

Government of India
Ministry of Environment, Forests and Climate Change (MoEF&CC)
Nungambakkam, Chennai – 600034.

MONITORING REPORT

PART I

DATA SHEET

F.No. EP/12.1/562&659/AP

- | | | | |
|---|--|---|---|
| 1 | Project Type
River valley / Mining / Industry /
Thermal / Nuclear / Other Specify | : | Industry (Fertilizer Complex) |
| 2 | Name of the project | : | i. Expansion of Fertilizer plant at Sriharipuram, Malkapuram Post, Visakhapatnam, Andhra Pradesh by M/s Coromandel Fertilizers Limited
ii. Expansion of Fertilizer plant (2700 MTPD to 3900 MTPD) at Sriharipuram, Malkapuram, Visakhapatnam Andhra Pradesh by M/S. Coromandel Fertilizers Limited |
| 3 | Clearance letter(s) / OM No. and dated | : | i. J-11011/388/2006-IA II (I) dated 18.05.2007
ii. J-11011/314/2007-IAII(I) dated 31.08.2007 |
| 4 | <u>Locations</u>
a. Taluk(s)
District
b. State (s)
c. Latitudes / Longitudes | : | Visakhapatnam,
Visakhapatnam
Andhra Pradesh
17°41.780 N 83°14.120 N |
| 5 | <u>Address of correspondence</u>
a. Address of concerned project Chief Engineer (with Pin Code & telephone / telex / fax numbers
b. Address of Executive Project Engineer/ Manager (with Pin Code/fax numbers) | : | Shri M Kumaresan ,
Sr. Asso. V.P.- Manufacturing
Coromandel International Limited, Sriharipuram, Malkapuram Post
Visakhapatnam-530011
Phone- 0891-2577888
kumaresanm@coromandel.murugappa.com
-do- |
| 6 | <u>Salient features:</u>
a. Salient features of the project
b. of the environmental management plans | : | Covered in the EIA/EMPs submitted to the Ministry of Environment, Forests and Climate Change (MoEF&CC) from time to time for approval at the time of grant of Environmental Clearance (EC) |
| 7 | <u>Breakup of the project area:</u>
a. Project area | : | 428 acres |
| 8 | Break up of project affected population with enumeration of those losing houses / dwelling units only, agricultural land only, both dwelling units and agricultural land and landless labourers / artisans | : | Nil |

	a	SC,ST/Adivasis	:	Not Applicable
	b	Others	:	Not Applicable
9		Financial Details:		
	a.	Project cost as originally planned and subsequent revised estimates and the years of price reference	i.	Rs.116 crores
			ii.	Rs. 1.5 to 2 crores
	b.	Allocations made for environmental management plans, with item wise and year wise breakup.	i.	46 crores common for entire plant
			ii.	Rs 5.0 crore recurring expenses common for entire plant
	c	Benefit cost ratio / internal rate of return and the years of assessment	:	Details not made available
	d	Whether (c) includes the cost of environmental management as shown in (b) above	:	Details not made available
	e	Total expenditure on the Project so far	:	Rs.100 crores (As per the project proponent)
	f	Actual expenditure incurred on the environmental management plans so far	:	i. Rs. 46 crores common for entire plant
			ii.	Rs 5.0 crore recurring expenses common for entire plant
				(As per the project proponent)
10		<u>Forest land requirement:</u>	:	Nil
	a	The status of approval for a diversion of forest land for non-forestry use	:	Not Applicable.
	b	The status of compensatory afforestation, if any	:	Not Applicable.
	c	The status of clear felling	:	Not Applicable.
	d	Comments on the viability and sustainability of compensatory afforestation programme in the light of actual field experience so far	:	Not Applicable.
11		The status of clear felling in non-forest area (such as submergence area of reservoir, approach road), if any, with quantitative information	:	Not Applicable.
12		<u>Status of construction:</u> Date of commencement & Completion		Plant is working since 1967. Expansion taken up in 2006-07.
13		Reasons for the delay if the project is yet to start.	:	Not Applicable
14		<u>Date of site visit:</u>		
	a	The dates on which the project was monitored by the Regional Office on previous occasions, if any	:	16.12.2010
	b	Date of site visit for this monitoring report	:	27.5.2015

PRESENT STATUS OF THE PROJECT

Ministry of Environment, Forests and Climate Change have accorded following Environmental Clearances (ECs) to the M/s Coromandel International Limited (CIL) - [herein after referred as Project Proponent (PP)] :-

S.No.	EC. File No.	Present status of the project
i.	F No. J-11011/388/2006-IA II (I) dated 18.05.2007	Implemented
ii.	F.No.J-11011/314/2007-IA II (1) – Dated 31.08.2007	

At the fertilizer complex, there are 3 streams of Complex Granulation plants, Train – A, Train – B and Train - C. The consolidated product profile of the fertilizer complex as provided by the project proponent is furnished under:

S. No.	Products	Quantity
1.	Complex fertilizers	3900 TPD
2.	Customized fertilizer plant	300 TPD
3.	H ₂ SO ₄	1700 TPD
4.	Bentonite Sulphur	90 TPD
5.	Phosphoric Acid	700 TPD
6.	Water Soluble Fertilizer	10 TPD
7.	Fertilizer technology centre (pilot plant)	
	(i) Complex fertilizer	24
	(ii) Phosphoric acid	0.83
By products		
8.	Gypsum	3227 TPD
9.	Hydrofluorosilicic acid	15 TPD
10.	Sulpho-Zinc & Sulpho Boron	10 TPD

The above project was monitored by the Regional Office - Chennai on 27.5.2015 along with the following representatives of the PP.

- Shri. M.Kumaresan, Sr. Associate Vice President;
- Shri N.S. Subramanyam, HOD – SHE;
- Shri M. Pawan Kumar, Manager – Environment.

The report is submitted on the basis of the field visit and as per the information provided by the PP. The status of compliance on the stipulated conditions contained in the ECs cited above is given below in Part II & Part III.

This is approved by the APCCF, RO-Chennai vide diary no.52 dated 1.9.2015.


(Sundar Ramanathan)
Scientist 'D'

PART II & III

DESCRIPTIVE REPORT ON STATUS OF COMPLIANCE TO THE CONDITIONS OF THE ENVIRONMENTAL CLEARANCE AND ENVIRONMENTAL MANAGEMENT

Subject:

- i. Expansion of Fertilizer plant at Sriharipuram, Malkapuram Post, Visakhapatnam, Andhra Pradesh by M/s Coromandel Fertilizers Limited
- ii. Expansion of Fertilizer plant (2700 MTPD to 3900 MTPD) at Sriharipuram, Malkapuram, Visakhapatnam Andhra Pradesh by M/S. Coromandel Fertilizers Limited

Reference:

- i. J-11011/388/2006-IA II (I) dated 18.05.2007
- ii. J-11011/314/2007-IAII(I) dated 31.08.2007

S. No.	Conditions	Compliance status
As per the EC letter no. J-11011/388/2006-IA II (I) dated 18.05.2007		
A. Specific Conditions		
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.	Complied. There are 11 stacks present in the fertilizer complex. Out of the 11 stacks the process stacks are reportedly 7 nos. The gaseous emissions from the stacks are being monitored on weekly basis by the in-house laboratory. Further, third party analysis is also being carrying out on monthly basis. Fluoride emissions and meeting the standard of 5 mg/Nm ³ from the stack of phosphoric acid plant. Report during the visit indicates the emission levels are within the prescribed standards. Out of the 7 stacks, 2 stacks are connected to APPCB server presently. It was informed that, on trial basis, fertilizer manufacturing plant, Complex C – stack will be provided with Online Stack monitoring system by August 2015. The remaining Fertilizer manufacturing plant – Complex A & B stack will be provided upon successful trials of Complex-C train, since reliable technology is not identified till date.
ii.	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.	Complied. Installed four Continuous Ambient Air Quality Monitoring Station (CAAQMS). Three stations inside the plant and another one installed at nearby village (Mulagada). AAQ data from these stations have been connected to the APPCB server. AAQ is also being monitored by third party at three locations twice a week. Reports are being submitted to the APPCB and RO,

S. No.	Conditions	Compliance status																										
		MoEF&CC. Report provided during the visit indicates that AAQ levels are within the norms.																										
iii.	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.	<p>Partly Complied. The water consumption and effluent generation for the entire fertilizer complex is as given below:</p> <p>Water consumption:-</p> <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> <p>Wastewater generation</p> <table><tr><th>Purpose</th><th>Quantity (KLD)</th></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> <p>Total water requirement is being met from Municipal Water supply. Effluent generated from the water soluble fertilizer plant is being recycled and reused in the process. Domestic effluents are being used for green belt development after treatment in STP. The cooling tower blow down (60,000 KLD) and process washings (7890 KLD) are being disposed off in to the sea at a distance of 5km through a channel. APPCB has approved the sea discharge. Reuse of treated effluent by the project proponent is not satisfactory. Detailed water balance has not been provided during the visit.</p>	Purpose	Quantity (KLD)	Process & Washes	7,417	Boiler Feed	2,400	Industrial Cooling (Makeup) – fresh water	1,759	Industrial Cooling – Sea water.	63,000	Domestic & other	650	Customised fertilizer plant	120	Total	75,346	Purpose	Quantity (KLD)	Process & washings	7,890	Cooling water blow down	60,000	Domestic	520	Total	68,410
Purpose	Quantity (KLD)																											
Process & Washes	7,417																											
Boiler Feed	2,400																											
Industrial Cooling (Makeup) – fresh water	1,759																											
Industrial Cooling – Sea water.	63,000																											
Domestic & other	650																											
Customised fertilizer plant	120																											
Total	75,346																											
Purpose	Quantity (KLD)																											
Process & washings	7,890																											
Cooling water blow down	60,000																											
Domestic	520																											
Total	68,410																											
iv.	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.	<p>Not complied. Prior clearance under the Coastal Regulation Zone (CRZ) has not been obtained from MoEF&CC, New Delhi for the disposal of treated effluent into the Sea. During the visit, PP informed that their unit was in operation since 1967 i.e prior to the enactment of the CRZ rules and obtained clearance under Water Act, 1974, which is not acceptable by the</p>																										

S. No.	Conditions	Compliance status
		Regional Office as compliance to this EC condition.
v.	Regular monitoring of ground water by installing Piezometric 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.	Partly complied. Ground water is transported through 5 Piezo wells and 8 Bore wells located in and around the guard pond. Ground water monitoring is carried out at 3 locations inside the plant. This is being carried out in coordination with APPCB. Report shows no adverse effects. Only four parameters (P_{11} , PO_4 , F and NH_4N) are analyzed in ground water. PP has to consult APPCB and see if other regular parameters are also to be monitored for ground water.
vi.	Gypsum produced as a by-product from phosphoric acid plant shall be utilized in cement industries as a retarder as well as soil conditioner for agricultural use. Waste oil shall be sold to the authorized recyclers / preprocessors.	Complied. Gypsum is being disposed to various nearby industries, predominantly Cement industries and also for agricultural purpose. Fresh gypsum handling area (10 acres) is lined with HDPE. Old Gypsum Handling Area is 100 Acres. Out of the 100 acres, as part of reclamation, 18 acres plantation has been done through TERI, New Delhi. Plantation activities in the reclaimed area (18 acres) are satisfactory. Approx. 15.0 million MT of gypsum was disposed. Remaining Gypsum old stocks estimated to be disposed by March 2016. Waste oil is being disposed to CPCB approved recyclers.
vii.	The company shall adopt rainwater-harvesting measures to reduce requirement of the fresh water.	Complied. Roof top rain water collection is done and it has potential to re-charge is 1 million liters per annum. The water collected in the well is used in firefighting system.
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.	Partly complied. Out of the 428 acres, 116 acres area is under green belt. 25 to 30 % of Green belt development partially damaged due to Hud-Hud Cyclone. Presently, re-plantation work is under progress in the affected area. However, it is noted that the 33% of the total area is yet to be covered under green belt development as stipulated in the EC condition.
ix.	The company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) for fertilizer industries.	Complied. Project proponent has implemented the CREP conditions satisfactorily. Report in this submitted by the PP is enclosed as Annex- I.
B. General Conditions		

S. No.	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.	Being complied. PP is adhering to the stipulations made by the APPCB. Consent for Operate (CFO) renewal from Andhra Pradesh Pollution Control Board has been obtained vide order no.APPCB/VSP/VSP/65/CFO/HO/2015-454 dated 21.4.2015 with a validity up to 31.10.2016.
ii.	No further expansion/modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests	Complied. PP has taken up expansion with the prior permission from the MoEF&CC for which EC was accorded on 31.8.2007.
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.	Complied. The hazardous wastes generated in the fertilizer complex are tank bottom sludges:30 TPA, LSHS sludge:10 TPA, Sulphur sludge: 600 TPA, spent catalyst:50 TPA, used oil:40 KLPA, Detoxified containers:600 Nos/annum and scrubbing sludge 360 TPA which are being handled in accordance the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008. Authorization renewal from APPCB has been obtained and is valid till 31.10.2016.
iv.	The project proponent shall also comply with all the safeguards recommended in the EIA /EMP Report.	Complied. Environmental protection measures and safeguards recommended in the EIA report are being followed by the project proponent.
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.	Complied. 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.	Complied. Fund provision as shown in S.No.9 of part I above has been made.
vii.	The Regional Office of this Ministry at Bangalore / Central Pollution Control	Complied. Six monthly compliance reports along

S. No.	Conditions	Compliance status
	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.	with monitored data are being submitted to the Regional Office of the MoEF&CC regularly.
viii.	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 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.	Complied. Advertisement was given in newspapers namely Hindu and Vartha dated 27.2.2007 and the copies were reportedly submitted to Regional Office, MoEF&CC.
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.	Not complied. PP informed that the expenses towards this project have been met from the Internal Fund Allocations. However, the details regarding date of financial closure and final approval of the project has not been provided during the visit.
x.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Agreed upon. It was submitted that the condition is "Noted" and assured to abide by the condition.
xi.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions.	Agreed upon. It was submitted that the condition is "Noted" and assured to abide by the condition.
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.	Complied. Consent for Operate (CFO) renewal from Andhra Pradesh Pollution Control Board has been obtained vide order no.APPCB/VSP/VSP/65/CFO/HO/2015-454 dated 21.4.2015 with a validity up to 31.10.2016. Obtained Public liability Insurance Policy no: 62030036153300000002 valid up to -31-03-2016.

As per the EC letter no. J-11011/314/2007-IAll(I) dated 31.08.2007

A. Specific Conditions

i.	The expansion of the project shall be based on process improvement.	Complied. PP informed that the expansion of the
----	---	---

S. No.	Conditions	Compliance status
	technology innovation, improving on stream-hours maximization of equipment capacity and continuous supply of raw materials. No Sulphuric acid and phosphoric acid plant shall be installed for additional requirement of Sulphuric acid and phosphoric acid. Due to enhancement of production pollution load shall not increase from the existing load.	project carried out through the following process improvements and technology innovations :- Usage of higher capacity pipe-reactor with improved technology. Decreasing recycle ratio from 4.5 to 3.0. Upgrading drives for Dryer, bucket elevators, installation of new piping, pre-heaters and higher efficiency scrubber nozzles. Also enhanced infrastructure to handle the additional quantity of raw materials, bulk and finished products. No Sulphuric acid and phosphoric acid plant has been installed for additional requirement of Sulphuric acid and phosphoric acid. Any shortfall of Sulphuric acid and phosphoric acid is being purchased from either Indian suppliers or imported.
ii.	The project authorities shall install efficient scrubbing system to control fluorine emission and bag filters for dust control in phosphoric acid plant.	Complied. Installed Bag - filters at Rock-grinding Section to meet the norms specified by the statutory authorities i.e. 50 mg / Nm ³ . At present, the fluorine gaseous emissions at the exit of fumes scrubber is less than 5 mg / Nm ³ . Presently the efficiency is reportedly 99%.
iii.	Multi stage scrubbing system shall be installed to control ammonia, fluorine and suspended particulate matter in fertilizer plant.	Complied. Multi-stage (Four-stage) scrubbing system was incorporated for 'A' & 'B' Trains in the year 2001 and for C-Train, in the year 2000. Presently, the emissions of ammonia and fluorine from all the stacks are within the limits specified by the statutory authorities. The efficiency is reportedly more than 95% as informed by the PP.
iv.	The project authority shall install dust collection system in fertilizer bagging plant.	Not complied. PP informed that bag filters are not suitable for this operation and it is under review.
v.	The Sulphuric Acid Plant shall be based on double conversion double absorption technology and anodically protected acid coolers shall be provided. Start-up scrubbers shall be installed in both Sulphuric acid plants to minimize SO ₂ emission during start-up.	Complied. Installed alkali scrubbers in Sulphuric Acid Plant (SAP) and SO ₂ emissions are reportedly below the APPCB limits and the stacks of the SAP are connected to the APPCB server.
vi.	The project authority shall install high efficiency scrubber nozzles, additional tail gas scrubber, improve the scrubber efficiency by optimizing the L/G ratio, install additional cyclones in scrubbing system, and install mist eliminators in	Complied. Installed higher efficiency scrubber nozzles. Improved L/G ratio through installing higher capacity scrubber circulation pumps and standby cyclones kept in place.

S. No.	Conditions	Compliance status
	scrubbers.	
vii.	Permission of the competent authority shall be obtained for drawl of additional quantity of 250m ³ /d existing Tatipudi and Meghadrigedda reservoirs.	Refer the comments below. PP informed that no additional water is required from Municipal Corporation and existing quantities are adequate to meet additional requirement. The agreement submitted by the PP for existing water supply from M/s GVMC is enclosed as Annex II.
viii.	The gaseous emissions (SO ₂ , SO ₃ , NO _x , NH ₃ , F, fertilizer 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.	Complied. There are 11 stacks present in the fertilizer complex. Out of the 11 stacks the process stacks are reportedly 7 nos. The gaseous emissions from the stacks are being monitored on weekly basis by the in-house laboratory. Further, third party analysis is also being carrying out on monthly basis. Fluoride emissions and meeting the standard of 5 mg/Nm ³ from the stack of phosphoric acid plant. Report during the visit indicates the emission levels are within the prescribed standards. Out of the 7 stacks, 2 stacks are connected to APPCB server presently. Emission data is periodically submitted to the Regional Office of MoEF&CC.
ix.	All the wastewaters generated from the various processes shall be recycled / reuse in the plant and zero discharge shall be maintained. The domestic wastewater shall be treated in septic tanks and treated waste shall be used for irrigation in the greenbelt.	Partly complied. PP is adopting Zero effluent discharge from complex fertiliser plant. However, effluents from Sulfuric acid & Phosphoric acid is being treated and discharged into sea. Domestic wastewater is treated in the STP. Cooling water blow down is discharged into the sea. In this regard, refer the compliance status against specific condition no.(iii) of the EC dated 11.5.2007 given at page 5 of this report.
x.	The proponent shall not withdraw groundwater for the plant and if it requires, the permission from the competent authority CGWA / SGWB shall be obtained.	No ground water drawl. PP informed that water requirement is being met from the Municipal Corporation and the plant operations do not ground water. Hence, no permission has been taken.
xi.	The company shall develop the greenbelt in at least 25% land area to mitigate the effect of fugitive emissions and noise as per the guidelines CPCB.	Complied. Out of the 428 acres, 116 acres area is under green belt. 25 to 30 % of Green belt development partially damaged due to Hud-Hud Cyclone. Presently, re-plantation work is under progress in the affected area
xii.	The company shall implement all the recommendations made in the Charter	Complied. Project proponent has implemented the

S. No.	Conditions	Compliance status
	on Corporate Responsibility for Environmental Protection (CREP) for fertilizer industries.	CREP conditions satisfactorily. Report in this submitted by the PP is enclosed as Annex- I.
B. General conditions		
i.	The project authorities shall strictly adhere to the stipulations of the SPCB/state government or any statutory body.	Being complied. PP is adhering to the stipulations made by the APPCB. Consent for Operate (CFO) renewal from Andhra Pradesh Pollution Control Board has been obtained vide order no.APPCB/VSP/VSP/65/CFO/HO/2015-454 dated 21.4.2015 with a validity up to 31.10.2016.
ii.	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.	Agreed upon. It was submitted that the condition is "Noted" and assured to abide by the condition.
iii.	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.	Complied. There are 11 stacks present in the fertilizer complex. Out of the 11 stacks the process stacks are reportedly 7 nos. The gaseous emissions from the stacks are being monitored on weekly basis by the in-house laboratory. Further, third party analysis is also being carrying out on monthly basis. Fluoride emissions and meeting the standard of 5 mg/Nm ³ from the stack of phosphoric acid plant. Report during the visit indicates the emission levels are within the prescribed standards. Out of the 7 stacks, 2 stacks are connected to APPCB server presently. In case of any upset in the process resulting in increase of emissions, the plant is stopped immediately for taking necessary actions.
iv.	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 downwind direction as well as where maximum ground level concentrations are anticipated.	Complied. Installed four Continuous Ambient Air Quality Monitoring Station (CAAQMS). Three stations inside the plant and another one installed at nearby village (Mulagada). AAQ data from these stations have been connected to the APPCB server. AAQ is also being monitored by third party at three locations twice a week. Reports are being

S. No.	Conditions	Compliance status
		submitted to the APPCB and RO, MoEF&CC. Report provided during the visit indicates that AAQ levels are within the norms.
v.	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 scrubbed water shall be sent to ETP for further treatment.	Refer the comments below. Installed stacks of adequate height to the scrubbers as per the CPCB guidelines. Scrubbing liquid generated in the complex fertilizer plant is reused in the process. In Phosphoric Acid, fluorine recovery is done by converting it to Hydro-fluoro silicic acid.
vi.	All the storage tanks will be under negative pressure to avoid any leakages. Breather valves, N ₂ blanketing and secondary condensers with brine chilling system shall be provided for all the storage tanks to minimize vapor losses. All liquid raw material shall be stored in storage Tanks and Drums.	Complied. Installed atmospheric ammonia storage tanks to store ammonia. Ammonia sensors are located at various locations within the factory premises.
vii.	The company shall undertake following Waste Minimization measures. ➤ Metering and control of quantities of active ingredients to minimize waste. ➤ Reuse of by-products from the process as raw materials or as raw material substitutes in other processes ➤ Use of automated filling to minimize spillage. ➤ Use of "Close Feed" system into batch reactors. ➤ Venting equipment through vapor recovery system.	Complied. Weigh feeders are incorporated for Metering and control of quantities of active ingredients to minimize waste. Installed grinding unit to recycle filter cake into granulation plant. Constructed acid recovery pits to reuse in the process Identified dedusting points and connected to cyclones. Water meters and energy meters provided to water lines and pollution control equipment.
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.	Complied. Fugitive emissions are monitored in the work zone environment, product and raw material storage area. Report provided during the visit indicates that the values are within the limits.
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 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.	Complied. The hazardous wastes generated in the fertilizer complex are tank bottom sludges:30 TPA, LSHS sludge:10 TPA, Sulphur sludge: 600 TPA, spent catalyst:50 TPA, used oil:40 KLPA; Detoxified containers:600 Nos/annum and scrubbing sludge:360 TPA which are being handled in accordance the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008. Authorization renewal from

S. No.	Conditions	Compliance status
		APPCB has been obtained and is valid till 31.10.2016.
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, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Being complied. Noise control measures like acoustic hoods, silencers, enclosures etc. have been provided on all sources of noise generation in the plant. Monitoring of noise levels is being done by a third party on monthly basis. Report provided during the visit indicated that noise levels are within the permissible limits.
xi.	The company shall develop rainwater-harvesting structures to harvest the run off water for recharge of ground water.	Complied. Roof top rain water collection is done and it has potential to re-charge is 1 million liters per annum. The water collected in the well is used in firefighting system.
xii.	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.	Complied. Dedicated OHC is available within the factory premises with full time doctor availability. Regularly conducting Annual medical check-up for employees and contract workmen according to Factories act and records are being maintained.
xiii.	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.	Complied. Out of the 428 acres, 116 acres area is under green belt. 25 to 30 % of Green belt development partially damaged due to Hud-Hud Cyclone. Presently, re-plantation work is under progress in the affected area. CSR activities carried out by the company are enclosed as Annex III.
xiv.	The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA / EMP report.	Complied. Environmental protection measures and safeguards recommended in the EIA report are being followed by the project proponent.
xv.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Complied. 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.
xvi.	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	Complied. Fund provision as shown in S.No.9 of part I above has been made.

S. No.	Conditions	Compliance status
	conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	
xvii.	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.	Partly complied. Six monthly compliance report along with monitored data are being submitted to the Regional Office of the MoEF&CC regularly. However, the reports have not been uploaded on the company's website.
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 the SPCB/Committee 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, 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 concerned Regional Office of the Ministry.	Complied. Advertisement was given in the newspapers namely Hindu and Vartha on 13.9.2007.
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.	Refer the comments below. PP informed that the additional production is envisaged through process modifications and optimization of process parameters. The investment made in this project is met through internal resources.


Comments and End note:-

Status of implementation of stipulated conditions:- It is inferred from above that following are the non-compliances observed against the stipulated conditions of the Environmental Clearances:-

- i. Name change of Environmental Clearance (EC) from M/s Coromandel Fertilizers Limited to M/s Coromandel International Limited has not been obtained from MoEF&CC, New Delhi.
- ii. Water balance statement for the entire fertilizer complex shall be submitted.
- iii. Prior clearance under the Coastal Regulation Zone (CRZ) has not been obtained from MoEF&CC, New Delhi for the disposal of treated effluent into the Sea.
- iv. Only four parameters (P_H , PO_4 , F and NH_4N) are analyzed in ground water. PP has to consult APPCB and see if other regular parameters are also to be monitored for ground water.
- v. PP has not covered 33% of the plant area under green belt development as stipulated in the EC condition.

- vi. Date of financial closure and final approval of the project in respect of the EC dated 11.5.2007 and 31.8.2007 has not been intimated to the Regional Office.
- vii. Project authority has not installed the dust collection system in fertilizer bagging plant.
- viii. Project proponent is not uploading the six monthly compliance reports along with the monitored environmental parameters data on the company's website.

This is approved by the APCCF, RO-Chennai vide diary no.52 dated 1.9.2015.


(Sundar Ramanathan)
Scientist 'D'

List of Annexure to the report:

- i. Compliance to the CREP recommendations submitted by the project proponent
- ii. Water supply agreement submitted by the project proponent
- iii. CSR activities carried out by the project proponent

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 8 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

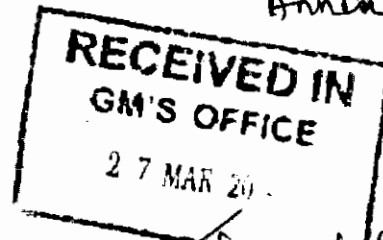
1	All the upcoming urea plants will have urea prilling towers based on natural draft so as to minimize urea dust emissions.	Not applicable to us
2	The existing urea plants, particularly, the plants having forced draft prilling towers, will install appropriate systems (e.g. scrubber, etc.) for achieving 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 ₂ SO 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. <i>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.</i>
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 <i>mostly</i> replaced with molten sulfur. Sulfur muck generated during occasional use of solid sulfur is separately stored on lined pad and <i>the same is being reused as filler in the granulator plant on continuous basis.</i>
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

Annexure II



GREATER VISAKHAPATNAM MUNICIPAL CORPORATION
VISAKHAPATNAM

From
The Commissioner,
Greater Visakhapatnam
Municipal Corporation,
Visakhapatnam.

To
M kumaresan
General Manager - Manufacturing
M/s Coromandel International Limited
PB No:1116, Sriharipuram,
Malkapuram Post
Visakhapatnam - 530 011

(r.Rc.No.13522/2009/EE(UGD-P)/SE(P-II)/CE(GVMC) dt:24.03.2014

Dear Sir,

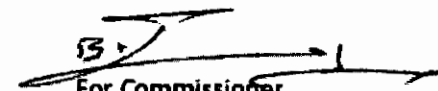
- SUB : SUPPLY OF TERTIARY TREATED WATER TO INDUSTRIES - REVIEW AND
CONCLUSION OF WATER PURCHASE AGREEMENTS
- REF : 1. Concession agreement no: 1/2012-13/Commissioner/CE/SE(P2)/EE(UGD-PV)
GVMC/PPP/Dt:25/07/2012
2. Work shop on water management by GVMC, Dt: 31/10/2012
3. Draft water purchase agreement

We are here with forwarding draft water purchase agreement which received from M/s Visakha Water Reclamation Infrastructure Pvt Ltd., (PPP) for your review and consent.

After review a draft agreement you can initiate your consent on water purchase agreement with the above said firm to meet your industry requirement.

For further information you can contact M/s. Visakha Water Reclamation Infrastructure Pvt. Ltd., on e mail : visakhawater@gmail.com / www.visakhawater.com and Contact No: 0891-2532681. You may also send your enquires to GVMC directly in this regard

Yours Sincerely,


For Commissioner
Greater Visakhapatnam
Municipal Corporation
Visakhapatnam

Water Purchase Agreement¹

This contract for the sale and purchase of water is entered into as of the day of [REDACTED] between the 'Visaka Water Reclamation Infrastructure Private limited', a company incorporated under the Companies Act, 1956 and having its registered office at House No: 9- 42-8/1, Second Floor, Balaji Nagar, Siripuram, Visakhapatnam - 530003, Andhra Pradesh, India (Hereinafter referred to as the 'Seller', which expression shall include its successors and assigns) and the [REDACTED], a company incorporated under the Companies Act, 1956 (Hereinafter referred to as the 'Purchaser', which expression shall include its successors and permitted assigns).

The Seller and the Purchaser shall be jointly known as the Parties and shall be individually known as Party

WITNESSTH:

- (A) Whereas, the GVMC has granted to the Seller a concession for the design, contraction, development, finance, operation and maintenance of various plant, equipment and facilities for recycling and reusing waste water from sewage treatment plants and to identify buyers and sell the water to prospective buyers in the State of Andhra Pradesh on Build, Operate and Transfer (BOT) basis (the "Project") on the terms and conditions contained in the Concession Agreement.
- (B) Pursuant to the Concession Agreement, the Seller is authorized to sell treated water to industries and potential buyers in the State of Andhra Pradesh.
- (C) The Seller has approached the Purchaser and the Purchaser has agreed to purchase the Treated Water (term defined hereinafter) in accordance with the terms and conditions set out hereinafter.

Now, THEREFORE, in consideration of the foregoing and the mutual agreements hereinafter set forth, it is mutually agreed:

¹ Note: To be stamped appropriately

Purchaser

Seller

Page - 1

ARTICLE 1

DEFINITIONS

1.1 For all purposes of this Agreement, the following words and expressions shall have the respective meanings set forth below:

"Agreement" shall mean this Water Supply Agreement executed hereof, including the schedules hereto, amendments, modifications and supplements made in writing by the Parties from time to time.

"Billing Period" means the period commencing from the beginning of the calendar month and ending with the Metering Date. The first Billing Period shall commence with the Commencement Date and end with the Metering Date corresponding to the month in which the Commencement Date occurs.

"Caution Deposit" shall have the meaning assigned to the term under Article 9.

"Change in Law" means the occurrence of any of the following after the date of this Agreement:

- (a) The enactment of any new Indian law;
- (b) The repeal, modification or re-enactment of any existing Indian law;
- (c) The commencement of any Indian law which has not come into effect until the date of this Agreement;
- (d) A change in the interpretation or application of any Indian law by a court as compared to such interpretation or application prior to the date of this Agreement; and
- (e) Imposition of any new Taxes and/or any change in the rates of any of the Taxes in India (other than corporate taxes, interest, penalties and other sums in relation thereto imposed on any account whatsoever) that have a direct effect on the Project.

"Commercial Operation Date" or "COD" shall have the meaning ascribed to the term under the Concession Agreement.

"Concession Agreement" shall mean Concession Agreement dated 26th July 2012 entered between GVMC and Seller, and as amended, supplemented from time to time.

"Contracted Quantity" shall have the meaning set forth in Article 3 & Annexure 2

"Force Majeure Event" shall have the meaning set forth in Article 11.

"GoI" means the Government of the Republic of India and any agency, legislative body, department, political subdivision, authority or instrumentality thereof.

"GoAP" means the Government of the State of Andhra Pradesh an entity existing under the laws of the Republic of India or any agency, legislative body, department, political subdivision, authority or instrumentality thereof.

Purchaser

Seller

IN WITNESS THEREOF each of the Parties have executed this Agreement on the date mentioned above.

For on behalf of Purchaser;

For on behalf of Seller;

Witness:

1.

2.

Witness:

1.

2.

Purchaser

Seller

Coromandel International Limited Visakhapatnam		
CSR Activities - 2012 -13		
	Activity	Rs/- Expenditure
1)	Construction of Police Sub Control room Sriharipuram	3,00,000
2)	25000 Rupees Scholarships donated to 5 meritorious students who scored above 90% in SSC, of Sriharipuram & Malkapuram High Schools	25,000
3)	Green Visakha Plantation drive in collaboration with state government	48,00,000
4)	Nutrition awareness sessions with self help groups on 26th April for Mulagada & Gondesipalem villages & on 13th June for Pilakavanipalem & Sriramnagar villages conducted under the aegis of Food & Nutrition Board, Ministry of Women & Child development	18,000
6)	Coromandel Gold Medal to chemical Engineering topper of Andhra University for the year 2010-11 & 2011-12	30,000
8)	Donated rugs, pillows, rubber sheets to Loyala home for senior citizens on 1.10.2012	30,000

9)	On the eve of Energy Hour, Coromandel Donated Groceries, Provisions and Note books to the Orphanage home children at Sheela Nagar	20,000
10)	Sponsored a library at Malkapuram high school through BREAD society on 14.11.2012	25,000
11)	Donated Rs. 5000 to a senior citizen couple suffering from Parkinson's disease residing nr. Gajuwaka High school on 19.12.2012	5,000
12)	Sponsored lunch to deaf and dumb children at Shanti ashram school on the occasion of Gandhi Jayanti	25,000
14)	Donated Rs. 8,000/- for construction of toilets to the Government Residential School for Visually Challenged Girls	8,000
15)	Repaired bathrooms by making them disabled friendly at the Government residential school for the Visually handicapped (made them disabled friendly-anti skid tiles, hand railings etc)	60,000
16)	Organised a mega medical camp for the local community	1,19,000
17)	Green Visakha Plantation drive in collaboration with state government at old gajuwaka area	58,00,000
	Total	1,12,65,000