	
5	Quantity of waste generated -	:	
6	Quantity of waste disposed -	:	
7	Quantity re-exported (wherever applicable)-	:	
8	Quantity in storage at the end of the year -	:	

Date : **06.05.2024**

Place: Visakhapatnam.

Signature of the Occupier or Operator of the disposal facility

COROMANDEL VIZAG

Sustainability Measures

SUB: Environmental – Energy Conservation

Name of the Project: 1650 MTPD Sulphuric Acid plant III

Problems faced before implementation of initiative:

- Higher energy consumption for 45 MT/Hr. steam Generation from Steaming coal

Brief Description: 1650 MTPD Sulphuric Acid Plant III installed, generating 87 MT / Hr., high pressure waste steam at 69kgf/cm^{2}g 485 ^{o}C. High pressure & temperature steam turbine results in lower Specific Steam Consumption of 4.0 MT / MWH. Old Condensing turbine was medium pressure 31kgf/cm^{2}g 315^{o}C with 5.8 MT/MW Specific Steam Consumption. Innovation enabled higher power generation

Technology: Monsanto Enviro Chem Systems USA, Engineering – Thyssenkrupp Industrial Solutions, India.

Cost – Rs 4300 million Annual Savings 72765000 kWh Annual Savings Rs 466 million
Payback 111 month Completed Date Aug 2023

Challenges faced during the project:

1. Technical Know How for modern Energy Efficient Sulphuric Acid Plant
2. Availability of expertise for taking up modern technologies

Prevailing practice in the industry: Maximise deployment of Carbon free Energy.

COROMANDEL VIZAG

Sustainability Measures

SUB: Environmental – Energy Conservation

Name of the Project: Installation of 11KV Automatic Power Factor controlling system

Problems faced before implementation of initiative:

- Grid power factor is at 0.970 lag and power factor to be maintained at unity for ideal conditions.
- Existing installed HT capacitor bank are not sufficient to meet the required capacitive load of the plant which is required to maintain unity power factor. This is due to the increase in plant loads subsequently.

Brief Description: Installation of Automatic Power Factor controlling panels comprising

1. 11 KV Limiting Reactors 2.12 MVAR – 3 no's
2. 100 Kvar,440V,3Ph,50Hz, CLMD 83 Capacitor – 30 no's
3. 11kV, 2500kVAr APFC with 6% inrush current – 1 no.
4. 11kV, 2000kVAr APFC with 6% inrush current – 1 no.

New generation technology considered as an alternative to conventional technology / method to limit the short circuit levels at existing substations

Cost – Rs 29.5 million Annual Savings 1703451 kWh Annual Savings Rs 11 million
Payback 32 month Completed Date Jan 2024

Benefits: 1) After installing additional capacitor bank panels, power factor of around 0.995 lag at grid side is being achieved from Feb-24 which will reduce the losses and improve the power factor which will in turn give us power saving.

Challenges faced during the project:
1) Subsequent increase in Power capacity addition continuously.

Prevailing practice in the industry: Install capacitor banks whenever power load increases

COROMANDEL VIZAG

Sustainability Measures

SUB: Environmental – Energy Conservation

Name of the Project: Replacement of age-old Air conditioner units with modern 3 Star Units

Problems faced before implementation of initiative:

- Higher Energy Consumption

Brief Description: 41 no's age-old Air conditioner units replaced by modern 3 Star Units.

Cost – Rs 2.384 million Annual Savings 48441 kWh Annual Savings Rs 0.1 million
Payback 92 month Completed Date Jan 2024

Benefits:
1) Improved Air Conditioning
2) Lower Energy Consumption

Challenges faced during the project: None.

Prevailing practice in the industry: Maximise deployment of modern 3 Star AC Units.



COROMANDEL VIZAG

Sustainability Measures – Kaizens – Zero cost Measures

SUB: Environmental – Energy Conservation

Name of the Project: Installation of AC controls, closure to respective AC Units

Problems faced before implementation of initiative:

- Higher Energy Consumption
- II AC unit running even when not required, as its temperature control is not close by

Brief Description: Installed AC temperature control sensors closure to respective AC Units,

Cost – Rs NIL million Annual Savings 21406 kWh Annual Savings Rs 0.14 million
Payback 0 month Completed Date Nov 2023

Benefits:
1) Improved Air Conditioning
2) Lower Energy Consumption

Challenges faced during the project: None.

Prevailing practice in the industry: Installation of AC controls closure to place of use is a best practice.

COROMANDEL VIZAG

SUB: Environmental – Sea Water Solution to Raw Water needs.

Name of the Project: 6000 M^3/Day Sea Water Reverse Osmosis Desalination Plant

Problems faced before implementation of initiative:

1. Limited availability of Raw water for plant expansion
2. Regular Line leaks along 10 Kilometer long TSR Water Pipeline.

Brief Description: Sea Water undergoes rapid floatation pretreatment, in Direct Air Floatation system for removal of Algae. Filtration of sea water is carried out by reverse osmosis, which involves forcing water at high pressure through a membrane that retains up to 99% of impurities. Desalinated Water is utilised in process plants as raw water, part of the desalinated water also undergoes post-treatment in mixed bed Ion Exchanger where it is demineralized.

Cost of Project: Coromandel: INR 30 Cr, INR Veolia – 40 Cr, Total INR 70 Cr

Benefits:

1. Support Plant expansion.
2. High purity demineralised water

Challenges faced during the project:

- Higher energy consumption for desalination by Reverse Osmosis 4.8 kWh/M3 Water

Prevailing practice in the industry:

Enabling and securing access to water resources at a permeate salinity / Total dissolved solids level of 200 ppm, by exploiting an inexhaustible natural resource with high salinity of 37000 ppm.

COROMANDEL VIZAG

SUB: Environmental – Nature Conservation - Greening within Fence

Name of the Project: **Greening within Fence** - Miyawaki Plantation

Problems faced before implementation of initiative:

1. Degraded land that has been used for construction and nonagricultural purposes.

Brief Description: Miyawaki Plantation involves plantation of trees, native to the area, with species that complement each other. As saplings receive sunlight from the top and grow upward, rather than sideways. It helps prevent growth of weeds, by avoiding sunlight reaching the soil.

S.no.	Area Of plantation	No. of plants	Year	Cost
1	Phase - 1	3000	2021-22	INR 7,61,607
2	Phase - II	10000	2021-22	INR 47,57,706
3	Phase - III	10000	2022-23	INR 50,00,000
4	Phase - IV	25000	2023-24	INR 1,24,00,000
5	Phase - V	3500	2023-24	INR 12,26,592

Greenery in more than 120 acres out of 320 acres industrial site (37.5%), adherence to better than regulatory norm.

Cost of the project: Rs. 136 Lakh Year 2023-24, No of Plants – 28500 no's

Benefits:

1. Creating Carbon sink in the area.
2. Control of fugitive emissions due to road traffic

Challenges faced during the project:

- Challenging sediment conditions, acidic soils necessitating laying of proper soil.

Prevailing practice in the industry:

Driving Compliance to APPCB order that 33% of industrial site around a factory is to be green.

COROMANDEL VIZAG

SUB: Environmental – Abating Noise

Name of the Project: **Modern Steam Vent Silencers**

Problems faced before implementation of initiative:

1. High noise during venting of high-pressure steam.

Brief Description: Performance of Vent Silencers is achieved by a 2-stage noise reduction approach.

Stage 1 –The inlet diffuser is effective in attenuating frequencies of sound and distributing the flow evenly to the 2nd stage.

Stage 2 – Sound reduction comprises of absorptive elements positioned within the silencer case thus absorbing acoustic energy out of the steam prior to exiting the atmosphere.

Benefits:

1. Noise-less steam venting.

Challenges faced during the project:

- Design Known how of modern steam vent silencers.

Prevailing practice in the industry:

Enabling Compliance to APPCB order that noise levels in the industry should be within 75 db during daytime and 70 db. during nighttime.

COROMANDEL VIZAG

SUB: Environmental – Dust Control during Solids Material Handling

Name of the Project: **Steam, Air & Water Curtain for Dust Control during Solid Sulphur Handling**

Problems faced before implementation of initiative:

1. Higher dust emissions during Solid Sulphur handling as the following existing measures have limited control of dust emissions.
    a. Rubber & Canvas apron serves to contain dust, however, is limited due to access through several openings in the apron.
    b. Bag filter creates a negative atmosphere and removes airborne dust, is limited due to dilution air entry through several openings and huge power consumption.

Brief Description: **Low pressure smothering steam, Fine mist of Water and Air are released to create positive pressure around the emission points and act as a curtain, at various dust emission points during Solids Sulphur handling in Sulphuric Acid Plant – III.**

Benefits:

1. Environment Compliance – Control of dust under positive pressure.
2. Better work place ambience

Challenges faced during the project:

- Fine mist of water and steam smothering increases acidity in solid sulphur
- Excessive load on Bag filters.

Prevailing practice in the industry:

Ensuring Compliance to APPCB order on fugitive Dust emissions < 50 mg/NM3

COROMANDEL VIZAG

SUB: Environmental – Effluent Control Better than regulatory norms

Name of the Project: Fresh Water Surface Condenser for Turbo Generator III

Problems faced before implementation of initiative:

1. Sea Water has worst Corrosion characteristics, hence special Cu: Ni 70:30 tubes used
2. Higher tube side Scaling due to sea water contaminants, requiring automatic cleaning using circulating rubber sponge balls.
3. Use of sodium hypochlorite, or chlorine, to ensure there is no marine growth on the pipes or the tubes. However, circulating water returning to the sea is affected.

Brief Description: Fresh Water Surface Condenser for Turbo Generator III, which rejects the heat from condensing steam in surface condenser to air in a cooling tower using fresh water as circulating heat transfer medium.

Benefits:

1. Better Environment –
    a. Capacity of air environment to absorb heat is higher than heat rejection to water.
    b. Heat of water needs to be released to air through water evaporation, hence direct discharge of heat to air is better option.
    c. Marine environment is least effected.

Challenges faced during the project:

- Higher liberation of heat in factory premises
- Large quantity of fresh water consumed.

Prevailing practice in the industry:

Fresh Water Surface Condenser is a better option for condensing type-high pressure steam turbine.

COROMANDEL VIZAG

SUB: Environmental – Effluent Control Better than regulatory norms

Name of the Project: **Zero Liquid Discharge Facility**

Problems faced before implementation of initiative:

1. Loss of containment
2. Poor Control of final effluent quality

Brief Description: Installation of Zero Liquid Discharge Systems

Technology used: The major sources of effluent are overflows and spillage of process drains of Sulphuric acid plant, cooling tower blow down and leachate water from Gypsum Pond. Installed water recovery pits along with agitators for water conservation by recovery and reuse.

Benefits:

1. Compliance to APPCB order.
2. Control on liquid effluents.

Challenges faced during the project:

Design and Installation of Gradient Floor for recovery, separate process and storm water drains and recovery pits.

Prevailing practice in the industry: Zero liquid discharge by installing process and storm water drains and recovery pits is well established. All new plants to be designed for ZLD

COROMANDEL VIZAG

SUB: Environmental – Effluent Control Better than regulatory norms

Name of the Project: **Cooling Tower Water Conductivity meter for blowdown control**

Problems faced before implementation of initiative:

1. Lack of online control for blowdown
2. Excessive Water consumption

Brief Description: Installation of Conductivity meter on cooling tower water system, for controlling Blowdown

Benefits:

1. Control on liquid effluents.

Challenges faced during the project:

Letting management realize on the need to have online Conductivity meter for cooling tower blowdown control

Prevailing practice in the industry: Boiler Blowdown control by installing conductivity meter is good water conservation practice.

COROMANDEL VIZAG

SUB: Environmental – Dust Control Better than regulatory norms

Name of the Project: **Dust control while preparing lime solution**

Problems faced before implementation of initiative:

1. Dust generation during mixing of lime in Lime Slurry Preparation Tank

Brief Description: Installation of Air Operated Diaphragm Pump

Benefits:

1. Control on Dust generation.

Challenges faced during the project:

Know how on operation of Air Operated Diaphragm Pump and its applications.

Prevailing practice in the industry: Installation of Air Operated Diaphragm Pump is a best practice in Lime Addition to Lime Slurry Preparation Tank/

Lime Dust generation while dumping into Lime slurry Preparation Tank

Air Operated Diaphragm Pump

Lime Power flow through hose without dust generation

COROMANDEL VIZAG

SUB: Environmental – Emission & Effluent Control measures

Name of the Project: **Installation of Continuous Emission Monitoring system**

Compliance to CPCB Guidelines: **Use of CEMS to continuously collect, record & report emission data of SO2 for monitoring compliance to Sulphuric Acid Plant emission standards.**

Problems faced before implementation of initiative:

1. Heights of stacks, Corrosive environment & Stack structure conditions restrict regular maintenance work at height.

Brief Description: **Installed Online stack emissions monitoring system The standard CEM system consists of a sample probe, filter, sample line (umbilical), gas conditioning system, calibration gas system, and a series of gas analyzers which reflect the parameters being monitored. A Data Acquisition and Handling System (DAHS) receives the signal output from each analyzer, which is then simultaneously transmitted live to CPCB / APPCB Servers in order to collect and record emissions data**

Technology used:

- SO2 measurement – Non-Dispersive Ultraviolet Absorption spectroscopy

Benefits: **Self-regulation of Industry**

Challenges faced during the project:

- Moisture in stack – availability of suitable material of construction

Prevailing practice in the industry:
Compliance to APPCB order

COROMANDEL VIZAG

SUB: Environmental – Emission & Effluent Control measures

Name of the Project: **Quality Assurance Laboratory Fumes Scrubber**

Problems faced before implementation of initiative:

- Quality Assurance Laboratory Fumes let to atmosphere.

Brief Description: Fumes Scrubber

Technology used: The scrubber system consists of a void tower crossflow Gas Scrubber with a Gas Scrubber Fan drawing gases from the various emission points of the Quality Assurance Laboratory and discharging them to the Stack.

The gases enter the gas scrubber through the bottom. They are washed with an aqueous solution. This solution circulates through the pumps. The make-up is done by process water. The bleed of the scrubber is pumped to ETP for treatment & reuse.

Benefits: Scrubbing of Gases for Fumes control

Challenges faced during the project:

- Water balance & effluent control of scrub liquor

Prevailing practice in the industry: Gas scrubbing ensures sustainable emission control.

COROMANDEL VIZAG

SUB: Environmental – Soil Rejuvenation

Name of the Project: **Garden Compost**

Problems faced before implementation of initiative:

- Lower Soil Nutrients in around Housing Colony.

Brief Description: Garden Compost

Technology used: Small Pits were dug in around each house in housing colony. is as simple as collecting yard waste or the organic materials in your trash (such as fruit and vegetable peels) to fill a pit. Over the course of a year or so, the material will decompose.

Benefits: The decomposed organic material is then added to soil to provide nutrients to sustain plant growth. Compost also helps to improve soil structure and supports soil microbes that are integral to plant health.

Challenges faced during the project: Some people believe learning how to compost is too complicated, it smells bad, and it's messy. This may be true if you compost the wrong way,

Prevailing practice in the industry: Compost is a natural alternative for Garden rejuvenation.

COROMANDEL VIZAG

SUB: Environmental – Monitoring

Name of the Project: **Ammonia Leak Detectors & Siren**

Problems faced before implementation of initiative:

- Non availability of information on Gas leak emissions to employees & Public

Brief Description: Siren and Ammonia Leak detectors installed at Mulagada village and at crossroad at Gate No 9, to alert Public on Ammonia Leak

Benefits: On Site Emergency Control.

Challenges faced during the project: Public unrest on Gas leaks in neighborhood villages.

Prevailing practice in the industry: Installation of leak detectors & Siren is a best practice.

COROMANDEL VIZAG

SUB: Environmental – Water Conservation

Name of the Project**: Sewage Treated Water for Gardening**

Problems faced before implementation of initiative:

- Fresh Water availability limited for Gardening.
- Utilisation of Sewage Treated Water in production process limited.

Brief Description: Installed Sewage Treated Water storage Tank, irrigation water lines for plantation at Harita Vanam

Benefits:

1. Water Conservation by avoiding freshwater use.
2. Ecological conservation by enabling zero effluent discharge.
3. Proper operation of Sewage Treatment Plant is ensured, else presence of pathogenic bacteria will harm Green plantation as well as contaminate groundwater.

Challenges faced during the project: A large percentage of domestic & industrial water users are afraid to use this technology to supply water (direct reuse) because of the potential presence of pathogenic organisms. However, most people are willing to accept reused wastewater for lawn irrigation and for cooling purposes in industrial processes.

Prevailing practice in the industry: Suitability of this technology, especially where there is a water deficit for several months of the year, implementation of wastewater recycling or reuse by industries can reduce demands for water of potable quality, and also reduce impacts on the environment.

COROMANDEL VIZAG

SUB: Environmental – Water Conservation

Name of the Project: **Rainwater Harvesting**

Problems faced before implementation of initiative:

- Fresh Water availability limited.

Brief Description: Installed Rainwater Harvesting System for Control Rooms

Benefits:

1. Water Conservation by avoiding freshwater use.

Challenges faced during the project:

1. Limited storage of rainwater.
2. Lot of dust accumulated in collection area, is washed away into rainwater collection system during rain, clogging drains as well as acidic & huge sediment water to plantation can harm plantation.

Prevailing practice in the industry: Rainwater harvesting is the viable technology used to conserve rainwater by collecting, storing, conveying, and purifying of rainwater that runs off from rooftops, parks, roads, open grounds, etc. for later use.

SUB: Environmental – Water Conservation

Name of the Project: **Startup Tail Gas Scrubber**

Problems faced before implementation of initiative:

- High SO2 emissions through stack during cold startup and process upsets.

Brief Description: Installed Start -up Tail Gas Scrubber where upward process gas flows is scrubbed by countercurrent Sodium Hydroxide solution in a packed Absorber, where SO2 reacts with NaOH to form sulphite and sulphate salts (Na2SO3 , NaHSO3 , Na2SO4).

Scrubber operates with close pH control on absorbing solution.

Benefits:

1. SO2 emission control.

Challenges faced during the project:

1. Density control – Higher density of absorbing solution causes clogging of absorber and leads to SPM carryover.
2. Low pH of Absorbing solution causes loss of Absorption.
3. Requires automatic process control.

Prevailing practice in the industry: Startup Tail Gas Scrubber for Sulphuric Acid Plant is as part of compliance to APPCB / CPCB guidelines.

Annexure-5

Environmental Control Measures
Coromandel International Limited
Visakhapatnam

s.no	EHS (2023-24)	Rs. Lakhs
1	Super heater replacement along with inlet & outlet ducts	650
2	Procurement of Heat Exchanger for evaporators with Carbon fiber reinforced graphite tubes - 1 No	150
3	Dilution cooler - replacement	150
4	Road Sweeping Machine	110
5	Sulphuric acid piping in Complex-ABC Train replacement with Alloy 20	80
6	Lightening protection phase - 3	80
7	B-Tr Dryer separator vessel & C-Tr Pre-scrubber vessel renewal	70
8	Critical flow meters	60
9	LECO sulphur analyzer	55
10	Miyawaki plantation Phase - V	11
11	SAP 1&2 cooling tower blowdown water recovery pumping system	25
12	Desalination plant of 6 MLD Capacity	3000
	Total	**4441**

s.no	EHS (2022-23)	Rs. Lakhs
1	Green Building	20
2	Solar Street lighting	7.1
3	LED lighting	5
4	Replacement of age-old Air conditioner	15
5	Battery Operated Electric Automotive	10
6	Haritha Vanam Red soil	16
7	Miyawaki Phase-III & IV	174
8	Evaporator - II Steam Condensate recovery	33
9	2 km plant bypass road	1370
10	Anion Rinse Water Recovery system	61
11	CAAQMS & OCEMS (New & O&M)	100
12	STP Capacity Enhancement	50
13	ETP sludge storage shed	150
14	Digital Display Board	3.0
15	NOx Analyzer	14

	Total	**2028.1**

s.no	EHS (2021-22)	Rs. Lakhs
1	Water recovery by rainwater harvesting	100
2	Gypsum Pond Leachate Recovery System	670
3	Installation of impervious HDPE Geo permeable membrane liner	650
4	Renovation of Online Continuous Emission Monitoring system	180
5	Renovation of Continuous Ambient Air Quality Monitoring system	70
6	Harithavanam Grass Cover	24
7	Miyawaki PH-II	45.6
8	Prill Tower area Grass	12
9	Colony Plantation	2
10	Green Visakha	271
11	Wharf plantation	2
	Total	**2026.6**

s.no	EHS (2020-21)	Rs. Lakhs
1	Green Visakha Plantation	266
2	CAAQMS at Garage location	49
3	EPR Charges for Plastic Waste Management	80
	Total	**395**

s.no	EHS (2019-20)	Rs. Lakhs
1	Green Visakha Plantation	140
2	HDPE liner for Gypsum Pond	1300
	Total	**1440**

s.no	EHS (2018-19)	Rs. Lakhs
1	Green Visakha Plantation	100.0
2	Gypsum Neutralization Unit	70.0
3	Drains Improvement (PA Plant)	25.0
4	Energy Efficient lighting at plants	20.0
5	Grass plantation at gypsum Pond on trials	5.0
	Total	**220.0**

s.no	EHS (2017-18)	Rs. Lakhs
1	Oil Skimmer	25.0
2	Green Visakha Plantation	50.0
3	PAP & remining stacks analysers	43.0
4	Gypsum Neutralization Unit	1000.0
	Process Drains Improvement (PA Plant)	130.0
	Total	1248.0

s.no	EHS (2016-17)	Rs. Lakhs
1	Oil spill recovery equipment	46.0
2	Sewage Treatment Plant	51.0
3	A , B Train – Online monitoring & Closed Circuit Camera	63 .0
	Total	160.0

s.no	EHS (2015-16)	Rs.Lakhs
1	Ambient Air Quality – 3rd stations (replacement to Cyclone damaged)	50.0
2	Online Monitoring equipment (Complex plant C train)	18.0
3	Plantation (inside + outside)	54.0
4	Improvements in Effluent Handling	55.0
	Total	177.0

s.no	EHS (2014-15)	Status	Rs.Lakhs
1	Replacement of damaged insulation due to HUd-Hud Cyclone	2014-15	230
2	Mechanical Plate exchanger replacement at SAP-I	2014-15	80
3	Pre-scrubber tank replacement	2014-15	18
4	REPL. OF BME CANDLES FOR SAP-1 AND SAP-2	2014-15	40
5	Replacement of Dedusting system ay Ctrain Cyclone ducts	2014-15	32
	Total,Rs/-		**400**

s.no	EHS (2013-14)	Status	Rs.Lakhs
1	Green Belt Development by TERI on Gypsum pond	2013-14	250

2	REPL. OF BME CANDLES FOR SAP-1 AND SAP-2	April'13	62
	Total,Rs/-		**312**

s.no	**EHS (2012-13)**	**Status**	**Rs.Lakhs**
1	3rd online AAQM station	March'13	60
2	Green Visakha -15000 saplings	March'13	58
3	A,B TRAIN COOLER CYCLONE DUCTING,RENEWAL	Nov'12	22
	Total,Rs/-		**140**

s.no	**EHS (2011-12)**	**Status**	**Rs.Lakhs**
1	Portable workplace monitoring system	May'12	10
2.	Green Visakha at Air port	March'13	50
	Total,Rs/-		**60**

	Capex -EHS(2010-11)	Status	Rs. Lacs
1	Effluent / Storm Water drains management	Feb'2011	30.00
2	Ambient Air Quality monitoring Station	March'2011	60.00
3	Effluent Treatment Plant(ETP)	August'2011	1600.00
4	HDPE lining -Gypsum siding area (About 5 acres)	July'2010	150.00
5	Telescopic chutes for Rock Go down	Feb'2011	45.00
6	Structural Stability	2010-11	120.00
7	Replacement of BME candles for FAT & DT	March'2011	40.00
8	AAQM Station at Mulagada village	Nov'2010	22.00
	Total(Lacs)		**2067.00**

2009-10			**(Rupees lakhs)**
Sl. no.	**Measure**	**Year installed**	**Cost Rs. Lakhs**
1.	HDPE lining Gypsum area – 5 acres	2009	100.00
2.	Water Conservation	2009	50.00
3.	Improvement to storm water drain system	2009	30.00
4.	Greenbelt Development	2009	17.00
5.	Start up Alkali Scrubber at 1400 MTPD sulfuric acid plant to reduce SO2 emissions	2009	135.00
6.	Fire water system for AAST	2009	30.00
7.	Ambient air monitoring station(AAQM)	2010	75.0
8.	Study of scrubbing system at complex plant	2009	10.00
9.	Filling of Black cotton soil at 7^{th} gate	2010	15.00
		TOTAL(Lacs)	**462.00**

Sl. no.	Measure	Year installed	Cost Rs. Lakhs
10.	Installed Dry gypsum Disposal system at Phosphoric acid plant	April'2009	2900
11.	BME candles for Final absorption tower of SAP-II	2008	10
12.	Procured road sweeping machine to reduce dust emission during movement of vehicles inside the plant roads	2008	17
13.	Installation of Alkali start-up scrubber for 300 MTPD sulfuric acid plant to reduce SO_2 emission during start-up	2008	99
14.	Installation of new bag-filter in place of existing bag-filter at wharf new silo for reduction of fugitive dust emissions	2008	14
15.	Replacement of bag-filter at old ball mill of rock-grinding unit	2007	18
16.	Installation of Air Pre-heater in Trains 'B' & 'C' of complex plant	2006	320
17.	Installation of Air Pre-heater in Train-A of complex plant	2006	165
18.	Installation of Telescopic chute (2 Nos.) at Wharf New Silo	2006	13
19.	Installation of pipe conveyor at wharf in place of cross conveyor.	2005	175
20.	Hazardous waste handling and disposal system	2004	5
21.	Installation of telescopic chute at rock phosphate storage godown.	2004	30
22.	Replacement of fume gas scrubber at phosphoric acid plant.	2004	150
23.	Installation of de-dusting system at rock phosphate unloading area.	2004	10
24.	Installation of new Screw Unloader System in place of gantry grab bucket system and construction of silo and overhead pipe conveyor at wharf	2003	2000
25.	Installation of new bag filter for storage silo at wharf area in place of existing one.	2003	20
26.	New SO_2 on-line analyser was installed at sulphuric acid plant.	2002	8

Sl. no.	Measure	Year installed	Cost Rs. Lakhs
27.	Ground rock transfer system from rock grinding station to phosphoric acid plant modified from pneumatic system to pipe conveying system.	2002	200
28.	Bag-filter was installed on inclined conveyor at wharf area.	2002	2
29.	Additional bag-filter at rock grinding unit	2001	5
30.	New scrubbing system for train 'B'	2001	550
31.	New scrubbing system for train 'A'	2000	550
32.	Telescopic chutes (2 nos.)	2000	12
33.	Pollution control equipment for new complex Train 'C'	2000	833
	TOTAL Rs./ lakhs		**8106**

BEFORE THE YEAR 2000			
34.	Telescopic chute, emulsifier nozzles & bag filter at wharf area	1999	10
35.	Renewal of bag filter at rock grinding	1998	15
36.	Molten sulfur handling facility	1997	1050
37.	Reinstallation of high capacity effluent pumps	1996	50
38.	Renewal of bag filter at phosphoric acid plant	1995	5
39.	Green-belt development	-	20
40.	Revamping of sulfuric acid plant converter & use of high active ring shaped catalyst.	1994	450
41.	Modification of recirculation pumps in effluent treatment plant	1994	35
42.	Fluorine recovery unit	1994	320
43.	LPG/Naphtha fumes monitor for leak detection	1993	4
44.	Installation of continuous pH meter for DT acid cooler exit water	1993	2
45.	Replacement of cold heat exchanger	1992	80
46.	Fluoride analyser for effluent analysis	1992	4
47.	Installation of continuous SO_2, analyser for stack in sulfuric acid plant	1992	15
48.	Installation of dust control system in bagging plant	1992	12
49.	Installation dust control system at wharf silo	1992	13
50.	Monitoring equipment viz. High volume samplers, ammonia sensors.	1990 & 91	5
51.	Effluent recycle scheme in complex plant	1989	12
52.	Construction of effluent treatment plant	1989	250
53.	Installation of bag filters in rock grinding plant	1989	12
54.	Construction of new F.A.T. in sulfuric acid plant	1989	20
55.	Extension of fume scrubber stack in phosphoric acid plant	1988	6
56.	Installation of fumes scrubber in phosphoric acid plant	1987	30
57.	Installation of mist eliminator candles in sulfuric acid plant	1987	10
58.	Rinse water recovery scheme in utilities plant	1984	3

BEFORE THE YEAR 2000			
59.	Replacement of conventional catalyst to more active type (Ring)	1980	60
60.	Conversion of sulfuric acid process to DCDA technology	1975	250
61.	High efficiency Venturi scrubbers in complex plant	1967	27
62.	Dust cyclones in complex plant	1967	6
63.	Installation of dust cyclones in phosphoric acid plant	1967	4
	TOTAL	**Rs/ lakhs**	**2796**

Note: Total investment from 1967 to 2012-13 = 13631 lakhs
Capital investment for 2013-14 = 312 lakhs
Investments in 2014-15 = 400 lakhs
In 2015-16 = 177 lakhs
In 2016-17 = 160 lakhs
In 2017-18 = 1248 lakhs
In 2018-19 = 220 lakhs
In 2019-20 = 1440 lakhs
In 2020-21 = 395 lakhs
In 2021-22 = 2026 lakhs

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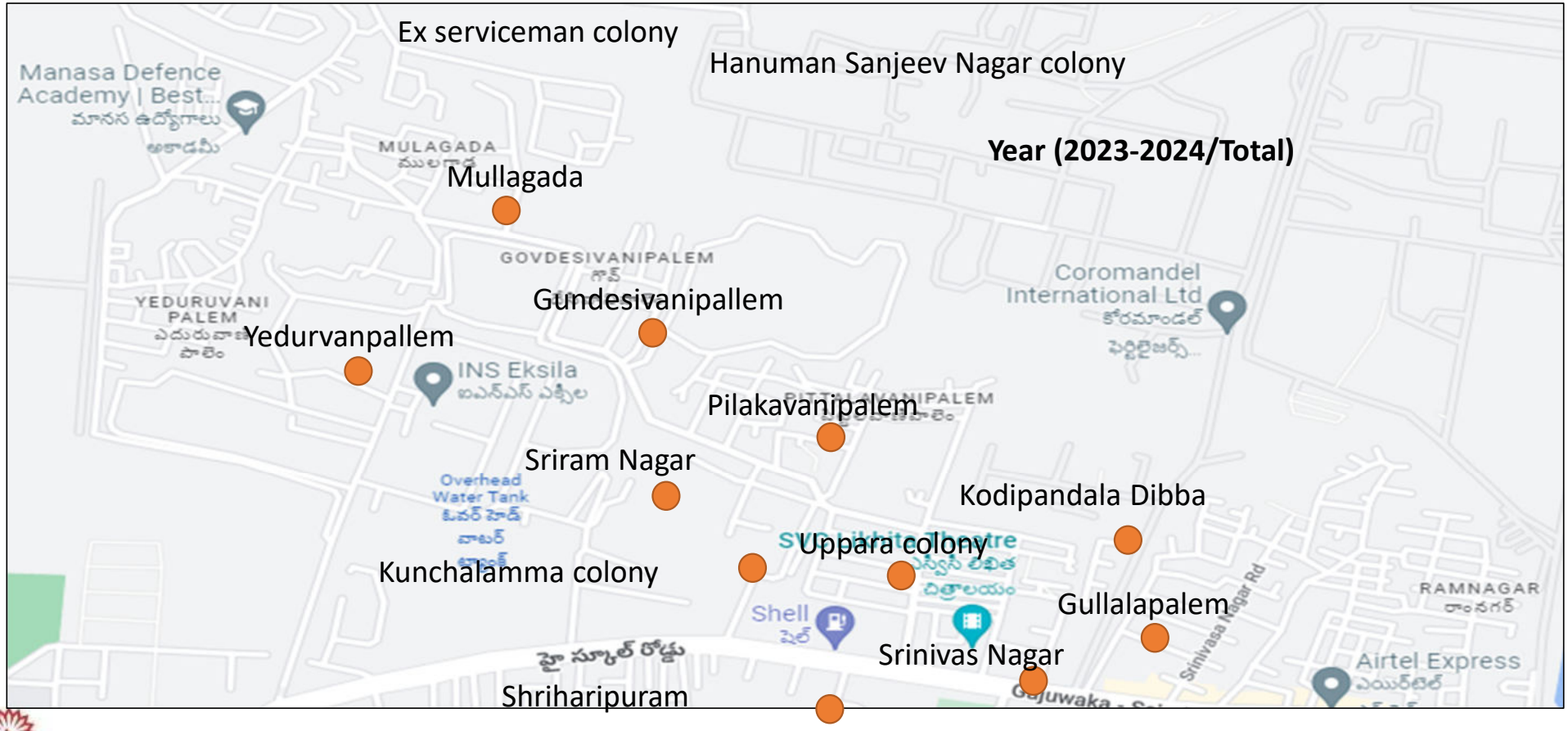
Coromandel

CSR
Annual report 2023-2024

Vizag

Mapping villages-Total bEN -217134



Total number of villages benefitted - 14

Total number of Schools benefitted - 9

Approved Vs Spent– 23-24

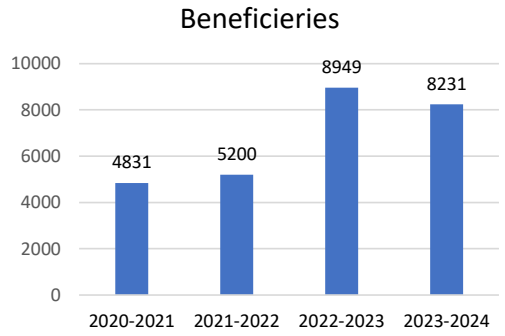
Spent Matrix

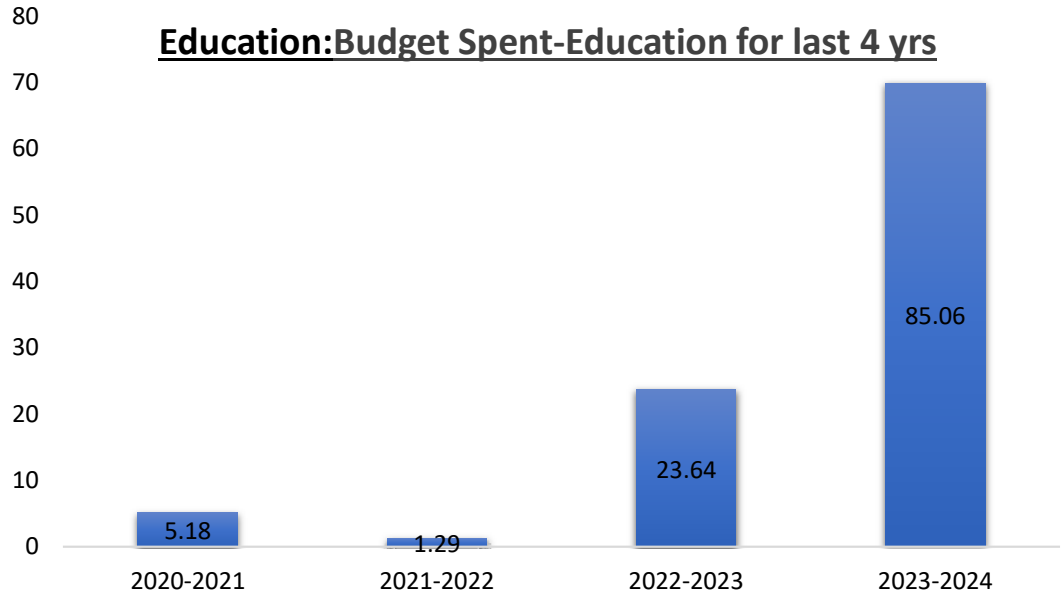
S.No	Domain	Spent (Lacs)
1	Community Development	133.00
2	Health	73.79
3	Education	85.67
	Total	292.46

CSR Initiative-Education

Key Highlights of the Last 4 Year

- Chemistry its FUNdametals
- Renovated Social welfare Girls hostels
- Coromandel Girlchild scholarship
- Champs Life skill development to children
- Karadi path Magic English
- School infra

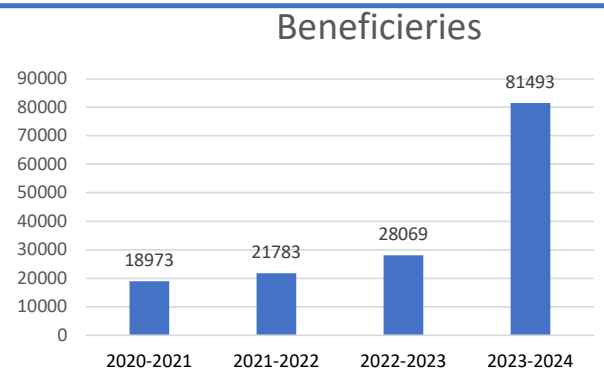


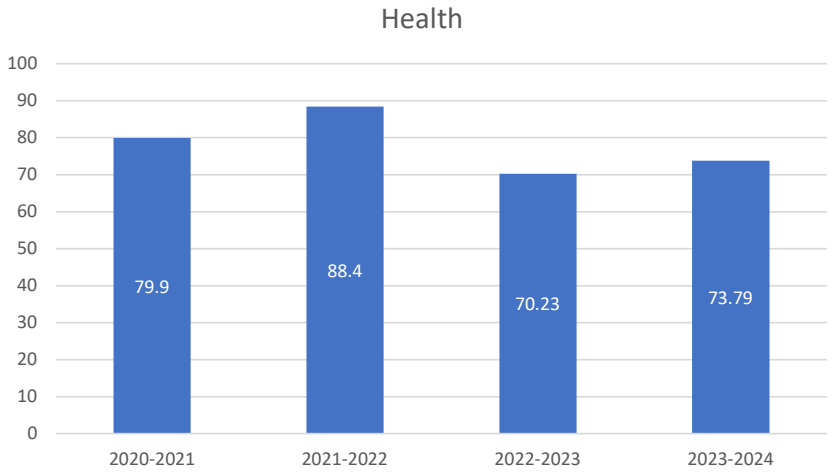


CSR Initiative-Health

Key Highlights of the last 4Years

- New Coromandel Medical centre
- IBCC
- Eye screening camp
- Women & Children Medical camp
- Anti-Larval & Fogging
- Health & Nutrition program

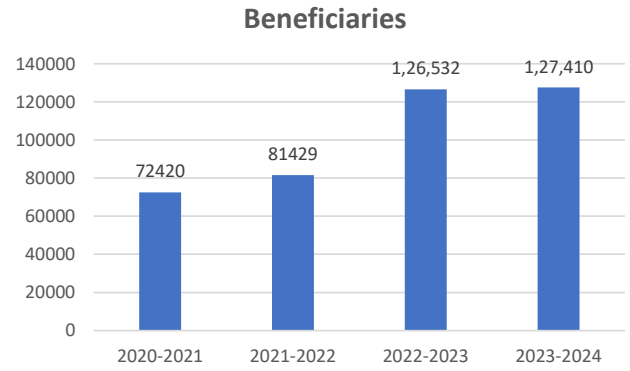


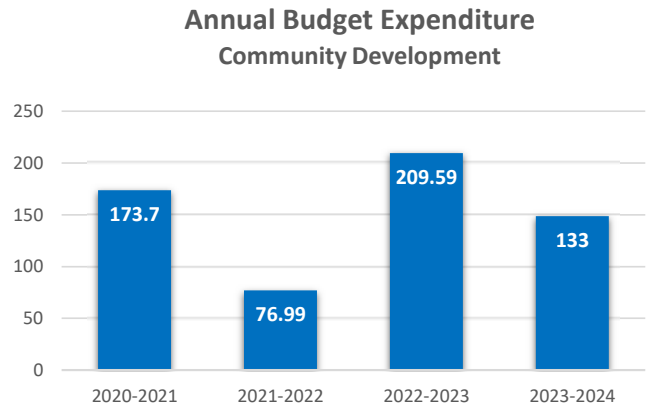


CSR Initiative-Community development

Key Highlights of the Year

- Community infra
- Women livelihood –Ekka
- Community Bore Motor wells
- Community Open Gyms-
- Inter village sports for youth
- Women sports
- RO water plant
- World environment day
- Govt ITI Computer Lab
- Renovated Fire station





Coromandel Prayog Utsav

- Coromandel Proyog Utsav (Mega Science Fair) on 29th Feb 2024.
- Mr. Husaian, Revenue Divisional Officer, Prof. Murthy garu, HoD of Journalism & Mass Communication & Dean Examinations of Andhra University, Mr. Rama Rao, Dy. Director of Social Welfare were the Chief Guests of the program.
- Total No of schools attended :29
- No of projects :150
- Total children attended :450

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Inauguration of Coromandel Science Laboratory @ Mindi High School

- Coromandel Science Laboratory was Inaugurated by Mr. Gudivada Amaranth, IT & Industrial Minister, Mr. Tippala Nagireddy, MLA of Gajuwaka at Govt High school Mindi on 26th June-2023.
- No. of Beneficiaries - 740

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Coromandel Science Laboratory @ Malkapuram GVMC High School inaugurated by Mr. Arun Leslee George, President & CHRO of Coromandel International Limited

30th Aug'23

No. of Beneficiaries - 1190

Coromandel Girl Child Scholarship Program

- Organized Coromandel Girl child Students success meet-2023.
- Coromandel Ladies Association recognized and encouraged 23 children who secured 510 marks and also state level rankers from Malkapuram GVMC High school
- Beneficiaries - 70 scholarship children
- Our scholarship- SSC children attended the examination out of 23 no's got 500 above marks

Teacher training workshop

- Organized 2 days Teachers training workshop on 12th & 13th Oct 2023 at Our CRC
- To ensure teachers in these schools have access to tested teaching learning materials in both print and multimedia formats to empower the students improve their English Language proficiency
- To empower the Teachers, use audio and video tools in govt schools through the implementation of the Karadi path Program.
- Participated Mandel educational officer, cluster recourse person ,Govt school teachers and our HR dept

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New Coromandel Medical Centre Inauguration

- New Coromandel Medical Centre Inaugurated by Shri Nageswarao garu, DMHO along with 58th ward Corporator, Mr.Gnanasundaram-VP & Unit Head, Mr.Jayagopal- CSR Head , Mr.Srinivasrao, DGM-HR
- DMHO appreciated coromandel management for their support towards health care services to the community.
- Initiated on 15th Nov 2023

Women & children Medical camp

- We Organized a dedicated Medical camp for Community Women & children (Up to 13years of age) at Gullalapalem & Mulagada villages and offered various services like ECG,RBS,LFT,HBSAg,CBC,ESR,THYROIS PROFILE,BLOOD GROUP,URIC ACID,CERVICAL CANCER SCREENING etc.
- Provided Six services Gynaecology/Paediatric/Orthopaedic/Nutrition /Dentist/General physician.
- Total conducted 2 villages on 3rd & 10th Dec 2023 total 541 beneficiaries benefitted they're of the programme and expressed their gratitude to the coromandel management for Organized this camp at their villages. Peoples participated from Gullalapalem & Mulagada.

World breast feeding week celebrations

- Coromandel International limited, is closely working around 5 Anghanwades (Mulagada/Pilakavanipalem/Gullalapalem/Sriharipuram/Yeduruvanipalem) nearby plant surrounding areas. We have conducted World Breastfeeding Week celebrations supported with Integrated Child Development Services (ICDS)
- Total pregnant & Lactation women covered 180 Nos and we provided Nutrition kits and participated Local corporator/ICDS Project director/Anganwadi teachers

Integrated Behavior Change Communication (IBCC)

- We have organised IBCC Project- Integrated Behavior Change communication to community.
- Health awareness/Hypertension/hand wash/Adolescent/Nutrition to community members.






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School Medical Camps

- Dental screening, Eye screening and Anemic screening camp 4 Govt primary and 4 High schools and total covered 9 Govt. Schools.
- As per requirement provided Dental kits & Anemic kits to school children.
- 3370 children in 8 Govt. Schools.

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Eye screening camp @ Community

We organized Eye screening camp Yeduruvanipalem and Pilakavanipalem villages and no of Benefitted 490

Anti Larval & Fogging

- Anti-Larval & Fogging Sprayed to Project villages.
- To avoid & control the seasonal diseases like Dengue, Malaria- Anti-Larval & Fogging Spray to 11 major community villages.

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Diabetic awareness Run

- Every year Coromandel Employe We Organized Diabetic Awareness Programme.
- Participated 98 employees provided participate certificates

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Community Hall Inauguration- Gondesivanipalem (58th ward)

- 58th ward Community hall Inaugurated by Anand Kumar YSRCP in charge and MSME Chairman and 58th ward Corporator Mrs.Lavanya and community leaders on 14th Aug 2023
- 110 families benefitted & 600 peoples covered.

Community Hall Inauguration-Hanuman Sanjivani colony (60th ward)

- Community hall Inaugurated by Mr. A Anandkumar MSME Chairman and west zone YSRCP in charge,60th ward corporator Mr.Suresh and community leaders on 14th Aug 2023
- 320 families benefitted 1600 peoples covered.
- 2 community halls works under process

10 Community Borewells installed

- Established 10 community bore wells in 10 locations
- Borewells inaugurated by Mr.Adari Anand kumar YSRCP In charge west zone & MSME Chairperson and 58th ward Corporator.
- 2023-2024 we initiated 4 Motor bore wells four villages

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4 Community Open Gyms Established

- Established 4 Community Open Gyms
  - Yeduruvanipalem
  - Pilakavanipalem
  - Gullalapalem
  - Ex servicemen colony

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Coromandel Inter-village Cricket Tournament 2023-24

- Coromandel encouraged youth and conducted Sports and games every year to create a healthy atmosphere among the community
- Organized Inter-village cricket tournament at Coromandel Cricket Ground
- 18 Teams participated in this event.
- Winners Yeduruvanipalem and Runners Pilakavanipalem

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World Environment day

- World Environment day celebrated and distributed the cloth bags to the Public and 30 Tree plantation at social welfare Girls hostels.
- Local Corporator, Police dept and local community members participated.

Coromandel Ladies Association Initiatives

- World food day
- National Cancer day
- Printer, game kits, stationary support to Social welfare Girl hostel children
- Wheelchairs support
- Blanket supported to poor people
- Women's day celebration

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Skill Development for women

- We established 4 Skill development program. Each program batch consists of 30 women
- Budget Rs. 5Lakhs x 4 = Rs.20.0 Lakhs

1.Maggam work

2.Jute bag

3.Handmade jewellery

4.Beautician

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Women's day celebrations

- 2023- Women's day celebrations, involving Community women members.
- 273 community women participated

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Beat Plastic Pollution

Distribution of cloth bags in presence of District Collector (Dr. A.MALLIKHARJUNA) and Mr. Y.V. Subba Reddy (Chairman – TTD)

Mega Beach cleaning

- Every year Coromandel Employee volunteers participated in Mega beach cleaning event as a part of Social cause.
- Total - 40 Employee voluntarily engaged in the event.
- District Collector,GVMC Commissioner and IT Minister Mr.Amaranath

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Road Safety awareness to Govt schools

- Every year we ensure Road safety awareness to 8 Govt schools. Conducted the quiz competition provided Prizes
- Risk and property Reduced our surround plant area Govt schools

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Renovation of Social welfare Girls Hostels

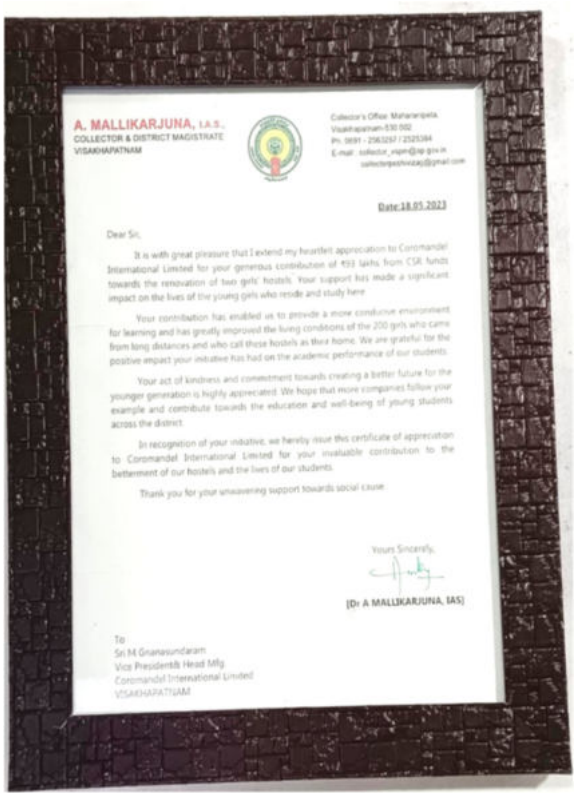
Dayal Nagar Girls Hostel

Nadupuru Girls Hostel

Social welfare Girls Hostels Inaugurated by District Collector


SCIENTISTS INVENTORS
LEADERS
WRITERS

Social welfare Girl's hostel report Hand overered to District collector



A. MALLIKARJUNA, I.A.S.,
COLLECTOR & DISTRICT MAGISTRATE
VISAKHAPATNAM

Collector's Office, Maharanipeta,
Visakhapatnam-530 002
Ph: 0891 - 2563257 / 2525384
E-mail: collector_vspm@ap.gov.in

Date:18.05.2023

Dear Sir,

It is with great pleasure that I extend my heartfelt appreciation to Coromandel International Limited for your generous contribution of ₹93 lakhs from CSR funds towards the renovation of two girls' hostels. Your support has made a significant impact on the lives of the young girls who reside and study here.

Your contribution has enabled us to provide a more conducive environment for learning and has greatly improved the living conditions of the 200 girls who came from long distances and who call these hostels as their home. We are grateful for the positive impact your initiative has had on the academic performance of our students.

Your act of kindness and commitment towards creating a better future for the younger generation is highly appreciated. We hope that more companies follow your example and contribute towards the education and well-being of young students across the district.

In recognition of your initiative, we hereby issue this certificate of appreciation to Coromandel International Limited for your invaluable contribution to the betterment of our hostels and the lives of our students.

Thank you for your unwavering support towards social cause.

Yours Sincerely,

(Dr A MALLIKARJUNA, IAS)

To
Sri M Gnanasundaram
Vice President& Head Mfg
Coromandel International Limited
VISAKHAPATNAM

Appreciation letter From District Collector

Coromandel ladies Association

- Coromandel Ladies Association visited and interacted with Social welfare Girl Children at Nadupuru.
- Ladies Association Provided Stationery and Games kits to school children.
- Ladies Association conducted Health Hygiene awareness session to children.
- 30 tree Plantation carried out by the team.

Coromandel Ladies Association visited to Social welfare Girls PG hostel Dayal Nagar

- Coromandel Ladies Association visited and interacted with Social welfare Girl PG students at Nadupuru.
- Ladies Association supported scanning printer to Hostel students.
- Awareness created on Personal Hygiene by Dr.Madhulatha.
- 30 tree Plantation carried out by the team.

PRSI National CSR Award

- Received First Prize in best CSR Programme for promoting Science & Technology.
- Award presented by Mr. Rajiv Ranjan Misra, Dhruba Jyoti Patil.

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Malkapuram Police station Renovation

- Renovated Malkapuram Police station and it was inaugurated by Mr.Anand Reddy, DCP Zone 2, Mr. Gnanasundaram-Vice President & Mr. GSV Raja, AVP HR of Coromandel along with Mr. Demudu Babu garu, Station Officer of Malkapuram Police Station

150 Safety Barricades to Police & surrounding communities

Fire Station Renovation jobs @ Pedagantyada

- Inaugurated by Mr.Niranjanreddy, Regional Fire officer, Mr. M. Gnanasundaram, Vice President of Coromandel along with Mr. Renukaiah, District Fire officer

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Coromandel

Thank You