Coromandel
FUTURE POSITIVE

Coromandel International Limited
Post Box No. 1116, Sriharipuram, Malkapuram Post
Visakhapatnam - 530 011, Andhra Pradesh, India.
Tel: 91-891-2578400 to 2578416
DID: 91-891-2578417/18/19
Fax: 91-891-2577665/2516164
Website: www.coromandel.biz
CIN: L24120AP1961PLC000892

EHS/MoEF/15-05

Dec'1, 2016

Regional Office, (South Eastern Zone)
Ministry of Environment and Forests and Climate Chage
1st Floor and 2nd Floor, HEPC Buiding
Cathedral Garden Road
Nunganbakkam, Chennai -600034

Dear Sir,

Sub: Half-Yearly EC(Environmental Clearance) compliance report – regd.

Ref: EC No: F No.J-11011/388/2006-IA-II (I)

***

Please find attached herewith half-yearly condition wise compliance report of EC (Environmental Clearance) of Phosphoric Acid Plant from 500 MTPD to 700 MTPD.

Thanking You,

Yours faithfully,
For Coromandel International Limited

M .Kumaresan
Sr. Associate Vice President- Manufacturing

Enc:a/a

MPK/KRS

Cc: Member Secretary, APPCB
Zonal office, APPCB
Regional Office, VSP, APPCB

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

Tel: 91-40-27842034 / 27847212
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Dec'1, 2016

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For Coromandel International Limited

M .Kumaresan
Sr. Associate Vice President- Manufacturing

Enc:a/a

MPK/KRS

cc: Member Secretary, APPCB
Zonal office_ APPCB
Regional Office_ VSP, APPCB

MoEF-EC- COMPLIANCE STATUS OF Environmental Clearance (EC) issued by MoEF for enhanced production capacity of Phosphoric acid plant from 500 MTPD to 700 MTPD

Reference :- F No. J-11011/388/2006-IA II (I) dated 18.05.2007

A. SPECIFIC CONDITIONS:

S.No.	Specific conditions	Compliance status
i.	The gaseous emissions (SO_2, NO_X, NH_3, Urea dust) particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. Monitoring of HF shall be carried out along with other parameters. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	Monitoring the fluoride emissions and meeting the standard of 5 mg/Nm3 from the stack of phosphoric acid plant. All and reports are being submitted to APPCB. In case of emergency plant will s/d immediately. Out of the 12 stacks present in the company, process stacks are 7 nos. The gaseous emissions are being monitored on continuous basis with in house laboratory. Further, MoEF approved third party analysis is also carried out on monthly basis and the reports are submitted regularly. Complex A, Complex-B & Complex C train were installed with online stack analyzer and the data uploading to APPCB/ CPCB websites through cloud server. SAP-I & SAP-II installed with online stack analyzer and connected to APPCB websites. Since for PM and F, reliable technology is yet to be identified, it can be provided based on the guidance given by CPCB, New Delhi.

<table>
<tr><th>S.No.</th><th>Specific conditions</th><th>Compliance status</th></tr>
<tr><td>ii.</td><td>Ambient air quality monitoring stations shall be set up in the downwind direction as well as where maximum ground level concentration is anticipated in consultation with the APPCB and data submitted to the Ministry's Regional Office at Bangalore six monthly and APPCB quarterly along with statistical analysis.</td><td>1) Installed four online monitoring AAQM stations i.e three in inside the plant and fourth at Mulagada village. AAQM station in Mulagada Village Damaged due to Hud-Hud Cyclone, Letter Sent to m/s HZL with CC to EE, VSP
2) Bagging AAQM installation completed, connected to APPCB website. At Mulagada, currently observing the CPCB methodology of Monitoring and complying.
3) In addition to the above, at 2 AAQMS– it is also being monitored by MoEF approved agency as per the CPCB guidelines. (Annexure-I)</td></tr>
<tr><td>iii.</td><td>Total water requirement will be met from Municipal Water supply. No effluent will be generated from water-soluble fertilizer plant since entire quantity of water will be recycled in the process. Liquid effluent from cooling tower blow down will be recycled and reused in phosphoric acid / granulation plants and in case of no consumption, it will be sent to ETP. Treated effluent will be disposed off into the sea at a distance of 5.0 K through a channel.</td><td>- No additional water required. Municipal Water supply quantity remains same.

- Effluent generated from Water Soluble Fertiliser plant is being recycled.

- Cooling Tower blow down water will be reused in the process.

- Treated effluent discharged into sea at a distance of more than 6 KM through a channel.

* Effluent Treatment Plant in operation

1. Water consumption:
<table>
<tr><th>Purpose</th><th>Quantity (KLD)</th></tr>
<tr><td>Process & Washes</td><td>7,417</td></tr>
<tr><td>Boiler Feed</td><td>2,400</td></tr>
<tr><td>Industrial Cooling (Makeup) – fresh water</td><td>1,759</td></tr>
<tr><td>Industrial Cooling – Sea water.</td><td>63,000</td></tr>
<tr><td>Domestic & other</td><td>650</td></tr>
<tr><td>Customised fertilizer plant</td><td>120</td></tr>
<tr><td>Total</td><td>75,346</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Specific conditions</th><th>Compliance status</th></tr>
<tr><td></td><td></td><td>2. Waste water generation:<table><tr><td>Purpose</td><td>Quantity (KLD)</td></tr><tr><td>Process & washings</td><td>7,890</td></tr><tr><td>Cooling water blow down</td><td>60,000</td></tr><tr><td>Domestic</td><td>520</td></tr><tr><td>Total</td><td>68,410</td></tr></table></td></tr>
<tr><td>iv.</td><td>Prior clearance under the Coastal Regulation Zone (CRZ) shall be obtained from the State / Central Govt. for the disposal of treated effluent into the Sea.</td><td>Coromandel does not discharge any treated effluent directly into the sea.

Coromandel has been permitted to discharge its treated effluents from ETP and return cooling water in a common channel provided by the Visak Port authorities since the plant was established in 1967 (prior to CRZ rules 1991)

Coromandel discharge point is approx. 03 km away from the Meghadrigadda over flow channel . All other industries (HPCL, APCL, IOCL and BPCL) are also discharging into common channel

Hence CRZ clearance is not applicable to the Coromandel International Ltd.</td></tr>
<tr><td>v.</td><td>Regular monitoring of ground water by installing Peizometric wells around the guard pond and sludge disposal site shall be periodically monitored and reports submitted to Ministry's Regional Office at Bangalore, CPCB and APPCB.</td><td>Ground water monitoring through 5 Peizo wells and 8 Bore wells located in and around the guard pond and reports furnishing to APPCB regularly.

The details are attached as Annexure-II</td></tr>
<tr><td>vi.</td><td>Gypsum produced as a by-product from phosphoric acid plant shall be utilized in cement industries as a retarded as well as soil conditioner for agricultural use. Waste oil shall be sold to the authorized recyclers / preprocessors.</td><td>Gypsum is being disposed to various nearby industries, predominantly Cement industries and also for agricultural purpose.

Fresh gypsum handling area lined with HDPE – 10 acres Old Gypsum Handling Area-100 Acres

Out of the 100 acres, as part of</td></tr>
</table>

S.No.	Specific conditions	Compliance status
		reclamation, 18 acres plantation has been done through TERI, New Delhi. Approx.17.8 million MT of PG was disposed from 2013-14 onwards till date Gypsum old stocks. Remaining Gypsum old stocks estimated as 3.2 million to be disposed by March 2018. However we also envisage difficulties in disposing to Cement industry due to market fluctuations, non availability of railway wagons etc., Waste oil is being disposed to CPCB approved recyclers.
vii.	The company shall adopt rainwater-harvesting measures to reduce requirement of the fresh water.	Roof top rain water collection is done and it has potential to re-charge is 1 million litres per annum.
viii.	Green belt shall be developed in 33 % area and properly maintained to mitigate the effects of fugitive emissions all around the plant as per the Central Pollution Control Board guidelines.	Out of the 428 acres, the revised land area is 338 (after demarking from VPT) and the green belt is developed in 145 acres area which is more than 33%. Hence Complied
ix.	The company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) for fertilizer industries.	Attached as **Annexure-III**

B. GENERAL CONDITIONS :-

S.No.	General conditions	Compliance status
i.	The project authorities must strictly adhere to the stipulations made by the A .P. Pollution Control Board (APPCB) and the State Government	*CFO valid up to 31.10.2021.
ii.	No further expansion/modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests	Prior approval will be taken from statutory body/ MOEF

S.No.	General conditions	Compliance status
iii.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 2003.	Maintaining FORM-3 and FORM-13 for storage and transfer of hazardous waste.
iv.	The project proponent shall also comply with all the safeguards recommended in the EIA /EMP Report.	Noted
v.	The project authorities will set up a separate environmental management cell for effective implementation of all the above stipulations under control of Senior Executive.	AGM – EHS is In-charge of pollution control and directly reports to Sr. Asso.V.P.-Manufacturing. He is supported by Manager – Environment and other staff from quality control & laboratory for carrying out analysis as per environmental management plan.
vi.	Adequate funds towards capital cost and recurring expenditure/annum shall be earmarked and judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government and a time bound implementation schedule for all the conditions stipulated herein shall be submitted. The funds so provided shall not be diverted for any other purposes.	Funds are provided through internal fund allocation systems.
vii.	The Regional Office of this Ministry at Bangalore / Central Pollution Control Board / APPCB will monitor the stipulated conditions. A six monthly compliance status report and the monitored data along with statistical interpretation shall be submitted to monitoring agencies regularly.	Half yearly reports being sent to APPCB and MOEF Bangalore & MoEF regional Office Ref: EHS/MoEF/16-01 Apr'28,2016
viii.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by	Advertised in prominent news papers dated – 27.05.2008 in local language and also English, and copies were

S.No.	General conditions	Compliance status
	the Ministry and copies of the clearance letter are available with the APPCB / Committee and may also be seen at Website of the Ministry of Environment and Forests at http:/envfor.nic.in. This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office at Bangalore.	forwarded to Regional Office, MoEF, Bangalore
ix.	The Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work, if any.	The Project was supported with Internal Fund Allocations. All the projects were completed by 2009-10.
x.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Compliance status furnishing regularly to concerned statutory bodies
xi.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions.	Compliance status furnishing regularly to concerned statutory bodies
xii.	The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	*Monthly furnishing Air & water cess returns to APPCB according to legal requirements. * Maintaining FORM-3 and FORM-13 according to HW rules,2008 *Public liability Insurance Policy no: 62030036163300000002 Valid upto -31-03-2017

murugappa

Coromandel International Limited
Visakhapatnam

Coromandel

MoEF Approved Lab Ambient Air Quality Data 2016-17

Sl.No.'s	Location	Cafertia/SSC					Near DG Sets					near gate No. 13				
	parameter	Pm2.5	Pm10	so2	Nox	NH3	Pm2.5	Pm10	so2	Nox	NH3	Pm2.5	Pm10	so2	Nox	NH3
1	April'16	25.6	49	13.3	16.9	0.1	30.7	62.8	15.8	20	0.07	32.2	73.15	11	18.7	0.09
2	May'16	30.8	62.6	18.5	23.9	0.05	29.2	58.4	20.6	27.9	0.08	31.9	72.6	16	26.4	0.05
3	June'16	34	69	20.3	26.2	0.1	28	56	19.5	26.5	0.07	30	69	15.2	25.1	0.05
4	July'16	33	68	19.3	25.7	0.09	29	60	19.2	26	0.07	33	70	14.9	24.6	0.05
5	August'16	35	74	19.9	25	0.08	31	66	20.9	26.1	0.07	36	75	15.5	23.9	0.06
6	September'16	34	72	18.5	25.1	0.09	35	71	19.85	25.6	0.08	39	81	15.1	24.2	0.05

TEAM
Labs and Consultants

ORIGINAL

Form-No. TCL/L/GF/RF-138

1053

Registered Office :
B-115, 116, 117 & 509, Annapoorna Block, Aditya Enclave, Ameerpet, Hyderabad - 530038.
Ph. : (O) 040-23748555 / 23748616, Fax : 040-23748666, Email : teamlabs@gmail.com
ISO 9001 : 2008, ISO 14001 : 2004 and OHSAS 18001 : 2007 Certified Organization
Laboratory Recognised by Ministry Environment, Forests and Climate Change, GoI, New Delhi

TEST REPORT

Test Report No.TLC/V/Env/CIL/11/0916 **dt.01.10.2016**

Description of Test: Ambient Air quality Monitoring inside the CFL

Name of the client: Coromandel International Limited, Visakhapatnam

Location of sampling: Stations as per details given

Period of Monitoring : For the Month of SEPTEMBER-2016

Summary of Ambient Air quality Monitoring Data for the Month of SEPTEMBER-2016

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	30	30	37
	Maximum	38	39	44
	98%tile	38	39	44
	Average	34	35	39
PM 10	Minimum	68	64	75
	Maximum	80	78	86
	98%tile	80	78	86
	Average	72	71	81
SO_2	Minimum	15.2	16.5	12.6
	Maximum	22.1	23.1	16.8
	Average	18.5	19.85	15.1
	98%tile	22.1	23.1	16.8
NO_X	Minimum	22.4	24.3	21.5
	Maximum	28.5	27.2	26.5
	98%tile	28.5	27.2	26.5
	Average	25.1	25.6	24.2
NH_3	Minimum	0.08 mg/M^3	0.06 mg/M^3	0.04 mg/M^3
	Maximum	0.11 mg/M^3	0.10 mg/M^3	0.06 mg/M^3
	98%tile	0.11 mg/M^3	0.10 mg/M^3	0.06 mg/M^3
	Average	0.09mg/M^3	0.08 mg/M^3	0.05 mg/M^3

All values are expressed in $\mu g/m^3$ except Ammonia

For TEAM Labs and Consultants

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ORIGINAL

Form-No. TCL/L/GF/RF-138

911

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Laboratory Recognised by Ministry Environment, Forests and Climate Change, GoI, New Delhi

TEST REPORT

Test Report No.TLC/V/Env/CIL/11/0816 dt.01.09.2016

Description of Test: Ambient Air quality Monitoring inside the CFL

Name of the client: Coromandel International Limited, Visakhapatnam

Location of sampling: Stations as per details given

Period of Monitoring : For the Month of AUGUST-2016

Summary of Ambient Air quality Monitoring Data for the Month of AUGUST-2016

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	30	27	30
	Maximum	41	34	42
	98%tile	41	34	42
	Average	35	31	36
PM 10	Minimum	62	59	64
	Maximum	84	74	85
	98%tile	84	74	85
	Average	74	66	75
SO_2	Minimum	15.8	15..8	12.8
	Maximum	24.0	27.5	18.0
	Average	19.9	20.9	15.5
	98%tile	24.0	27.5	18.0
NO_X	Minimum	20.8	23.3	21.5
	Maximum	28.9	29.0	26.1
	98%tile	28.9	29.0	26.1
	Average	25.0	26.1	23.9
NH_3	Minimum	0.08 mg/M^3	0.04 mg/M^3	0.04 mg/M^3
	Maximum	0.10 mg/M^3	0.10 mg/M^3	0.09 mg/M^3
	98%tile	0.10 mg/M^3	0.10 mg/M^3	0.09 mg/M^3
	Average	0.08mg/M^3	0.07 mg/M^3	0.06 mg/M^3

All values are expressed in $\mu g/m^3$ except Ammonia

For TEAM Labs and Consultants

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Form-No. TCL/L/GP/RP-138

797

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TEST REPORT

Test Report No.TLC/V/Env/CIL/11/0716 **dt.03.08.2016**

Description of Test: **Ambient Air quality Monitoring inside the CFL**

Name of the client: **Coromandel International Limited, Visakhapatnam**

Location of sampling: **Stations as per details given**

Period of Monitoring : **For the Month of JULY-2016**

Summary of Ambient Air quality Monitoring Data for the Month of JULY-2016

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	27	24	29
	Maximum	40	35	37
	98%tile	40	35	37
	Average	33	29	33
PM 10	Minimum	60	55	64
	Maximum	74	69	78
	98%tile	74	69	78
	Average	68	60	70
SO_2	Minimum	13.2	15.7	12.9
	Maximum	25.1	28.7	17.2
	Average	19.3	19.2	14.9
	98%tile	25.1	28.7	17.2
NO_X	Minimum	18.6	24.6	22.6
	Maximum	30.0	27.5	26.0
	98%tile	29.9	27.5	25.9
	Average	25.7	26.0	24.6
NH_3	Minimum	0.08 mg/M^3	0.05 mg/M^3	0.03 mg/M^3
	Maximum	0.11 mg/M^3	0.08 mg/M^3	0.08 mg/M^3
	98%tile	0.11 mg/M^3	0.08 mg/M^3	0.08 mg/M^3
	Average	0.09 mg/M^3	0.07 mg/M^3	0.05 mg/M^3

All values are expressed in □μ g/m^3 except Ammonia

TEAM Labs and Consultants

For Team Labs & Consultants [redacted].

TEAM
Labs and Consultants

ORIGINAL

Form-No. TCL/L/GF/RF-138

617

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TEST REPORT

Test Report No.TLC/V/Env/CIL/11/0616 dt.04.07.2016

Description of Test: Ambient Air quality Monitoring inside the CFL

Name of the client: Coromandel International Limited, Visakhapatnam

Location of sampling: Stations as per details given

Period of Monitoring : For the Month of JUNE-2016

Summary of Ambient Air quality Monitoring Data for the Month of JUNE-2016

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	27	23	27
	Maximum	40	33	34
	98%tile	40	33	34
	Average	34	28	30
PM 10	Minimum	61	50	65
	Maximum	75	61	75
	98%tile	75	61	75
	Average	69	56	69
SO_2	Minimum	13.5	16.0	13.2
	Maximum	26.8	29.3	17.5
	Average	26.7	28.1	17.4
	98%tile	20.3	19.5	15.2
NO_X	Minimum	19.0	25.1	23.1
	Maximum	30.6	28.1	26.5
	98%tile	30.5	28.1	26.4
	Average	26.2	26.5	25.1
NH_3	Minimum	0.09 mg/M^3	0.06 mg/M^3	0.03 mg/M^3
	Maximum	0.12 mg/M^3	0.09 mg/M^3	0.08 mg/M^3
	98%tile	0.12 mg/M^3	0.09 mg/M^3	0.07 mg/M^3
	Average	0.10 mg/M^3	0.07 mg/M^3	0.05 mg/M^3

All values are expressed in □μ g/m^3
except Ammonia

For TEAM Labs and Consultants

BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/11/0516 **dt.04.06.2016**

Description of Test: **Ambient Air quality Monitoring inside the CFL**

Name of the client: **Coromandel International Limited, Visakhapatnam**

Location of sampling: **Stations as per details given**

Period of Monitoring : **For the Month of MAY-2016**

Summary of Ambient Air quality Monitoring Data for the Month of MAY-2016

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	24.8	24.0	28.8
	Maximum	36.8	33.6	36.0
	98%tile	36.8	33.4	35.7
	Average	30.8	29.2	31.9
PM 10	Minimum	55.8	52.2	68.4
	Maximum	68.4	63.9	78.9
	98%tile	68.1	63.5	78.5
	Average	62.6	58.4	72.6
SO_2	Minimum	12.3	16.8	13.9
	Maximum	24.4	30.8	18.4
	Average	24.2	29.5	18.3
	98%tile	18.5	20.6	16.0
NO_X	Minimum	17.3	26.4	24.3
	Maximum	27.8	29.6	27.9
	98%tile	27.7	29.6	27.8
	Average	23.9	27.9	26.4
NH_3	Minimum	0.08 mg/M^3	0.06 mg/M^3	0.03 mg/M^3
	Maximum	0.11 mg/M^3	0.09 mg/M^3	0.08 mg/M^3
	98%tile	0.11 mg/M^3	0.09 mg/M^3	0.08 mg/M^3
	Average	0.05 mg/M^3	0.08 mg/M^3	0.05 mg/M^3

All values are expressed in □μ g/m^3 except Ammonia

For Bhagavathi Ana LabsPvt Ltd.

Bhagavathi Ana Labs Pvt. Ltd. *Central Laboratory - Industrial Testing Division*
(A Bureau Veritas Group Company)
Plot No. 7-2-C 14, Industrial Estate, Sanathnagar, Hyderabad - 500 018. INDIA
Tel.: +91 40 23811535, 23711536 • www.bhagavathianalabs.com • centrallab.hyderabad@in.bureauveritas.com

BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/11/0416 **dt.04.05.2016**

Description of Test: **Ambient Air quality Monitoring inside the CFL**

Name of the client: **Coromandel International Limited, Visakhapatnam**

Location of sampling: **Stations as per details given**

Period of Monitoring : **For the Month of APRIL-2016**

Summary of Ambient Air quality Monitoring Data for the Month of APRIL-2016

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	21	24	29
	Maximum	30	34	36
	Average	25.6	30.7	32.2
	98%tile	30.0	34.0	35.7
PM 10	Minimum	44	56	69
	Maximum	53	68	79
	Average	49.0	62.8	73.15
	98%tile	54.0	68.0	78.6
SO_2	Minimum	7.8	11.9	9.9
	Maximum	17.3	19.5	13
	Average	13.3	15.8	11.0
	98%tile	17.3	19.4	12.8
NO_X	Minimum	12.3	18.7	17.2
	Maximum	19.7	20.9	19.7
	Average	16.9	20.0	18.7
	98%tile	19.7	26.9	19.7
NH_3	Minimum	0.06 mg/M^3	0.05 mg/M^3	0.04 mg/M^3
	Maximum	0.09 mg/M^3	0.07 mg/M^3	0.09 mg/M^3
	Average	0.10 mg/M^3	0.1 mg/M^3	0.06 mg/M^3
	98%tile	0.10 mg/M^3	0.07 mg/M^3	0.09 mg/M^3

All values are expressed in □µ g/m^3 except Ammonia

For Bhagavathi Ana LabsPvt Ltd.

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CHARTER ON CORPORATE RESPONSIBILITY FOR ENVIRONMENT PROTECTION

Wastewater Management

1	Efforts will be made for conservation of water, particularly with a target to have consumption less than 8, 12 and 15 m^3/tonne of urea produced for plant based on gas, naphtha and fuel oil, respectively. In case of plants using Naphtha and Gas both as feedstock, water consumption target of less than 10 m^3/tonne will be achieved. An action plan for this will be submitted by June 2003 and targets will be achieved by March 2004.	Our ammonia plant was shut down during May 1999 and was subsequently dismantled during the first quarter of 2003. Hence, not applicable to us.
2	Use of arsenic for CO_2 absorption in ammonia plants and chromate based chemicals for cooling systems, which is still continuing in some industries, will be phased out and replaced with non-arsenic and non-chromate systems by December 2003. In this regard, action plan will be submitted by June 2003.	Urea plant was shut down during the year 1997 and dismantled in the year 2000. Hence, not applicable to us.
3	Adequate treatment for removal of oil, chromium (till non-chromate based cooling system is in place) and fluoride will be provided to meet the prescribed standards at the source (end of respective process unit) itself. Action plan will be firmed up by June 2003 for compliance by March 2004.	All our cooling towers in our plant are of non-chromate base type. Installed fluorine recovery unit and effluent treatment plant for the removal of fluoride at source level.
4	Proper and complete nitrification and de-nitrification will be ensured, wherever such process is used for effluent treatment, by September 2003.	Not applicable to us
5	Ground water monitoring around the storage facilities and beyond the factory premises will be carried out at regular intervals particularly for pH, fluoride. CPCB will finalize the guidelines for groundwater monitoring by December 2003.	Ground water monitoring through 5 piezo wells around the plant and reports are furnishing to APPCB regularly.

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6	No effluent arising from process plants and associated facilities will be discharged to the storm water drain. The quality of storm water will be regularly monitored by all the industries.	Plant effluent drains are separated from storm water drains. Plant drains are recycled and in some cases routed to ETP for treatment. Installed dry gypsum disposal system in place of wet disposal and commissioned cooling tower for barometric condensers. Commissioned new ETP and kept in operation
7	The industries, where waste water/effluent flows through the storm water drains even during the dry season will install continuous systems for monitoring the storm water quality for pH, ammonia and fluoride. If required, storm water will be routed through effluent treatment plant before discharging. An action plan will be submitted by June 2003 and necessary action will be taken by June 2004.	

Air Pollution Management

1	All the upcoming urea plants will have urea prilling towers based on natural draft so as to minimize urea dust emissions.	Not applicable to us
2	The existing urea plants, particularly, the plants having forced draft prilling towers, will install appropriate systems (e.g. scrubber, etc.) for achieving existing norms of urea dust emissions. In this regard, industries will submit action plan by June 2003 and completion of necessary actions by June 2004.	Not applicable to us
3	The sulphuric acid plants having SCSA system will switch over to DCDA system by March 2004 to meet the emission standard for SO_2 as 2 kg / tonne of H_2SO_4 produced. An action plan for this will be submitted by June 2003.	Our sulfuric acid plant was switched over to DCDA in the year 1975 to achieve 1 Kg of SO_2 per tonne of Sulfuric acid. Hence not applicable.

4	Sulphuric acid plants having DCDA system will improve the conversion and absorption efficiencies of the system as well as scrubbers to achieve SO_2 emissions of 2 kg/tonne of acid produced in case of plants having capacity above 300 tpd and 2.5 kg/tonne in case of plants are having capacity upto 300 tpd. An action plan will be submitted by June 2003 and emission levels will be complied with by September 2004.	In 2002, the converter and absorber are up rated and modified to get less than 1 Kg/MT without scrubber. The current SO_2 emission levels in old sulfuric acid plant (1400 MTPD) and as well as new sulfuric acid plant (300 MTPD) is less than 0.65 Kg/MT of acid produced and hence not applicable.
5	Stack height for sulphuric acid plants will be provided as per the guidelines and on the basis of normal plant operations (and not when the scrubbers are in use) by June 2003. The scrubbed gases are to be let out at the same height of the stack.	Stack at old sulfuric acid plant was installed based on the CPCB guidelines in the year 1989, which was replaced with a new one in the year 2002. Followed CPCB guidelines for the new sulfuric acid plant stack height also.
6	An action plan for providing proper dust control systems at rock phosphate grinding unit in phosphoric acid plants/single super phosphate plants, so as to achieve particulate emission levels of 150 mg/NM^3 will be submitted by September 2003 and complied with by March 2004.	Presently the particulate emissions at rock phosphate grinding unit are well below the limit of 50 mg/Nm^3. Hence, no action is called for.
7	Particulate as well as gaseous fluoride will be monitored and adequate control systems will be installed by June 2004 to achieve the norms on total fluoride emissions ($25mg/NM^3$).	The present fluoride stack emission levels in the phosphoric acid plant as well as from Complex plant are well within the limit of 5 mg/Nm^3. Hence, no action is called for.
8	Continuous SO_2 emission monitoring systems will be installed in sulphuric acid plants (having capacity 200 tpd and above) by March 2004. Action plan for this will be submitted by June 2003.	Installed online SO_2 analyzer of Rosemont make in the year 1989, which was replaced with a new one in the year 2002 and also installed SO_2 online analyzer for the new sulphuric acid plant during commissioning of the plant in the year 2005 and network connected to PCB server
9	Regular monitoring of ambient air quality with regard to SO_2, NO_x, and PM, SO_3, fluoride and acid mist will be carried out.	Being monitored regularly and installed online AAQM stations and network connected to PCB server

Solid Waste Management

1	Gypsum will be effectively managed by providing proper lining, dykes with approach roads and monitoring of groundwater quality around storage facilities. Accumulated gypsum will be properly capped. In this regard, action plan will be submitted by June 2003 and for compliance by December 2003.	Switched over to dry gypsum disposal system in year 2009 and 5 acres of land lined with HDPE lining with garland drainage system. The collected leachate recycling to phosphoric acid plant.
2	An action plan for proper handling, storage and disposal of spent catalyst having toxic metals will be submitted by June 2003 and implemented by September 2003. The industry will also explore recovery/buy-back of spent catalyst by September 2003.	Spent vanadium pentoxide generated in sulfuric acid plant is collected in drums wrapped with polythene cover and stored in a covered shed as per Hazardous waste Management guidelines. *The same is being disposed to TSDF of M/s. Coastal Waste Management, Project, Visakhapatnam (A division of M/s Ramky Enviro Engineers Ltd.). Exploring disposal to CPCB approved / Chattisgarh Pollution control Board approved recycler this year.*
3	Carbon slurry, sulphur muck and chalk will be properly managed and disposed of in properly designed landfill either within premises or in common facility. Action plan on this will be submitted by June 2003 and implemented by March 2004.	Usage of solid sulfur is *mostly* replaced with molten sulfur. Sulfur muck generated during occasional use of solid sulfur is separately stored on lined pad and the *same is being reused as filler in the granulator plant on continuous basis.*
4	Existing stock of chromium and arsenic bearing sludge will be properly disposed by December 2003. Industries will also explore recovery of chromium from the sludge. CPCB will provide guidelines for proper disposal of the sludge.	Not applicable to us