Coromandel
FUTURE POSITIVE

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EHS/MoEF/15-06

Dec'1, 2015

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-11011/548/2008-IA-II(I) dt 10.06.2009

***

Please find attached herewith half-yearly condition wise compliance report of EC (Environmental Clearance) of Customized Fertilizer Plant of 300 MTPD.

Thanking You,

Yours faithfully,
For Coromandel International Limited

M .Kumaresan
Sr. Associate Vice President- Manufacturing

Enc:a/a

MPK/NSS

CC: Member Secretary, Hyderabad
CC: APPCB, RO. Visak
CC: APPCB, ZO. Visak

MoEF-EC- COMPLIANCE STATUS OF Environmental Clearance (EC) issued by MoEF for Manufacture of Customized Fertilizer plant of two streams of 300 MTPD each

Ref: F.No. J-11011/548/2008-1A-II(I) dated 10.6.2009

A.) SPECIFIC CONDITIONS:

	CONDITION	COMPLIANCE STATUS
i)	The company shall comply with all the conditions mentioned in the environmental clearance issued to the existing plant vide Ministry's letter F.No.J-11011/314/2007-IA.II(I) dated 31st August, 2007 for expansion of the fertiliser plant from 2700 to 3900 TPD	Complied
ii)	The projects authorities shall ensure zero discharge from the proposed plant. The wastewater generated for the existing plant shall be treated and disposed as per the standards prescribed by the Andhra Pradesh Pollution Control Board. No utilities shall be developed for this project.	Zero effluent discharge from this customized fertilizer plant.
iii)	The project authorities shall not manufacture the raw materials as this plant will be based on mixing process only.	No raw materials will be manufactured.
iv)	The project authority shall install dust collection such as cyclone system in fertilizer mixing and bagging plant to control particulate emissions.	Installed cyclones in series for each circuit to eliminate dust emissions
v)	The company shall carry out air quality monitoring at vents/stacks and regular monitor the gaseous emissions along with particulate matter. The reports shall be submitted to the Ministry's Regional Office at Bangalore, CPCB and SPCB	Air quality monitoring reports being regularly furnished to CPCB & SPCB
vi)	The gaseous emissions (SO_2, No_x, NH_3, Urea dust) and particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. Emission data shall be periodically monitored and reports submitted to Ministry's Regional Office at Bangalore, CPCB and SPCB.	Stack analysis reports being regularly furnished to APPCB & SPCB.

	CONDITION	COMPLIANCE STATUS
vii)	Data on ambient air quality, stack emissions and fugitive emissions shall be regularly uploaded on the website of the company and submitted on-line to the Ministry's Regional Office at Bangalore, Andhra Pradesh Pollution Control Board (APPCB) and Central Pollution Control Board (CPCB) as well as hard copy once in six months. Data on SPM, SO2 and NOx shall also be displayed outside the premises at the appropriate place for the general public.	Installed four online AAQM stations. Three stations inside the plant and another one installed at nearby village (Mulagada). Reports are furnishing to APPCB regularly. All inside AAQM stations are connected to AP PCB website. During the Recent Hud-Hud Cyclone, two AAQMs, one in Our Bagging station and One at Village Mulagada were damaged. We are currently observing the CPCB methodology of Monitoring and complying. Physical installation of bagging AAQM Completed. In addition to the above, at Three AAQ monitoring stations – it is also being monitored by MoEF approved agency as per the CPCB guidelines. AAQ data is attached as Annexure-I
viii)	the company shall develop the green belt in 33% area, out of total area to mitigate the effect of fugitive emissions and noise as per the guidelines of CPCB	Out of the 428 acres -120 acres area is under green belt. 25 to 30 % of our Green belt partially damaged due to recent Hud-Hud Cyclone. Presently, re-plantation work is under progress in the affected area.
ix)	The company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) for fertilizer industries for existing and proposed plant	Annexure-II
x)	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.	Annual health check up being conducted for employees and contract workmen according to Factories act'1948

	CONDITION	COMPLIANCE STATUS
xi)	The company shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling.	Plant has full fledge fire fighting system and also have an agreement for mutual aid with neighbouring industries
xii)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	All contract workmen (including canteen workers) are provided canteen, drinking water,toilet facilities. Annual health check up is also being done for regular contract workmen.
B) GENERAL CONDITIONS		
i)	The project authorities shall strictly adhere to the stipulations of the SPCB / State Government or any statutory body.	Agree
ii)	The gaseous emissions (SO2, HCL, NOx, NH3, Fertiliser dust) and particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. Emission data shall be periodically monitored and reports submitted to Ministry's Regional Office, CPCB and SPCB.	1) Emissions from sulfuric acid plants , complex fertiliser plants & phosphoric acid plant are monitored regularly by inhouse lab as well as third party and same will be furnishing to concerned authorites 2) Two sulfuric acid plants stack emissions connected to PCB server
iii)	All the waste waters generated from the various processes shall be recycled/reused in the plant and zero discharge shall be maintained. The domestic waste water shall be treated in septic tanks and treated waste shall be used for irrigation in the green-belt.	Zero effluent discharge from complex plant and developed and implemented schemes to make minimized effluent from phosphoric acid & Sulfuric acid plants
iv)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted

	CONDITION	COMPLIANCE STATUS
v)	At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	Emergency interlocks provided to critical equipments.Failure of any equipment plant will lead to plant shut down immediately
vi)	The locations of ambient air quality monitoring stations shall be reviewed in consultation with the State Pollution Control Board (SPCB) and additional stations shall be installed, if required, in the down wind direction as well as where maximum ground level concentrations are anticipated.	Installed four online AAQM stations. Three stations inside the plant and another one installed at nearby village (Mulagada). Reports are furnishing to APPCB regularly. All inside AAQM stations are connected to AP PCB website. During the Recent Hud-Hud Cyclone, two AAQMs, one in Our Bagging station and One at Village Mulagada were damaged. We are currently observing the CPCB methodology of Monitoring and complying. In addition to the above, at Three AAQ monitoring stations – it is also being monitored by MoEF approved agency as per the CPCB guidelines. The AAQ data is attached as **Annexure-I**
vii)	Dedicated scrubbers and stacks of appropriate height as per the Central Pollution Control Board guidelines shall be provided to control the emissions from various vents. The scrubber water shall be sent to ETP for further treatment.	Installed stacks & scrubbers according to CPCB guidelines. Scrubbing liquid recycling into process
viii)	Fugitive emissions in the work zone environment, product and raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by the State Pollution Control Boards/Central Pollution Control Board.	Being measured quarterly as per OHSAS 18001 Standard and procured workplace monitoring equipments to monitor frequently

	CONDITION	COMPLIANCE STATUS
ix)	The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals rules, 1989 as amended in the October, 1994 and January 2000 and Hazardous Waste (Management and Handling) Rules, 1989 as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage and disposal of hazardous wastes.	Maintaining FORM-3 and FORM-13 for storage and transfer of hazardous waste.Hazardous Waste sending to authorised dealers of APPCB/SPCB.
x)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers,	Monthly monitoring noise levels at all plant locations
xi)	The company shall develop rainwater harvesting structures to harvest the run-off water for recharge of groundwater.	Noted
xii)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco development plan should be submitted to the SPCB within three months of receipt of this letter for approval.	1. Installed four stage scrubbing system in complex plant 2. Installed Alkali scrubbers in both sulfuric acid plants 3. Installed fume scrubber in phosphoric acid plant 4. Recovery of flourosilisic acid from 30% phosphoric acid 5. Installed bag filters at rock grinding section and rock unloading at wharf 6. Installed tube conveyors to transfer raw material & product in order to avoid spillages 7. Developed green belt in 29% of the plant area and developing Green belt in 18 acres on gypsum pond by Teri(The Energy Resources & Institution ,New Delhi).Completed in 18 acres with 16000 nos
xiii)	The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report.	Noted

	CONDITION	COMPLIANCE STATUS
xiv)	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental management and Monitoring functions	Our laboratory equipped with all facilities
xv)	The project authorities shall earmark adequate funds to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Funds are provided through Revenue/Capital budget.
xvi)	The implementation of the project vis-à-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry/SPCB/CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the website of the Company.	Will be updated in the company intranet website shortly and compliance report being sent to respective boards.
xvii)	State Pollution Control Board should display a copy of the clearance letter at the Regional office, Gram Panchayat, District Industry Centre and Collector's office/Tehsildar's Office for 30 days.	Agree
xviii)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with SPCB and may also be seen at Website of the Ministry at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, atleast 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 concerned Regional Office of the Ministry.	Advertised in prominent news papers in local language and also English, and copies were forwarded to Regional Office, MoEF, Bangalore and SPCB.
xix)	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 start of the project.	Noted

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.

P.T.O.

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

Ambinet Records - MoEF Approved Lab 2015-16

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'15	23.0	46.0	8.0	15.2	0.01	30.0	69.0	8.9	18.5	0.02	29.0	60.0	10.4	18.6	0.02
2	May'15	37.0	73.0	19.2	27.8	0.10	47.0	86.0	36.8	31.1	0.13	44.0	83.0	19.7	29.7	0.09
3	June'15	40.0	69.0	14.8	23.0	0.09	46.0	78.0	30.0	29.9	0.11	46.0	77.0	17.9	27.5	0.07
4	July'15	34.0	66.0	17.7	27.4	0.09	44.0	77.0	30.0	30.9	0.11	48.0	82.0	17.4	30.7	0.07
5	August'15	40.0	71.0	18.3	26.9	0.07	45.0	80.0	23.4	29.9	0.09	50.0	81.0	16.2	30.7	0.06
6	September'15	37.0	68.0	17.6	28.3	0.06	40.0	75.0	23.9	30.4	0.08	48.0	81.0	17.5	30.2	0.05

BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/11/0915 **dt.01.10.2015**

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-2015**

Summary of Ambient Air quality Monitoring Data for the Month of SEPTEMBER-2015

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	35	41
	Maximum	44	45	54
	Average	37	40	48
	98%tile	44	45	54
PM 10	Minimum	60	70	70
	Maximum	75	80	85
	Average	68	75	81
	98%tile	75	80	85
SO_2	Minimum	14.6	16.6	14.8
	Maximum	21.0	30.0	20.2
	Average	17.6	23.9	17.5
	98%tile	21.0	30.0	20.2
NO_X	Minimum	24.4	26.9	28.2
	Maximum	30.8	32.8	32.5
	Average	28.3	30.4	30.2
	98%tile	30.8	32.8	32.5
NH_3	Minimum	0.05mg/M^3	0.07mg/M^3	0.04mg/M^3
	Maximum	0.07mg/M^3	0.10mg/M^3	0.07mg/M^3
	Average	006mgM^3	0.08mg/M^3	0.05mg/M^3
	98%tile	0.07mg/M^3	0.10mg/M^3	0.07mg/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)
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Tel: +91 40 23811535, 23711530 e-mail: www.bhagavathi-analabs.com

Note: This Report is subject to the terms and conditions mentioned overleaf

A275271

BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/08/0815 dt.02.09.2015

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-2015

Summary of Ambient Air quality Monitoring Data for the Month of AUGUST-2015

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	35	35	44
	Maximum	45	52	53
	Average	40	45	50
	98%tile	45	52	53
PM 10	Minimum	60	70	75
	Maximum	78	86	88
	Average	71	80	81
	98%tile	78	86	88
SO_2	Minimum	11.9	15.9	12.8
	Maximum	22.4	28.0	21.2
	Average	18.3	23.4	16.2
	98%tile	22.4	28.0	21.2
NO_x	Minimum	21.9	27.7	29.3
	Maximum	30.6	32.4	32.7
	Average	26.9	29.9	30.7
	98%tile	30.6	32.4	32.7
NH_3	Minimum	0.05mg/M^3	0.06mg/M^3	0.05mg/M^3
	Maximum	0.09mg/M^3	0.10mg/M^3	0.09mg/M^3
	Average	007mgM^3	0.09mg/M^3	0.06mg/M^3
	98%tile	0.09mg/M^3	0.10mg/M^3	0.09mg/M^3

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

For Bhagavathi Ana LabsPvt Ltd.

Bhagavathi Ana Labs Pvt. Ltd. *Central Laboratory Industrial Testing Division*
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BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/08/0615 dt.03.07.2015

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-2015

Summary of Ambient Air quality Monitoring Data for the Month of JUNE-2015

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	34	38	32
	Maximum	48	52	52
	Average	40	46	46
	98%tile	48	52	52
PM 10	Minimum	58	62	61
	Maximum	77	88	88
	Average	69	78	77
	98%tile	77	88	88
SO_2	Minimum	11.8	18.7	11.6
	Maximum	20.5	40.1	22.3
	Average	14.8	30.0	17.9
	98%tile	20.5	40.1	22.3
NO_X	Minimum	21.6	21.9	17.8
	Maximum	31.1	33.2	31.7
	Average	23.0	29.9	27.5
	98%tile	31.1	33.2	31.7
NH_3	Minimum	0.05mg/M^3	0.05mg/M^3	0.03mg/M^3
	Maximum	0.12mg/M^3	0.13mg/M^3	0.09mg/M^3
	Average	009mgM^3	0.11mg/M^3	0.07mg/M^3
	98%tile	0.12mg/M^3	0.13mg/M^3	0.09mg/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*
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Note: This Report is subject to the terms and conditions mentioned overleaf

A272113

BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/08/0715 dt.03.08.2015

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-2015

Summary of Ambient Air quality Monitoring Data for the Month of JULY-2015

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	40	41
	Maximum	39	48	52
	Average	34	44	48
	98%tile	39	48	52
PM 10	Minimum	55	68	76
	Maximum	79	87	87
	Average	66	77	82
	98%tile	79	87	87
SO_2	Minimum	13.8	20.6	14.7
	Maximum	23.0	34.8	21.1
	Average	17.7	30.0	17.4
	98%tile	23.0	34.8	21.1
NOx	Minimum	23.7	27.9	28.8
	Maximum	31.1	33.0	32.6
	Average	27.4	30.9	30.7
	98%tile	31.1	33.0	32.6
NH_3	Minimum	0.07mg/M^3	0.09mg/M^3	0.05mg/M^3
	Maximum	0.11mg/M^3	0.13mg/M^3	0.09mg/M^3
	Average	009mgM^3	0.11mg/M^3	0.07mg/M^3
	98%tile	0.11mg/M^3	0.13mg/M^3	0.09mg/M^3

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

For Bhagavathi Ana LabsPvt Ltd.

Bhagavathi Ana Labs Pvt. Ltd. *Central Laboratory - Industrial Testing Division*
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BHAGAVATHI ANA LABS

TEST REPORT

Test Report No.BALL/V/Env/CIL/08/0515 dt.02.06.2015

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-2015

Summary of Ambient Air quality Monitoring Data for the Month of MAY-2015

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	37	42	37
	Maximum	47	55	53
	Average	42	47	44
	98%tile	47	55	53
PM 10	Minimum	69	80	76
	Maximum	78	95	94
	Average	73	88	83
	98%tile	78	95	94
SO_2	Minimum	14.9	27.8	14.8
	Maximum	26.4	44.4	25.6
	Average	19.15	36.8	19.7
	98%tile	26.4	44.4	25.6
NO_x	Minimum	25.5	28.9	24.9
	Maximum	31.8	33.6	32.4
	Average	27.8	31.1	29.7
	98%tile	31.8	33.6	32.4
NH_3	Minimum	0.09mg/M^3	0.10mg/M^3	0.07mg/M^3
	Maximum	0.12mg/M^3	0.16mg/M^3	0.11mg/M^3
	Average	0.10mgM^3	0.13mg/M^3	0.09mg/M^3
	98%tile	0.12mg/M^3	0.16mg/M^3	0.11mg/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*
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TEST REPORT

Test Report No.BALL/V/Env/CFL/09/0415 dt.01.05.2015

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-2015

Summary of Ambient Air quality Monitoring Data for the Month of APRIL-2015

Parameters		AAQ-1 Station at the Top of Cafeteria	AAQ-2 Station near DG sets	AAQ-3 Station at Gate –13
PM2.5	Minimum	16	26	25
	Maximum	28	34	33
	Average	23	30	29
	98%tile	28	34	33
PM 10	Minimum	42	52	54
	Maximum	48	69	66
	Average	46	62	60
	98%tile	48	69	66
SO_2	Minimum	7.3	7.9	9.6
	Maximum	8.8	9.9	11.2
	Average	8.0	8.9	10.4
	98%tile	8.8	9.9	11.2
NO_x	Minimum	12.5	16.5	17.5
	Maximum	17.9	19.9	20.1
	Average	15.2	18.5	18.6
	98%tile	17.9	19.9	20.1
NH_3	Minimum	0.01mg/M^3	0.01mg/M^3	0.01mg/M^3
	Maximum	0.03mg/M^3	0.03mg/M^3	0.03mg/M^3
	Average	0.01mg/M^3	0.02mg/M^3	0.016mg/M^3
	98%tile	0.03mg/M^3	0.06mg/M^3	0.04mg/M^3

All values are expressed in □ µgms/M^3 except Ammonia

For Bhagavathi Ana LabsPvt Ltd.

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