

To,

Date: 15/06/2026

Chief Conservator of Forests (Central),
Ministry of Environment, Forest and Climate Change,
Regional Office,
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, Koramangala II Block,
Bengaluru-560 034

Subject: Submission of updated EC Compliance status report along with Supporting Documents.

Reference: EC No. J-11011/217/2008-IA-II (I) dt. 1st September, 2009 and Corrigendum dated 30th October, 2009, EC validity extension dated 4th February, 2015 issued by Ministry of Environment and Forests, New Delhi.

Dear Sir,

This is with reference to the Environmental Clearance granted vide letter EC No. J-11011/217/2008-IA-II (I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009, EC validity extension dated 4th February, 2015 to M/s. Zuari Agro Chemicals Limited for the project located at Zuarinagar, Goa - 403726.

Pursuant to the specific condition of the Environmental Clearance requiring periodic submission of the compliance status of stipulated EC conditions along with monitored environmental data to the concerned authorities, we hereby submit the updated half yearly EC Compliance status Report along with supporting documents for your kind record.

We would like to inform you that pursuant to a Business Transfer Agreement (BTA) dated 1.03.2021 executed between M/s. Zuari Agro Chemicals Limited (ZACL) and M/s. Paradeep Phosphates Limited (PPL), the fertiliser plant at Goa along with associated business was transferred to PPL on a slump sale basis, which transaction was consummated with effect from 1st June, 2022.

On that basis, the Consent to Operate (CTO) for the said unit has been transferred on 3rd June, 2022 in the name of M/s. Paradeep Phosphates Limited. Further, an application for transfer/change of name in the aforesaid Environmental Clearance from ZACL to PPL is under process and will be submitted to the Ministry separately.

In accordance with the specific condition of the Environmental Clearance requiring periodic submission of compliance status, including monitored environmental data, the Project Proponent had been submitting post-EC compliance reports to the Goa State Pollution Control Board (GSPCB), Regional Office of MoEF&CC, Bengaluru, and Zonal Office of CPCB, Bengaluru, through hard and soft copies, and also placing the same in the public domain as applicable. Such compliance reporting was carried out from time to time in line with the stipulated EC conditions. The Company is presently aligning and streamlining its compliance framework to ensure continued and timely submission of EC compliance reports to all concerned authorities in accordance with the said EC conditions.

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Also find enclosed herewith details of production, water consumption, solid waste generation and environmental monitoring report for the relevant reporting period.

We request you to kindly take the above submission on record. We remain committed to full compliance with all Environment Clearance conditions and applicable regulatory requirements.

Thanking you.

Yours Sincerely,

For Paradeep Phosphates Limited, Goa Unit


15/06/20

Suresh Pramanik

Chief Manufacturing Officer & Unit Head- Goa Plant

Copy to:

1. The Secretary, Department of Environment and Forests, Govt. of Goa, Secretariat Panji.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi – 110032
3. The Chairman, Goa State Pollution Control Board, opp. Saligao Seminary, Saligao, Goa - 403511.
4. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi – 110003.

Enclosures:

Annexure – A: Compliance Report of Environmental Clearance

Annexure – B: Details of Production Along with Other Details

Annexure- C: Compiled Environment monitoring reports (AAQM, Noise, Work zone) data

1. Annexure – 1 Copy of latest Consolidated Consent and Authorization in the name of M/s. Paradeep Phosphates Limited- Goa Unit
2. Annexure – 2 Last six months Analysis Report for Environmental Monitoring
3. Annexure - 3 Flow Diagram of Wastewater Treatment Scheme
4. Annexure -4 Authorised Vendor Sale order
5. Annexure - 5 Greenbelt photos and species details
6. Annexure -6 Health Check-up Report
7. Annexure - 7 Copy of Agreement with WRD, Govt. of Goa
8. Annexure -8 Community Welfare Measures
9. Annexure -9 Environmental Management Cell
10. Annexure -10 Newspaper Advertisement
11. Annexure -11- Earlier post EC submitted
12. Annexure -12- CCR copies
13. Annexure -13- Memorandum of Association of Paradeep Phosphates Limited
14. Annexure -14- Content page of RA
15. Annexure -15- Copy of mock drill report.

2026

Environment Clearance status report



Submitted to

Ministry of Environment, Forest and Climate Change,
Regional Office,
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, Koramangala II Block,
Bengaluru-560 034

Submitted by

M/s. Paradeep Phosphates Limited-
Goa Unit, Jai Kisaan Bhawan,
Zuarinagar Goa-403 726

Table of Contents

ANNEXURE – A: Compliance Status Report of Environmental Clearance	2
ANNEXURE – B: Details of Production, Water Consumption, Waste Water Generation, Fuel consumption, Electricity consumption & Hazardous Generation.....	15
Details of Production, Water Consumption, Hazardous Waste Generation, Fuel Consumption, Electricity Consumption (For the last six months)-Month wise	16
Waste Water Generation	21
ANNEXURE – C: Environmental Monitoring Compiled data.....	22

List of Annexures

Annexure no.	Name of annexure
Annexure – 1	Copy of latest Consolidated Consent and Authorization in the name of M/s. Paradeep Phosphates Limited- Goa Unit
Annexure- – 2	For the last six months Analysis Report for Environmental Monitoring
Annexure- 3	Flow Diagram of Wastewater Treatment Scheme
Annexure - 4	Authorised Vendor Sale order
Annexure - 5	Greenbelt photos and species details
Annexure - 6	Health Check-up Report
Annexure - 7	Copy of Agreement with WRD, Govt. of Goa
Annexure - 8	Community Welfare Measures
Annexure - 9	Environmental Management Cell
Annexure - 10	Newspaper Advertisement
Annexure - 11	Earlier post EC submitted
Annexure - 12	CCR copies
Annexure - 13	Memorandum of Association of Paradeep Phosphates Limited
Annexure -14	Content page of RA
Annexure -15	Copy of mockdrill report

Abbreviations:

PPL	Paradeep Phosphates Limited
ZACL	Zuari Agro Chemicals Limited
NG	Natural Gas
RLNG	Regasified Liquefied Natural Gas
FO	Furnace oil
NOC	No objection certificate
CTO	Consent to Operate
STP	Sewage Treatment Plant
EC	Environment Clearance
MoEF&CC	Ministry of Environment, Forest and Climate Change
NEERI	National Environmental Engineering Research Institute

ANNEXURE – A: Compliance Status Report of Environmental Clearance

Reference: Environmental Clearance Issued vide letter no. F. No. J-11011/217/2008-IA-II (I) dt. 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

Project: Revamp of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG / RLNG and reduction of specific energy consumption along with debottlenecking the capacity of Ammonia and Urea plants, changeover of fuel from FO to NG / RLNG in the Utility Boilers as also debottlenecking the capacity of NPK plants A & B along with product mix change at Zuarinagar, Goa by M/s. Zuari Agro Chemicals Ltd.

Chronology for clarity:

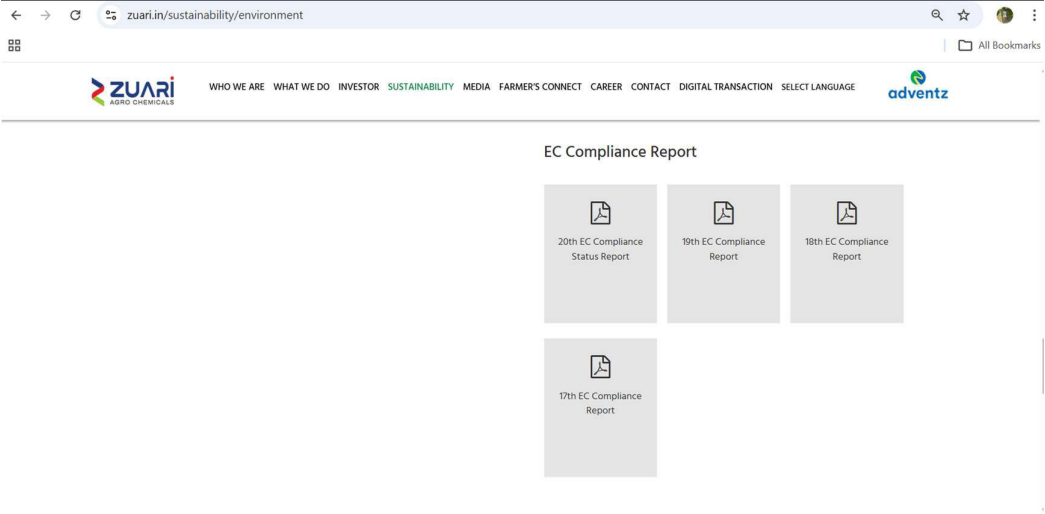
Date	Description
01.09.2009	Environmental Clearance (EC) was granted vide F. No. J-11011/217/2008-IA-II(I) for revamp of the Ammonia Plant involving changeover of feedstock and fuel from Naphtha to NG/RLNG, reduction in specific energy consumption, debottlenecking of ammonia-urea plants, fuel change in utility boiler from FO to NG/RLNG, and debottlenecking of NPK Plants A & B along with product mix change at Zuarinagar, Goa by M/s Zuari Industries Ltd. The EC was valid for 5 years.
30.10.2009	Corrigendum/Amendment issued to the EC revising specific condition no. (ii) stating that water consumption shall not exceed 10,135 m ³ /day.
03.10.2012	Application submitted for change of name from Zuari Industries Limited to Zuari Agro Chemicals Limited , pursuant to approval by the Registrar of Companies dated 28.09.2012.
17.06.2013	MoEF&CC issued letter seeking required documents in support of the name change application, including NOC, reason for name change, Certificate of Incorporation, and Memorandum & Articles of Association.
25.07.2013	Reply submitted to MoEF&CC along with the required documents for processing the name change.
04.02.2015	EC Validity extension in the name of M/s. Zuari Agro Chemicals Limited
01.03.2021	Business Transfer Agreement to M/s. Paradeep Phosphates Limited which transaction was consummated with effect from 1 st June,2022.
03.06.2022	CTO – Amendment for Name change from M/s. Zuari Agro Chemicals Limited to M/s. Paradeep Phosphates Limited .



❖ **COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE**

Sr. No.	EC Conditions	Compliance Status
A. Specific Conditions:		
i)	The project authority shall treat the industrial and domestic effluent as per the standards notified under Environment (Protection) Rules, 1986 or prescribed by Goa State Pollution Control Board whichever are stringent. The treated wastewater shall be recycled/reused/used for irrigation/green belt development and zero discharge shall be maintained.	The industrial effluent is given treatment which includes oil/grit removal, settling, pH correction and temporary storage in Effluent Treatment Plant. The treated industrial effluent is totally recycled to NPK-A and NPK-B plants for process use. The domestic effluent is treated separately in Sewage Treatment Plant and the treated domestic effluent is totally recycled to cooling towers as part make up. Only STP treated water is used for green belt maintenance within the complex occasionally. Reverse Osmosis (RO) unit is also installed in ETP to enhance the effluent treatment facility and the permeate is recycled to cooling tower as part make up & RO reject is recycled in NPK plant process use. Thus, zero liquid discharge is achieved. Copy of latest consent to operate having consent no. No. 12/2023-PCB/1948660/R00013712 dated 14.06.2024 and amendment consent No.2024/GSPCB/2510028/Amendment dated 03.02.2025 valid upto 31.12.2028 to M/s. Paradeep Phosphates Limited is annexed as Annexure -1. Detailed Flow Diagram of Wastewater Treatment scheme is attached herewith as an Annexure -3.
ii)	The water consumption shall not exceed 10135 m ³ /day and the permission for drawl of same shall be obtained from concerned Department and a copy shall be submitted to the Ministry and its Regional Office at Bangalore within 3 months.	Complied. The water consumption is maintained within 10135 m³/day. The entire water requirement is obtained from PWD supply and a lake. Details of Water Consumption for the period of last six months is attached as an Annexure-B.
iii)	The project authorities shall install efficient air pollution control system like vibopriller to Urea Prilling Tower, low NOX burners to Reformer, Scrubbers and Ammonia Stripper etc. to control particulate and gaseous emissions from the plant to achieve the prescribed standards.	Vibopriller is already installed in Urea Prilling Tower. Ammonia Stripper for treatment of process condensate and Scrubbers to control particulate and gaseous emissions from process plants already exist. The particulate and gaseous emissions from process plants are within the standards prescribed by GSPCB, Goa. Modern design burners with lower NO_x emissions are installed in Reformer, Process Heaters and fired Boilers as part of revamp for Gas Conversion. The Revamp of Scrubbing system in NPK-A, B Plants has been completed with M/s INCRO, Spain's Two Stage Scrubbing and M/s. Jacobs Dual Mole Scrubbing Technologies respectively.

Sr. No.	EC Conditions	Compliance Status
	   	
vii)	The proponent shall upload the status of compliance of the stipulated EC conditions, including monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant namely; SPM, RSPM, SO2, NOx (Ambient levels as well as stack emissions) or NH3, indicated for the project shall be monitored and displayed at the convenient location near the main gate of the Company in public domain.	The Compliance Status Reports of EC conditions including results of monitored data are displayed on website and the same is being updated periodically. The earlier nineteen Compliance Status Reports were sent to concerned RO-MoEF&CC, ZO-CPCB and GSPCB, Goa. The Final report (20th Compliance Status Report) is submitted on 10.06.2019. The compiled data of stack emission monitoring, ambient air quality monitoring, work zone monitoring and ambient noise level monitoring for the last six months are being submitted herewith as an Annexure-C and monitoring reports are attached as Annexure -2. All the results of monitoring conform to the respective standards prescribed. The PM2.5, PM10, SO2, NO2 and NH3 are being monitored in ambient air twice a week on 24 hourly basis at four AAQM stations by an external laboratory recognized by MoEF&CC. The reports are being sent to GSPCB, Goa every month and the results are being displayed and updated on electronic display boards at four different locations in public domain, which are already in existence before grant of EC. The process stack emission monitoring is carried out by an external laboratory recognized by MoEF&CC for NH3, Particulate Matter, SO2 and NO2 as per the conditions of Air Consent and the reports are being submitted to GSPCB, Goa once in three months. Stack emissions electronic display board is installed near gate no.1 which is in public domain and is already in operation since August 2010.

Sr. No.	EC Conditions	Compliance Status
	 Display board near main gate  Display board- Dabolim gate  Display board near BITS  Display board- Petrol bunk 	
viii)	Spent catalysts shall be sold to authorized venders for its metal value. The other solid wastes shall be segregated and stored in the separate storage space and finally sold to the authorized vendors.	Being followed regularly. Details of Solid and Hazardous waste is attached as an Annexure-B. Spent catalysts are sold to authorized vender only. Copy of sale order to Authorized Vendor with authorisation letter is attached herewith as an Annexure -4.
ix)	As proposed the Company shall maintain the green belt covering 50% land area of the plant to mitigate the effect of fugitive emissions	In 1973 when the Company began operation, the entire land was barren with very low coverage of vegetation. Over the last four decades in operation, through sustained efforts by our Estate Dept., a green belt covering approx. 50% total land area has already been developed and is being maintained.

Sr. No.	EC Conditions	Compliance Status
	and noise as per the CPCB guidelines.	Photographs of the greenbelt and list of greenbelt species along with numbers is attached as an Annexure -5 .
x)	The Company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for fertilizer industries.	Unit has complied with all recommendations relevant to us made in "CREP for Fertilizer Industries" including the phasing out of use of Arsenic for CO2 absorption system in Ammonia plant. During the annual shut down in April 2014, we have carried out "solution swap" wherein Arsenic based solution has been totally replaced with non-arsenic dual activator based GV solution. The discharged Arsenic bearing solution was disposed-off in a scientific manner using Solidification and Stabilization process developed by NEERI, Nagpur and successfully implemented previously by us in the year 2004. We engaged NEERI as consultant for Solidification and Stabilization of the April 2014 lot of arsenic waste. In view of lower concentration of Arsenic compared to earlier waste, NEERI carried out a study and fine-tuned the earlier process. Consent from Goa State Pollution Control Board was received on 16.03.2016. The project was completed in February 2017.
xi)	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.	Being followed regularly. Unit is having separate health centre with full-fledged doctor and supporting staff for looking after occupational health surveillance of the workers.  Health checkup reports of the workers are attached herewith as an Annexure - 6.
xii)	Provision shall be made for the housing of construction	There is no construction work at the site. Implementation of our revamp/debottlenecking project of the existing plants involves

Sr. No.	EC Conditions	Compliance Status
	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, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	minimal temporary manpower for which the necessary infrastructure and facilities are available at site and in the near vicinity. The required housing, necessary infrastructure and other facilities are provided to the construction labour. No temporary Structures were constructed as facilities were already available on site.
B.	General Conditions	
i)	The project authorities shall strictly adhere to the stipulations of the GSPCB / State Government or any Statutory body.	Stipulations of GSPCB / State Govt. or other Statutory Body are being complied on regular basis.
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 adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted and complied.
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.	The process stack emission monitoring as well as ambient air quality monitoring is being carried out by a MoEF&Cc recognized external laboratory and the results have been within the prescribed limits. In case of failure of any pollution control system, the concerned plant is shut down, problem is identified, fault rectified and then only plant is started back after ensuring that the results are well within stipulations.
iv)	The locations of ambient quality monitoring stations shall be reviewed in consultations with 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.	Four ambient air quality monitoring stations are already in operation even before the grant of EC. These were established at the locations recommended by CPCB after a proper technical study involving simulations for identifying the distance of maximum GLC of pollutants. The study by CPCB also took into account the human habitation areas like public schools while finalizing their recommendations. Post revamp, the simulation study by NEERI does not indicate any significant change in the pollutants level in ambient air as well as in the distance of max. GLC of pollutants.

Sr. No.	EC Conditions	Compliance Status
v)	Dedicated scrubbers and stacks of appropriate height as per the CPCB guidelines shall be provided to control the emissions from various vents. The scrubber water shall be sent to ETP for further treatment.	Dedicated scrubbers are already provided before the emissions pass through the stacks and the scrubber water is totally recycled within the plants. The Revamp of Scrubbing system in NPK-A & NPK-B Plants have been completed. As part of revamp project, unit has changed over the fuel from Naphtha/Furnace Oil to Natural Gas, which is a clean fuel with traces of Sulphur. With this change in fuel, SO₂ emissions have reduced drastically by about 98%. The heights of all the stacks are found to be appropriate and adequate as per CPCB guidelines. Details of fuel requirements for the period of last six months is attached as an Annexure-B.
vi)	The Company shall undertake following Waste Minimization measures a) Metering and control of quantities of active ingredients to minimize waste b) Reuse of by-products from the process as raw materials or as raw material substitute in other processes c) Use of "Closed Feed" system into batch reactors d) Venting equipment through vapour recovery system e) Use of high-pressure hoses for equipment cleaning to reduce wastewater generation.	a) Waste minimization measures implemented at the plant include metering systems, close monitoring of specific raw material consumption, and reduction of effluent generation at the source itself. Metering facilities are provided for all major water streams, including fresh water consumption, effluent generation points, and treated wastewater reuse lines. Raw material consumption, such as natural gas, is also monitored through metering systems to ensure better control and optimization of usage. b) Treated industrial and domestic effluents are reused/recycled within the process, thereby minimizing freshwater consumption and achieving effective wastewater utilization. ETP sludge generated from effluent treatment operations and acid tank cleaning sludge are reused as filler material in the NPK-A/NPK-B manufacturing process. Additionally, swept product collected during housekeeping activities in the process areas is also reused in the NPK-A/NPK-B manufacturing process as filler material, thereby reducing waste generation and promoting resource recovery. c) Our manufacturing process consists of continuous unit operations carried out through a closed-loop system. No batch reactors are involved in the process; hence, the same is not applicable to our operations. d) Systems such as cyclone separators, wet scrubbers, and carbon dioxide absorption systems are provided for recovery and treatment of gases prior to discharge through the stacks. Accordingly, adequate operational controls are available to regulate and control emissions within the prescribed limits. e) High-pressure hoses are utilized during in-process cleaning and annual shutdown maintenance activities to minimize water consumption and thereby reduce wastewater generation.
vii)	Fugitive emissions in the work zone environment, product, and raw material storage area shall be regularly monitored. The	The work zone environment in process plants, product and raw material storage areas at different locations is being regularly monitored for Ammonia and records are being maintained. The results conform to the limits prescribed under The Factories Act.

Sr. No.	EC Conditions	Compliance Status
	emissions shall conform to the limits imposed by SPCB/CPCB.	Leak detection sensors are already installed inside the plant premises and near storage area also.
viii)	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.	Authorization from GSPCB, Goa for collection, storage and disposal of Hazardous Wastes is already obtained before grant of EC and is being renewed regularly. The provisions under MSIHC Rules and HW Rules under EP Act are being complied on regular basis. Also, we are disposing off our E-waste in accordance with the E-waste (Management) Rules, 2016. Details of Solid & Hazardous waste generation and disposal for the period of last six months is attached as an Annexure-B.
ix)	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).	Noise control measures and PPE for operating personnel are provided. The ambient noise level at the factory periphery at different locations in all directions is being monitored once in three months and records are being maintained. The results conform to the standards prescribed under Noise Pollution (Regulations and Control) Rules, 2000 under EP Act and Rules.
x)	The Company shall develop rain water harvesting structures to harvest runoff water for recharge of ground water.	Rain water harvesting for storage in the form of captive lake of 235 MG capacity already exists since inception of factory way back in 1973. Signed an agreement with WRD, Govt. of Goa in March 2014 for supply of raw water which has already commenced and with improved water supply in adequate quantity; we have stopped usage of all the Bore wells thus eliminating the drawl of groundwater. Copy of Agreement with WRD, Govt. of Goa is attached as an Annexure -7.
xi)	The Company shall undertake eco-development 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	During its operation for last four decades, the Company (Zuari) has already undertaken many eco-development measures like afforestation, creation and maintenance of green belt around the factory premises etc. The Company has also undertaken community welfare measures like maintenance of public gardens in Vasco city, awarding scholarships, A/C and refrigerator repair training, conducting health camps, supply of safe drinking water to nearby villages, creation of self-help groups, assistance to the present self-help groups, cleanliness drive, distribution of free saplings as a part of tree plantation drive etc. as part of Corporate Social Responsibility

Sr. No.	EC Conditions	Compliance Status
	of receipt of this letter for approval.	Schemes. Report on "Eco-development plan and Community Welfare Measures" already undertaken by the Company (Zuari Agro Chemicals Limited) is submitted to GSPCB, Goa. As Paradeep has done CSR activities. Copy of Community Welfare Measures taken by Paradeep is attached herewith as an Annexure -8.
xii)	The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report.	As proposed in EIA / EMP report, environmental protection measures and safeguards are being implemented as part of execution of revamp for gas conversion. As part of revamp in Ammonia & Utilities plants, company(Zuari) have changed over fuel/feed from Naphtha/Furnace Oil to much cleaner NG/RLNG, also installed low NOx burners in Heaters and Boilers, replaced Furnace oil as fuel to Natural gas in the Hot Air Generator of NPK-A and NPK-B Plants.
xiii)	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	A full-fledged laboratory (NABL certified having certificate no. TC-16079) with necessary facilities already exists for carrying out analysis and monitoring. Stack emission and ambient air quality monitoring is outsourced to MoEF&CC approved external laboratory as stipulated by GSPCB, Goa.  Details of Environmental Management Cell reconstituted at Paradeep is attached herewith as an Annexure -9.
xiv)	The project authorities shall earmark adequate funds to implement the conditions	Till date, Rs. 54.18 crores as Capital Investment and a recurring cost of around Rs. 7.6 Crores has been spent for implementation of environment clearance conditions.

Sr. No.	EC Conditions	Compliance Status
	stipulated by the MoEF as well as the State Govt. along with the implementation schedule for all the conditions stipulated herein. The fund so provided shall not be diverted for any other purpose.	
xv)	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 the monitoring agencies and shall be posted on the website of the Company.	The earlier twenty, six monthly Compliance Status Reports of EC conditions including the status of the revamp project were submitted on 1/12/2009, 1/6/2010, 1/12/2010, 1/6/2011, 1/12/2011, 1/6/2012, 1/12/2012, 1/6/2013, 1/12/2013, 1/06/2014, 01/12/2014, 30/05/2015, 01/12/2015, 01/06/2016, 01/12/2016, 01/06/2017, 07/12/2017, 11/06/2018, 04/12/2018 and 10/06/2019 to concerned RO-MOEF&CC, ZO-CPCB and GSPCB, Goa. The reports are also posted on Company's(Zuari) website. Copies of earlier submitted six monthly compliances are attached as Annexure -11. Copies of earlier received certified compliance report are attached as Annexure -12.
xvi)	The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including results of monitored data (both hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and SPCB.	The earlier nineteen, six monthly Compliance Status Reports of EC conditions including results of monitored data were submitted on 1/12/2009, 1/6/2010, 1/12/2010, 1/6/2011, 1/12/2011, 1/6/2012, 1/12/2012, 1/6/2013, 1/12/2013, 1/06/2014, 01/12/2014, 30/05/2015, 01/12/2015, 01/06/2016, 01/12/2016, 01/06/2017, 07/12/2017, 11/06/2018, 04/12/2018 and 10/06/2019 to concerned RO-MOEF&CC, ZO-CPCB and GSPCB, Goa in both forms i.e. hard copies as well as e-mail and a CD attached with this report. The compiled data of stack emission monitoring, ambient air quality monitoring, work zone monitoring and ambient noise level monitoring for the period last six months are being submitted herewith as Annexure –C. Copies of earlier submitted six monthly compliances are attached as Annexure -11. Copies of earlier received certified compliance report are attached as Annexure -12.
xvii)	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and Local NGO, if any, from whom suggestions/representations if any, were received while processing the proposal. The clearance letter shall also be put up on	Complied.

Sr. No.	EC Conditions	Compliance Status
	website of the Company by the proponent.	
xviii)	The 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 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. Copy of Advertisement of Newspaper is attached herewith as an Annexure -10 .
xix)	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 as amended subsequently, shall also to be put on the website of the Company along with the status of compliance of EC condition and shall also be sent to the respective Regional Office of MoEF by e-mail.	Environmental Statement for each financial year ending 31 st March in Form-V as mandated under EP Rules, 1986 is being submitted to GSPCB, Goa every year before scheduled date. The latest Environmental Statement for 2024-2025 was submitted to GSPCB On 29.09.2025.
xx)	The project proponent 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.	The Project stands completed. Feed and Fuel change over from Naphtha to NG/RLNG in Ammonia plant and Fuel changeover from Furnace Oil to NG/RLNG in Utilities Boilers completely with effect from September, 2013. The project for improved energy efficiency at debottlenecked capacity of the Ammonia-Urea plants has been implemented. The debottlenecking project for enhanced capacity of NPK plant-A and NPK plant-B along with product mix change has been completed and the plants are operational effective from December, 2015 and May, 2017 respectively. Also obtained the necessary Consent to Establish and Consent to Operate from Goa State Pollution Control Board for the project. Several Energy Saving Schemes as well as Capacity De-bottlenecking

Sr. No.	EC Conditions	Compliance Status
		schemes have been already implemented in the Ammonia plant in compliance with the EC (Environmental Clearance). These include Revamp in the Reforming Section (both Radiant and Convection Sections), Shift Conversion Section, CO2 Removal Section etc. in order to be compliant with the preset energy norms set forth by Department of Fertilizers, Government of India in the NUP (New Urea Policy)-2015 at the existing/approved capacities in the EC (Environmental Clearance)/CTO (Consent to Operate). The revamped Scrubbing Systems in the NPK-A and NPK-B Plants have been very effective such that the Ammonia emissions are well below the prescribed emission norms. In the Ammonia plant, in compliance with the EC/CREP, the Solution in the CO2 Removal section has been swapped from Arsenic bearing Modified Benfield Solution to Non-Arsenic based GV Solution (V2O5 based). Necessary hardware additions were also done along with the Solution Swap. The disposal of the modified Benfield Solution through Solidification/Stabilization has been completed in February, 2017. Moreover, Business Transfer Agreement was done between M/s. Zuari Agro Chemicals Limited and M/s. Paradeep Phosphates Limited on 01.03.2021 and transferred to M/s. Paradeep Phosphates Limited which transaction was consummated with effect from 1st June,2022. On that basis the Consent to Operate for the said unit has been transferred on 3rd June, 2022 in the name of M/s. Paradeep Phosphates Limited. Copy of Memorandum of Association of Paradeep Phosphates Limited is attached as Annexure -13. Copy of latest consent to operate having consent no. No. 12/2023-PCB/1948660/R00013712 dated 14.06.2024 and amendment consent No.2024/GSPCB/2510028/Amendment dated 03.02.2025 valid upto 31.12.2028 to M/s. Paradeep Phosphates Limited is annexed as Annexure -1.

**ANNEXURE – B: Details of Production, Water
Consumption, Waste Water Generation, Fuel consumption,
Electricity consumption & Hazardous Generation**

Details of Production, Water Consumption, Hazardous Waste Generation, Fuel Consumption, Electricity Consumption (For the last six months)-Month wise

August 2025

PATRAK		Aug-25
Water consumed	Unit	Quantity
Water consumed for the month in KL	KL	301000
Cooling-Boiler	KL	258545
Domestic	KL	28440
Process Bio-degradable	KL	14015
Process Non Bio-degradable	KL	0
Average Total Effluent Generation	KL	530
Electricity units Consumed in the month for		
Production	KWH	8282650
ETP	KWH	161350
Production		
Captive power	KWH	8357240
Ammonia	MT	26450
Urea	MT	40008
NPK A	MT	29895.3
NPK B	MT	34786.75
Fuel Consumption (except electricity)		
Natural Gas (only Fuel)	SM3	19826600
H.S.D	KL	15.53
Hazardous Waste monthly data		
HW disposed in August 2025	• 1.400 MT of Empty barrels (Category 33.1) is handed over to the authorized recycler.	

September 2025

PATRAK		Sep-25
Water consumed	Unit	Quantity
Water consumed for the month in KL	KL	281000
Cooling-Boiler	KL	239681
Domestic	KL	28350
Process Bio-degradable	KL	12969
Process Non Bio-degradable	KL	0
Average Total Effluent Generation	KL	518
Electricity units Consumed in the month for		
Production	KWH	7696720
ETP	KWH	153250
Production		

Captive power	KWH	6986330
Ammonia	MT	23935
Urea	MT	33896
NPK A	MT	29811.2
NPK B	MT	41296.1
Fuel Consumption (except electricity)		
Natural Gas (only Fuel)	SM3	18723586
H.S.D	KL	12.655
Hazardous Waste monthly data		
HW disposed in September 2025	• 3.700 MT of Spent Oil (Category 5.1) from PPL, Goa Unit is handed over to the authorized recycler. • 2.800 MT of Tank residue and sludge containing oil (Category 3.1) is handed over to the authorized recycler.	

October 2025

PATRAK		Oct-25
Water consumed	Unit	Quantity
Water consumed for the month in KL	KL	301000
Cooling-Boiler	KL	257607
Domestic	KL	29400
Process Bio-degradable	KL	13993
Process Non Bio-degradable	KL	0
Average Total Effluent Generation	KL	517
Electricity units Consumed in the month for		
Production	KWH	8296230
ETP	KWH	164000
Production		
Captive power	KWH	6835190
Ammonia	MT	26396
Urea	MT	40289
NPK A	MT	33729.7
NPK B	MT	44801.95
Fuel Consumption (except electricity)		
Natural Gas (only Fuel)	SM3	19132855
H.S.D	KL	18.585
Hazardous Waste monthly data		
HW disposed in October 2025	• 2.590 MT of Spent Oil (Category 5.1) from PPL, Goa Unit is handed over to the authorized recycler. • 5.780 MT of Tank residue and sludge containing oil (Category 3.1) is handed over to the authorized recycler. • 0.800 MT of empty barrels (Category 33.1) from PPL Goa is handed over to the authorized recycler.	

	• Following hazardous wastes were given to Ponda Envocare limited, (TSDF unit) for disposal by Pre-Co-Processing in October 2025. i. Waste and residues containing oil (Cat. 5.2) – 0.570 MT ii. Sludge and filter contaminated with oil (Cat. 3.3) – 0.330 MT iii. Contaminated cotton rags and other cleaning materials (Cat. 33.2) – 0.380 MT
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November 2025

PATRAK		Nov-25
Water consumed	Unit	Quantity
Water consumed for the month in KL	KL	299000
Cooling-Boiler	KL	256671
Domestic	KL	28750
Process Bio-degradable	KL	13579
Process Non Bio-degradable	KL	0
Average Total Effluent Generation	KL	553
Electricity units Consumed in the month for		
Production	KWH	8157160
ETP	KWH	157600
Production		
Captive power	KWH	6743600
Ammonia	MT	25728
Urea	MT	39665
NPK A	MT	34667.75
NPK B	MT	46000
Fuel Consumption (except electricity)		
Natural Gas (only Fuel)	SM3	18490754
H.S.D	KL	28.81
Hazardous Waste monthly data		
HW disposed in November 2025	• 2.930 MT of Spent Oil (Category 5.1) from PPL, Goa Unit is handed over to the authorized recycler. • 2.950 MT of Tank residue and sludge containing oil (Category 3.1) is handed over to the authorized recycler.	

December 2025

PATRAK		Dec-25
Water consumed	Unit	Quantity
Water consumed for the month in KL	KL	308000
Cooling-Boiler	KL	264033
Domestic	KL	30470

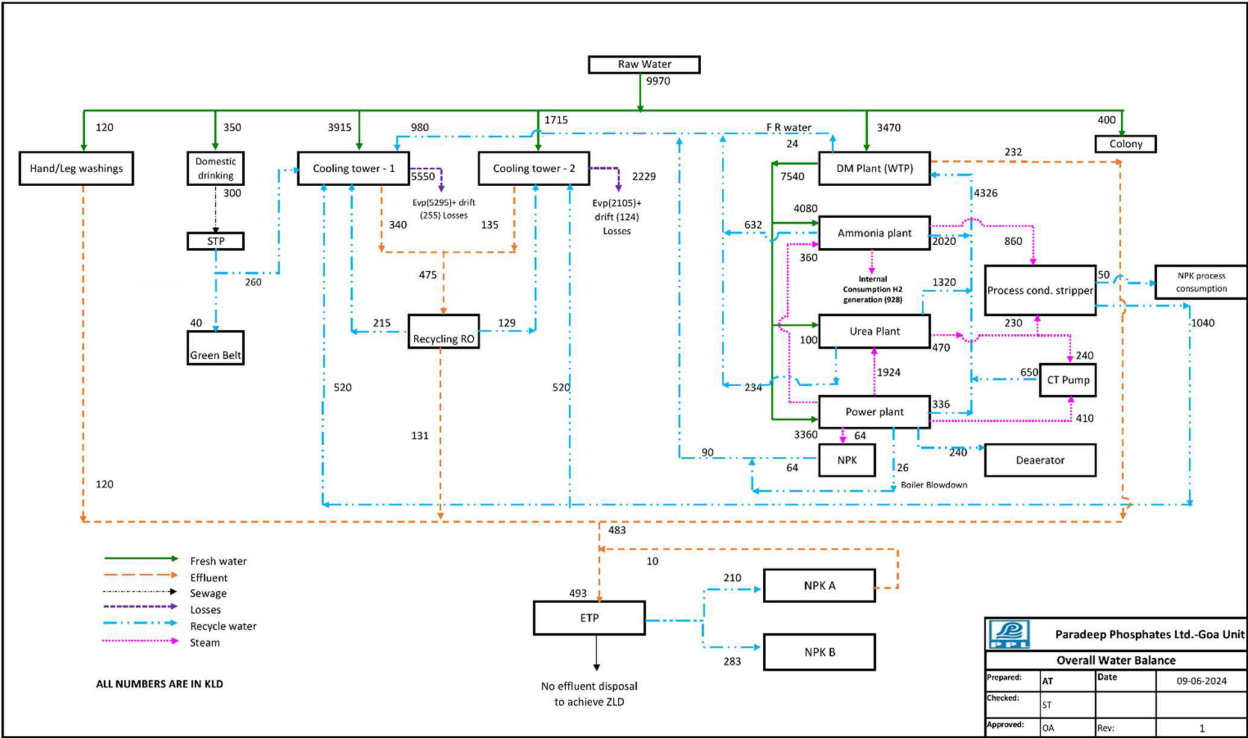
Process Bio-degradable	KL	13497
Process Non Bio-degradable	KL	0
Average Total Effluent Generation	KL	405
Electricity units Consumed in the month for		
Production	KWH	7482890
ETP	KWH	139480
Production		
Captive power	KWH	7170450
Ammonia	MT	26555
Urea	MT	40916
NPK A	MT	17524.2
NPK B	MT	19228.65
Fuel Consumption (except electricity)		
Natural Gas (only Fuel)	SM3	19279793
H.S.D	KL	12.42
Hazardous Waste monthly data		
HW disposed in December 2025	0.510 MT of empty barrels (Category 33.1) from PPL Goa is handed over to the authorized recycler.	

January 2026

PATRAK		Jan-26
Water consumed	Unit	Quantity
Water consumed for the month in KL	KL	310000
Cooling-Boiler	KL	263302
Domestic	KL	32710
Process Bio-degradable	KL	13988
Process Non Bio-degradable	KL	0
Average Total Effluent Generation	KL	535
Electricity units Consumed in the month for		
Production	KWH	8295760
ETP	KWH	151570
Production		
Captive power	KWH	5516570
Ammonia	MT	26234
Urea	MT	40668
NPK A	MT	32763.4
NPK B	MT	38050
Fuel Consumption (except electricity)		
Natural Gas (only Fuel)	SM3	19421125
H.S.D	KL	13.13
Hazardous Waste monthly data		

HW disposed in January 2026	• 5.360 MT of Spent Oil (Category 5.1) from PPL, Goa Unit is handed over to the authorized recycler. • 1.650 MT of Tank residue and sludge containing oil (Category 3.1) is handed over to the authorized recycler.
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Waste Water Generation



ANNEXURE – C: Environmental Monitoring Compiled data

Stack Monitoring data

Stack emission monitoring data					
Stack description	Parameter	Unit	Limits prescribed by GSPCB	May-25	Remarks
DG Set* Stack (8100 KVA)	PM	mg/Nm ³	150	51.21	Limit prescribed as per valid granted Consent by GSPCB as per consent no. 12/2023-PCB/1948660/R00 013712 dated 14.06.2024
	SO ₂	kg/h	105.6	1.95	
	NO ₂	ppmv	1100	94.11	
	NonMethane Hydrocarbon, as C (at 15% O ₂)	mg/Nm ³	150	13.01	
	Carbon Monoxide (CO) (at 15% O ₂)	mg/Nm ³	150	22.12	

Note: Stack emission monitoring was carried out by M/s. Aditya Environmental Services Pvt. Ltd., Raigad, an external laboratory recognized as “ Environmental Laboratory”.

*Purchase power is utilised to run complex plants instead of DG Power as purchase power is cheaper.

Stack emission monitoring data							Remarks
Stack description	Parameter	Unit	Limits prescribed by GSPCB	Aug -25	Nov-25	Feb-26	
NPK-B stack (05-5D-101)	PM	mg/Nm ³	150	60.62	53.63	55.68	Limit prescribed as per valid granted Consent by GSPCB as per consent no. 12/2023-PCB/1948660/R00013712 dated 14.06.2024
	NH ₃	kg/h	10	2.3	1.47	1.9	
Ammonia plant - reformer/combustion chamber flue gas stack (A-CA-101)	SO ₂	kg/h	--	3.94	4.19	4.73	
	NO ₂	ppmv	--	99.64	91.77	95.02	
Urea plant prilling tower (U-IA-301)	PM	mg/Nm ³	150	91.01	85.24	93.35	
Urea plant dust separator (U-FD-304)	PM	mg/Nm ³	150	67.59	64.01	62.6	
Boiler (S-BF-101CA) (Boiler B&C inlet)	PM	mg/Nm ³	--	46.03	42.84	37.92	
	SO ₂	kg/h	--	2.58	2.52	2.58	

Stack emission monitoring data							
Stack description	Parameter	Unit	Limits prescribed by GSPCB	Aug -25	Nov-25	Feb-26	Remarks
	NO2	ppmv	--	95.48	89.73	90.97	
NPK-A Dedusting stack (N-CB-403)	PM	mg/N m3	150	52.08	43.08	51.04	
NPK-A Fumes stack (N-CB-901)	NH3	kg/h	10	0.43	0.37	0.94	
NPK-A Dryer stack (N-CB-301)	PM	mg/N m3	150	52.96	55.25	57.37	

Note: Stack emission monitoring was carried out by M/s. Aditya Environmental Services Pvt. Ltd., Raigad, an external laboratory recognized as “ Environmental Laboratory”.

Work Zone monitoring data:

Sr. No.	Work Zone	Fugitive Ammonia Level in ppm	
		15/10/2025 (ppm)	09/01/2026 (ppm)
1	RMH plant - Amm. Tanker unloading area	0	1
2	Ammonia plant – Amm. Receiver/Economiser area	2	3
3	Ammonia Hortonsphere Amm. Pump area	5	6
4	Urea plant – Amm. Pump area	4	5
5	Urea plant – Amm. Condensor area	3	4
6	NPK-A plant – Pre-Neutralizer area	7	8
7	NPK-A plant – Amm. Granulator area	4	3
8	NPK-A plant - Dryer area	1	2
9	NPK-B plant – Pre-Neutralizer area	3	4
10	NPK-B plant – Amm. Granulator area	6	7
11	NPK-B plant - Dryer area	0	0
12	Product Handling plant - Urea bagging area	2	1
13	Product Handling plant - NPK-A bagging area	1	0
14	Product Handling plant - NPK-B bagging area	0	1
15	Product Handling plant - Urea bulk area	10	9
16	Product Handling plant - NPK-A bulk area	8	8
17	Product Handling plant - NPK-B bulk area	6	8

Noise monitoring data:

Date		14.10.2025		13.01.2026	
S. No.	Locations	Noise Level (dB) Day time	Noise Level (dB) Night time	Noise Level (dB) Day time	Noise Level (dB) Night time
1	Near Main Gate	52.3	50.9	51.7	50.1
2	Near Gate No.1	57.6	52.1	58.3	52.6
3	Near DAP gate	60.2	56.4	61	57.1
4	Near Post Office	54.1	52.8	53.8	43
5	Near Goa Carbonic factory	56.4	49.7	55.9	49.9
6	Near D-colony view point	51	45.2	40.6	34.8
7	Behind Administration Building	53.1	43.5	52.9	43.7
8	Near Railway siding road junction in B-colony	63.5	56.2	64.4	56
9	Near Railway siding (Vasco end)	61.9	53	62.1	52.8

AAQ monitoring data:

Feb-26															
Parameter s	PM-10 Avg ($\mu\text{g}/\text{m}^3$)	PM-10 Min ($\mu\text{g}/\text{m}^3$)	PM-10 Max ($\mu\text{g}/\text{m}^3$)	PM-2.5 Avg ($\mu\text{g}/\text{m}^3$)	PM-2.5 Min ($\mu\text{g}/\text{m}^3$)	PM-2.5 Max ($\mu\text{g}/\text{m}^3$)	SO ₂ Avg ($\mu\text{g}/\text{m}^3$)	SO ₂ Min ($\mu\text{g}/\text{m}^3$)	SO ₂ Max ($\mu\text{g}/\text{m}^3$)	NO ₂ Avg ($\mu\text{g}/\text{m}^3$)	NO ₂ Min ($\mu\text{g}/\text{m}^3$)	NO ₂ Max ($\mu\text{g}/\text{m}^3$)	Ammonia Avg ($\mu\text{g}/\text{m}^3$)	Ammonia Min ($\mu\text{g}/\text{m}^3$)	Ammonia Max ($\mu\text{g}/\text{m}^3$)
Permissible Limits	100			60			80			80			400		
D -Colony	51.53	44.00	61.60	31.15	26.90	36.60	13.94	11.50	18.00	17.5	16.30	19.70	31.91	16.50	52.40
Near Primary School	62.2	54.60	71.20	34.78	29.40	41.40	14.93	12.50	17.40	18.18	15.80	19.50	32.46	19.70	44.80
Near Jai Kisaan Club	55.5	46.70	62.90	31.23	27.10	42.50	14.81	12.50	19.10	17.23	15.80	19.20	18.39	14.60	24.60
C-Colony	58.43	47.50	66.90	30.75	27.40	34.20	14.31	10.60	19.50	18.7	15.80	20.80	25.01	16.10	40.80

Jan-26															
Parameter s	PM-10 Avg ($\mu\text{g}/\text{m}^3$)	PM-10 Min ($\mu\text{g}/\text{m}^3$)	PM-10 Max ($\mu\text{g}/\text{m}^3$)	PM-2.5 Avg ($\mu\text{g}/\text{m}^3$)	PM-2.5 Min ($\mu\text{g}/\text{m}^3$)	PM-2.5 Max ($\mu\text{g}/\text{m}^3$)	SO ₂ Avg ($\mu\text{g}/\text{m}^3$)	SO ₂ Min ($\mu\text{g}/\text{m}^3$)	SO ₂ Max ($\mu\text{g}/\text{m}^3$)	NO ₂ Avg ($\mu\text{g}/\text{m}^3$)	NO ₂ Min ($\mu\text{g}/\text{m}^3$)	NO ₂ Max ($\mu\text{g}/\text{m}^3$)	Ammonia Avg ($\mu\text{g}/\text{m}^3$)	Ammonia Min ($\mu\text{g}/\text{m}^3$)	Ammonia Max ($\mu\text{g}/\text{m}^3$)
Permissible Limits	100			60			80			80			400		
D -Colony	48.86	41.90	64.10	31.77	26.30	39.10	11.47	9.10	13.20	16.4	14.60	18.30	29.79	16.50	68.50
Near Primary School	56.4	48.30	68.90	34.12	29.20	41.70	11.96	10.10	13.80	16.14	15.10	19.20	34.87	29.00	50.70
Near Jai Kisaan Club	46.4	35.90	56.80	28.93	25.80	32.50	10.81	9.60	12.10	14.39	12.30	16.20	25.07	17.30	35.00

C-Colony	48.84	39.20	61.40	29.03	22.90	34.60	11.43	9.80	12.90	15.4	13.60	16.70	26.29	15.10	36.20
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Dec-25															
Parameter s	PM-10 Avg ($\mu\text{g}/\text{m}^3$)	PM-10 Min ($\mu\text{g}/\text{m}^3$)	PM-10 Max ($\mu\text{g}/\text{m}^3$)	PM-2.5 Avg ($\mu\text{g}/\text{m}^3$)	PM-2.5 Min ($\mu\text{g}/\text{m}^3$)	PM-2.5 Max ($\mu\text{g}/\text{m}^3$)	SO ₂ Avg ($\mu\text{g}/\text{m}^3$)	SO ₂ Min ($\mu\text{g}/\text{m}^3$)	SO ₂ Max ($\mu\text{g}/\text{m}^3$)	NO ₂ Avg ($\mu\text{g}/\text{m}^3$)	NO ₂ Min ($\mu\text{g}/\text{m}^3$)	NO ₂ Max ($\mu\text{g}/\text{m}^3$)	Ammonia Avg ($\mu\text{g}/\text{m}^3$)	Ammonia Min ($\mu\text{g}/\text{m}^3$)	Ammonia Max ($\mu\text{g}/\text{m}^3$)
Permissible Limits	100			60			80			80			400		
D -Colony	55.38	48.20	61.70	34.74	27.70	40.80	11.81	10.80	13.80	17.0	14.60	19.50	24.51	16.10	37.30
Near Primary School	60.2	47.50	70.50	35.39	28.40	42.00	12.62	10.10	15.30	18.10	15.70	21.30	33.74	24.90	59.90
Near Jai Kisaan Club	55.2	45.50	65.90	28.19	17.10	36.70	11.41	9.50	12.90	14.74	12.50	16.10	19.19	14.70	22.90
C-Colony	59.73	47.90	65.50	30.82	27.20	35.70	10.91	9.60	13.70	14.7	11.80	17.30	20.33	13.90	39.30

Nov-25															
Parameter s	PM-10 Avg ($\mu\text{g}/\text{m}^3$)	PM-10 Min ($\mu\text{g}/\text{m}^3$)	PM-10 Max ($\mu\text{g}/\text{m}^3$)	PM-2.5 Avg ($\mu\text{g}/\text{m}^3$)	PM-2.5 Min ($\mu\text{g}/\text{m}^3$)	PM-2.5 Max ($\mu\text{g}/\text{m}^3$)	SO ₂ Avg ($\mu\text{g}/\text{m}^3$)	SO ₂ Min ($\mu\text{g}/\text{m}^3$)	SO ₂ Max ($\mu\text{g}/\text{m}^3$)	NO ₂ Avg ($\mu\text{g}/\text{m}^3$)	NO ₂ Min ($\mu\text{g}/\text{m}^3$)	NO ₂ Max ($\mu\text{g}/\text{m}^3$)	Ammonia Avg ($\mu\text{g}/\text{m}^3$)	Ammonia Min ($\mu\text{g}/\text{m}^3$)	Ammonia Max ($\mu\text{g}/\text{m}^3$)
Permissible Limits	100			60			80			80			400		
D -Colony	54.31	40.20	67.80	30.66	21.90	35.20	12.39	11.90	13.20	16.3	14.70	17.40	30.09	21.60	43.30
Near Primary School	54.4	44.40	62.50	30.84	22.90	35.80	12.96	12.10	13.90	16.53	14.40	18.00	38.40	29.70	51.00

Near Jai Kisaan Club	46.1	32.40	52.80	23.86	18.30	32.10	11.24	9.40	14.60	14.94	13.10	15.90	24.96	16.20	54.00
C-Colony	52.73	41.40	61.40	25.36	19.20	29.20	11.18	10.10	13.70	15.6	14.20	17.40	33.05	25.20	62.90

Oct-25															
Parameter s	PM-10 Avg (µg/m³)	PM-10 Min (µg/m³)	PM-10 Max (µg/m³)	PM-2.5 Avg (µg/m³)	PM-2.5 Min (µg/m³)	PM-2.5 Max (µg/m³)	SO ₂ Avg (µg/m³)	SO ₂ Min (µg/m³)	SO ₂ Max (µg/m³)	NO ₂ Avg (µg/m³)	NO ₂ Min (µg/m³)	NO ₂ Max (µg/m³)	Ammonia Avg (µg/m³)	Ammonia Min (µg/m³)	Ammonia Max (µg/m³)
Permissible Limits	100			60			80			80			400		
D -Colony	53.12	33.70	87.40	29.38	17.10	51.30	12.69	11.20	14.80	16.5	15.50	17.70	25.22	17.60	32.80
Near Primary School	49.16	32.40	59.90	27.02	18.60	36.70	11.87	10.50	13.40	15.6	13.50	19.80	33.44	23.00	44.90
Near Jai Kisaan Club	48.42	33.00	66.00	26.76	18.80	37.90	11.12	9.90	13.00	14.7	13.30	17.70	22.19	16.20	30.80
C-Colony	50.34	34.60	59.70	28.57	17.90	37.50	10.79	10.10	12.10	15.1	13.60	17.20	26.94	17.20	39.40

Sep-25															
Parameter s	PM-10 Avg (µg/m³)	PM-10 Min (µg/m³)	PM-10 Max (µg/m³)	PM-2.5 Avg (µg/m³)	PM-2.5 Min (µg/m³)	PM-2.5 Max (µg/m³)	SO ₂ Avg (µg/m³)	SO ₂ Min (µg/m³)	SO ₂ Max (µg/m³)	NO ₂ Avg (µg/m³)	NO ₂ Min (µg/m³)	NO ₂ Max (µg/m³)	Ammonia Avg (µg/m³)	Ammonia Min (µg/m³)	Ammonia Max (µg/m³)
Permissible Limits	100			60			80			80			400		
D -Colony	39.57	28.70	48.00	19.07	16.60	20.90	12.34	10.10	13.70	17.3	13.20	20.20	32.80	19.40	71.90

Near Primary School	43.79	32.90	54.90	21.49	15.40	29.20	13.66	11.40	15.80	18.8	15.90	21.90	28.86	21.10	43.70
Near Jai Kisaan Club	39.66	31.20	57.60	22.96	17.90	34.60	11.09	9.70	12.60	15.0	13.20	17.40	16.49	13.40	23.10
C-Colony	42.87	29.10	51.70	23.31	18.30	30.80	11.21	10.30	12.80	15.0	12.60	16.70	16.86	14.20	19.60

Aug-25															
Parameter s	PM-10 Avg (µg/m³)	PM-10 Min (µg/m³)	PM-10 Max (µg/m³)	PM-2.5 Avg (µg/m³)	PM-2.5 Min (µg/m³)	PM-2.5 Max (µg/m³)	SO ₂ Avg (µg/m³)	SO ₂ Min (µg/m³)	SO ₂ Max (µg/m³)	NO ₂ Avg (µg/m³)	NO ₂ Min (µg/m³)	NO ₂ Max (µg/m³)	Ammonia Avg (µg/m³)	Ammonia Min (µg/m³)	Ammonia Max (µg/m³)
Permissible Limits	100			60			80			80			400		
D -Colony	41.66	33.50	51.60	20.37	16.60	25.60	12.31	11.40	13.50	17.9	15.30	21.50	40.71	19.90	95.10
Near Primary School	47.81	41.10	53.30	25.08	22.90	29.60	13.17	10.50	14.30	20.2	16.70	22.60	32.32	16.70	45.60
Near Jai Kisaan Club	42.84	34.90	57.60	24.13	17.10	29.20	10.57	9.90	11.20	14.5	12.10	15.80	18.82	14.90	23.50
C-Colony	48.13	40.20	57.00	25.18	17.50	31.20	10.98	10.10	12.60	15.4	11.50	19.20	22.42	16.30	30.20

Note: Ambient air quality monitoring was carried out by M/s. Aditya Environmental Services Pvt. Ltd., Raigad, an external laboratory recognized as “ Environmental Laboratory”.

-----END OF THE REPORT-----

GOA STATE POLLUTION CONTROL BOARD

गोंय राज्य प्रदूषण नियंत्रण मंडळ

(An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 Certified Board)

Phone Nos : 0832- 2407700,
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No.2024/GSPCB/2510028/Amendment

Date: - 03/02/2025

AMENDMENT

Sub: Partial modification in the Renewal of Consent to Operate under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 (i) of the Hazardous and other Wastes (Management, and Transboundary Movement) Rules 2016 as amended thereafter order issued to **M/s. PARADEEP PHOSPHATES LIMITED**.

Ref:-1) Renewal of Consent to Operate under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 (i) of the Hazardous and other Wastes (Management, and Transboundary Movement) Rules 2016 as amended thereafter, Order bearing No.12/2023- PCB/1948660/R00013712 Dated 14/06/2024.

In partial modification in the Renewal of Consent to Operate under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 (i) of the Hazardous and other Wastes (Management, and Transboundary Movement) Rules 2016 as amended thereafter, order issued to M/s. **PARADEEP PHOSPHATES LIMITED** the serial no. 3 (iii) c, 3 (iv), 3 (vii) Sr. 2,5(i) (Sr.No. 3), 6 (xv), 7. (xxi) and the capital investment of the unit on page 13 of 14 in the said order referred at (1) above may be read as follows:-

3. (iii) c. The treated effluent shall be re-used in the plant processes. Overflow from the monsoon water settling tank has to meet the following standards:

pH	Between	6.5&8.0
Suspended Solids	Not to exceed	100mg/l
BOD, 3 days, 27°C	Not to exceed	30mg/l

COD	Nottoexceed	250mg/l
Ammonical Nitrogen	Nottoexceed	75mg/l
Free Ammonical Nitrogen	Nottoexceed	4mg/l
Total Kjeldahl Nitrogen	Nottoexceed	100mg/l
NitrateNitrogen	Nottoexceed	10mg/l
CyanideasCN	Nottoexceed	0.2mg/l
VanadiumasV	Nottoexceed	0.2mg/l
ArsenicasAs	Nottoexceed	0.2mg/l
PhosphateasP	Nottoexceed	5mg/l
Oil&Grease	Nottoexceed	10mg/l
FluorideasF	Nottoexceed	10mg/l
HexavalentChromiumasCr	Nottoexceed	0.1mg/l
TotalChromiumasCr	Nottoexceed	2 mg/l

3. (iv) Domestic Effluent treatment and Disposal:-

The domestic waste water shall be re-circulated after treatment and chlorine dosing as make-up water in cooling towers and for gardening as and when deemed fit for the purpose.

The unit shall maintain/operate comprehensive sewage treatment plant (**300 KLD capacity**) consisting of primary/ secondary and/ or tertiary treatment as is warranted with reference to influent quality and operate and maintain the same continuously so as to achieve the quality of the treated effluent to the following standards:

Parameters	Discharge on land for irrigation, Inland surface water	
pH	Between	5.5 & 9.0
Total Suspended Solids	Not to exceed	Not more than 20
BOD, 3 days, 27o C	Not to exceed	10 mg/l
COD	Not to exceed	50 mg/l
N-total	Not to exceed	10mg/l
Fecal Coliform	Less than	100MPN/100ml
Oil & Grease	Not to exceed	10mg/l

3. (vii) Non-Hazardous Solid Waste:

All the Solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board. The total quantity shall be segregated and treated as follows:

Sr.No.	Type of segregated solid waste	Quantity (MT/Year)	Disposal
2.	Waste activated carbon from WTP filters	15 MT	Used along with back filling material for structure/building foundation, road construction etc. OR should recycle the waste through recycler OR To be sent for coprocessing in cement kiln OR To be sent to the TSDF.

5. CONDITIONS REQUIRED TO BE COMPLIED UNDER THE HAZARDOUS AND OTHER WASTES (MANAGEMENT AND TRANSBOUNDARY MOVEMENT) RULES 2016 AS AMENDED THEREAFTER:

- (i) The unit is hereby granted authorization to operate a facility for generation, storage and disposal of hazardous wastes as specified below:

Sr. No.	Category	Type of waste	Quantity	Mode of disposal
3.	18.1	Spent catalyst (Catalyst containing metals like Ni, Fe, Cr, Cu, Zn)	120 MT/Annum	To be sent to authorized utilizers registered with SPCB under Rule 9 of HZW rule OR To be sent for Alternate Fuel and Raw Material Facility (AFRF) for preprocessing and followed by co-processing to any cement industries/ To be sent for Co processing in cement Kiln as per CPCB guidelines for co processing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration.

6. (xv) Unit has to submit monthly monitoring reports on the Online consent management of monitoring system of the board.

7. (xxi) STP treated water used for gardening has to analysed once in every month from a laboratory recognized by Ministry of Environment forest and climate change and the results have to be submitted to Board.

Received Consent fee of: **The Capital Investment of the unit is Rs. 62,380 Lakhs.**

All other conditions mentioned in the Renewal of Consent to Operate under the Water Act and Air Act, and Other Wastes Order cited at serial no. (1) above, remain unchanged.

To,
M/s. PARADEEP PHOSPHATES LIMITED
(Fertilizer Division)
(Represented by: Mr. Nilesh Govind Dessai)
Survey No. 157/1A & 163/1, Zuarinagar,
Sancoale, Mormugao – Goa.

Shamila Dos
Milagres
Monteiro

Digitally signed by
Shamila Dos
Milagres Monteiro
Date: 2025.02.03
15:48:47 +05'30'

(Dr. Shamila Monteiro)
Member Secretary
Goa State Pollution Control Board

GOA STATE POLLUTION CONTROL BOARD

गोंय राज्य प्रदूषण नियंत्रण मंडळ

(An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 Certified Board)

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No. 12/2023-PCB/1948660/R00013712

Date: 14/06/2024

Renewal of Consent to Operate under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 (i) of the Hazardous and other Wastes (Management, and Transboundary Movement) Rules 2016 as amended thereafter

[To be referred as Water Act, Air Act and HW (M&T) Rules respectively]

RENEWAL OF CONSENT TO OPERATE AND AUTHORIZATION is hereby granted to

M/s. PARADEEP PHOSPHATES LIMITED
(Fertilizer Division)
(Represented by: Mr. Nilesh Govind Dessai)
(Large Scale Industry)
(Red Category)

**Survey No. 157/1A & 163/1,
Zuarinagar, Sancoale, Mormugao – Goa.**

Located in the area declared under the provisions of the Water Act, Air Act and Authorization under the Provisions of HW (M&T) Rules, subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:

1. This Renewal of Consent to operate and Authorization is issued in supersession of the earlier Consent Orders issued vide Order No.12/2018-PCB/58613/R000121 dated 18/09/2019, Corrigendum No. 12/2018-PCB/58613/R000121/Tech/10824 dated 20/09/2021 & Amend No. 12/2018 PCB/58613/R000121/1316371 dated 03/06/2022 is valid up to **31/12/2028.**

2. Renewal of Consent to operate and Authorization is valid for the manufacture of:

Sr. No	Product	Capacity
A.	Main Products	
1.	Urea	495000 MTPA
2.	Complex fertilizers produced in NPK-A Plant	500000 MTPA
3.	Complex fertilizers produced in NPK-B Plant	500000 MTPA
B.	By-Products	
1.	Carbon dioxide	34400 MPTA
C.	Intermediate Products	
1.	Ammonia	346500 MPTA
D.	Power Plant	
1.	Power for Captive Consumption from Diesel Generator	6 MW
2.	Power for Captive Consumption from Steam Turbine Generator	7.5 MW

3. **CONDITIONS REQUIRED TO BE COMPLIED UNDER THE WATER ACT:**

- (i) The daily quantity of industrial effluent from the factory shall not exceed **550 KLD.**

- (ii) The daily quantity of domestic effluent from the factory shall not exceed **300 KLD.**

(iii) **Industrial Effluent Treatment and Disposal:**

- a. The total quantity of water used in the production process shall be re-circulated and no industrial effluent shall be **discharged outside in any of the up set conditions.**
- b. In upset conditions, the industrial effluent shall be stored in a impervious holding pond of sufficient capacity and shall be reused in the plant, and discharge of the **treated effluents into sea is not permitted.**
- c. Following standards will have to be complied for using of treated effluent for gardening or other reuses. Also overflow from the monsoon water settling tank has to meet the following standards.

pH	Between	6.5 & 8.0
Suspended Solids	Not to exceed	100 mg/l
BOD,3days,27°C	Not to exceed	30 mg/l
COD	Not to exceed	250 mg/l
Ammonical Nitrogen	Not to exceed	75 mg/l
Free Ammonical Nitrogen	Not to exceed	4 mg/l
Total Kjeldahl Nitrogen	Not to exceed	100 mg/l
Nitrate Nitrogen	Not to exceed	10 mg/l
Cyanide as CN	Not to exceed	0.2 mg/l
Vanadium as V	Not to exceed	0.2 mg/l

Arsenic as As	Not to exceed	0.2 mg/l
Phosphate as P	Not to exceed	5 mg/l
Oil & Grease	Not to exceed	10 mg/l
Fluoride as F	Not to exceed	10 mg/l
Hexavalent Chromium as Cr	Not to exceed	0.1 mg/l
Total Chromium as Cr	Not to exceed	2 mg/l

- d. As per the decision taken in 157th Board meeting, the unit shall comply with the revised standards for the following parameters within the period of six months from the date of issue of this consent.

Parameters	Discharge on land for irrigation, Inland surface water	
pH	Between	5.5 & 9.0
Total Suspended Solids	Not to exceed	Not more than 20
BOD, 3 days, 27o C	Not to exceed	10 mg/l
COD	Not to exceed	50 mg/l
N-total	Not to exceed	10mg/l
Fecal Coliform	Less than	100MPN/100ml
Oil & Grease	Not to exceed	10mg/l

(iv) **Domestic Effluent treatment and Disposal:-**

The domestic waste water shall be re-circulated after treatment and chlorine dosing as make-up water in cooling tower no. 1.

- (v) The unit shall at his own cost get the effluent samples collected both before and after treatment and analyzed, every month the parameters indicated above from a laboratory recognized by Ministry of Environment and Forest under the Environment Protection Act, 1986 and rules thereunder and results shall be submitted regularly to this Board, by 15th of the succeeding month.

- (vi) A good house-keeping shall be maintained within the factory premises. All pipes, valves and drains shall be maintained in leak-proof condition. Floor washings shall be channelized to the effluent collection system only and shall not be allowed to find way in open areas.

(vii) **Non-Hazardous Solid Waste:**

All the Solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board. The total quantity shall be segregated and treated as follows:

Sr.No	Type of segregated solid waste	Quantity (MT/Year)	Disposal
1	Waste sand from WTP filters	20 MT	Used along with back filling material for structure/building foundation, road construction etc.
2	Waste activated carbon from WTP filters	15 MT	
3	Sludge from STP	4 MT	Manure/re-use in process
4	Glass wool insulation	10 MT	To be given to Co-processing in for energy recovery or Incineration
5	PUF insulation	1 MT	
6	Metal scrap	700 MT	

7	Rubber scrap	25 MT	To be given for recycling
8	Packaging Material	60 MT	
9	Plastic scrap	75 MT	
10	Construction debris	50 MT	To be disposed as per the C&D waste management rule.

- (viii) **The unit should have zero discharge policy i.e. the treated waste water may be re-used in process/greenbelt development/or any other use as deemed fit by the unit with due permission from the Board.**

4. CONDITIONS REQUIRED TO BE COMPLIED UNDER THE AIR ACT:

- (i) The unit shall maintain and operate air pollution control system of adequate capacity for the following equipments;

Sr. No.	Name of Equipments/ Installation	No. of Installation	Capacity	SO ₂ Kg/Hr	Particulate Matter mg/Nm ³
1.	Boiler (utility boiler)	3	70 MT/hr	-----	-----
2.	Boiler (MP)	1	5 MT/hr	-----	-----
3.	Combustion chamber	1	115 MT/hr	----	-----
4.	D. G. Set	01	8100 KVA	105.6	150

- (ii) The unit shall observe the following standards for D.G. Sets ≥ 1000 KVA

Sr. No.	Parameters	Limits
1.	NO _x (as NO ₂)	1100ppm (as 15% O ₂) Dry basis in ppm
2.	NMHC (as C)	150mg/Nm ³ (at 15% O ₂)
3.	Particulate Matter	150mg/Nm ³ (at 15% O ₂)
4.	CO	150mg/Nm ³ (at 15% O ₂)
5.	Sulphur Content in Fuel	Less than 2%

- (iii) The applicant shall maintain and operate air Pollution control systems and let out the emission through following stacks & Outlets, so as to restrict the emission discharged on any day shall not exceed the figures as mentioned below:

Sr. No.	Stack No.	Description of Stack	Quantity of Emission NM ³ /hr	Stack Height in meters
1	S-BF101CA	Power station Boiler (Common stack)	1,66,000	50
2.	S-BF201	i) 6 MWCCP + MP Boiler (Common stack) ii) MP Boiler	35,800 5,000	30
3.	A-CA101	Ammonia Plant Reformer + C Chamber (Combustion Chamber)	2,40,000	36.5
4.	U-IA301	Urea Plant Prilling Tower	6,00,000	53
5.	U-FD304	Urea Plant Dust Separator	71,600	61

6.	N-CB901	NPK-A Plant Fumes Stack	66,000	48.5
7.	N-CB301	NPK-A Plant Dryer Stack	1,94,000	33
8.	N-CB403	NPK-A Plant De-dusting (Cooler) Stack	72,000	33
9.	O5-5D101	NPK-B Plant Stack	2,32,000	43.5
10.	E-GT-201	Emergency Generator Set	6,000	14

- (iv) The unit shall observe the following standards:-

Sr. No	Type of fuel	Quantity /hr
1.	Natural gas for 70MT/hr Boiler	8500 Kg/hr
2.	Natural Gas (for 5Tboiler)	310 kg/hr
3.	Natural gas for combustion Chamber and reformer	10,000 kg/hr
4.	L.S.H.S. (for D. G. Set)	1400 ltrs/hr
5.	H.S.D. for initial startup	20 ltrs/hr
6.	Natural Gas for NPK-A furnace	300 Kg/Hr.
7.	Natural Gas for NPK-B furnace	300 Kg/hr
8.	HSD for Emergency Generator Set	330 ltrs/hr

- (v) The emissions shall not contain constituents in excess of the prescribed limits as laid down here under:-

Sr. No	Name of Equipments/ Installation	Parameters	Limits
1.	U-IA301	Particulate Matter	150 mg/Nm ³
2.	U-FD304	Particulate Matter	150 mg/Nm ³
3.	N-CB901	Ammonia	10 kg/hr
4.	N-CB301	Particulate Matter	150 mg/Nm ³
5.	N-CB403	Particulate Matter	150 mg/Nm ³
6.	O5-5D101	Particulate Matter & Ammonia	150 mg/Nm ³ & 10 kg/hr

- (vi) **The Stack Port Hole and Plat form is to be designed as per CPCB guidelines Method 1 Part 1 of Stack Monitoring – Material & methodology for isokinetic sampling.**
- (vii) The unit should comply with all the standards for D. G. Sets prescribed at Sr. no. 94, 95 and 6 of Schedule I of the Environment (Protection) Rules, 1986.
- (viii) The unit should carry out emission monitoring from the stacks of D.G. set annually and from other Stacks once in three months from a laboratory recognized by Ministry of Environment and Forest under the Environment Protection Act, 1986 and the result shall be submitted to this Board.

- (ix) The unit shall take adequate measures for control of noise levels from its own sources within the premises in respect of noise. The limits are as follows:

Category of Area/ Zone	Limits in dB (A) Leq	
	Day time	Night time
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

Day time is reckoned between 6 a.m. to 10 p.m. and night time is reckoned between 10 p.m. to 6a.m.

- (x) Adequate mitigation measures shall be taken to control emissions from the unit process so as to achieve the following Ambient Air Quality standards:

Sr. No.	Pollutant	Time weighted	Concentration in Ambient Air	
			Industrial, residential, rural & other area	Ecologically sensitive area (notified by Central Government)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual* 24hours**	50 80	20 80
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual* 24hours**	40 80	30 80
3	Particulate Matter (sizelessthan10µm) or PM ₁₀ µg/m ³	Annual* 24hours**	60 100	60 100
4	Particulate Matter (sizelessthan2.50µm) or PM _{2.5} µg/m ³	Annual* 24hours**	40 60	40 60
5	Ammonia (NH ₃) µg/m ³	Annual* 24hours**	100 400	100 400

*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

**24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

- (xi) The Unit shall carry out Ambient Air Quality Monitoring once every month from a laboratory recognized by MOEF under the Environment Protection Act., 1986 and the report should be submitted to the Board by the 15th of the subsequent months.

5. **CONDITIONS REQUIRED TO BE COMPLIED UNDER THE HAZARDOUS AND OTHER WASTES (MANAGEMENT AND TRANSBOUNDRY MOVEMENT) RULES 2016 AS AMENDED THEREAFTER:**

- (i) The unit is hereby granted authorization to operate a facility for collection, storage and disposal of hazardous wastes as specified below:

Sr. No.	Category	Type of waste	Quantity	Mode of disposal
1	5.1	Used/Spent Oil	50 MT/Annum	Should recycle hazardous waste through GSPCB authorized recycler

2	3.1	Furnace Oil tank cleaning residue & washing water & sludge	100 MT/annum	Should recycle hazardous waste through GSPCB authorized recycler operating in state of Goa OR To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration
3	18.3	Spent catalyst (Catalyst containing metals like Ni, Fe, Cr, Cu, Zn)	120 MT/annum	To be sent to authorized utilizers registered with SPCB under Rule 9 of HZW rule OR To be sent for Alternate Fuel and Raw Material Facility (AFRF) for preprocessing and followed by co-processing to any cement industries/ To be sent for Co processing in cement Kiln as per CPCB guidelines for co processing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration.
4	35.3	Chemical sludge Form waste water treatment	60 MT/annum	To be sent for Alternate Fuel and Raw Material Facility (AFRF) for preprocessing and followed by co-processing to any cement industries/ To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration OR Chemical-Physical Treatment followed by disposal in a secured landfill of CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd.
5	5.2	Wastes or Residues containing Oil	5MT/annum	Waste oil: To recycler registered with SPCB and having valid authorization of SPCB. Residue containing with oil : To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF operated M/s. Ponda Envocare Ltd. At Pissurlem IDC for incineration.
6	33.1	Empty barrels/ container/ liner contaminated with hazardous chemicals	12MT/Annum	Empty barrel/drum/liners to be washed and the effluent to be treat in ETP after following CPCB guidelines /SOP for decontamination of contaminated container/drums. The empty drums after

				washing as per guidelines to be given to recyclers OR To be sent to authorized utilizers registered with SPCB under Rule 9 OR To be sent for Alternate Fuel and Raw Material Facility (AFRF) for preprocessing and followed by co-processing to any cement industries/ To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration
7	33.2	Contaminated cotton rags or other cleaning material	5MT/annum	To be sent for Alternate Fuel and Raw Material Facility (AFRF) for preprocessing and followed by co-processing to any cement industries/ To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration.
8	3.3	Sludge and filter contaminated with oil	2MT/annum	To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration.
9	35.2	Waste resin material from DM plant	6MT/Annum	To be sent for Coprocessing in cement Kiln as per CPCB guidelines for coprocessing OR To be sent to CHWTSDF at Pissurlem IDC operated by M/s Ponda Envocare Ltd for incineration.

- (i) ***The authorization shall comply with the provisions of the Environment (Protection) Act, 1986 and the rule made there under.***
- (ii) The person authorized shall not rent, lend, sell or transfer or otherwise transport the hazardous waste without obtaining prior permission of the Goa State pollution Control Board.
- (iii) Any unauthorized change in personnel, equipment or working conditions as mentioned in the hotel unit by the person authorized shall constitute a breach of his authorization.
- (iv) It is a duty of the authorized person to take permission of the Goa State Pollution Control Board to close down the facility.
- (v) The inner bottom surfaces of the tank shall be impervious enough to prevent leakage or seepage of these wastes into the sub surface soil or ground water.

- (vi) The occupier shall maintain a manifest system as per Rule 19 for disposal of hazardous wastes to ensure that these wastes are delivered to the designated facility preventing pilferage and clandestine disposal due to unforeseen events that may occur during transit.
- (vii) The manifest shall be endorsed by the dispatcher, transporter and receiver of hazardous wastes. The endorsed copy shall be furnished to the Goa State Pollution Control Board.
- (viii) Under any circumstances the hazardous waste shall not be disposed to unauthorized facilities.
- (ix) The occupier shall maintain the records for collection, storage and disposal of hazardous waste in Form 3 of as per Hazardous And Other Waste (Management & Transboundary Movement) Rules 2016 as amended thereafter.
- (x) The occupier shall furnish monthly returns for collection, storage and disposal of hazardous waste through online OCCMS systems.
- (xi) The unit shall put up an online board (minimum size 6x4 Feet) at prominent location near the main gate providing details as follows in English and Konkani languages:-
 - Hazardous Waste category number.
 - Hazardous Waste quantity number.
 - Treatment facility for each category.
 - Mode of disposal for each category.
 - Hazardous Waste Authorization number, date and validity period.
 - Water Consent number, date and validity period.
 - Air Consent number, date and validity period.
 - Quantity and Nature of Hazardous Chemicals being used.
- (xii) The occupier shall ensure that the Hazardous Wastes are not allowed to be stored for more than 90 days.
- (xiii) The unit shall submit online annual returns in prescribed format on or before 30th June of every year.
- (xiv) **An Authentic MSDS (Material Safety Data Sheet) is to be provided for the products manufactured, byproducts & waste generated, duly signed & stamped by an authorized representative of the unit.**

6. GENERAL CONDITIONS:

- (i) The unit shall not change or alter the quantity, quality of discharge, temperature or the mode of the effluent/ emission or hazardous wastes or control equipments provided for without previous permission of the Board.
- (ii) The unit shall provide facility for collection of samples of effluent, air emissions and hazardous wastes to the Board staff.
- (iii) An application in prescribed form along with the prescribed fees for renewal of Consent shall be submitted at least 60 days before the expiry of validity of this Consent. An application for renewal of Consent submitted after expiry of the validity shall accompany with penalty of 50% of the Consent fees in addition to the prescribed consent fees.

- (iv) The Board shall be forthwith informed of any accident or unforeseen event involving discharge of any poisonous, noxious or polluting matter into a stream or well or on land or into the atmosphere, as result of such discharge water/ air is being polluted.
- (v) This Consent to operate is granted without any prejudice to any of the permission(s) required under any law, by laws and regulations in force and this Consent to Operate is confined to matters arising out of the Air Act and Water Act only.
- (vi) The Board reserves the right to amend or add any conditions in this consent and the same shall be binding on the applicant.
- (vii) The unit shall submit to this office, the Environmental Statement Report in Form V for the Financial Year ending April to March by 30th September of the succeeding year as per the provisions of the rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
- (viii) Reliable flow meter shall be installed to maintain record of water consumption/waste water generation per day. The records so maintained shall be made available to the Board officials whenever required.
- (ix) The industry shall bear the cost of analysis / monitoring in case of complaints received by the Board/ reinspections due to non-compliances observed by the Board & monitoring carried by the Board.
- (x) The unit shall submit the details of the Public Liability Insurance Policy under the PLI Act 1991, to the Board office as applicable.
- (xi) The unit shall submit returns for disposal of batteries under the Battery Waste Management) Rules 2022, if applicable.
- (xii) The unit shall submit returns for disposal of e - waste under the E- Waste (Management) Rules 2022, if applicable.
- (xiii) The unit shall submit returns for disposal of plastic waste under the Plastic Waste (Management) Rules 2016 as amended thereafter, if applicable.
- (xiv) The unit shall comply to the Guidelines and DUST Mitigation measures in handling Construction material and C & D waste issued by central Pollution Control Board and are placed on Board website goaspcb.gov.in.**
- (xv) Unit has to submit monthly monitoring reports on the Online consent management of monitoring system of the board. Also a hard copy of the same to be submitted to board office.
- (xvi) The unit has to obtain no objection certificate from the Central Ground water Authority, or the concerned state authority for any ground water abstraction, if applicable.**

7. SPECIFIC CONDITIONS:

- (i) The unit is required to submit revised water balance chart.**
- (ii) ETP before RO must be upgraded scientifically, especially the HRSCC to achieve better treated effluent quality and higher performance of UF, RO.**
- (iii) The guard pond for storage of effluent under upset condition must always be maintained empty when there is no off specification effluent to be stored.**
- (iv) Settled solids in holding tanks should be desludged at regular intervals to avoid anaerobic condition.**
- (v) Housekeeping on the premises is a major issue and needs improvements especially at NPK and Urea Bagging area. Utmost care should be taken to avoid surface runoff from NPK bagging area. The spillages should be contained at source to avoid further contamination of the surface / storm water runoff.**
- (vi) The unit shall identify and characterize the deposits on rocks near the railway yards.**
- (vii) The unit shall establish Continuous particulate emission online monitoring on Stack as specified in the consent.**
- (viii) The unit shall relocate Ambient Monitoring locations and shall be carried out at 3 locations, one on downwind direction to the predominate wind direction and other two locations at 120⁰ to the downwind location**
- (ix) The unit shall load the sludge in the Dryer, with not more than 6% dry solids to ensure uninterrupted operation and better efficiency. Sludge will have to be stored in a tank with an agitator to maintain uniform consistency of solids before feeding to dryer and without transfer of sludge to sludge drying beds.**
- (x) The sludge holding pond should be discarded but not broken down and after making it water can be used to store effluent under upset condition. The predicted storm water to be pumped to the factory premises and the capacity of the containment storage for the water to be informed to this Board.**
- (xi) Site has carried out study through NEERI to provide settling pond and filter bed. The unit is required to submit copy of the same to the Board along with action taken report within 15 days.**

- (xii) Storm water drain during non- monsoon season must be maintained dry.**
- (xiii) The effluent bypass pipeline was observed to be provided with a valve, which was closed and locked, however as per CPCB Guideline a Flow meter with camera should be provided on treated effluent recycle line. (Holding Pond effluent transfer pipeline to Plant), and connected to the Board.**
- (xiv) The unit is required submit the drawings indicating the discharge pipeline and dismantle the old pipeline. Unit shall ensure that no effluents are released outside the factory premises.**
- (xv) Unit has to provide catchment area with settling pond and filter bed arrangement within the premises and the monsoon runoff water (majorly from ETP, raw material storage, bagging plant process plant, RO plant and auto workshop, FO storage tank area) has to be diverted into the same before allowing the same to flow outside the premise. The final overflow from the settling pond should meet the standards specified for the treated water from ETP as above 3(iii) (c). Necessary Water sampling arrangement has to be provided for collecting the water sample of the overflow flowing outside the premise.**
- (xvi) Covered shed has to be provided for the workshop (autoshow) area and the earth moving machineries has to be parked within the closed shed. Monsoon run off water from the workshop area has to be channelized into the settling tank.**
- (xvii) Housekeeping of the plant area has to be improved and leakages of steam traps, pipe line valves etc. has to rectified immediately. Solid non hazardous waste generated from the plant has to be properly segregated and stored. Spillages from the road have to be cleaned regularly.**
- (xviii) Unit has to submit details layout of the storm water drain and layout of the existing pipe line from the unit to the sea.**
- (xix) Fixed closed shed has to be provided for storage of phosphoric acid sludge and filler material instead of temporary shed.**
- (xx) The storm water drain from the internal premise has to be maintained completely dry and no process water/leakages be allowed in the storm water drain.**
- (xxi) ETP treated water used for gardening has to analysed once in every month from a laboratory recognized by Ministry of Environment forest and climate change and the results have to be submitted to Board.**
- (xxii) Covered shed need to be provided to holding pond of the ETP, ETP sludge storage area/beds.**

- (xxiii) As per the Hazardous and other Wastes (Management and Transboundary Movement) Rules 2018, Form3 has to be maintained.
- (xxiv) In any upset conditions the industrial effluents after treatment has to be stored in impervious holding pond and should be reused in plant. Unit has to submit action plan within 30 days for the management of handling of the treated effluents in case of upset conditions.
- (xxv) Unit should submit the status report if the treated effluent is recycled back in the plant for reuse, a flow-meter has to be installed on the recycle line with a camera to capture the recycle effluent flow instead of installing showing the closed valve of the treated water discharge line.
- (xxvi) Unit should suitably justify the concept of Zero Liquid Discharge (ZLD).
- (xxvii) Unit should get the status of assessment through NEERI in respect of certain consent compliance (e.g. clause 7 (i)) vis-à-vis reasonability to seek exception w.r.t. clause 7(ii).
- (xxviii) Unit should monitor lysimeter installed at two sites for the containment of Arsenic and Chromium bearing Hazardous Waste as per the NEERI recommendation and Submit monitoring report to the Board.
- (xxix) The unit shall submit bank guarantee of rupees 25.0 lakhs within 15 days of the receipt of the consent for the compliance of the above consent conditions.

To
M/s. PARADEEP PHOSPHATES LIMITED
 (Fertiliser Division)
 (Represented by: Mr. Nilesh Govind Dessai)
 Survey No. 157/1A & 163/1,
 Zuarinagar, Sancoale, Mormugao – Goa.

Copy for favour of information to –

1. Accounts Section.
2. Concerned File.
3. Guard File

Received Consent fee of: **The Capital Investment of the unit is Rs. 1,51,340 lakhs**

Receipt no.	Amount	Date
2837	Rs. 79,18,248/- (Consent Renewal fees)	21/12/2023

Shamila Dos
 Milagres
 Monteiro

Digitally signed by
 Shamila Dos Milagres
 Monteiro
 Date: 2024.06.14
 18:11:06 +05'30'

Dr. Shamila Monteiro
 (Member Secretary)
 Goa State Pollution Control Board

CUSTOMER FEEDBACK

Dear Citizen / Customer,

We appreciate you for sparing a few minutes for giving us your valuable feedback on our services

Name : Contact

Address:.....

.....

Email: Date.....

Name of the service availed:

.....

Are you aware that service standards are included in the Citizen's Charter as available on Board's website :www.goaspcb.gov.in?Yes ☐ No ☐

If yes, is the Citizen Charter simple and easy to understand?

Yes ☐ No ☐

Description of service delivery parameters (Consents/Authorisation/RTI's/Complaints etc.)	Excellent	Good	Fair	Average	Poor	Reason for grading
Time taken to deliver service in comparison to service standards mentioned in Citizen's Charter						
Quality of service (accuracy, completeness)						
Knowledge of dealing hand / staff regarding services/schemes						
Courtesy of staff						
Board's response in view of your query/requirement is to your satisfaction						
Date of your visit to the office and your overall experience						

Suggestions for improvement, if any

.....

.....

Signature & date

To,
The Member Secretary,
Goa State Pollution Control Board,
Near Pilerne Industrial Estate,
Opposite Saligao Seminary, Saligao, Bardez, Goa. 403511

Please note that your feedback is considered essential for overall improvement and development of Board functions in service of environment.



F. No. J-11011/217/2008-IA-II (I)
Government of India
Ministry of Environment & Forests
(IA Division)

Paryavaran Bhawan
 CGO Complex, Lodhi Road
 New Delhi – 110 003

E-mail: ms.industry-mef@nic.in

Telephone: 011: 2436 3973

Dated: 1st September, 2009

To

Vice President,
 M/s Zuari Industries Ltd,
 Zuarinagar,
 Goa, 403 726

zclvg@rediffmail.com

Sub: Revamp of Ammonia Plant for changeover of feedstock and fuel from Naptha to NG/RLNG and reduction of specific energy consumption along with debottlenecking the capacity of ammonia-urea plants, change over of fuel from FO to NG/RLNG in the utility boiler as also debottlenecking the capacity of NPK plant A & B alongwith product mix change at Zuari Nagar, Goa by M/s Zuari Industries Ltd. – environmental clearance reg.

Sir,

This has reference your letter no. nil dated 27th April, 2009 alongwith final EIA/EMP report seeking environment clearance under EIA Notification 2006 for above mentioned project and subsequent submission of information vide your letters dated 13th May, 2009 and 23rd July 2009.

2.0 The Ministry of Environment and Forests has examined the application. It is noted that M/s Zuari Industries Ltd. Have proposed for Revamp of Ammonia Plant for changeover of feedstock and fuel from Naptha to NG/RLNG and reduction of specific energy consumption along with debottlenecking the capacity of ammonia-urea plant, change over of fuel from FO to NG/RLNG in the utility boiler as also debottlenecking the capacity of NPK plant A & B alongwith product mix change at Zuari Nagar, Goa. Total land area of the plant is 410 ha. The existing green belt of 205 hectares already covers about 50% of the total area. The cost of the project will be Rs. 300 Crores of which Rs 10.15 Crores for capital and Rs. 1.05 Crores/annum has been earmarked for the protection of environment. The plant is operating its Ammonia-Urea plants since 1973 and NPK-A plant (earlier called NPK Plant) since 1975. The details of the products and production capacity of the plant are as given below:

Name of Products, By-Products and Intermediate Products	Existing, MTPA	Proposed activity (new/modernization/expansion), MTPA	Total, MTPA
A. Main Products			
1. Urea	376200/ 399300 [#]	118800	495000
2. Complex Fertilizers	150000*	350000	500000*

produced in NPK-A Plant			
3. Complex Fertilizers produced in NPK-B Plant	150000**	350000	500000**
B. By-Products			
1. Carbon dioxide	18950	15450	34400
2. Argon	2.2 Million Sm ³	-	2.2 Million Sm ³
C. Intermediate Products			
1. Ammonia	220000	126500	346500

#: FICC Re-assessed Capacity

*: Existing Annual capacity of 150000 MT is based on production of 28:28:0 grade which has been discontinued. Proposed Annual capacity of 500000 MT is based on production of 10:26:26 grade.

**: Existing Annual capacity of 150000 MT is based on production of 18:46:0. Proposed Annual capacity of 500000 MT is based on production of 10:26:26 grade.

3.0 It is noted that the details of the proposed revamp and debottlenecking scheme to achieve the enhanced capacity by implementing the following modifications:

1. Change over of feedstock and fuel in Ammonia Plant to NG/RLNG as well as fuel changeover in Utility Boilers and Hot air generating furnaces in NPK-A and NPK-B plants to NG/RLNG.
2. Revamping of Ammonia-Urea plants to reduce the specific energy consumption of Ammonia by about 1.0 GCal/MT Ammonia and corresponding reduction in the specific energy of Urea.
3. Debottlenecking the capacity of Ammonia plant to 1050 MTPD, Urea Plant to 1500 MTPD, NPK-A plant to 1600 MTPD and NPK-B plant to 1600 MTPD. The two complex fertiliser plants will also be equipped for Product Mix change. Present products are like DAP 18:46:0, 10:26:26, 12:32:16, 19:19:19. In future the products will be of grades like 15:15:15, 17:17:17, 14:28:14, etc. in addition to the grades already produced at present.

4.0 It is further noted that reduction in the CO₂ and SO₂ emissions will be due to fuel change over from Naphtha to NG/RLNG. All the burners will be replaced with modern design to reduce the NOx emission. There will be no open venting of any vessels in operation which release harmful or obnoxious chemicals. The prilling system has already been replaced from stationary prilling heads to Vibropriller. The routing of the scrubbing solution will be changed to improve scrubbing efficiency in the NPK plant. The scrubbing solution flow rates will be increased and an additional pre-scrubber will be installed. The consumption of water which was approximately 22700 M³/day in the design has been steadily reduced and presently is 8500 M³/day. All waste water streams in the plant including the treated domestic effluent will be recycled back to the process for Complex Fertilizer Plants which will be the net water consumers. The company will continue to maintain zero effluent discharge status even after revamp.

5.0 All the Chemical Fertilizer plants have been listed at Sl. No. 5(a) under Category 'A' and appraised at the Central level in 1st meeting of the Expert Appraisal Committee (Industry - 2) held during 24th-25th July, 2009. Public hearing/public consultation exempted as per para 7(ii) of EIA Notification, 2006.

6.0 Based on the information submitted by project authorities, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006 subject to the compliance of the following Specific and General conditions:

A. SPECIFIC CONDITIONS:

- i) The project authority shall treat the industrial and domestic effluent as per the standards notified under Environmental (Protect) rules 1986 or prescribed by the Goa Pollution Control Board whichever are stringent. The treated wastewater shall be recycled/reused/used for irrigation/green belt development and zero discharge shall be maintained.
- ii) The water consumption shall not exceed 8500 KLD and the permission for drawl of same shall be obtained from the concerned Department and a copy shall be submitted to the Ministry and its Regional Office at Bangalore within 3 months.
- iii) The project authorities shall install efficient air pollution control system like vibropriller to Urea Prilling Tower, low NOx burners to reformer, scrubbers, Ammonia stripper etc. to control particulate and gaseous emissions from the plant to achieve the prescribed standards.
- iv) The gaseous emissions (SO₂, NOx, NH₃, 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, CPCB and SPCB.
- v) The company shall undertake measures to reduce fugitive emissions especially of ammonia. The company shall submit the Risk Assessment study report for the storage and handling of ammonia in the campus.
- vi) The company shall install the hooter system for leak detection of ammonia in the plant premises.
- vii) The proponent shall upload the status of compliance of the stipulated EC conditions, including monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant namely; SPM, RSPM, SO₂, NOx (Ambient levels as well as stack emissions) or NH₃, indicated for the project shall be monitored and displayed at the convenient location near the main gate of the Company in the public domain.
- viii) Spent catalysts shall be sold to authorized vendors for its metal value. The other solids wastes shall be segregated and stored in the separate storage space and finally sold to the authorized vendors.
- ix) As proposed the company shall maintain the green belt covering 50% land area of the plant to mitigate the effect of fugitive emissions and noise as per the guidelines CPCB.
- x) The company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) for fertilizer industries.

- xi) Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.
- 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, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

B. GENERAL CONDITIONS :

- (i) The project authorities shall strictly adhere to the stipulations of the SPCB/state government or any statutory body.
- (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.
- (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.
- (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.
- (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.
- (vi) 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 "Closed Feed" system into batch reactors.
 - Venting equipment through vapour recovery system.
 - Use of high pressure hoses for equipment cleaning to reduce wastewater generation.
- (vii) 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.
- (viii) 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.

- (ix) 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).
- (x) The company shall develop rain water harvesting structures to harvest the run off water for recharge of ground water.
- (xi) 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.
- (xii) The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report.
- (xiii) A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- (xiv) 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.
- (xv) 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.
- (xvi) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both on hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.
- (xvii) A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations if any, were received while processing the proposal. The clearance letter shall also put up on the website of the Company by the proponent.
- (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 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.

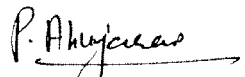
- (xix) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 as amended subsequently, shall also be put on the website of the Company alongwith the status of compliance of EC conditions and shall also be sent to the respective regional Office of the MoEF by e-mail.
- (xx) 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.

7.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

8.0 The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

9.0 Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, Second Floor, Trikot-I, Bhikaji Cama Place, New Delhi-110066, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.

10.0 The above conditions will be enforced, inter-alia under the provisions of the Water(Prevention & Control of Pollution) Act,1974, 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.


(Dr. P L Ahujarai)
Director

Copy to : -

1. The Secretary, Department of Environment and Forests, Govt. of Goa, Secretariat Panji.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi – 110032.
3. The Chairman, Goa State Pollution Control Board, Panji.
4. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (SZ), Bangalore.
5. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi-110003.
6. Guard file.
7. Record file


(Dr. P L Ahujarai)
Director

F. No. J-11011/217/2008- IA II (I)
Government of India
Ministry of Environment and Forests
(I.A. Division)

Paryavaran Bhawan, CGO Complex,
Lodhi Road, New Delhi – 110 003
E-mail : ms.industry-mef@nic.in
Telefax: 011 – 2436 3973
Dated: October 30, 2009

CORRIGENDUM

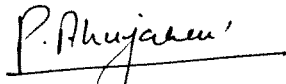
Sub: Revamp of Ammonia Plant for changeover of feedstock and fuel from Naptha to NG/RLNG and reduction of specific energy consumption along with debottlenecking the capacity of ammonia-urea plants, change over of fuel from FO to NG/RLNG in the utility boiler as also debottlenecking the capacity of NPK plant A & B alongwith product mix change at Zuari Nagar, Goa by M/s Zuari Industries Ltd. – amendment in environmental clearance reg

Sir,

This is in continuation of this Ministry's earlier letter of even no. dated 1st September, 2009 and your communication dated 11th September, 2009 on the above mentioned subject requesting the Ministry for amendment in environmental clearance.

2. The matter has been examined. Following amendments are made in the environmental clearance order of even no. dated 1st September, 2009:

- i. The line 8th of para 4 of environmental clearance dated 1st September, 2009 may be read as "the total water requirement for the existing as well as proposed expansion is estimated to be 10135m³/d. The company would draw 8500m³/d from the existing sources i.e. PWD, Government of Goa and rest of the water from the captive lake having capacity of 235MG."
- ii. The Specific condition no.ii may be read as water consumption shall not exceed 10135m³/d.
- iii. All the other conditions in the environmental clearance dated 1st September, 2009 shall remain same.


(Dr. P. L. Ahujarai)
Director

To
The Vice President,
M/s Zuari Industries Limited
Zuarinagar, Goa-403726

Copy to:

1. The Chairman, Central Pollution Control Board , Parivesh Bhavan, CBD-cum-office complex, East Arjun Nagar, New Delhi 110032.
2. The Chairman, Goa State Pollution Control Board , Panaji.
3. The Chief Conservator of Forests, (Central), Ministry of Environment and Forests, Regional office(SZ), Bangalore.
4. Monitoring cell, MoEF
5. Guard file/ Record file.

Government of India
Ministry of Environment and Forests
(I.A. Division)
Paryavaran Bhawan
CGO Complex, Lodhi Road
New Delhi – 110 003

E-mail: vp.upadhyay@nic.in
Tele/fax: 011 – 2436 2875

No. J-11011/217/2008-IA-II(I)

Dated : 17th June, 2013

To

M/s. Zuari Agro Chemicals Limited
Jaikisaan Bhawan, Zuarinagar
Goa – 403 726

Sub : Request for Change in the name of the Company and Transfer of Environmental Clearance for Revamp of Ammonia / Urea / NPK Plants along with changeover of feed /fuel to NG / RLNG, currently standing in the name of Zuari Industries Limited, to in the name of Zuari Agro Chemicals Limited, Zuarinagar, Goa – regarding.

This refers to letter No. NIL dated October 3, 2012 of M/s. Zuari Agro Chemicals Limited on the above subject requesting the Ministry to change the name of the Company and transfer of Environmental Clearance for Revamp of Ammonia / Urea / NPK Plants along with changeover of feed / fuel to NG / RLNG, currently standing in the name of "M/s. Zuari Industries Limited" to in the name of "M/s. Zuari Agro Chemicals Limited" for all future correspondence.

The documents which were said to be enclosed with the letter of April 9, 2012 are not available in our records. Following documents are required for processing the matter :

- i. Reasons for change in the company name from from M/s. Zuari Industries Limited to M/s. Zuari Agro Chemicals Limited.
- ii. No Objection Certificate from M/s. Zuari Industries Limited in a non-judicial stamp paper for transferring the environmental clearance letter dated 11.3.2013 to M/s. Zuari Agro Chemicals Limited.

Contd.....2/-

- iii. Undertaking from **M/s. Zuari Agro Chemicals Limited** in a non-judicial stamp paper stating that they will be complying with the environmental safeguards mentioned in the environmental clearance letter dated 11.3.2013.
- iv. Certificate of Incorporation Consequent upon Change of Name issued by the Registrar of Companies, Ministry of Corporate Affairs.
- v. Memorandum and Articles of Association of **M/s. Zuari Agro Chemicals Limited**.

It is requested that above documents may kindly be sent earliest.

Yours faithfully



(V.P. Upadhyay)
Director (S)

Copy for kind information to :

1. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi – 110 032.
2. The Additional Principal Chief Conservator of Forests (Southern Zone), Kendriya Sadan, 4th Floor, E&F Wing, II Block Koramangala, Bangalore.



No. PPL/ENV/R-2025-26/31

12.09.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Sir,

Sub.: Ambient Air Quality Monitoring Reports for August 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **August 2025** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


12/09/25

Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/01-04.

Issue Date :05.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	01/08/2025 to 02/08/2025					
Date of sample analysis		:	02/08/2025 to 05/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
01	D-Colony	South - East	From 09.15 Hrs. on 01/08/2025 to 09.15 Hrs. on 02/08/2025	51.6	20.8	12.4	16.9	95.1
02	Near Primary School	East	From 09.30 Hrs. on 01/08/2025 to 09.30 Hrs. on 02/08/2025	47.1	23.1	13.7	18.2	37.1
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 01/08/2025 to 09.45 Hrs. on 02/08/2025	48.7	29.2	10.7	14.8	20.7
04	C-Colony	Northwest	From 10.00 Hrs. on 01/08/2025 to 10.00 Hrs. on 02/08/2025	50.3	22.5	10.3	13.5	17.9
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/07-10.

Issue Date :09.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	04/08/2025 to 05/08/2025					
Date of sample analysis		:	05/08/2025 to 09/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
07	D -Colony	South - East	From 09.15 Hrs. on 04/08/2025 to 09.15 Hrs. on 05/08/2025	38.1	19.4	12.8	19.2	57.4
08	Near Primary School	East	From 09.30 Hrs. on 04/08/2025 to 09.30 Hrs. on 05/08/2025	45.8	24.2	13.9	21.4	45.6
09	Near Jai Kisaan Club	North	From 09.45 Hrs. on 04/08/2025 to 09.45 Hrs. on 05/08/2025	42.4	27.9	10.5	14.1	16.5
10	C-Colony	Northwest	From 10.00 Hrs. on 04/08/2025 to 10.00 Hrs. on 05/08/2025	46.3	28.7	11.4	15.8	22.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/14-17.

Issue Date :13.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	08/08/2025 to 09/08/2025					
Date of sample analysis		:	09/08/2025 to 13/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
14	D-Colony	South - East	From 09.15 Hrs. on 08/08/2025 to 09.15 Hrs. on 09/08/2025	43.4	22.9	12.0	18.7	43.1
15	Near Primary School	East	From 09.30 Hrs. on 08/08/2025 to 09.30 Hrs. on 09/08/2025	47.7	25.5	13.3	22.5	36.3
16	Near Jai Kisaan Club	North	From 09.45 Hrs. on 08/08/2025 to 09.45 Hrs. on 09/08/2025	35.8	27.5	10.1	13.8	14.9
17	C-Colony	Northwest	From 10.00 Hrs. on 08/08/2025 to 10.00 Hrs. on 09/08/2025	54.3	28.0	10.9	19.2	22.1
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/18-21.

Issue Date :16.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	11/08/2025 to 12/08/2025					
Date of sample analysis		:	12/08/2025 to 16/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
18	D -Colony	South - East	From 09.15 Hrs. on 11/08/2025 to 09.15 Hrs. on 12/08/2025	33.5	17.5	13.5	16.9	23.5
19	Near Primary School	East	From 09.30 Hrs. on 11/08/2025 to 09.30 Hrs. on 12/08/2025	41.1	23.3	14.3	17.9	38.6
20	Near Jai Kisaan Club	North	From 09.45 Hrs. on 11/08/2025 to 09.45 Hrs. on 12/08/2025	37.5	20.8	10.5	15.8	16.9
21	C-Colony	Northwest	From 10.00 Hrs. on 11/08/2025 to 10.00 Hrs. on 12/08/2025	45.8	28.7	12.6	14.7	26.3
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/22-25.

Issue Date :19.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	15/08/2025 to 16/08/2025					
Date of sample analysis		:	16/08/2025 to 19/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
22	D-Colony	South - East	From 09.15 Hrs. on 15/08/2025 to 09.15 Hrs. on 16/08/2025	46.1	18.7	11.8	18.6	23.5
23	Near Primary School	East	From 09.30 Hrs. on 15/08/2025 to 09.30 Hrs. on 16/08/2025	52.3	27.9	12.8	19.5	22.8
24	Near Jai Kisaan Club	North	From 09.45 Hrs. on 15/08/2025 to 09.45 Hrs. on 16/08/2025	48.7	27.1	11.2	15.5	18.0
25	C-Colony	Northwest	From 10.00 Hrs. on 15/08/2025 to 10.00 Hrs. on 16/08/2025	57.0	31.2	10.3	17.7	19.6
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/26-29.

Issue Date :23.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	18/08/2025 to 19/08/2025					
Date of sample analysis		:	19/08/2025 to 23/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
26	D -Colony	South - East	From 09.15 Hrs. on 18/08/2025 to 09.15 Hrs. on 19/08/2025	38.6	24.6	12.0	21.5	28.0
27	Near Primary School	East	From 09.30 Hrs. on 18/08/2025 to 09.30 Hrs. on 19/08/2025	43.2	23.8	13.7	22.6	40.6
28	Near Jai Kisaan Club	North	From 09.45 Hrs. on 18/08/2025 to 09.45 Hrs. on 19/08/2025	34.9	17.1	10.7	15.2	23.1
29	C-Colony	Northwest	From 10.00 Hrs. on 18/08/2025 to 10.00 Hrs. on 19/08/2025	41.6	17.5	12.6	18.9	30.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/30-33.

Issue Date :26.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	22/08/2025 to 23/08/2025					
Date of sample analysis		:	23/08/2025 to 26/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
30	D-Colony	South - East	From 09.15 Hrs. on 22/08/2025 to 09.15 Hrs. on 23/08/2025	40.8	25.6	11.4	15.3	24.1
31	Near Primary School	East	From 09.30 Hrs. on 22/08/2025 to 09.30 Hrs. on 23/08/2025	51.3	25.4	12.2	16.7	26.4
32	Near Jai Kisaan Club	North	From 09.45 Hrs. on 22/08/2025 to 09.45 Hrs. on 23/08/2025	43.8	21.3	9.9	13.5	17.5
33	C-Colony	Northwest	From 10.00 Hrs. on 22/08/2025 to 10.00 Hrs. on 23/08/2025	53.8	27.1	10.5	14.9	27.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/34-37.

Issue Date :30.08.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	25/08/2025 to 26/08/2025					
Date of sample analysis		:	26/08/2025 to 30/08/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
34	D-Colony	South - East	From 09.15 Hrs. on 25/08/2025 to 09.15 Hrs. on 26/08/2025	45.7	17.2	13.3	16.5	19.9
35	Near Primary School	East	From 09.30 Hrs. on 25/08/2025 to 09.30 Hrs. on 26/08/2025	48.5	22.9	14.1	21.2	26.8
36	Near Jai Kisaan Club	North	From 09.45 Hrs. on 25/08/2025 to 09.45 Hrs. on 26/08/2025	57.6	26.3	10.3	12.1	18.3
37	C-Colony	Northwest	From 10.00 Hrs. on 25/08/2025 to 10.00 Hrs. on 26/08/2025	40.2	18.3	10.1	11.5	19.6
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/40-43.

Issue Date :04.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	29/08/2025 to 30/08/2025					
Date of sample analysis		:	30/08/2025 to 04/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
40	D-Colony	South - East	From 09.15 Hrs. on 29/08/2025 to 09.15 Hrs. on 30/08/2025	37.1	16.6	11.6	17.9	51.8
41	Near Primary School	East	From 09.30 Hrs. on 29/08/2025 to 09.30 Hrs. on 30/08/2025	53.3	29.6	10.5	21.4	16.7
42	Near Jai Kisaan Club	North	From 09.45 Hrs. on 29/08/2025 to 09.45 Hrs. on 30/08/2025	36.2	20.0	11.2	15.3	23.5
43	C-Colony	Northwest	From 10.00 Hrs. on 29/08/2025 to 10.00 Hrs. on 30/08/2025	43.9	24.6	10.1	12.6	16.3
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/08/01-04.

Issue Date:30/08/2025

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	Aug 2025

ANNEXURE-I

Calibration Detail of Instruments at D -Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



Reshma S. Patil
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-End of Test Report-

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No. PPL/ENV/R-2025-26/38

13.10.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Madam,

Sub.: Ambient Air Quality Monitoring Reports for September 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **September 2025** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/01-04.

Issue Date :05.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	01/09/2025 to 02/09/2025					
Date of sample analysis		:	02/09/2025 to 05/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
01	D-Colony	South - East	From 09.15 Hrs. on 01/09/2025 to 09.15 Hrs. on 02/09/2025	44.6	18.7	10.1	18.4	19.4
02	Near Primary School	East	From 09.30 Hrs. on 01/09/2025 to 09.30 Hrs. on 02/09/2025	54.9	27.1	13.7	20.6	27.2
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 01/09/2025 to 09.45 Hrs. on 02/09/2025	57.6	34.6	9.9	13.2	15.7
04	C-Colony	Northwest	From 10.00 Hrs. on 01/09/2025 to 10.00 Hrs. on 02/09/2025	46.7	23.1	11.4	14.2	15.3
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. The above results relate only to the conditions prevailing at the time of sampling.
3. The test report shall not be reproduced except in full, without written approval of laboratory.



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(Authorized Signatory)

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/08-11.

Issue Date :09.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	05/09/2025 to 06/09/2025					
Date of sample analysis		:	06/09/2025 to 09/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
08	D-Colony	South - East	From 09.15 Hrs. on 05/09/2025 to 09.15 Hrs. on 06/09/2025	39.2	20.8	12.4	15.1	20.6
09	Near Primary School	East	From 09.30 Hrs. on 05/09/2025 to 09.30 Hrs. on 06/09/2025	48.4	23.3	14.3	19.1	21.1
10	Near Jai Kisaan Club	North	From 09.45 Hrs. on 05/09/2025 to 09.45 Hrs. on 06/09/2025	35.7	25.4	12.6	17.1	13.4
11	C-Colony	Northwest	From 10.00 Hrs. on 05/09/2025 to 10.00 Hrs. on 06/09/2025	46.4	23.8	10.9	16.6	15.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/12-15.

Issue Date :13.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	08/09/2025 to 09/09/2025					
Date of sample analysis		:	09/09/2025 to 13/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
12	D-Colony	South - East	From 09.15 Hrs. on 08/09/2025 to 09.15 Hrs. on 09/09/2025	42.8	17.9	13.3	19.2	24.7
13	Near Primary School	East	From 09.30 Hrs. on 08/09/2025 to 09.30 Hrs. on 09/09/2025	41.3	17.1	12.2	15.9	24.8
14	Near Jai Kisaan Club	North	From 09.45 Hrs. on 08/09/2025 to 09.45 Hrs. on 09/09/2025	31.8	18.7	9.7	13.4	17.1
15	C-Colony	Northwest	From 10.00 Hrs. on 08/09/2025 to 10.00 Hrs. on 09/09/2025	47.5	25.3	11.4	16.5	14.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/20-23.

Issue Date :16.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	12/09/2025 to 13/09/2025					
Date of sample analysis		:	13/09/2025 to 16/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
20	D-Colony	South - East	From 09.15 Hrs. on 12/09/2025 to 09.15 Hrs. on 13/09/2025	41.7	20.8	12.4	13.2	71.9
21	Near Primary School	East	From 09.30 Hrs. on 12/09/2025 to 09.30 Hrs. on 13/09/2025	40.6	29.2	14.1	19.7	25.6
22	Near Jai Kisaan Club	North	From 09.45 Hrs. on 12/09/2025 to 09.45 Hrs. on 13/09/2025	34.6	21.2	12.6	17.4	18.6
23	C-Colony	Northwest	From 10.00 Hrs. on 12/09/2025 to 10.00 Hrs. on 13/09/2025	45.9	30.8	10.5	14.7	15.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/25-28.

Issue Date :20.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	15/09/2025 to 16/09/2025					
Date of sample analysis		:	16/09/2025 to 20/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
25	D-Colony	South - East	From 09.15 Hrs. on 15/09/2025 to 09.15 Hrs. on 16/09/2025	31.8	17.5	13.0	20.2	21.6
26	Near Primary School	East	From 09.30 Hrs. on 15/09/2025 to 09.30 Hrs. on 16/09/2025	39.7	15.4	15.8	21.9	43.7
27	Near Jai Kisaan Club	North	From 09.45 Hrs. on 15/09/2025 to 09.45 Hrs. on 16/09/2025	42.7	21.7	11.6	15.1	16.2
28	C-Colony	Northwest	From 10.00 Hrs. on 15/09/2025 to 10.00 Hrs. on 16/09/2025	29.1	18.3	12.8	14.0	17.7
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/31-34.

Issue Date :24.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	19/09/2025 to 20/09/2025					
Date of sample analysis		:	20/09/2025 to 24/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
31	D-Colony	South - East	From 09.15 Hrs. on 19/09/2025 to 09.15 Hrs. on 20/09/2025	34.9	18.9	10.3	14.5	19.9
32	Near Primary School	East	From 09.30 Hrs. on 19/09/2025 to 09.30 Hrs. on 20/09/2025	36.6	21.2	11.4	16.7	25.9
33	Near Jai Kisaan Club	North	From 09.45 Hrs. on 19/09/2025 to 09.45 Hrs. on 20/09/2025	43.4	24.6	9.9	13.2	15.2
34	C-Colony	Northwest	From 10.00 Hrs. on 19/09/2025 to 10.00 Hrs. on 20/09/2025	39.7	23.4	12.2	14.8	18.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/37-40.

Issue Date :26.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	22/09/2025 to 23/09/2025					
Date of sample analysis		:	23/09/2025 to 26/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
37	D-Colony	South - East	From 09.15 Hrs. on 22/09/2025 to 09.15 Hrs. on 23/09/2025	48.0	20.9	13.3	20.0	58.3
38	Near Primary School	East	From 09.30 Hrs. on 22/09/2025 to 09.30 Hrs. on 23/09/2025	51.1	20.8	13.9	18.9	28.6
39	Near Jai Kisaan Club	North	From 09.45 Hrs. on 22/09/2025 to 09.45 Hrs. on 23/09/2025	31.2	22.9	11.8	15.7	13.9
40	C-Colony	Northwest	From 10.00 Hrs. on 22/09/2025 to 10.00 Hrs. on 23/09/2025	37.6	21.3	10.5	16.7	17.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/43-46.

Issue Date :30.09.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	26/09/2025 to 27/09/2025					
Date of sample analysis		:	27/09/2025 to 30/09/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
43	D-Colony	South - East	From 09.15 Hrs. on 26/09/2025 to 09.15 Hrs. on 27/09/2025	28.7	16.6	12.6	18.0	28.4
44	Near Primary School	East	From 09.30 Hrs. on 26/09/2025 to 09.30 Hrs. on 27/09/2025	32.9	18.8	14.7	19.8	25.5
45	Near Jai Kisaan Club	North	From 09.45 Hrs. on 26/09/2025 to 09.45 Hrs. on 27/09/2025	36.5	19.6	10.1	14.6	15.2
46	C-Colony	Northwest	From 10.00 Hrs. on 26/09/2025 to 10.00 Hrs. on 27/09/2025	41.2	21.3	10.9	12.6	18.5
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/49-52.

Issue Date :03.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	29/09/2025 to 30/09/2025					
Date of sample analysis		:	30/09/2025 to 03/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
49	D-Colony	South - East	From 09.15 Hrs. on 29/09/2025 to 09.15 Hrs. on 30/09/2025	44.4	19.5	13.7	17.2	30.4
50	Near Primary School	East	From 09.30 Hrs. on 29/09/2025 to 09.30 Hrs. on 30/09/2025	48.6	20.5	12.8	16.2	37.3
51	Near Jai Kisaan Club	North	From 09.45 Hrs. on 29/09/2025 to 09.45 Hrs. on 30/09/2025	43.4	17.9	11.6	15.3	23.1
52	C-Colony	Northwest	From 10.00 Hrs. on 29/09/2025 to 10.00 Hrs. on 30/09/2025	51.7	22.5	10.3	14.7	19.6
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/09/01-04.

Issue Date:30/09/2025

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	September 2025

ANNEXURE-I

Calibration Detail of Instruments at D -Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



Reshma S. Patil
(Authorized Signatory)

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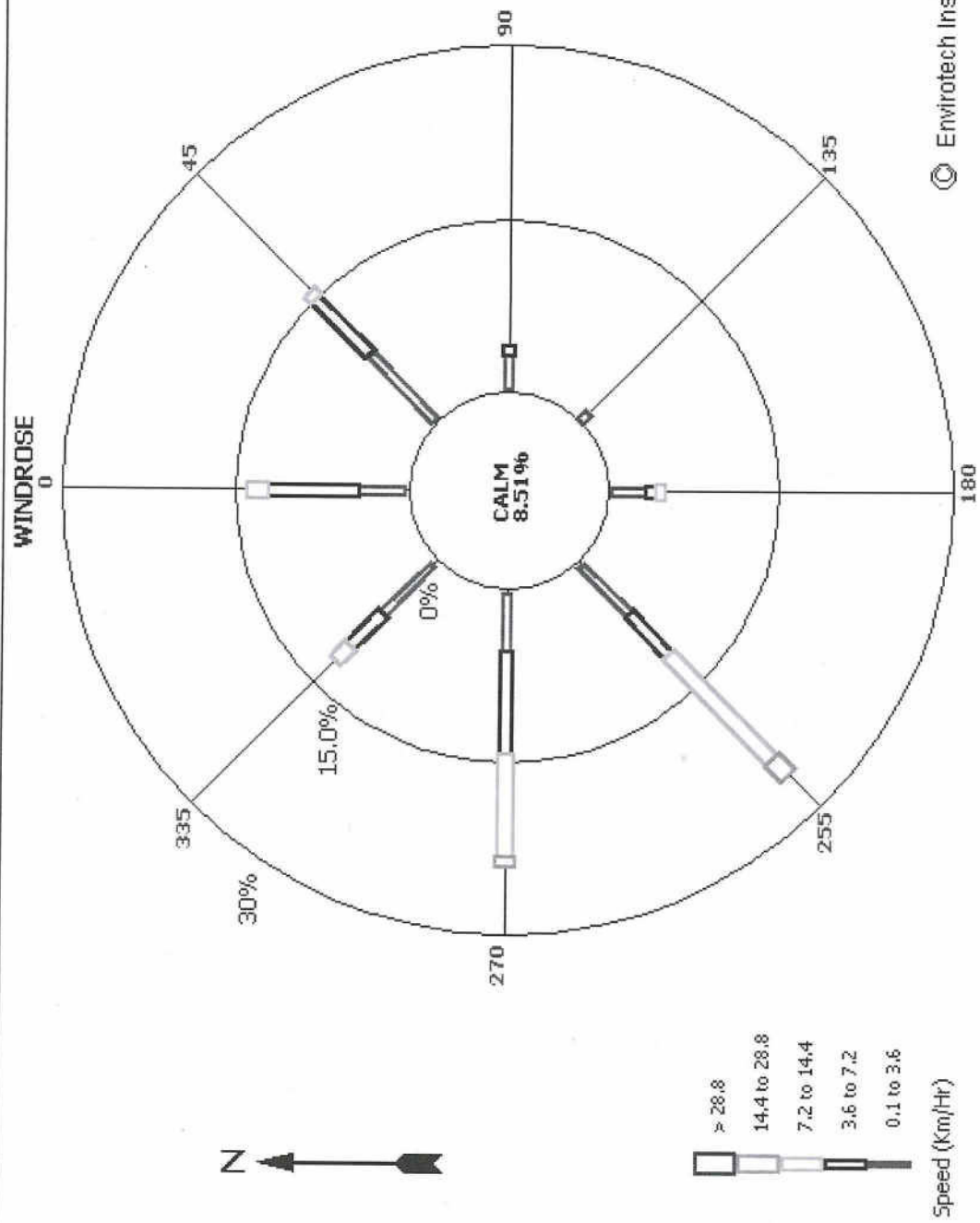
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Time : 00:00 - 23:00

Date : 01/09/25 - 30/09/25

D Colony





No. PPL/ENV/R-2025-26/47

12.11.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Madam,

Sub.: Ambient Air Quality Monitoring Reports for October 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **October 2025** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


12/11/25

Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/01-04.

Issue Date :07.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	03/10/2025 to 04/10/2025					
Date of sample analysis		:	04/10/2025 to 07/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
01	D-Colony	South - East	From 09.15 Hrs. on 03/10/2025 to 09.15 Hrs. on 04/10/2025	33.7	17.1	11.2	17.7	25.3
02	Near Primary School	East	From 09.30 Hrs. on 03/10/2025 to 09.30 Hrs. on 04/10/2025	35.8	18.6	12.2	19.8	31.4
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 03/10/2025 to 09.45 Hrs. on 04/10/2025	40.5	21.7	10.5	15.3	16.2
04	C-Colony	Northwest	From 10.00 Hrs. on 03/10/2025 to 10.00 Hrs. on 04/10/2025	49.3	23.8	10.1	14.9	19.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/08-11.

Issue Date :11.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	06/10/2025 to 07/10/2025					
Date of sample analysis		:	07/10/2025 to 10/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
08	D-Colony	South - East	From 09.15 Hrs. on 06/10/2025 to 09.15 Hrs. on 07/10/2025	61.2	25.2	11.6	15.9	32.1
09	Near Primary School	East	From 09.30 Hrs. on 06/10/2025 to 09.30 Hrs. on 07/10/2025	59.2	36.7	12.8	18.6	43.4
10	Near Jai Kisaan Club	North	From 09.45 Hrs. on 06/10/2025 to 09.45 Hrs. on 07/10/2025	50.7	24.6	12.0	17.7	26.2
11	C-Colony	Northwest	From 10.00 Hrs. on 06/10/2025 to 10.00 Hrs. on 07/10/2025	55.6	37.5	10.3	17.2	33.3
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/13-16.

Issue Date :14.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	10/10/2025 to 11/10/2025					
Date of sample analysis		:	11/10/2025 to 14/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
13	D-Colony	South - East	From 09.15 Hrs. on 10/10/2025 to 09.15 Hrs. on 11/10/2025	63.0	36.3	12.2	16.4	32.8
14	Near Primary School	East	From 09.30 Hrs. on 10/10/2025 to 09.30 Hrs. on 11/10/2025	59.9	33.3	11.2	14.2	29.2
15	Near Jai Kisaan Club	North	From 09.45 Hrs. on 10/10/2025 to 09.45 Hrs. on 11/10/2025	41.6	18.8	10.3	13.5	22.2
16	C-Colony	Northwest	From 10.00 Hrs. on 10/10/2025 to 10.00 Hrs. on 11/10/2025	59.7	28.7	10.5	15.4	21.8
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/17-20.

Issue Date :18.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	13/10/2025 to 14/10/2025					
Date of sample analysis		:	14/10/2025 to 18/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
17	D -Colony	South - East	From 09.15 Hrs. on 13/10/2025 to 09.15 Hrs. on 14/10/2025	87.4	51.3	13.5	17.2	27.3
18	Near Primary School	East	From 09.30 Hrs. on 13/10/2025 to 09.30 Hrs. on 14/10/2025	58.4	30.4	11.6	14.0	26.3
19	Near Jai Kisaan Club	North	From 09.45 Hrs. on 13/10/2025 to 09.45 Hrs. on 14/10/2025	57.8	33.7	11.2	15.5	21.1
20	C-Colony	Northwest	From 10.00 Hrs. on 13/10/2025 to 10.00 Hrs. on 14/10/2025	54.9	36.3	10.1	13.6	34.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/23-26.

Issue Date :22.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	17/10/2025 to 18/10/2025					
Date of sample analysis		:	18/10/2025 to 22/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
23	D-Colony	South - East	From 09.15 Hrs. on 17/10/2025 to 09.15 Hrs. on 18/10/2025	47.3	29.2	12.5	16.5	17.6
24	Near Primary School	East	From 09.30 Hrs. on 17/10/2025 to 09.30 Hrs. on 18/10/2025	50.9	24.6	10.5	13.5	23.0
25	Near Jai Kisaan Club	North	From 09.45 Hrs. on 17/10/2025 to 09.45 Hrs. on 18/10/2025	58.5	35.0	11.0	14.3	30.8
26	C-Colony	Northwest	From 10.00 Hrs. on 17/10/2025 to 10.00 Hrs. on 18/10/2025	49.2	20.4	10.1	13.9	39.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/27-30.

Issue Date :25.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	20/10/2025 to 21/10/2025					
Date of sample analysis		:	21/10/2025 to 25/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
27	D-Colony	South - East	From 09.15 Hrs. on 20/10/2025 to 09.15 Hrs. on 21/10/2025	49.6	31.2	11.9	15.7	23.2
28	Near Primary School	East	From 09.30 Hrs. on 20/10/2025 to 09.30 Hrs. on 21/10/2025	58.7	27.1	11.4	14.0	29.5
29	Near Jai Kisaan Club	North	From 09.45 Hrs. on 20/10/2025 to 09.45 Hrs. on 21/10/2025	33.0	19.6	9.9	13.3	27.1
30	C-Colony	Northwest	From 10.00 Hrs. on 20/10/2025 to 10.00 Hrs. on 21/10/2025	49.8	34.2	11.2	15.9	35.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/31-34.

Issue Date :28.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	24/10/2025 to 25/10/2025					
Date of sample analysis		:	25/10/2025 to 28/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
31	D-Colony	South - East	From 09.15 Hrs. on 24/10/2025 to 09.15 Hrs. on 25/10/2025	40.3	23.2	12.8	15.5	22.6
32	Near Primary School	East	From 09.30 Hrs. on 24/10/2025 to 09.30 Hrs. on 25/10/2025	32.4	22.5	13.4	16.9	44.9
33	Near Jai Kisaan Club	North	From 09.45 Hrs. on 24/10/2025 to 09.45 Hrs. on 25/10/2025	36.2	20.8	11.4	14.3	19.7
34	C-Colony	Northwest	From 10.00 Hrs. on 24/10/2025 to 10.00 Hrs. on 25/10/2025	34.6	17.9	10.8	13.9	17.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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(Authorized Signatory)

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Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/35-38.

Issue Date :31.10.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	27/10/2025 to 28/10/2025					
Date of sample analysis		:	28/10/2025 to 31/10/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
35	D-Colony	South - East	From 09.15 Hrs. on 27/10/2025 to 09.15 Hrs. on 28/10/2025	34.5	19.6	13.7	16.2	26.3
36	Near Primary School	East	From 09.30 Hrs. on 27/10/2025 to 09.30 Hrs. on 28/10/2025	33.8	19.2	12.3	15.2	33.4
37	Near Jai Kisaan Club	North	From 09.45 Hrs. on 27/10/2025 to 09.45 Hrs. on 28/10/2025	51.5	37.9	13.0	14.7	20.1
38	C-Colony	Northwest	From 10.00 Hrs. on 27/10/2025 to 10.00 Hrs. on 28/10/2025	43.5	32.1	11.9	14.1	18.3
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/41-44.

Issue Date :03.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	30/10/2025 to 31/10/2025					
Date of sample analysis		:	31/10/2025 to 03/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
41	D-Colony	South - East	From 09.15 Hrs. on 30/10/2025 to 09.15 Hrs. on 31/10/2025	61.1	31.3	14.8	17.5	19.8
42	Near Primary School	East	From 09.30 Hrs. on 30/10/2025 to 09.30 Hrs. on 31/10/2025	53.3	30.8	11.4	14.2	39.9
43	Near Jai Kisaan Club	North	From 09.45 Hrs. on 30/10/2025 to 09.45 Hrs. on 31/10/2025	66.0	28.7	10.8	13.4	16.3
44	C-Colony	Northwest	From 10.00 Hrs. on 30/10/2025 to 10.00 Hrs. on 31/10/2025	56.5	26.2	12.1	17.0	23.5
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/01-04.

Issue Date: 31/10/2025

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	October 2025

ANNEXURE-I

Calibration Detail of Instruments at D-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/07/2025	31/10/2025	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/10/41-44.

Issue Date:31/10/2025

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Analysis	November 2025

ANNEXURE-I

Calibration Detail of Instruments at D -Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



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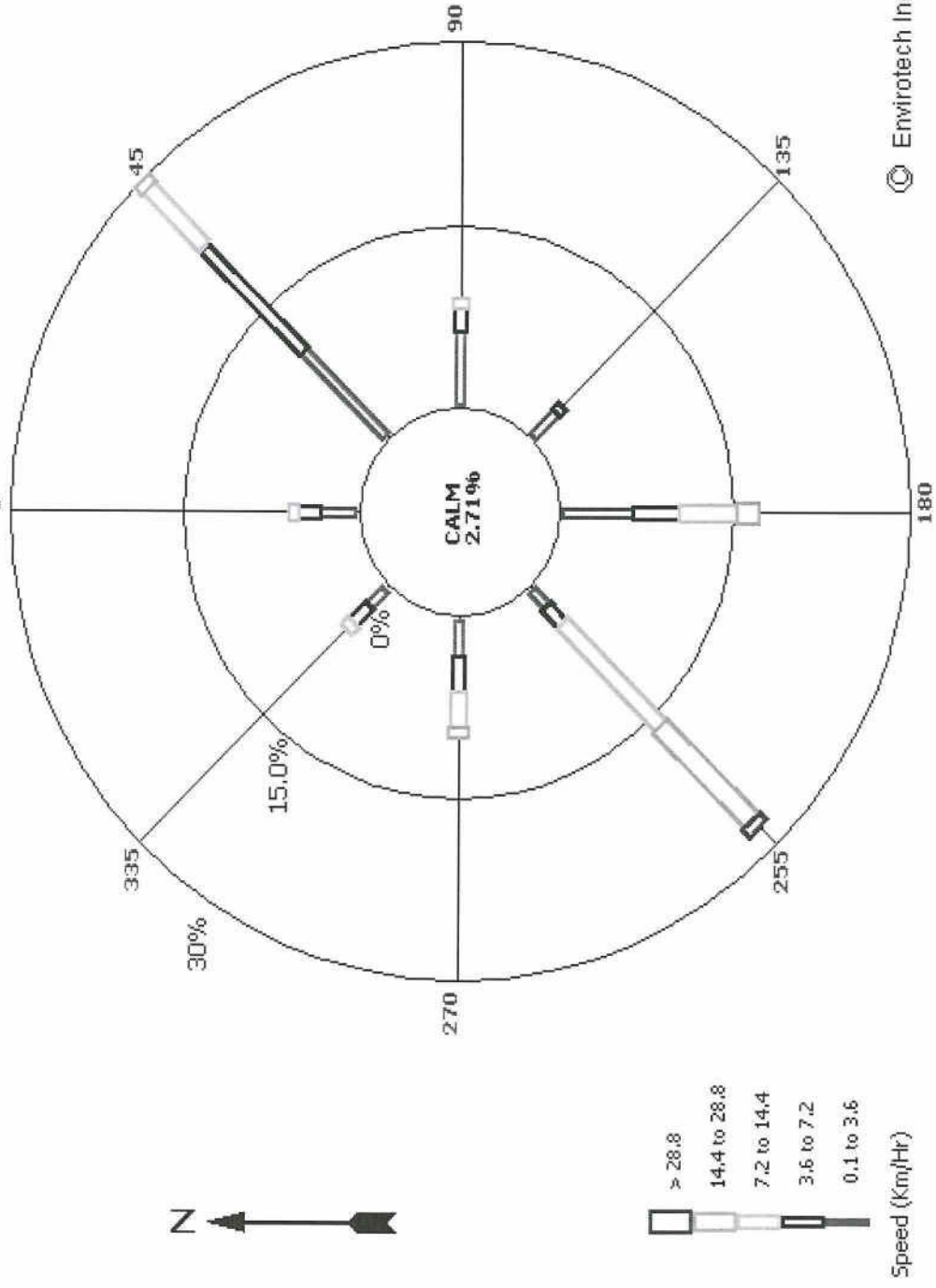
Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Time : 00:00 - 23:00

Date : 01/10/25 - 31/10/25

D Colony

WINDROSE
0





No. PPL/ENV/R-2025-26/53

15.12.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

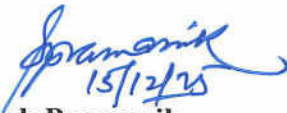
Dear Madam,

Sub.: Ambient Air Quality Monitoring Reports for November 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **November 2025** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik

Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/01-04.

Issue Date :07.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	03/11/2025 to 04/11/2025					
Date of sample analysis		:	04/11/2025 to 07/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
01	D-Colony	South - East	From 09.15 Hrs. on 03/11/2025 to 09.15 Hrs. on 04/11/2025	40.2	21.9	12.3	16.2	33.8
02	Near Primary School	East	From 09.30 Hrs. on 03/11/2025 to 09.30 Hrs. on 04/11/2025	44.4	22.9	12.8	17.3	40.0
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 03/11/2025 to 09.45 Hrs. on 04/11/2025	39.0	19.2	11.0	13.1	21.0
04	C-Colony	Northwest	From 10.00 Hrs. on 03/11/2025 to 10.00 Hrs. on 04/11/2025	45.5	21.2	10.3	14.6	25.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/01-04.

Issue Date: 30/11/2025

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	November 2025

ANNEXURE-I

Calibration Detail of Instruments at D -Colony						
Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School						
Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club						
Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony						
Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



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(Authorized Signatory)

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/08-11.

Issue Date :10.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	06/11/2025 to 07/11/2025					
Date of sample analysis		:	07/11/2025 to 10/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
08	D-Colony	South - East	From 09.15 Hrs. on 06/11/2025 to 09.15 Hrs. on 07/11/2025	53.4	30.4	12.5	17.4	35.9
09	Near Primary School	East	From 09.30 Hrs. on 06/11/2025 to 09.30 Hrs. on 07/11/2025	50.3	28.3	13.4	18.0	38.5
10	Near Jai Kisaan Club	North	From 09.45 Hrs. on 06/11/2025 to 09.45 Hrs. on 07/11/2025	49.9	25.0	11.4	14.7	23.2
11	C-Colony	Northwest	From 10.00 Hrs. on 06/11/2025 to 10.00 Hrs. on 07/11/2025	56.3	19.2	10.8	15.9	26.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. The above results relate only to the conditions prevailing at the time of sampling.
3. The test report shall not be reproduced except in full, without written approval of laboratory.



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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/12-15.

Issue Date :14.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	10/11/2025 to 11/11/2025					
Date of sample analysis		:	11/11/2025 to 14/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
12	D-Colony	South - East	From 09.15 Hrs. on 10/11/2025 to 09.15 Hrs. on 11/11/2025	61.7	35.1	11.9	14.7	32.9
13	Near Primary School	East	From 09.30 Hrs. on 10/11/2025 to 09.30 Hrs. on 11/11/2025	55.4	35.4	12.3	15.2	36.9
14	Near Jai Kisaan Club	North	From 09.45 Hrs. on 10/11/2025 to 09.45 Hrs. on 11/11/2025	48.7	18.3	10.5	14.3	18.6
15	C-Colony	Northwest	From 10.00 Hrs. on 10/11/2025 to 10.00 Hrs. on 11/11/2025	51.6	24.2	10.1	16.3	25.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Reshma S. Patil
(Authorized Signatory)

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/16-19.

Issue Date :18.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	14/11/2025 to 15/11/2025					
Date of sample analysis		:	15/11/2025 to 18/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
16	D-Colony	South - East	From 09.15 Hrs. on 14/11/2025 to 09.15 Hrs. on 15/11/2025	55.6	32.5	12.5	16.4	22.6
17	Near Primary School	East	From 09.30 Hrs. on 14/11/2025 to 09.30 Hrs. on 15/11/2025	58.6	30.6	13.0	17.6	41.8
18	Near Jai Kisaan Club	North	From 09.45 Hrs. on 14/11/2025 to 09.45 Hrs. on 15/11/2025	50.6	22.5	11.0	15.5	21.2
19	C-Colony	Northwest	From 10.00 Hrs. on 14/11/2025 to 10.00 Hrs. on 15/11/2025	61.4	25.4	10.5	14.2	33.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/20-23.

Issue Date :21.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	17/11/2025 to 18/11/2025					
Date of sample analysis		:	18/11/2025 to 21/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
20	D -Colony	South - East	From 09.15 Hrs. on 17/11/2025 to 09.15 Hrs. on 18/11/2025	53.4	32.4	12.5	17.1	28.2
21	Near Primary School	East	From 09.30 Hrs. on 17/11/2025 to 09.30 Hrs. on 18/11/2025	47.4	30.0	13.9	16.7	51.0
22	Near Jai Kisaan Club	North	From 09.45 Hrs. on 17/11/2025 to 09.45 Hrs. on 18/11/2025	32.4	21.7	14.6	15.9	25.9
23	C-Colony	Northwest	From 10.00 Hrs. on 17/11/2025 to 10.00 Hrs. on 18/11/2025	50.5	28.1	11.2	16.4	30.6
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/24-27.

Issue Date :25.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	21/11/2025 to 22/11/2025					
Date of sample analysis		:	22/11/2025 to 25/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
24	D-Colony	South - East	From 09.15 Hrs. on 21/11/2025 to 09.15 Hrs. on 22/11/2025	55.0	32.5	12.3	14.7	22.4
25	Near Primary School	East	From 09.30 Hrs. on 21/11/2025 to 09.30 Hrs. on 22/11/2025	62.5	35.8	13.4	16.4	36.5
26	Near Jai Kisaan Club	North	From 09.45 Hrs. on 21/11/2025 to 09.45 Hrs. on 22/11/2025	46.4	29.6	10.8	15.0	19.6
27	C-Colony	Northwest	From 10.00 Hrs. on 21/11/2025 to 10.00 Hrs. on 22/11/2025	58.2	28.5	13.7	14.8	27.1
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/28-31.

Issue Date :29.11.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	24/11/2025 to 25/11/2025					
Date of sample analysis		:	25/11/2025 to 29/11/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
28	D-Colony	South - East	From 09.15 Hrs. on 24/11/2025 to 09.15 Hrs. on 25/11/2025	47.4	25.3	13.2	16.5	21.6
29	Near Primary School	East	From 09.30 Hrs. on 24/11/2025 to 09.30 Hrs. on 25/11/2025	54.2	35.4	12.8	14.4	29.7
30	Near Jai Kisaan Club	North	From 09.45 Hrs. on 24/11/2025 to 09.45 Hrs. on 25/11/2025	52.8	32.1	11.2	15.3	16.2
31	C-Colony	Northwest	From 10.00 Hrs. on 24/11/2025 to 10.00 Hrs. on 25/11/2025	41.4	27.1	10.5	14.9	33.8
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/11/34-37.

Issue Date :02.12.2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	28/11/2025 to 29/11/2025					
Date of sample analysis		:	29/11/2025 to 02/12/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
34	D -Colony	South - East	From 09.15 Hrs. on 28/11/2025 to 09.15 Hrs. on 29/11/2025	67.8	35.2	11.9	17.0	43.3
35	Near Primary School	East	From 09.30 Hrs. on 28/11/2025 to 09.30 Hrs. on 29/11/2025	62.5	28.3	12.1	16.6	32.8
36	Near Jai Kisaan Club	North	From 09.45 Hrs. on 28/11/2025 to 09.45 Hrs. on 29/11/2025	49.1	22.5	9.4	15.7	54.0
37	C-Colony	Northwest	From 10.00 Hrs. on 28/11/2025 to 10.00 Hrs. on 29/11/2025	56.9	29.2	12.3	17.4	62.9
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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No. PPL/ENV/R-2025-26/63

14.01.2026

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Madam,

Sub.: Ambient Air Quality Monitoring Reports for December 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **December 2025** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/01-04.

Issue Date :06.12.2025

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	01/12/2025 to 02/12/2025				
Date of sample analysis			:	02/12/2025 to 06/12/2025				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
01	D-Colony	South - East	From 09.15 Hrs. on 01/12/2025 to 09.15 Hrs. on 02/12/2025	53.3	32.7	11.3	15.4	22.0
02	Near Primary School	East	From 09.30 Hrs. on 01/12/2025 to 09.30 Hrs. on 02/12/2025	58.3	37.9	13.5	17.8	29.8
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 01/12/2025 to 09.45 Hrs. on 02/12/2025	49.3	17.1	10.4	16.1	22.5
04	C-Colony	Northwest	From 10.00 Hrs. on 01/12/2025 to 10.00 Hrs. on 02/12/2025	47.9	27.2	12.1	14.4	19.4
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/10-13.

Issue Date :10.12.2025

Name of the customer	:	Paradeep Phosphates Ltd.- Goa Unit						
Address	:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726						
AAQM Date of Sampling	:	05/12/2025 to 06/12/2025						
Date of sample analysis	:	06/12/2025 to 10/12/2025						
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m ³)	PM 2.5 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)
10	D-Colony	South - East	From 09.15 Hrs. on 05/12/2025 to 09.15 Hrs. on 06/12/2025	48.2	27.7	11.1	17.0	17.8
11	Near Primary School	East	From 09.30 Hrs. on 05/12/2025 to 09.30 Hrs. on 06/12/2025	57.8	35.4	12.5	18.9	25.5
12	Near Jai Kisaan Club	North	From 09.45 Hrs. on 05/12/2025 to 09.45 Hrs. on 06/12/2025	51.7	33.6	11.6	14.9	16.3
13	C-Colony	Northwest	From 10.00 Hrs. on 05/12/2025 to 10.00 Hrs. on 06/12/2025	62.7	29.5	10.0	17.3	20.6
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/14-17.

Issue Date :13.12.2025

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	08/12/2025 to 09/12/2025				
Date of sample analysis			:	09/12/2025 to 13/12/2025				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
14	D-Colony	South - East	From 09.15 Hrs. on 08/12/2025 to 09.15 Hrs. on 09/12/2025	57.2	29.2	10.8	16.5	33.4
15	Near Primary School	East	From 09.30 Hrs. on 08/12/2025 to 09.30 Hrs. on 09/12/2025	61.5	32.3	13.2	18.8	30.6
16	Near Jai Kisaan Club	North	From 09.45 Hrs. on 08/12/2025 to 09.45 Hrs. on 09/12/2025	45.5	26.3	12.4	15.1	19.9
17	C-Colony	Northwest	From 10.00 Hrs. on 08/12/2025 to 10.00 Hrs. on 09/12/2025	65.5	32.5	11.1	16.4	22.3
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/20-23.

Issue Date :17.12.2025

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	12/12/2025 to 13/12/2025				
Date of sample analysis			:	13/12/2025 to 17/12/2025				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
20	D-Colony	South - East	From 09.15 Hrs. on 12/12/2025 to 09.15 Hrs. on 13/12/2025	49.3	33.7	13.8	18.2	22.3
21	Near Primary School	East	From 09.30 Hrs. on 12/12/2025 to 09.30 Hrs. on 13/12/2025	47.5	28.4	15.3	20.6	29.7
22	Near Jai Kisaan Club	North	From 09.45 Hrs. on 12/12/2025 to 09.45 Hrs. on 13/12/2025	46.6	21.7	9.5	14.9	20.9
23	C-Colony	Northwest	From 10.00 Hrs. on 12/12/2025 to 10.00 Hrs. on 13/12/2025	55.0	29.2	10.1	15.7	39.3
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- The above results relate only to the conditions prevailing at the time of sampling.
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Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/24-27.

Issue Date :20.12.2025

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	15/12/2025 to 16/12/2025				
Date of sample analysis			:	16/12/2025 to 20/12/2025				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
24	D-Colony	South - East	From 09.15 Hrs. on 15/12/2025 to 09.15 Hrs. on 16/12/2025	55.6	35.8	12.2	16.1	21.3
25	Near Primary School	East	From 09.30 Hrs. on 15/12/2025 to 09.30 Hrs. on 16/12/2025	62.5	35.4	11.7	17.5	25.9
26	Near Jai Kisaan Club	North	From 09.45 Hrs. on 15/12/2025 to 09.45 Hrs. on 16/12/2025	58.6	27.1	12.7	15.3	15.1
27	C-Colony	Northwest	From 10.00 Hrs. on 15/12/2025 to 10.00 Hrs. on 16/12/2025	65.1	29.6	10.9	15.1	18.5
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/30-33.

Issue Date :24.12.2025

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	19/12/2025 to 20/12/2025				
Date of sample analysis			:	20/12/2025 to 24/12/2025				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
30	D-Colony	South - East	From 09.15 Hrs. on 19/12/2025 to 09.15 Hrs. on 20/12/2025	59.5	36.2	11.4	19.5	28.3
31	Near Primary School	East	From 09.30 Hrs. on 19/12/2025 to 09.30 Hrs. on 20/12/2025	57.6	33.7	13.5	16.3	35.9
32	Near Jai Kisaan Club	North	From 09.45 Hrs. on 19/12/2025 to 09.45 Hrs. on 20/12/2025	63.4	28.3	10.3	12.5	19.1
33	C-Colony	Northwest	From 10.00 Hrs. on 19/12/2025 to 10.00 Hrs. on 20/12/2025	60.6	32.1	9.6	11.8	15.6
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/36-39.

Issue Date :27.12.2025

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	22/12/2025 to 23/12/2025				
Date of sample analysis			:	23/12/2025 to 27/12/2025				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
36	D-Colony	South - East	From 09.15 Hrs. on 22/12/2025 to 09.15 Hrs. on 23/12/2025	61.7	40.8	11.9	14.6	16.1
37	Near Primary School	East	From 09.30 Hrs. on 22/12/2025 to 09.30 Hrs. on 23/12/2025	70.5	39.2	13.0	21.3	41.5
38	Near Jai Kisaan Club	North	From 09.45 Hrs. on 22/12/2025 to 09.45 Hrs. on 23/12/2025	65.9	30.4	10.4	13.2	14.7
39	C-Colony	Northwest	From 10.00 Hrs. on 22/12/2025 to 10.00 Hrs. on 23/12/2025	58.6	28.3	13.7	15.4	17.3
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/42-45.

Issue Date :31.12.2025

Report No: 26/12/2025 to 31/12/2025

Issue Date: 31/12/2025

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	26/12/2025 to 27/12/2025					
Date of sample analysis		:	27/12/2025 to 31/12/2025					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
42	D -Colony	South - East	From 09.15 Hrs. on 26/12/2025 to 09.15 Hrs. on 27/12/2025	57.6	37.9	12.2	17.9	22.1
43	Near Primary School	East	From 09.30 Hrs. on 26/12/2025 to 09.30 Hrs. on 27/12/2025	62.2	34.2	10.8	16.0	59.9
44	Near Jai Kisaan Club	North	From 09.45 Hrs. on 26/12/2025 to 09.45 Hrs. on 27/12/2025	60.4	36.7	12.9	14.8	21.3
45	C-Colony	Northwest	From 10.00 Hrs. on 26/12/2025 to 10.00 Hrs. on 27/12/2025	56.7	33.3	10.1	12.4	16.1
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/48-51.

Issue Date :03.01.2026

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	29/12/2025 to 30/12/2025				
Date of sample analysis			:	30/12/2025 to 03/01/2026				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
48	D -Colony	South - East	From 09.15 Hrs. on 29/12/2025 to 09.15 Hrs. on 30/12/2025	56.0	38.7	11.6	17.7	37.3
49	Near Primary School	East	From 09.30 Hrs. on 29/12/2025 to 09.30 Hrs. on 30/12/2025	63.7	42.0	10.1	15.7	24.9
50	Near Jai Kisaan Club	North	From 09.45 Hrs. on 29/12/2025 to 09.45 Hrs. on 30/12/2025	55.4	32.5	12.5	15.9	22.9
51	C-Colony	Northwest	From 10.00 Hrs. on 29/12/2025 to 10.00 Hrs. on 30/12/2025	65.5	35.7	10.6	13.8	13.9
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-25/12/01-04.

Issue Date:31/12/2025

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	December 2025

ANNEXURE-I

Calibration Detail of Instruments at D-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



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No. PPL/ENV/R-2025-26/71

13.02.2026

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Madam,

Sub.: Ambient Air Quality Monitoring Reports for January 2026.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **January 2026** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/01-04.

Issue Date :06.01.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	02/01/2026 to 03/01/2026					
Date of sample analysis		:	03/01/2026 to 06/01/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
01	D-Colony	South - East	From 09.15 Hrs. on 02/01/2026 to 09.15 Hrs. on 03/01/2026	45.6	32.7	12.2	17.4	27.7
02	Near Primary School	East	From 09.30 Hrs. on 02/01/2026 to 09.30 Hrs. on 03/01/2026	51.2	29.6	13.7	19.2	33.2
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 02/01/2026 to 09.45 Hrs. on 03/01/2026	54.5	26.7	10.9	14.6	34.4
04	C-Colony	Northwest	From 10.00 Hrs. on 02/01/2026 to 10.00 Hrs. on 03/01/2026	48.7	30.6	10.6	13.8	22.0
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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(Authorized Signatory)

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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/08-11.

Issue Date :10.01.2026

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	05/01/2026 to 06/01/2026				
Date of sample analysis			:	06/01/2026 to 10/01/2026				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
08	D-Colony	South - East	From 09.15 Hrs. on 05/01/2026 to 09.15 Hrs. on 06/01/2026	64.1	39.1	11.3	18.1	37.8
09	Near Primary School	East	From 09.30 Hrs. on 05/01/2026 to 09.30 Hrs. on 06/01/2026	68.9	35.0	12.9	15.2	35.6
10	Near Jai Kisaan Club	North	From 09.45 Hrs. on 05/01/2026 to 09.45 Hrs. on 06/01/2026	56.8	32.5	10.3	13.5	17.6
11	C-Colony	Northwest	From 10.00 Hrs. on 05/01/2026 to 10.00 Hrs. on 06/01/2026	61.4	34.6	11.6	16.4	20.5
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

1. Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. The above results relate only to the conditions prevailing at the time of sampling.
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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/12-15.

Issue Date :14.01.2026

Name of the customer	:	Paradeep Phosphates Ltd.- Goa Unit						
Address	:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726						
AAQM Date of Sampling	:	09/01/2026 to 10/01/2026						
Date of sample analysis	:	10/01/2026 to 14/01/2026						
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
12	D-Colony	South - East	From 09.15 Hrs. on 09/01/2026 to 09.15 Hrs. on 10/01/2026	45.3	31.1	13.2	18.3	18.4
13	Near Primary School	East	From 09.30 Hrs. on 09/01/2026 to 09.30 Hrs. on 10/01/2026	55.5	29.2	12.1	15.2	36.2
14	Near Jai Kisaan Club	North	From 09.45 Hrs. on 09/01/2026 to 09.45 Hrs. on 10/01/2026	48.5	25.8	10.8	16.2	21.7
15	C-Colony	Northwest	From 10.00 Hrs. on 09/01/2026 to 10.00 Hrs. on 10/01/2026	52.0	28.7	9.8	13.6	15.1
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/16-19.

Issue Date :17.01.2026

Name of the customer	:	Paradeep Phosphates Ltd.- Goa Unit						
Address	:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726						
AAQM Date of Sampling	:	12/01/2026 to 13/01/2026						
Date of sample analysis	:	13/01/2026 to 17/01/2026						
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
16	D -Colony	South - East	From 09.15 Hrs. on 12/01/2026 to 09.15 Hrs. on 13/01/2026	41.9	28.4	10.7	14.8	19.4
17	Near Primary School	East	From 09.30 Hrs. on 12/01/2026 to 09.30 Hrs. on 13/01/2026	58.3	33.3	12.5	15.1	33.8
18	Near Jai Kisaan Club	North	From 09.45 Hrs. on 12/01/2026 to 09.45 Hrs. on 13/01/2026	46.6	29.7	10.0	12.3	17.3
19	C-Colony	Northwest	From 10.00 Hrs. on 12/01/2026 to 10.00 Hrs. on 13/01/2026	53.9	27.5	11.1	16.5	18.8
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/20-23.

Issue Date :21.01.2026

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	16/01/2026 to 17/01/2026				
Date of sample analysis			:	17/01/2026 to 21/01/2026				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
20	D-Colony	South - East	From 09.15 Hrs. on 16/01/2026 to 09.15 Hrs. on 17/01/2026	51.9	37.5	11.4	14.6	68.5
21	Near Primary School	East	From 09.30 Hrs. on 16/01/2026 to 09.30 Hrs. on 17/01/2026	61.4	41.7	13.8	17.3	50.7
22	Near Jai Kisaan Club	North	From 09.45 Hrs. on 16/01/2026 to 09.45 Hrs. on 17/01/2026	47.7	30.8	9.6	13.4	17.5
23	C-Colony	Northwest	From 10.00 Hrs. on 16/01/2026 to 10.00 Hrs. on 17/01/2026	51.2	32.5	10.3	15.2	23.0
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/24-27.

Issue Date :24.01.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	19/01/2026 to 20/01/2026					
Date of sample analysis		:	20/01/2026 to 24/01/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
24	D -Colony	South - East	From 09.15 Hrs. on 19/01/2026 to 09.15 Hrs. on 20/01/2026	42.5	26.3	12.2	16.1	16.5
25	Near Primary School	East	From 09.30 Hrs. on 19/01/2026 to 09.30 Hrs. on 20/01/2026	49.3	31.2	11.6	15.8	29.0
26	Near Jai Kisaan Club	North	From 09.45 Hrs. on 19/01/2026 to 09.45 Hrs. on 20/01/2026	42.7	30.4	10.6	14.2	33.2
27	C-Colony	Northwest	From 10.00 Hrs. on 19/01/2026 to 10.00 Hrs. on 20/01/2026	48.2	29.2	12.9	16.7	31.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/28-31.

Issue Date :28.01.2026

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	23/01/2026 to 24/01/2026				
Date of sample analysis			:	24/01/2026 to 28/01/2026				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
28	D-Colony	South - East	From 09.15 Hrs. on 23/01/2026 to 09.15 Hrs. on 24/01/2026	49.3	31.6	10.4	15.7	25.5
29	Near Primary School	East	From 09.30 Hrs. on 23/01/2026 to 09.30 Hrs. on 24/01/2026	48.3	33.3	10.3	15.4	30.8
30	Near Jai Kisaan Club	North	From 09.45 Hrs. on 23/01/2026 to 09.45 Hrs. on 24/01/2026	37.1	27.9	12.1	15.1	35.0
31	C-Colony	Northwest	From 10.00 Hrs. on 23/01/2026 to 10.00 Hrs. on 24/01/2026	39.2	22.9	12.4	16.4	36.2
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/32-35.

Issue Date :31.01.2026

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	27/01/2026 to 28/01/2026				
Date of sample analysis			:	28/01/2026 to 31/01/2026				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
32	D-Colony	South - East	From 09.15 Hrs. on 27/01/2026 to 09.15 Hrs. on 28/01/2026	47.6	29.6	9.1	15.5	20.1
33	Near Primary School	East	From 09.30 Hrs. on 27/01/2026 to 09.30 Hrs. on 28/01/2026	51.6	34.2	10.1	16.0	32.0
34	Near Jai Kisaan Club	North	From 09.45 Hrs. on 27/01/2026 to 09.45 Hrs. on 28/01/2026	48.2	27.9	11.6	14.9	27.4
35	C-Colony	Northwest	From 10.00 Hrs. on 27/01/2026 to 10.00 Hrs. on 28/01/2026	43.3	29.2	11.7	15.4	34.4
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/38-41.

Issue Date :04.02.2026

Name of the customer			:	Paradeep Phosphates Ltd.- Goa Unit				
Address			:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726				
AAQM Date of Sampling			:	30/01/2026 to 31/01/2026				
Date of sample analysis			:	31/01/2026 to 04/02/2026				
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 (µg/m³)	PM 2.5 (µg/m³)	SO ₂ (µg/m³)	NO ₂ (µg/m³)	NH ₃ (µg/m³)
38	D-Colony	South - East	From 09.15 Hrs. on 30/01/2026 to 09.15 Hrs. on 31/01/2026	51.5	29.6	12.7	17.0	34.2
39	Near Primary School	East	From 09.30 Hrs. on 30/01/2026 to 09.30 Hrs. on 31/01/2026	62.7	39.6	10.6	16.1	32.5
40	Near Jai Kisaan Club	North	From 09.45 Hrs. on 30/01/2026 to 09.45 Hrs. on 31/01/2026	35.9	28.7	11.4	15.3	21.5
41	C-Colony	Northwest	From 10.00 Hrs. on 30/01/2026 to 10.00 Hrs. on 31/01/2026	41.7	26.1	12.5	14.7	35.2
	Limit Prescribed in NAAQS Schedule VII			100	60	80	80	400
	Method of Measurement			IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/01/01-04.

Issue Date:31/01/2026

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	January 2026

ANNEXURE-I

Calibration Detail of Instruments at D -Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m³/min	0.1 m³/min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



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(Authorized Signatory)

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No. PPL/ENV/R-2025-26/77

13.03.2026

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Madam,

Sub.: Ambient Air Quality Monitoring Reports for February 2026.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of ambient air quality monitoring for the month of **February 2026** carried out by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/01-04.

Issue Date :06.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	02/02/2026 to 03/02/2026					
Date of sample analysis		:	03/02/2026 to 06/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
01	D-Colony	South - East	From 09.15 Hrs. on 02/02/2026 to 09.15 Hrs. on 03/02/2026	51.1	30.3	11.9	16.3	21.6
02	Near Primary School	East	From 09.30 Hrs. on 02/02/2026 to 09.30 Hrs. on 03/02/2026	58.6	33.0	12.5	17.5	19.7
03	Near Jai Kisaan Club	North	From 09.45 Hrs. on 02/02/2026 to 09.45 Hrs. on 03/02/2026	62.9	29.3	13.5	16.0	17.2
04	C-Colony	Northwest	From 10.00 Hrs. on 02/02/2026 to 10.00 Hrs. on 03/02/2026	65.4	34.2	10.6	18.4	26.5
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/01-04.

Issue Date:28/02/2026

Name of the customer	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726
AAQM Period of Sampling	February 2026

ANNEXURE-I

Calibration Detail of Instruments at D -Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Primary School

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at Near Jai Kisaan Club

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL

Calibration Detail of Instruments at C-Colony

Sr. No	Equipment ID	Range	Sensitivity	Calibration date	Calibration Due date	Traceability
I	UV-Spectrophotometer C-I-16	220-1000nm	±0.05Abs	01/11/2025	28/02/2026	Inhouse
II	Respirable dust sampler RDS/G/I/01	0.6 -1.5 m ³ /min	0.1 m ³ /min	08/04/2025	07/04/2026	NPL
III	Fine dust sampler FDS/G/I/01	16.67 lpm	± 2 %	08/04/2025	07/04/2026	NPL
IV	Oven C-I-10	Up to 260°C	±1°C	11/07/2025	10/07/2026	NPL



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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/08-11.

Issue Date :11.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	06/02/2026 to 07/02/2026					
Date of sample analysis		:	07/02/2026 to 11/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
08	D-Colony	South - East	From 09.15 Hrs. on 06/02/2026 to 09.15 Hrs. on 07/02/2026	55.6	35.7	11.5	18.6	31.5
09	Near Primary School	East	From 09.30 Hrs. on 06/02/2026 to 09.30 Hrs. on 07/02/2026	63.1	29.4	13.2	18.8	32.0
10	Near Jai Kisaan Club	North	From 09.45 Hrs. on 06/02/2026 to 09.45 Hrs. on 07/02/2026	46.7	27.1	12.9	16.5	18.4
11	C-Colony	Northwest	From 10.00 Hrs. on 06/02/2026 to 10.00 Hrs. on 07/02/2026	66.9	31.6	16.5	18.8	24.7
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/12-15.

Issue Date :14.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	09/02/2026 to 10/02/2026					
Date of sample analysis		:	10/02/2026 to 14/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
12	D-Colony	South - East	From 09.15 Hrs. on 09/02/2026 to 09.15 Hrs. on 10/02/2026	61.6	36.6	15.5	16.3	41.3
13	Near Primary School	East	From 09.30 Hrs. on 09/02/2026 to 09.30 Hrs. on 10/02/2026	54.6	31.7	17.1	15.8	37.5
14	Near Jai Kisaan Club	North	From 09.45 Hrs. on 09/02/2026 to 09.45 Hrs. on 10/02/2026	55.1	27.3	19.1	16.5	15.0
15	C-Colony	Northwest	From 10.00 Hrs. on 09/02/2026 to 10.00 Hrs. on 10/02/2026	51.0	29.7	19.5	20.8	29.4
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/16-19.

Issue Date :18.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	13/02/2026 to 14/02/2026					
Date of sample analysis		:	14/02/2026 to 18/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
16	D-Colony	South - East	From 09.15 Hrs. on 13/02/2026 to 09.15 Hrs. on 14/02/2026	48.7	29.6	15.4	17.9	52.4
17	Near Primary School	East	From 09.30 Hrs. on 13/02/2026 to 09.30 Hrs. on 14/02/2026	62.8	37.9	17.4	18.8	44.0
18	Near Jai Kisaan Club	North	From 09.45 Hrs. on 13/02/2026 to 09.45 Hrs. on 14/02/2026	54.4	31.3	15.8	18.1	24.6
19	C-Colony	Northwest	From 10.00 Hrs. on 13/02/2026 to 10.00 Hrs. on 14/02/2026	47.5	27.4	10.9	19.5	19.9
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

- Limit Prescribed as per NAAQM standard wide MoEF Gazette Notification No B-29016/20/90/PCI-1 & Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/20-23.

Issue Date :21.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	16/02/2026 to 17/02/2026					
Date of sample analysis		:	17/02/2026 to 21/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
20	D-Colony	South - East	From 09.15 Hrs. on 16/02/2026 to 09.15 Hrs. on 17/02/2026	44.0	27.7	13.5	19.7	44.2
21	Near Primary School	East	From 09.30 Hrs. on 16/02/2026 to 09.30 Hrs. on 17/02/2026	57.8	32.1	13.2	18.1	44.8
22	Near Jai Kisaan Club	North	From 09.45 Hrs. on 16/02/2026 to 09.45 Hrs. on 17/02/2026	49.5	29.3	15.8	15.8	18.6
23	C-Colony	Northwest	From 10.00 Hrs. on 16/02/2026 to 10.00 Hrs. on 17/02/2026	63.4	33.3	16.4	18.3	40.8
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/24-27.

Issue Date :25.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	20/02/2026 to 21/02/2026					
Date of sample analysis		:	21/02/2026 to 25/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
24	D-Colony	South - East	From 09.15 Hrs. on 20/02/2026 to 09.15 Hrs. on 21/02/2026	48.2	26.9	13.2	16.5	26.2
25	Near Primary School	East	From 09.30 Hrs. on 20/02/2026 to 09.30 Hrs. on 21/02/2026	71.2	39.0	16.7	18.6	28.9
26	Near Jai Kisaan Club	North	From 09.45 Hrs. on 20/02/2026 to 09.45 Hrs. on 21/02/2026	58.6	33.8	12.5	17.6	19.4
27	C-Colony	Northwest	From 10.00 Hrs. on 20/02/2026 to 10.00 Hrs. on 21/02/2026	59.9	30.5	14.5	15.8	25.0
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/28-31.

Issue Date :27.02.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	23/02/2026 to 24/02/2026					
Date of sample analysis		:	24/02/2026 to 27/02/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
28	D-Colony	South - East	From 09.15 Hrs. on 23/02/2026 to 09.15 Hrs. on 24/02/2026	51.1	34.6	18.0	16.3	21.6
29	Near Primary School	East	From 09.30 Hrs. on 23/02/2026 to 09.30 Hrs. on 24/02/2026	67.5	41.4	15.8	19.5	27.5
30	Near Jai Kisaan Club	North	From 09.45 Hrs. on 23/02/2026 to 09.45 Hrs. on 24/02/2026	56.3	29.2	12.5	18.1	19.3
31	C-Colony	Northwest	From 10.00 Hrs. on 23/02/2026 to 10.00 Hrs. on 24/02/2026	64.4	31.8	14.5	19.5	17.7
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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Ambient Air Quality Test Report

Report No.: AESPL/G/A-26/02/32-35.

Issue Date :04.03.2026

Name of the customer		:	Paradeep Phosphates Ltd.- Goa Unit					
Address		:	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726					
AAQM Date of Sampling		:	27/02/2026 to 28/02/2026					
Date of sample analysis		:	28/02/2026 to 04/03/2026					
I.D No	Location	Geometric direction of Location from the source	Time and Date	Parameters				
				PM 10 ($\mu\text{g}/\text{m}^3$)	PM 2.5 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	NH ₃ ($\mu\text{g}/\text{m}^3$)
32	D-Colony	South - East	From 09.15 Hrs. on 27/02/2026 to 09.15 Hrs. on 28/02/2026	51.9	27.8	12.5	18.1	16.5
33	Near Primary School	East	From 09.30 Hrs. on 27/02/2026 to 09.30 Hrs. on 28/02/2026	62.1	33.7	13.5	18.3	25.3
34	Near Jai Kisaan Club	North	From 09.45 Hrs. on 27/02/2026 to 09.45 Hrs. on 28/02/2026	60.1	42.5	16.4	19.2	14.6
35	C-Colony	Northwest	From 10.00 Hrs. on 27/02/2026 to 10.00 Hrs. on 28/02/2026	48.9	27.5	11.6	18.1	16.1
Limit Prescribed in NAAQS Schedule VII				100	60	80	80	400
Method of Measurement				IS:5182 Part 23, 2017	IS:5182 Part 24, 2019	IS:5182 Part-2, 2017	IS:5182 Part-6, 2017	IS:5182 Part-25, 2018

Note:

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-End of Test Report-

We Are Listening & Want to Improve - Complaint Register is Available with us!

Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

	PARADEEP PHOSPHATES LIMITED GOA UNIT	ENV-F-04 Rev No: 01 Date: 24.06.2022
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PARADEEP PHOSPHATES LIMITED, GOA UNIT

AMBIENT NOISE LEVEL MONITORING

Date of Monitoring: 14.10.2025			
S. No.	Locations	Noise Level (dB) Day time	Noise Level (dB) Night time
1	Near Main Gate	52.3	50.9
2	Near Gate No.1	57.6	52.1
3	Near DAP gate	60.2	56.4
4	Near Post Office	54.1	52.8
5	Near Goa Carbonic factory	56.4	49.7
6	Near D-colony view point	51.0	45.2
7	Behind Administration Building	53.1	43.5
8	Near Railway siding road junction in B-colony	63.5	56.2
9	Near Railway siding (Vasco end)	61.9	53.0

Instrument calibration detail			
S. No.	Name of Instrument	Make & Model	Calibration Date
1	Digital Sound Level Meter	Envirotech SLM 100	18-12-2024
			Calibration Due Date 17-12-2025

	Checked by	Approved by
Signature		
Designation	Dy. Manager – Environment	Manager – Environment



PARADEEP PHOSPHATES LIMITED
GOA UNIT

ENV-F-04
Rev No: 01
Date: 24.06.2022

PARADEEP PHOSPHATES LIMITED, GOA UNIT
AMBIENT NOISE LEVEL MONITORING

Date of Monitoring: 13.01.2026			
S. No.	Locations	Noise Level (dB) Day time	Noise Level (dB) Night time
1	Near Main Gate	51.7	50.1
2	Near Gate No.1	58.3	52.6
3	Near DAP gate	61.0	57.1
4	Near Post Office	53.8	43.0
5	Near Goa Carbonic factory	55.9	49.9
6	Near D-colony view point	40.6	34.8
7	Behind Administration Building	52.9	43.7
8	Near Railway siding road junction in B-colony	64.4	56.0
9	Near Railway siding (Vasco end)	62.1	52.8

Instrument calibration detail			
S. No.	Name of Instrument	Make & Model	Calibration Date
1	Digital Sound Level Meter	Envirotech SLM 100	09/01/2026
			Calibration Due Date 08/01/2027

	Checked by	Approved by
Signature		
Designation	Dy. Manager – Environment	Manager – Environment



No. PPL/ENV/R-2025-26/15

13.06.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Sir,

Sub.: Stack Emission and annual DG set stack Analysis Report for May 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate Order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of stack emission analysis carried out in **May 2025** by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

Also, we are submitting herewith the annual report of DG set stack emission analysis done in the month of May 2025. Kindly note that the DG Set Stack analysis is to be done once in a year as per Consent Conditions.

As desired by your office vide. Letter No.6/5/98-PCB/VOL.V/533 dt.10/7/2000, we are also submitting the working sheets of the stack emission analysis carried out.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


13/06/25

Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTIN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 07/06/2025

Report No. AESPL/G/ST-25/05/11

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	DG-8100 KVA
02	Date & Time of Monitoring	28/05/2025 at 15.00 Hrs.
03	Date of completion of Analysis	07/06/2025
04	Parameter	
a.	Nature	DG STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meter	30.0
d.	Stack diameter, meter	1.45
e.	Stack Temperature, °C	217
f.	Stack flue Gas Velocity, m/s	10.54
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	64123.9
h.	Stack Gas Flow rate, Nm ³ /Hr.	34798.8
i.	DG Load, MW	4.4
j.	DG Capacity MW	6.0
k.	Fuel Consumption Kg/hr	932.5
l.	Type of fuel used	LSHS

STACK GAS ANALYSIS REPORT

Sr. No	Parameter	Unit	Result	Limit	Method of Test
01	Particulate Matter(PM) (at 15% O ₂)	mg/Nm ³	51.21	150	IS-11255, (part- 1,3) 2018-19
02	Sulphur dioxide (SO ₂) (at 15% O ₂)	mg/Nm ³	54.64	NM	IS-11255, (part-2) 2019
		Kg/Hr.	1.95	105.6	
03	Oxides of Nitrogen NO ₂ (at 15% O ₂)	mg/Nm ³	177.07	NM	IS-11255, (part-7) 2017
		ppmv	94.11	1100	
04	NonMethane Hydrocarbon, as C (at 15% O ₂)	mg/Nm ³	13.01	150	EPA METHOD 25
05	Carbon Monoxide (CO) (at 15% O ₂)	mg/Nm ³	22.12	150	EPA METHOD 10

Note 1. Test Specification as per Consent No: 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.

2. NM refers to not mentioned in consent

3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	02/05/2025	31/05/2025



Reshma S. Patil
(Authorized Signatory - Pollution & Environment)

-End of Test Report-

We Are Listening & Want to Improve - Complaint Register is Available with us!

Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuari Nagar

Date & time of visit: 28/05/2025 at 15:00 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>30</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.45</u>	Cross sectional area of stack m ³	<u>1.652</u>
	Type of fired heater	:	<u>DG 8100 KVA</u>		
	No. of stacks	:			
	Fuel used	:	<u>LSHS</u>		
	Fuel consumption (Kg/hr)	:	<u>938.5</u>		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	<u>3% H₂O₂</u>	Vol. of gas Sampled lit.	:	<u>300</u>
	DGM Temp °C	:	<u>50</u>	Vol. of Abs. media	:	<u>100 ml</u>	Vol. of air (at NTP) m ³	:	<u>0.3</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Normality of BaCl ₂	:	<u>0.01</u>	SO ₂ mg/Nm ³	:	<u>54.64</u>
	Vol. of BaCl ₂ required	:	<u>1.0</u>	Sampling flow rate	:	<u>1 lpm</u>	SO ₂ kg/hr	:	<u>1.95</u>
NO _x	Initial box temp.	:	<u>27</u>	Abs. media	:	<u>H₂SO₄+H₂O₂</u>	Vol. of air sampled (ml)	:	
	Final box temp.	:	<u>31</u>	Vol. of Abs. media	:	<u>25</u>	NO _x mg/Nm ³	:	<u>177.07</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Initial pressure	:	<u>685</u>	NO _x (ppmv)	:	<u>94.11</u>
	Calculation Factor	:	<u>50</u>	Final pressure	:	<u>760</u>		:	
	Absorbance	:	<u>0.226</u>	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01991</u>
	Final DGM reading	:	<u>50</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0625</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C + 273)	:	<u>408</u>	(1-Bow)	:	<u>0.9375</u>
	DGM temp (°C)	:	<u>135</u>	P _{bar} -P _m	:	<u>710</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>6.249</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10.8</u>	× 0.44= <u>4.75</u>	<u>30.13</u>	<u>29.38</u>
	O ₂	:	<u>10.2</u>	× 0.32= <u>3.26</u>		
	N ₂	:	<u>78.8</u>	× 0.28= <u>22.06</u>		
	CO	:	<u>0.2</u>	× 0.28= <u>0.056</u>		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.71153	Wt. of Particulate gms	:	0.02704
Final wt. of thimble gms	:	2.73857		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	217	490	4.9				
2	0.2	/	/	5.2				
3	0.3			5.6				
4	0.4			5.1				
5	0.5			6.1				
6	0.6			5.8				
7	0.7			5.4				
8	0.8			5.9				
9	0.9			5.3				
10	1.0	217	490	5.7				
11	Ang	217	490	5.5				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X T_s}{P_s X M_s}}$$

Where,

Ts- Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP - Differential Pressure(mm WC)

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 51.21 mg/Nm ³	SO ₂ - 54.64 mg/Nm ³	NO _x - 177.07 mg/Nm ³
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Monitored By:

DG 8100 KVA Stack

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (1.45)^2$$

$$= 1.652 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{5.5 \times 490}{710 \times 29.38}}$$

$$= 10.54 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 10.54 \times 3600 \times 1.652$$

$$= 62670.0 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 62670.0 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 62670.0 \times \frac{710}{760} \times \frac{298}{490}$$

$$= 35606.1 \text{ Nm}^3/\text{Hr}$$

5 SO₂ (mg/Nm³)

$$= \frac{32.06 \times (S-B) \times N \times V_{soln} \times 1000/V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 1.0 \times 0.01 \times 1000}{30 \times 10}$$

$$= 96.18 \text{ mg/m}^3$$

$$= 96.18 \times \frac{710}{760} \times \frac{298}{490}$$

$$= 54.64 \text{ mg/Nm}^3$$

SO₂ (Kg/Hr)

$$\begin{aligned} &= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)} \\ &= 54.64 \times 35606.1/1000000 \\ &= 1.95 \quad \text{Kg/Hr} \end{aligned}$$

6 Volume of gas sampled (Nm³)

$$= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})}$$

$$= 0.3858 \times (2000 - 100) \times \left[\frac{580}{(273 + 31)} - \frac{50}{(273 + 27)} \right]$$

$$= 0.3858 \times 1900 \times \left[\frac{580}{304} - \frac{50}{300} \right]$$

$$= 1276.36 \quad \text{Nm}^3$$

7 NO₂ (mg/Nm³)

$$= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}}$$

$$= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.226}{1276.36}$$

$$= 177.07 \text{ mg/Nm}^3$$

8 NO₂ (ppmv)

$$= \text{mg/Nm}^3 \times 24.45 \times \left[\frac{1}{46} \right]$$

$$= 177.07 \times 24.45 \times (1/46)$$

$$= 94.11 \quad \text{ppmv}$$

9 Particulate Matter (mg/m³)

$$a \quad \text{Initial weight of Thimble} = 2.71153 \text{ g}$$

$$b \quad \text{Final weight of Thimble} = 2.73857 \text{ g}$$

$$c \quad \text{Difference (b-a)} = 0.02704 \text{ g}$$

Particulate Matter (mg/m³)

$$= \frac{0.02704 \times 1000}{0.3}$$

$$= 90.13 \quad \text{mg/m}^3$$

a Particulate Matter (mg/Nm³)

$$= \text{mg/m}^3 \times \frac{710}{760} \times \frac{298}{490}$$

$$= 51.21 \quad (\text{mg/Nm}^3)$$

10 Non methane Hydrocarbon (nMHC)

Results by G.C.= 8.0 ppm

a nMHC converting ppm into mg/m³

$$\begin{aligned}\text{mg/m}^3 \text{ nMHC} &= \frac{\text{ppm} \times \text{mol.wt}(\text{C}_5\text{H}_{10})}{24.45} \\ &= \frac{8 \times 70}{24.45} \\ &= 22.90 \text{ mg/m}^3\end{aligned}$$

b nMHC in mg/Nm³

$$\begin{aligned}&= \text{mg/Nm}^3 \times \frac{710}{760} \times \frac{298}{490} \\ &= 13.01 \text{ mg/Nm}^3\end{aligned}$$

11 Estimation Of Carbonmonoxide CO

Using GC With methanator = 34 ppm

Converting CO ppm to mg/m³

$$\begin{aligned}\text{CO mg/m}^3 &= \text{ppm} \times \text{mol wt} \\ &= \frac{34 \times 28}{24.45} \\ &= 38.94\end{aligned}$$

$$\begin{aligned}\text{CO mg/Nm}^3 &= 38.94 \times \frac{720}{760} \times \frac{298}{490} \\ &= 22.12 \text{ mg/Nm}^3\end{aligned}$$



No. PPL/ENV/R-2025-26/36

12.09.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Sir,

Sub.: Stack Emission Analysis Report for August 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate Order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of stack emission analysis carried out in **August 2025** by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

As desired by your office vide. Letter No.6/5/98-PCB/VOL.V/533 dt.10/7/2000, we are also submitting the working sheets of the stack emission analysis carried out.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/05

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	BOILER (S-BF- 101CA) (Boiler A&C Inlet)
02	Date & Time of Monitoring	08/08/2025 at 11.00 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	50
d.	Stack diameter, meter	2.38
e.	Stack Temperature, °C	122
f.	Stack flue Gas Velocity, m/s	12.66
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	202836.4
h.	Stack Gas Flow rate, Nm ³ /Hr.	142958.4
i.	Boiler Load, %	100
j.	Boiler Capacity A&C, MT/hr	140
k.	Fuel consumption for Boiler A&C Kg/Hr	7926.96
l.	Type of fuel used	Natural Gas

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No	Parameter	Unit	Result	Limit	Method of Analysis
01	Particulate matter	mg/Nm ³	46.03	NM	IS-11255, (part- 1,3) 2018-19
02	Sulphur dioxide (SO ₂)	mg/Nm ³	18.08	NM	IS-11255, (part-2) 2019
		Kg/Hr.	2.58	NM	
03	Oxides of Nitrogen (NO ₂)	mg/Nm ³	179.64	NM	IS-11255, (part-7) 2017
		ppmv	95.48	NM	

Note 1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of Sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	01/08/2025	31/08/2025



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

We Are Listening & Want to Improve - Complaint Register is Available with us!

Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paragdeep Phosphates Address: Zuainagar

Date & time of visit: 08/08/2025 at 11.00 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>50</u>		
	I.D. Of Stack at port (mtr) D	:	<u>2.38</u>	Cross sectional area of stack m ³	<u>4.449</u>
	Type of fired heater	:	<u>Boiler (S-BF-101(A))</u>		
	No. of stacks	:			
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	<u>300</u>
	DGM Temp °C	:	<u>31</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	<u>0.3</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	<u>18.08</u>
	Vol. of BaCl ₂ required	:	<u>0.8</u>	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	<u>2.58</u>
NO _x	Initial box temp.	:	<u>26</u>	Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:	<u>30</u>	Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	<u>179.64</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Initial pressure	:	685	NO _x (ppmv)	:	<u>95.48</u>
	Calculation Factor	:	<u>50</u>	Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>12</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0178</u>
	Final DGM reading	:	<u>31</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0059</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C+ 273)	:	<u>304</u>	(1-Bow)	:	<u>0.9444</u>
	DGM temp (°C)	:	<u>31</u>	P _{bar} -P _m	:	<u>710</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>0.5898</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10.8</u>	× 0.44= <u>4.75</u>	<u>30.18</u>	<u>30.13</u>
	O ₂	:	<u>11.2</u>	× 0.32= <u>3.58</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:				
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:				
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386			
Thimble No.	:			:				
Initial wt. of thimble gms	:	2.14542	Wt. of Particulate gms	:	0.00987			
Final wt. of thimble gms	:	2.15529		:				
Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	122	395	9.8				
2	0.2	/	/	10.4				
3	0.3			9.9				
4	0.4			10.3				
5	0.5			9.5				
6	0.6			10.7				
7	0.7			10.0				
8	0.8			10.2				
9	0.9			9.7				
10	1.0	122	395	10.5				
11	Avg	122	395	10.1				
12	0							

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 46.03 mg/Nm ³	SO ₂ - 18.08 mg/Nm ³	NO _x - 179.64 mg/Nm ³
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Monitored By:



Boiler Plant Stack (S-BF 101CA)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (2.38)^2$$

$$= 4.449 \text{ m}^2$$

2 Stack Flue Gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{10.1 \times 395}{710 \times 30.13}}$$

$$= 12.66 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 12.66 \times 3600 \times 4.449$$

$$= 202836.4 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 202836.4 \times \frac{P_{\text{atm}}}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 202836.4 \times \frac{710}{760} \times \frac{298}{395}$$

$$= 142958.4 \text{ Nm}^3/\text{Hr}$$

5 SO₂ (mg/Nm³)

$$= \frac{32.06 \times (S-B) \times N \times V_{\text{Soln}} \times 1000/V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 0.8 \times 0.01 \times 30 \times 1000/10}{30}$$

$$= 25.65 \text{ (mg/m}^3\text{)}$$

$$= 25.65 \times \frac{710}{760} \times \frac{298}{395}$$

$$= 18.08 \text{ mg/Nm}^3$$

SO₂ (Kg/Hr)

$$\begin{aligned} &= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)} \\ &= 18.08 \times 142958.4/1000000 \\ &= 2.58 \quad \text{Kg/Hr} \end{aligned}$$

6 Volume of gas sampled (Nm³)

$$\begin{aligned} &= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} - \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})} \\ &= 0.3858 \times (2000 - 100) \times \left[\frac{550}{(273 + 30)} - \frac{50}{(273 + 26)} \right] \\ &= 0.3858 \times 1900 \times \left[\frac{550}{303} - \frac{50}{299} \right] \\ &= 1207.99 \quad \text{Nm}^3 \end{aligned}$$

7 NO₂ (mg/Nm³)

$$\begin{aligned} &= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}} \\ &= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.217}{1207.99} \\ &= 179.64 \quad \text{mg/Nm}^3 \end{aligned}$$

NO₂ (ppmv)

$$\begin{aligned} &= 179.64 \times 24.45 \times \left[\frac{1}{46} \right] \\ &= 95.48 \quad \text{ppmv} \end{aligned}$$

Volume of gas sampled = 300 ltrs

$$\begin{aligned} &= 0.3 \times \frac{720}{760} \times \frac{298}{395} \\ &= 0.2144 \end{aligned}$$

8 Particulate Matter (mg/Nm³)

a	Initial weight of Thimble	=	2.14542 g
b	Final weight of Thimble	=	2.15529 g
c	Difference (b-a)	=	0.00987 g

Particulate Matter (mg/Nm³)

$$\begin{aligned} &= \frac{0.00987 \times 1000}{0.2144} \\ &= 46.03 \quad \text{mg/Nm}^3 \end{aligned}$$



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTIN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/06

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	AMMONIA PLANT-REFORMER/COMBUSTION CHAMBER FLUE GAS STACK (A-CA-101)
02	Date & Time of Monitoring	08/08/2025 at 14.00 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	36.5
d.	Stack diameter, meter	3.50
e.	Stack Temperature, °C	126
f.	Stack flue Gas Velocity, m/s	8.86
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	306786.0
h.	Stack Gas Flow rate, Nm ³ /Hr.	217069.0
i.	Plant Load, %	82
j.	Plant Capacity, MT/day	1050

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No	Parameter	Unit	Result	Limit	Method of Analysis
01	Sulphur dioxide (SO ₂)	mg/Nm ³	18.15	NM	IS-11255, (part-2) 2019
		Kg/Hr.	3.94	NM	
02	Oxides of Nitrogen (NO ₂)	mg/Nm ³	187.47	NM	IS-11255, (part-7) 2017
		ppmv	99.64	NM	

Note 1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of Sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	UV-Vis Spectrophotometer	Systonics-104	01/08/2025	31/08/2025



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

We Are Listening & Want to Improve - Complaint Register is Available with us!

Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Parsadeep Phosphates Address: Zuasinagar

Date & time of visit: 08/08/2025 at 14:00hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>36.5</u>		
	I.D. Of Stack at port (mtr) D	:	<u>3.5</u>	Cross sectional area of stack m ³	<u>9.622</u>
	Type of fired heater	:	<u>Ammonia Reformer</u>		
	No. of stacks	:	<u>(A-CA-101)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	<u>300</u>
	DGM Temp °C	:	<u>130</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	<u>0.3</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	<u>18.15</u>
	Vol. of BaCl ₂ required	:	<u>0.8</u>	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	<u>3.94</u>
NO _x	Initial box temp.	:	<u>27</u>	Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:	<u>30</u>	Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	<u>187.47</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Initial pressure	:	685	NO _x (ppmv)	:	<u>99.64</u>
	Calculation Factor	:	<u>50</u>	Final pressure	:	760		:	
	Absorbance	:	<u>0.222</u>	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0197</u>
	Final DGM reading	:	<u>130</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0616</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C+ 273)	:	<u>403</u>	(1-Bow)	:	<u>0.9384</u>
	DGM temp (°C)	:	<u>130</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>6.1616</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10.2</u>	× 0.44=	<u>29.8</u>	<u>29.8</u>
	O ₂	:	<u>10.8</u>	× 0.32=		
	N ₂	:	<u>78</u>	× 0.28=		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:		Wt. of Particulate gms	:	
Final wt. of thimble gms	:			:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	126	399	4.5				
2	0.2			5.1				
3	0.3			4.7				
4	0.4			5.2				
5	0.5			4.6				
6	0.6			5.3				
7	0.7			4.9				
8	0.8					5.0		
9	0.9			4.8				
10	1.0	126	399	4.9				
11	Avg	126	399	4.9				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- -	SO ₂ - 18.15 mg/Nm ³	NO _x - 187.47 mg/Nm ³
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Monitored By



Ammonia Plant - Reformer Stack/Combustion Chamber Stack (A-CA 101)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (3.5)^2$$

$$= 9.622 \quad \text{m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{4.9 \times 399}{720 \times 29.8}}$$

$$= 8.86 \quad \text{m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 8.86 \times 3600 \times 9.622$$

$$= 306786.0 \quad \text{m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 306786.0 \times \frac{BP}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 306786.0 \times \frac{720}{760} \times \frac{298}{399}$$

$$= 217069.0 \quad \text{Nm}^3/\text{Hr}$$

5 SO₂ (mg/m³)

$$= \frac{32.06 \times (S-B) \times N \times V_{\text{Soln}} \times 1000/V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 0.8 \times 0.01 \times 30 \times 1000/10}{30}$$

$$= 25.65 \quad (\text{mg/m}^3)$$

$$= 25.65 \times \frac{720}{760} \times \frac{298}{399}$$

$$= 18.15 \quad \text{mg/Nm}^3$$

SO₂ (Kg/Hr)

$$\begin{aligned} &= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)} \\ &= 18.15 \times 217069.0/1000000 \\ &= 3.94 \quad \text{Kg/Hr} \end{aligned}$$

6 NO₂ (mg/Nm³)

Volume of gas sampled (Nm³)

$$= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} - \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})}$$

$$= 0.3858 \times (2000 - 100) \times \left[\frac{550}{(273 + 30)} - \frac{50}{(273 + 27)} \right]$$

$$= 0.3858 \times 1900 \times \left[\frac{550}{303} - \frac{50}{300} \right]$$

$$= 1184.2 \quad \text{Nm}^3$$

NO₂ (mg/Nm³)

$$= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}}$$

$$= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.222}{1184.2}$$

$$= 187.47 \quad \text{mg/Nm}^3$$

NO₂ (ppmv)

$$= 187.47 \times 24.45 \times \left[\frac{1}{46} \right]$$

$$= 99.64 \quad \text{ppmv}$$



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/07

Client	Paradeep Phosphates Ltd.- Goa Unit	
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726	
01	Sample Attached to	UREA PLANT PRILLING TOWER (U-IA-301)
02	Date & Time of Monitoring	08/08/2025 at 15.20 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	53
d.	Stack diameter, meter	11.8
e.	Stack Temperature, °C	51
f.	Stack flue Gas Velocity m/s	1.82
g.	Stack gas flow rate at Stack condition m ³ /Hr.	585534.3
h.	Stack Gas Flow rate Nm ³ /Hr.	510202.4
i.	Plant Load %	91
j.	Plant Capacity, MT/day	1500

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	91.01	150	IS-11255, (Part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

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Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep phosphates Address: Zuaringar

Date & time of visit: 08/08/2025 at 15:20 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>53</u>		
	I.D. Of Stack at port (mtr) D	:	<u>11.8</u>	Cross sectional area of stack m ³	<u>89.4</u>
	Type of fired heater	:	<u>Urea Boiling Tower</u>		
	No. of stacks	:	<u>(U-1A-301)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>35</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0148</u>
	Final DGM reading	:	<u>35</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0818</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>327</u>	(1-Bow)	:	<u>0.9882</u>
	DGM temp (°C)	:	<u>35</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>3.1766</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.23</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>2.184</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.87513	Wt. of Particulate gms	:	0.02379
Final wt. of thimble gms	:	2.89892		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	51	324	0.2				
2	0.2	/	/	0.2				
3	0.3			0.3				
4	0.4			0.3				
5	0.5			0.2				
6	0.6			0.2				
7	0.7			0.3				
8	0.8			0.2				
9	0.9			0.3				
10	1.0			51	324	0.2		
11	Arg	51	324	0.25				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 91.01 mg/m ³	SO ₂ - —	NO _x - —
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Monitored By: 

Urea Plant - Prilling Tower (U-AI - 301)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= 89.4 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{0.25 \times 324}{720 \times 29.23}}$$

$$= 1.82 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 1.82 \times 3600 \times 89.4$$

$$= 585534.3 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 585534.3 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 585534.3 \times \frac{720}{760} \times \frac{298}{324}$$

$$= 510202.4 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{324}$$

$$= 0.2614 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\text{a Initial weight of Thimble} = 2.87513 \text{ g}$$

$$\text{b Final weight of Thimble} = 2.89892 \text{ g}$$

$$\text{c Difference (b-a)} = 0.02379 \text{ g}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.02379 \times 1000}{0.2614}$$

$$= 91.01 \text{ mg/Nm}^3$$



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/08

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	UREA PLANT DUST SEPERATOR (U-FD-304)
02	Date & Time of Monitoring	08/08/2025 at 16.30 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	61
d.	Stack diameter, meter	1.12
e.	Stack Temperature, °C	55
f.	Stack flue Gas Velocity m/s	16.29
g.	Stack gas flow rate at Stack condition m ³ /Hr.	57778.8
h.	Stack Gas Flow rate Nm ³ /Hr.	49040.6
i.	Plant Load %	91
j.	Plant Capacity, MT/day	1500

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method of analysis
01	Particulate Matter (PM)	mg/Nm ³	67.59	150	IS-11255, (part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

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Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuaringar

Date & time of visit: 08/08/2025 at 16.30 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>61</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.12</u>	Cross sectional area of stack m ³	<u>0.98533</u>
	Type of fired heater	:	<u>Urea-Dust Separator</u>		
	No. of stacks	:	<u>(U-FD-304)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>12</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01786</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.05618</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C+ 273)	:	<u>305</u>	(1-Bow)	:	<u>0.94387</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>710</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>0.31786</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.2</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.75937	Wt. of Particulate gms	:	0.01721
Final wt. of thimble gms	:	2.77658		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	55	328	19.0				
2	0.2	/	/	19.8				
3	0.3			20.0				
4	0.4			19.3				
5	0.5			19.1				
6	0.6			19.5				
7	0.7			19.7				
8	0.8			19.2				
9	0.9			19.9				
10	1.0	55	328	19.5				
11	Avg	55	328	19.5				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts- Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 67.59 mg/Nm ³	SO ₂ - —	NO _x - —
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Monitored By



Urea Plant - Dust Separator (U-FD- 304)

1 Cross sectional area of Stack (m²)

$$\begin{aligned} &= \frac{\pi}{4} \times (d)^2 \\ &= \frac{3.14159}{4} \times (1.12)^2 \\ &= 0.98533 \text{ m}^2 \end{aligned}$$

2 Stack Flue gas Velocity (m/s)

$$\begin{aligned} &= 34.97 \times 0.8386 \times \sqrt{\frac{19.5 \times 328}{710 \times 29.2}} \\ &= 16.29 \text{ m/s} \end{aligned}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$\begin{aligned} &= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack} \\ &= 16.29 \times 3600 \times 0.98533 \\ &= 57778.8 \text{ m}^3/\text{Hr} \end{aligned}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$\begin{aligned} &= 57778.8 \times \frac{P}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}} \\ &= 57778.8 \times \frac{710}{760} \times \frac{298}{328} \\ &= 49040.6 \text{ Nm}^3/\text{Hr} \end{aligned}$$

5 Volume of Gas Sampled : 300 Litres

$$\begin{aligned} &= 0.3 \times \frac{710}{760} \times \frac{298}{328} \\ &= 0.2546 \text{ Nm}^3 \end{aligned}$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble	=	2.75937 g
b Final weight of Thimble	=	2.77658 g
c Difference (b-a)	=	0.01721 g

Particulate Matter (mg/Nm³)

$$\begin{aligned} &= \frac{0.01721 \times 1000}{0.2546} \\ &= 67.59 \text{ mg/Nm}^3 \end{aligned}$$



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Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/03

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A FUMES STACK(N-CB-901)
02	Date & Time of Monitoring	07/08/2025 at 14.10 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature (°C)	28
c.	Stack Height (meter)	48.5
d.	Stack diameter (meter)	1.4
e.	Stack Temperature (°C)	54
f.	Stack flue Gas Velocity (m/s)	11.21
g.	Stack gas flow rate at Stack condition (m ³ /Hr.)	62115.9
h.	Stack Gas Flow rate (Nm ³ /Hr.)	53627.8
i.	Plant Load %	61
j.	Plant Capacity (MT/day)	1600

STACK GAS ANALYSIS REPORT

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Ammonia (NH ₃)	mg/Nm ³	8.0	NM	IS 11255 (Part-6) 2019
		kg/Hr.	0.43	10	

Note:

1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	UV-Vis Spectrophotometer	Systonics-104	01/08/2025	31/08/2025



Reshma S. Patil
(Authorized signatory)

-End of Test Report-

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Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Parsadeep Phosphates Address: Zuaringar

Date & time of visit: 07/08/25 at 14:10 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>48.5</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.4</u>	Cross sectional area of stack m ³	<u>1.539</u>
	Type of fired heater	:	<u>NPK-A Fumes stack</u>		
	No. of stacks	:	<u>(N-CB-901)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>33</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01472</u>
	Final DGM reading	:	<u>33</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0467</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>306</u>	(1-Bow)	:	<u>0.9533</u>
	DGM temp (°C)	:	<u>33</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.678</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10</u>	× 0.44= <u>4.40</u>	<u>30.08</u>	<u>29.52</u>
	O ₂	:	<u>12</u>	× 0.32= <u>3.84</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	-	Wt. of Particulate gms	:	-
Final wt. of thimble gms	:	-		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	54	327	8.5				
2	0.2			9.8				
3	0.3			9.0				
4	0.4			9.1				
5	0.5			9.9				
6	0.6			10.5				
7	0.7			9.2				
8	0.8			10.0				
9	0.9			9.3				
10	1.0	54	327	9.7				
11	Avg	54	327	9.5				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM NH ₃ - 8.0 mg/Nm ³	SO ₂ - —	NOx - —
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Monitored By



NPK-A Plant - Fumes Stack (N-CB 901)

1 Cross sectional area of Stack (m²)

$$\begin{aligned} &= \frac{\pi}{4} \times d^2 \\ &= \frac{3.14159}{4} \times (1.4)^2 \\ &= 1.539 \text{ m}^2 \end{aligned}$$

2 Stack Flue gas Velocity (m/s)

$$\begin{aligned} &= 34.97 \times 0.8386 \times \sqrt{\frac{9.5 \times 327}{720 \times 29.52}} \\ &= 11.21 \text{ m/s} \end{aligned}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$\begin{aligned} &= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack} \\ &= 11.21 \times 3600 \times 1.539 \\ &= 62115.9 \text{ m}^3/\text{Hr} \end{aligned}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$\begin{aligned} &= 62115.9 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}} \\ &= 62115.9 \times \frac{720}{760} \times \frac{298}{327} \\ &= 53627.8 \text{ Nm}^3/\text{Hr} \end{aligned}$$

5 Ammonia (mg/Nm³)

$$\begin{aligned} &= \frac{OD \times CF \times 1000}{\text{Volume of Gas Sample}} \times \frac{\text{Total Volume of Abs.Soln}}{\text{Sample Aliquote}} \\ &= \frac{0.545 \times 22.03 \times 1000}{30} \times \frac{100}{5} \\ &= 8004.233 (\mu\text{g}/\text{Nm}^3) \\ &= 8.00 \text{ mg}/\text{Nm}^3 \end{aligned}$$

6 Ammonia Conc. in Kg/Hr

$$\begin{aligned} &= \frac{\text{mg}/\text{Nm}^3 (\text{amm}) \times \text{Stack flow rate (NTP)}}{10^6} \\ &= \frac{8.0 \times 53627.8}{10^6} \\ &= 0.43 \text{ Kg}/\text{Hr} \end{aligned}$$



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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/04

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A DRYER STACK (N-CB-301)
02	Date & Time of Monitoring	07/08/2025 at 15.30 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meters	33
d.	Stack diameter, meter	3.0
e.	Stack Temperature, °C	53
f.	Stack flue Gas Velocity m/s	7.88
g.	Stack gas flow rate at Stack condition m ³ /Hr.	200590.4
h.	Stack Gas Flow rate Nm ³ /Hr.	173711.1
i.	Plant Load %	61
j.	Fuel consumption (Natural Gas) Kg/hr.	208.31
k.	Plant Capacity, MT/day	1600

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	52.96	150	IS-11255, (part- 1,3) 2018-19

Note:

1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025



Reshma S. Patil
(Authorized signatory)

-End of Test Report-

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Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuaringar

Date & time of visit: 07/08/2025 at 15:30 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>33</u>		
	I.D. Of Stack at port (mtr) D	:	<u>3.0</u>	Cross sectional area of stack m ³	<u>7.069</u>
	Type of fired heater	:	<u>NPK-A Dwyer</u>		
	No. of stacks	:	<u>NI-CB-301</u>		
	Fuel used	:	<u>Natural Gas</u>		
	Fuel consumption (Kg/hr)	:	<u>208.81</u>		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>30</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.9458</u>
	Final DGM reading	:	<u>30</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04634</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>303</u>	(1-Bow)	:	<u>0.9537</u>
	DGM temp (°C)	:	<u>30</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.6338</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>4</u>	× 0.44= <u>1.76</u>	<u>29.36</u>	<u>28.83</u>
	O ₂	:	<u>18</u>	× 0.32= <u>5.76</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:				
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:				
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386			
Thimble No.	:			:				
Initial wt. of thimble gms	:	2.14133	Wt. of Particulate gms	:	0.01376			
Final wt. of thimble gms	:	2.15509		:				
Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	53	326	3.9				
2	0.2	/	/	4.2				
3	0.3							
4	0.4							
5	0.5							
6	0.6							
7	0.7							
8	0.8							
9	0.9			4.7				
10	1.0	53	326	5.2				
11	Avg	53	326	4.6				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 52.96 mg/Nm ³	SO ₂ - -	NOx- -
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Monitored By: 

NPK-A Plant - Dryer Stack (N-CB- 301)

1 Cross sectional area of Stack (m²)

$$\begin{aligned} &= \frac{\pi}{4} \times d^2 \\ &= \frac{3.14159}{4} \times (3)^2 \\ &= 7.069 \text{ m}^2 \end{aligned}$$

2 Stack Flue gas Velocity (m/s)

$$\begin{aligned} &= 34.97 \times 0.8386 \times \sqrt{\frac{4.6 \times 326}{720 \times 28.83}} \\ &= 7.88 \text{ m/s} \end{aligned}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$\begin{aligned} &= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack} \\ &= 7.88 \times 3600 \times 7.069 \\ &= 200590.4 \text{ m}^3/\text{Hr} \end{aligned}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$\begin{aligned} &= 200590.4 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}} \\ &= 200590.4 \times \frac{720}{760} \times \frac{298}{326} \\ &= 173711.1 \text{ Nm}^3/\text{Hr} \end{aligned}$$

5 Volume of Gas Sampled : 300 Litres

$$\begin{aligned} &= 0.3 \times \frac{720}{760} \times \frac{298}{326} \\ &= 0.2598 \text{ Nm}^3 \end{aligned}$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble	=	2.14133 g
b Final weight of Thimble	=	2.15509 g
c Difference (b-a)		0.01376 g

Particulate Matter (mg/Nm³)

$$\begin{aligned} &= \frac{0.01376 \times 1000}{0.2598} \\ &= 52.96 \text{ mg/Nm}^3 \end{aligned}$$



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/10

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A DEDUSTING STACK (N-CB-403)
02	Date & Time of Monitoring	07/08/2025 at 16.45 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	33
d.	Stack diameter, meter	1.8
e.	Stack Temperature °C	45
f.	Stack flue Gas Velocity m/s	8.56
g.	Stack gas flow rate at Stack condition m ³ /Hr.	78412.2
h.	Stack Gas Flow rate Nm ³ /Hr.	69613.2
i.	Plant Load %	61
j.	Plant Capacity, MT/day	1600

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	52.08	150	IS 11255 (Part-1) 1985

Note:

1. Limit prescribed as per Consent No 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartoris	01/01/2025	31/12/2025



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

We Are Listening & Want to Improve - Complaint Register is Available with us!

Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuorinagar

Date & time of visit: 07/08/2025 at 16:45 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>33</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.8</u>	Cross sectional area of stack m ³	<u>2.545</u>
	Type of fired heater	:	<u>NPK-A Dedusting cooler</u>		
	No. of stacks	:	<u>(N-CB-403)</u>		
	Fuel used	:	<u>Natural Gas</u>		
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.1527</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04843</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>305</u>	(1-Bow)	:	<u>0.95156</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.8434</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.04</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.68767	Wt. of Particulate gms	:	0.01387
Final wt. of thimble gms	:	2.70154		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	45	318	5.2				
2	0.2		/	5.5				
3	0.3			5.9				
4	0.4			5.3				
5	0.5			6.2				
6	0.6			6.0				
7	0.7			5.7				
8	0.8					5.0		
9	0.9			5.4				
10	1.0	45	318	5.8				
11	Avg	45	318	5.6				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V=34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 52.08 mg/m ³	SO ₂ -	NO _x -
-------------------	-----------------------------	-------------------	-------------------

Monitored By:

[Signature]

NPK-A Plant - Dedusting Cooler Stack (N-CB - 403)

1 Cross sectional area of Stack (m²)

$$\begin{aligned} &= \frac{\pi}{4} \times d^2 \\ &= \frac{3.14159}{4} \times (1.8)^2 \\ &= 2.545 \text{ m}^2 \end{aligned}$$

2 Stack Flue gas Velocity (m/s)

$$\begin{aligned} &= 34.97 \times 0.8386 \times \sqrt{\frac{5.6 \times 318}{720 \times 29.04}} \\ &= 8.56 \text{ m/s} \end{aligned}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$\begin{aligned} &= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack} \\ &= 8.56 \times 3600 \times 2.545 \\ &= 78412.2 \text{ m}^3/\text{Hr} \end{aligned}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$\begin{aligned} &= 78412.2 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp (K)}} \\ &= 78412.2 \times \frac{720}{760} \times \frac{298}{318} \\ &= 69613.2 \text{ Nm}^3/\text{Hr} \end{aligned}$$

5 Volume of Gas Sampled : 300 Litres

$$\begin{aligned} &= 0.3 \times \frac{720}{760} \times \frac{298}{318} \\ &= 0.2663 \text{ Nm}^3 \end{aligned}$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble	=	2.68767 g
b Final weight of Thimble	=	2.70154 g
c Difference (b-a)	=	0.01387 g

Particulate Matter (mg/Nm³)

$$\begin{aligned} &= \frac{0.01387 \times 1000}{0.2663} \\ &= 52.08 \text{ mg/Nm}^3 \end{aligned}$$



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 22/08/2025

Report No. AESPL/G/ST-25/08/02

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-B STACK (05-5D-101)
02	Date & Time of Monitoring	07/08/2025 at 11.30 Hrs.
03	Date of completion of Analysis	22/08/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature (°C)	28
c.	Stack Height (meter)	43.5
d.	Stack diameter (meter)	2.5
e.	Stack Temperature (°C)	53
f.	Stack flue Gas Velocity (m/s)	13.65
g.	Stack gas flow rate at Stack condition (m ³ /Hr.)	246810.7
h.	Stack Gas Flow rate (Nm ³ /Hr.)	213737.9
i.	Plant Load %	79
j.	Fuel consumption (Natural Gas) Kg/hr	197.71
k.	Plant Capacity (MT/day)	1600

STACK GAS ANALYSIS REPORT

Sr. No	Parameter	Unit	Result	Limit	Method of analysis
01	Particulate Matter (PM)	mg/Nm ³	60.62	150	IS-11255, (part- 1,3) 2018-19
02	Ammonia (NH ₃)	mg/Nm ³	10.75	NM	IS 11255 (Part-6) 2019
		kg/Hr.	2.30	10	

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	01/08/2025	31/08/2025



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

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Reg. Office: 110, Hiren Light Industrial Estate, Mogul Lane, Mahim, Mumbai - 400016 Tel: 022 4217500 E-mail: contact@aespl.co.in

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep phosphate Address: Zuaringar

Date & time of visit: 07/08/25 at 11.30 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>43.5</u>		
	I.D. Of Stack at port (mtr) D	:	<u>2.5</u>	Cross sectional area of stack m ³	<u>5.0218</u>
	Type of fired heater	:	<u>NPK-B DAP</u>		
	No. of stacks	:	<u>(05-SD-101)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.1527</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04843</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>305</u>	(1-Bow)	:	<u>0.9576</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.8434</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [M _d ×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.04</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ²	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.47017	Wt. of Particulate gms	:	0.01575
Final wt. of thimble gms	:	2.48592		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	53	326	13.3				
2	0.2			14.2				
3	0.3			13.6				
4	0.4			13.9				
5	0.5			14.5				
6	0.6			13.8				
7	0.7			14.0				
8	0.8			13.7				
9	0.9			13.9				
10	1.0	53	326	14.1				
11	Avg	53	326	13.9				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 60.62 mg/Nm ³	SO ₂ - —	NO _x - 10.75 mg/Nm ³
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Monitored By: 

NPK-B Plant - Stack (05-5D-101)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (2.5)^2$$

$$= 5.0218 \quad \text{m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{13.9 \times 326}{720 \times 29.04}}$$

$$= 13.65 \quad \text{m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 13.65 \times 3600 \times 5.0218$$

$$= 246810.7 \quad \text{m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 246810.7 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 246810.7 \times \frac{720}{760} \times \frac{298}{326}$$

$$= 213737.9 \quad \text{Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{326}$$

$$= 0.2598 \quad \text{Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\begin{array}{lll} \text{a} & \text{Initial weight of Thimble} & = 2.47017 \text{ g} \end{array}$$

$$\begin{array}{lll} \text{b} & \text{Final weight of Thimble} & = 2.48592 \text{ g} \end{array}$$

$$\begin{array}{lll} \text{c} & \text{Difference (b-a)} & = 0.01575 \text{ g} \end{array}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.01537 \times 1000}{0.2598}$$

$$= 60.62 \quad \text{mg/Nm}^3$$

7 Ammonia ($\mu\text{g}/\text{Nm}^3$)

$$= \frac{OD \times CF \times 1000}{\text{Volume of Gas Sample}} \times \frac{\text{Total Volume of Abs.Soln}}{\text{Sample Aliquote}}$$

$$= \frac{0.732 \times 22.03 \times 1000}{30} \times \frac{100}{5}$$

$$= 10750.64 \quad (\mu\text{g}/\text{Nm}^3)$$

$$= 10.75 \quad \text{mg}/\text{Nm}^3$$

Ammonia Conc. in Kg/Hr

$$= \frac{\text{mg}/\text{Nm}^3 (\text{amm}) \times \text{Stack flow rate (NTP)}}{10^6}$$

$$= \frac{10.75 \times 213737.9}{10^6}$$

$$= 2.30 \quad \text{Kg}/\text{Hr}$$



No. PPL/ENV/R-2025-26/58

15.12.2025

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Sir,

Sub.: Stack Emission Analysis Report for November 2025.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate Order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of stack emission analysis carried out in **November 2025** by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

As desired by your office vide. Letter No.6/5/98-PCB/VOL.V/533 dt.10/7/2000, we are also submitting the working sheets of the stack emission analysis carried out.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik

Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 26/11/2025

Report No. AESPL/G/ST-25/11/01

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-B STACK (05-5D-101)
02	Date & Time of Monitoring	12/11/2025 at 11.15 Hrs.
03	Date of completion of Analysis	26/11/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature (°C)	30
c.	Stack Height (meter)	43.5
d.	Stack diameter (meter)	2.5
e.	Stack Temperature (°C)	51
f.	Stack flue Gas Velocity (m/s)	11.66
g.	Stack gas flow rate at Stack condition (m ³ /Hr.)	210775.7
h.	Stack Gas Flow rate (Nm ³ /Hr.)	183658.3
i.	Plant Load %	100
j.	Fuel consumption (Natural Gas) Kg/hr	235.59
k.	Plant Capacity (MT/day)	1600

STACK GAS ANALYSIS REPORT

Sr. No	Parameter	Unit	Result	Limit	Method of analysis
01	Particulate Matter (PM)	mg/Nm ³	53.63	150	IS-11255, (part- 1,3) 2018-19
02	Ammonia (NH ₃)	mg/Nm ³	8.02	NM	IS 11255 (Part-6) 2019
		kg/Hr.	1.47	10	

Note:

1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	01/11/2025	30/11/2025



Reshma S. Patil
(Authorized Signatory)

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Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 26/11/2025

Report No. AESPL/G/ST-25/11/02

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	AMMONIA PLANT-REFORMER/COMBUSTION CHAMBER FLUE GAS STACK (A-CA-101)
02	Date & Time of Monitoring	12/11/2025 at 14.20 Hrs.
03	Date of completion of Analysis	26/11/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	31
c.	Stack Height, meter	36.5
d.	Stack diameter, meter	3.50
e.	Stack Temperature, °C	130
f.	Stack flue Gas Velocity, m/s	9.60
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	332537.8
h.	Stack Gas Flow rate, Nm ³ /Hr.	232954.5
i.	Plant Load, %	81.71
j.	Plant Capacity, MT/day	1050

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No	Parameter	Unit	Result	Limit	Method of Analysis
01	Sulphur dioxide (SO ₂)	mg/Nm ³	17.97	NM	IS-11255, (part-2) 2019
		Kg/Hr.	4.19	NM	
02	Oxides of Nitrogen (NO ₂)	mg/Nm ³	172.66	NM	IS-11255, (part-7) 2017
		ppmv	91.77	NM	

Note 1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of Sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	01/11/2025	30/11/2025



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Date: 25/11/2025

Report No. AESPL/G/ST-25/11/03

Client	Paradeep Phosphates Ltd.- Goa Unit	
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726	
01	Sample Attached to	UREA PLANT PRILLING TOWER (U-IA-301)
02	Date & Time of Monitoring	12/11/2025 at 15.30 Hrs.
03	Date of completion of Analysis	25/11/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	53
d.	Stack diameter, meter	11.8
e.	Stack Temperature, °C	58
f.	Stack flue Gas Velocity m/s	1.76
g.	Stack gas flow rate at Stack condition m ³ /Hr.	567659.3
h.	Stack Gas Flow rate Nm ³ /Hr.	484166.7
i.	Plant Load %	89
j.	Plant Capacity, MT/day	1500

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	85.24	150	IS-11255, (Part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025



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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 25/11/2025

Report No. AESPL/G/ST-25/11/04

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	UREA PLANT DUST SEPERATOR (U-FD-304)
02	Date & Time of Monitoring	12/11/2025 at 16.20 Hrs.
03	Date of completion of Analysis	25/11/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	28
c.	Stack Height, meter	61
d.	Stack diameter, meter	1.12
e.	Stack Temperature, °C	56
f.	Stack flue Gas Velocity m/s	16.97
g.	Stack gas flow rate at Stack condition m ³ /Hr.	60194.1
h.	Stack Gas Flow rate Nm ³ /Hr.	50935.3
i.	Plant Load %	89
j.	Plant Capacity, MT/day	1500

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method of analysis
01	Particulate Matter (PM)	mg/Nm ³	64.01	150	IS-11255, (part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025



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Date: 27/11/2025

Report No. AESPL/G/ST-25/11/06

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	BOILER (S-BF- 101CA) (Boiler B&C Inlet)
02	Date & Time of Monitoring	13/11/2025 at 14.10 Hrs.
03	Date of completion of Analysis	27/11/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	32
c.	Stack Height, meter	50
d.	Stack diameter, meter	2.38
e.	Stack Temperature, °C	124
f.	Stack flue Gas Velocity, m/s	14.24
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	228025.7
h.	Stack Gas Flow rate, Nm ³ /Hr.	159902.1
i.	Boiler Load, %	100
j.	Boiler Capacity B&C, MT/hr	140
k.	Fuel consumption for Boiler B&C Kg/Hr	8248.34
l.	Type of fuel used	Natural Gas

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No	Parameter	Unit	Result	Limit	Method of Analysis
01	Particulate matter	mg/Nm ³	42.84	NM	IS-11255, (part- 1,3) 2018-19
02	Sulphur dioxide (SO ₂)	mg/Nm ³	15.74	NM	IS-11255, (part-2) 2019
		Kg/Hr.	2.52	NM	
03	Oxides of Nitrogen (NO ₂)	mg/Nm ³	168.82	NM	IS-11255, (part-7) 2017
		ppmv	89.73	NM	

- Note
1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
 2. NM refers to not mentioned in consent.
 3. The above stack analysis results related only to the conditions prevailing at the time of Sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	01/11/2025	30/11/2025



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Date: 26/11/2025

Report No. AESPL/G/ST-25/11/07

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A DEDUSTING STACK (N-CB-403)
02	Date & Time of Monitoring	13/11/2025 at 16.15 Hrs.
03	Date of completion of Analysis	26/11/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meter	33
d.	Stack diameter, meter	1.8
e.	Stack Temperature °C	41
f.	Stack flue Gas Velocity m/s	8.65
g.	Stack gas flow rate at Stack condition m ³ /Hr.	79296.7
h.	Stack Gas Flow rate Nm ³ /Hr.	71295.2
i.	Plant Load %	75
j.	Plant Capacity, MT/day	1600

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	43.08	150	IS 11255 (Part-1) 1985

Note:

- Limit prescribed as per Consent No 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartoris	01/01/2025	31/12/2025
03	UV-Vis Spectrophotometer	Systonics-104	01/11/2025	30/11/2025



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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 05/12/2025

Report No. AESPL/G/ST-25/11/09

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A FUMES STACK(N-CB-901)
02	Date & Time of Monitoring	24/11/2025 at 14.30 Hrs.
03	Date of completion of Analysis	05/12/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature (°C)	29
c.	Stack Height (meter)	48.5
d.	Stack diameter (meter)	1.4
e.	Stack Temperature (°C)	56
f.	Stack flue Gas Velocity (m/s)	12.26
g.	Stack gas flow rate at Stack condition (m ³ /Hr.)	67952.3
h.	Stack Gas Flow rate (Nm ³ /Hr.)	56475.1
i.	Plant Load %	90
j.	Plant Capacity (MT/day)	1600

STACK GAS ANALYSIS REPORT

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Ammonia (NH ₃)	mg/Nm ³	6.56	NM	IS 11255 (Part-6) 2019
		kg/Hr.	0.37	10	

Note:

1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	UV-Vis Spectrophotometer	Systonics-104	01/11/2025	30/11/2025



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Date: 05/12/2025

Report No. AESPL/G/ST-25/11/10

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A DRYER STACK (N-CB-301)
02	Date & Time of Monitoring	24/11/2025 at 15.40 Hrs.
03	Date of completion of Analysis	05/12/2025
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meters	33
d.	Stack diameter, meter	3.0
e.	Stack Temperature, °C	46
f.	Stack flue Gas Velocity m/s	8.45
g.	Stack gas flow rate at Stack condition m ³ /Hr.	214988.2
h.	Stack Gas Flow rate Nm ³ /Hr.	190265.1
i.	Plant Load %	90
j.	Fuel consumption (Natural Gas) Kg/hr.	214.34
k.	Plant Capacity, MT/day	1600

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	55.25	150	IS-11255, (part- 1,3) 2018-19

Note:

1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2025	31/12/2025



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Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuari Nagar

Date & time of visit: 12/11/25 at 11.15 Hrs

Stack Details	Stack Appearance	:	Round
	Total Height of Stack (mtr)	:	43.5
	I.D. Of Stack at port (mtr) D	:	2.5
			Cross sectional area of stack m ³ 5.0248
	Type of fired heater	:	NPK-B DAP
	No. of stacks	:	(05-SD-101)
	Fuel used	:	Natural Gas
	Fuel consumption (Kg/hr)	:	235.59

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	0	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	32	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	0	Vol ^m of condensate (ml) V _c	:	10	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	0.1527
	Final DGM reading	:	32	Vol ^m of Air collected (m ³) V _m	:	0.3	$Bow = \frac{M}{100}$	:	0.04843
	Suction at meter (mm Hg) P _m	:	40	T _m (°C+ 273)	:	305	(1-Bow)	:	0.9576
	DGM temp (°C)	:	32	P _{bar} -P _m	:	720	$M = \frac{V_v \times 100}{V_v + V_m}$	:	4.8434

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	6	× 0.44= 2.64	29.6	29.04
	O ₂	:	16	× 0.32= 5.12		
	N ₂	:	78	× 0.28= 21.84		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.12743	Wt. of Particulate gms	:	0.01402
Final wt. of thimble gms	:	2.14145		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading		
		°C	°K=(°C+273)				Initial	Final	
1	0.1	51	324	9.5					
2	0.2			10.9					
3	0.3			10.2					
4	0.4			9.9					
5	0.5			10.1					
6	0.6			10.3					
7	0.7			9.8					
8	0.8			10.2					
9	0.9			10.5					
10	1.0			51	324	10.6			
11	Arg			51	325	10.2			
12									

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 53.63 mg/Nm ³	SO ₂ - —	NH ₃ - 8 mg/Nm ³
-------------------	------------------------------	---------------------	--

Monitored By:



NPK-B Plant - Stack (05-5D-101)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (2.5)^2$$

$$= 5.0218 \quad \text{m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= \frac{34.97 \times 0.8386 \times \sqrt{\frac{10.2 \times 324}{720 \times 29.04}}}{1}$$

$$= 11.66 \quad \text{m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 11.66 \times 3600 \times 5.0218$$

$$= 210775.7 \quad \text{m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 210775.7 \times \frac{BP}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 210775.7 \times \frac{720}{760} \times \frac{298}{324}$$

$$= 183658.3 \quad \text{Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{324}$$

$$= 0.2614 \quad \text{Nm}^3$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble = 2.12743 g

b Final weight of Thimble = 2.14145 g

c Difference (b-a) = 0.01402 g

Particulate Matter (mg/Nm³)

$$= \frac{0.01402 \times 1000}{0.2614}$$

$$= 53.63 \quad \text{mg/Nm}^3$$

7 Ammonia ($\mu\text{g}/\text{Nm}^3$)

$$= \frac{OD \times CF \times 1000}{\text{Volume of Gas Sample}} \times \frac{\text{Total Volume of Abs.Soln}}{\text{Sample Aliquote}}$$

$$= \frac{0.546 \times 22.03 \times 1000}{30} \times \frac{100}{5}$$

$$= 8018.92 \quad (\mu\text{g}/\text{Nm}^3)$$

$$= 8.02 \quad \text{mg}/\text{Nm}^3$$

Ammonia Conc. in Kg/Hr

$$= \frac{\text{mg}/\text{Nm}^3 (\text{amm}) \times \text{Stack flow rate (NTP)}}{10^6}$$

$$= \frac{8.02 \times 183658.3}{10^6}$$

$$= 1.47 \quad \text{Kg}/\text{Hr}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuainagar

Date & time of visit: 12/11/2025 at 14.20 Hrs

Stack Details	Stack Appearance	:	Round	
	Total Height of Stack (mtr)	:	36.5	
	I.D. Of Stack at port (mtr) D	:	3.5	Cross sectional area of stack m ³ 9.622
	Type of fired heater	:	Ammonia Reformers	
	No. of stacks	:	(A-CA-101)	
	Fuel used	:		
	Fuel consumption (Kg/hr)	:		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	0	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	300
	DGM Temp °C	:	130	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	0.3
	Vol. of Abs. media taken for titration	:	10	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	17.97
	Vol. of BaCl ₂ required	:	0.8	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	4.19
NO _x	Initial box temp.	:	28	Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:	31	Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	172.66
	Vol. of Abs. media taken for titration	:	10	Initial pressure	:	685	NO _x (ppmv)	:	91.77
	Calculation Factor	:	50	Final pressure	:	760		:	
	Absorbance	:	0.208	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	0	Vol ^m of condensate (ml) V _c	:	10	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	0.0197
	Final DGM reading	:	130	Vol ^m of Air collected (m ³) V _m	:	0.3	$Bow = \frac{M}{100}$	:	0.0616
	Suction at meter (mm Hg) P _m	:	50	T _m (°C+ 273)	:	403	(1-Bow)	:	0.9384
	DGM temp (°C)	:	130	P _{bar} -P _m	:	720	$M = \frac{V_v \times 100}{V_v + V_m}$	:	6.1616

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	10.2	× 0.44= 4.49	29.8	29.8
	O ₂	:	10.8	× 0.32= 3.46		
	N ₂	:	78	× 0.28= 21.84		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:	-		:	
Initial wt. of thimble gms	:	-	Wt. of Particulate gms	:	-
Final wt. of thimble gms	:	-		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	130	403	5.5				
2	0.2			6.2				
3	0.3			5.8				
4	0.4			5.9				
5	0.5			5.2				
6	0.6			5.6				
7	0.7			5.0				
8	0.8			6.4				
9	0.9			5.4				
10	1.0	130	403	6.0				
11	Avg	130	403	5.7				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP - Differential Pressure(mm WC)

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- -	SO ₂ - 17.97 mg/Nm ³	NO _x - 172.66 mg/Nm ³
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Monitored By:



Ammonia Plant - Reformer Stack/Combustion Chamber Stack (A-CA 101)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (3.5)^2$$

$$= 9.622 \quad \text{m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{5.7 \times 403}{720 \times 29.8}}$$

$$= 9.60 \quad \text{m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 9.60 \times 3600 \times 9.622$$

$$= 332537.8 \quad \text{m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 332537.8 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 332537.8 \times \frac{720}{760} \times \frac{298}{403}$$

$$= 232954.5 \quad \text{Nm}^3/\text{Hr}$$

5 SO₂ (mg/m³)

$$= \frac{32.06 \times (S - B) \times N \times V_{soln} \times 1000 / V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 0.8 \times 0.01 \times 30 \times 1000 / 10}{30}$$

$$= 25.65 \quad (\text{mg/m}^3)$$

$$= 25.65 \times \frac{720}{760} \times \frac{298}{403}$$

$$= 17.97 \quad \text{mg/Nm}^3$$

SO₂ (Kg/Hr)

$$= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)}$$

$$= 17.97 \times 232954.5/1000000$$

$$= 4.19 \quad \text{Kg/Hr}$$

6 NO₂ (mg/Nm³)

Volume of gas sampled (Nm³)

$$= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} - \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})}$$

$$= 0.3858 \times (2000 - 100) \times \left[\frac{550}{(273 + 31)} - \frac{40}{(273 + 28)} \right]$$

$$= 0.3858 \times 1900 \times \left[\frac{550}{304} - \frac{40}{301} \right]$$

$$= 1204.7 \quad \text{Nm}^3$$

NO₂ (mg/Nm³)

$$= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}}$$

$$= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.208}{1204.7}$$

$$= 172.66 \quad \text{mg/Nm}^3$$

NO₂ (ppmv)

$$= 172.66 \times 24.45 \times \left[\frac{1}{46} \right]$$

$$= 91.77 \quad \text{ppmv}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuaminagar.

Date & time of visit: 12/11/25 at 15:30 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>53</u>		
	I.D. Of Stack at port (mtr) D	:	<u>11.8</u>	Cross sectional area of stack m ³	<u>89.4</u>
	Type of fired heater	:	<u>Urea Prilling Tower</u>		
	No. of stacks	:	<u>(U-1A-301)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>35</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0148</u>
	Final DGM reading	:	<u>35</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0818</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>327</u>	(1-Bow)	:	<u>0.9882</u>
	DGM temp (°C)	:	<u>35</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>3.1766</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(M _s)= [M _d ×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.23</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.53587	Wt. of Particulate gms	:	0.02181
Final wt. of thimble gms	:	2.55768		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	58	331	0.2				
2	0.2			0.2				
3	0.3			0.3				
4	0.4			0.3				
5	0.5			0.2				
6	0.6			0.2				
7	0.7			0.2				
8	0.8			0.3				
9	0.9			0.2				
10	1.0	58	331	0.2				
11	Avg	58	331	0.23				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X Ts}{Ps X Ms}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{Ts}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 85.24 mg/Nm ³	SO ₂ -	NO _x -
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Monitored by: 

Urea Plant - Prilling Tower (U-AI - 301)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= 89.4 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{0.23 \times 331}{720 \times 29.23}}$$

$$= 1.76 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 1.76 \times 3600 \times 89.4$$

$$= 567659.3 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 567659.3 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 567659.3 \times \frac{720}{760} \times \frac{298}{331}$$

$$= 484166.7 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{331}$$

$$= 0.2559 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\text{a Initial weight of Thimble} = 2.53587 \text{ g}$$

$$\text{b Final weight of Thimble} = 2.55768 \text{ g}$$

$$\text{c Difference (b-a)} = 0.02181 \text{ g}$$

$$\text{Particulate Matter (mg/Nm}^3\text{)}$$

$$= \frac{0.02181 \times 1000}{0.2559}$$

$$= 85.24 \text{ mg/Nm}^3$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuari nagar.

Date & time of visit: 12/11/2025 at 16:20 Hrs.

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>61</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.12</u>	Cross sectional area of stack m ³	<u>0.9853</u>
	Type of fired heater	:	<u>Urea Dust Separator</u>		
	No. of stacks	:	<u>(U-FD-304)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>12</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01786</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.05618</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C+ 273)	:	<u>305</u>	(1-Bow)	:	<u>0.94387</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>710</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>0.31786</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.2</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.41427	Wt. of Particulate gms	:	0.01625
Final wt. of thimble gms	:	2.43052		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	56	329	20.5				
2	0.2			21.4				
3	0.3			20.8				
4	0.4			21.7				
5	0.5			20.7				
6	0.6			21.2				
7	0.7			21.5				
8	0.8			21.0				
9	0.9			20.8				
10	1.0	56	329	21.4				
11	Avg	56	329	21.1				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X Ts}{Ps X Ms}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{Ts}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 64.01 mg/Nm ³	SO ₂ -	NO _x -
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Monitored By:



Urea Plant - Dust Separator (U-FD- 304)

1 Cross sectional area of Stack (m²)

$$\begin{aligned} &= \frac{\pi}{4} \times (d)^2 \\ &= \frac{3.14159}{4} \times (1.12)^2 \\ &= 0.98533 \text{ m}^2 \end{aligned}$$

2 Stack Flue gas Velocity (m/s)

$$\begin{aligned} &= 34.97 \times 0.8386 \times \sqrt{\frac{21.1 \times 329}{710 \times 29.2}} \\ &= 16.97 \text{ m/s} \end{aligned}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$\begin{aligned} &= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack} \\ &= 16.97 \times 3600 \times 0.98533 \\ &= 60194.1 \text{ m}^3/\text{Hr} \end{aligned}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$\begin{aligned} &= 60194.1 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}} \\ &= 60194.1 \times \frac{710}{760} \times \frac{298}{329} \\ &= 50935.3 \text{ Nm}^3/\text{Hr} \end{aligned}$$

5 Volume of Gas Sampled : 300 Litres

$$\begin{aligned} &= 0.3 \times \frac{710}{760} \times \frac{298}{329} \\ &= 0.2539 \text{ Nm}^3 \end{aligned}$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble	=	2.41427 g
b Final weight of Thimble	=	2.43052 g
c Difference (b-a)	=	0.01625 g

Particulate Matter (mg/Nm³)

$$\begin{aligned} &= \frac{0.01625 \times 1000}{0.2539} \\ &= 64.01 \text{ mg/Nm}^3 \end{aligned}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zamunagar

Date & time of visit: 13/11/2025 at 14.00 hrs.

Stack Details	Stack Appearance	:	Round
	Total Height of Stack (mtr)	:	50
	I.D. Of Stack at port (mtr) D	:	2.38
			Cross sectional area of stack m ³ 4.449
	Type of fired heater	:	Boiler
	No. of stacks	:	CS-BF-101 (A)
	Fuel used	:	Natural Gas
	Fuel consumption (Kg/hr)	:	8248.34

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	0	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	300
	DGM Temp °C	:	31	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	0.3
	Vol. of Abs. media taken for titration	:	10	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	15.74
	Vol. of BaCl ₂ required	:	0.7	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	2.52
NO _x	Initial box temp.	:	27	Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:	30	Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	168.82
	Vol. of Abs. media taken for titration	:	10	Initial pressure	:	685	NO _x (ppmv)	:	89.73
	Calculation Factor	:	50	Final pressure	:	760		:	
	Absorbance	:	0.204	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	0	Vol ^m of condensate (ml) V _c	:	12	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	0.0178
	Final DGM reading	:	31	Vol ^m of Air collected (m ³) V _m	:	0.3	$Bow = \frac{M}{100}$	:	0.0059
	Suction at meter (mm Hg) P _m	:	50	T _m (°C+ 273)	:	304	(1-Bow)	:	0.9444
	DGM temp (°C)	:	31	P _{bar} -P _m	:	710	$M = \frac{V_v \times 100}{V_v + V_m}$	:	0.5898

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	10.8	× 0.44= 4.75	30.18	30.13
	O ₂	:	11.2	× 0.32= 3.58		
	N ₂	:	78	× 0.28= 2.84		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.46122	Wt. of Particulate gms	:	0.00914
Final wt. of thimble gms	:	2.47036		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	124	397	12.1				
2	0.2			12.5				
3	0.3			12.8				
4	0.4			13.0				
5	0.5			12.7				
6	0.6			13.3				
7	0.7			12.9				
8	0.8			12.6				
9	0.9			12.4				
10	1.0	124	397	12.7				
11	Arg	124	397	12.7				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X T_s}{P_s X M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 42.84 mg/Nm ³	SO ₂ - 15.74 mg/Nm ³	NO _x - 168.82 mg/Nm ³
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Monitored By 

Boiler Plant Stack (S-BF 101CA)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (2.38)^2$$

$$= 4.449 \text{ m}^2$$

2 Stack Flue Gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{12.7 \times 397}{710 \times 30.13}}$$

$$= 14.24 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 14.24 \times 3600 \times 4.449$$

$$= 228025.7 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 228025.7 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 228025.7 \times \frac{710}{760} \times \frac{298}{397}$$

$$= 159902.1 \text{ Nm}^3/\text{Hr}$$

5 SO₂ (mg/Nm³)

$$= \frac{32.06 \times (S-B) \times N \times V_{soln} \times 1000/V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 0.7 \times 0.01 \times 30 \times 1000/10}{30}$$

$$= 22.44 \text{ (mg/m}^3\text{)}$$

$$= 22.44 \times \frac{71}{760} \times \frac{298}{397}$$

$$= 15.74 \text{ mg/Nm}^3$$

SO₂ (Kg/Hr)

$$\begin{aligned} &= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)} \\ &= 15.74 \times 159902.1/1000000 \\ &= 2.52 \quad \text{Kg/Hr} \end{aligned}$$

6 Volume of gas sampled (Nm³)

$$= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} - \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})}$$

$$= 0.3858 \times (2000 - 100) \times \left[\frac{550}{(273 + 30)} - \frac{50}{(273 + 27)} \right]$$

$$= 0.3858 \times 1900 \times \left[\frac{550}{303} - \frac{50}{300} \right]$$

$$= 1208.39 \quad \text{Nm}^3$$

7 NO₂ (mg/Nm³)

$$= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}}$$

$$= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.204}{1208.39}$$

$$= 168.82 \quad \text{mg/Nm}^3$$

NO₂ (ppmv)

$$= 168.82 \times 24.45 \times \left[\frac{1}{46} \right]$$

$$= 89.73 \quad \text{ppmv}$$

Volume of gas sampled = 300 ltrs

$$= 0.3 \times \frac{720}{760} \times \frac{298}{397}$$

$$= 0.2133$$

8 Particulate Matter (mg/Nm³)

$$\begin{aligned} \text{a Initial weight of Thimble} &= 2.46122 \text{ g} \\ \text{b Final weight of Thimble} &= 2.47036 \text{ g} \\ \text{c Difference (b-a)} &= 0.00914 \text{ g} \end{aligned}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.0914 \times 1000}{0.2133}$$

$$= 42.84 \quad \text{mg/Nm}^3$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep phosphates Address: Zuaringar

Date & time of visit: 13/11/25 at 16:15Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>33</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.8</u>	Cross sectional area of stack m ³	
	Type of fired heater	:	<u>NPK-A Dedusting cooler</u>		
	No. of stacks	:	<u>(N-CB-403)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.1527</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04843</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>305</u>	(1-Bow)	:	<u>0.95158</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.8434</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.04</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.08696	Wt. of Particulate gms	:	0.01162
Final wt. of thimble gms	:	2.09858		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	41	314	5.4				
2	0.2			6.2				
3	0.3			5.7				
4	0.4			5.9				
5	0.5			5.2				
6	0.6			6.4				
7	0.7			5.8				
8	0.8			6.1				
9	0.9			5.5				
10	1.0	41	314	5.8				
11	Avg	41	314	5.8				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times Ts}{Ps \times Ms}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP – Differential Pressure(mm WC)

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{Ts}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM-43.08 mg/Nm ³	SO ₂ -	NO _x -
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Monitored by:



NPK-A Plant - Dedusting Cooler Stack (N-CB - 403)

1 Cross sectional area of Stack (m²)

$$\begin{aligned} &= \frac{\pi}{4} \times d^2 \\ &= \frac{3.14159}{4} \times (1.8)^2 \\ &= 2.545 \text{ m}^2 \end{aligned}$$

2 Stack Flue gas Velocity (m/s)

$$\begin{aligned} &= 34.97 \times 0.8386 \times \sqrt{\frac{5.8 \times 314}{720 \times 29.04}} \\ &= 8.65 \text{ m/s} \end{aligned}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$\begin{aligned} &= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack} \\ &= 8.65 \times 3600 \times 2.545 \\ &= 79296.7 \text{ m}^3/\text{Hr} \end{aligned}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$\begin{aligned} &= 79296.7 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}} \\ &= 79296.7 \times \frac{720}{760} \times \frac{298}{314} \\ &= 71295.2 \text{ Nm}^3/\text{Hr} \end{aligned}$$

5 Volume of Gas Sampled : 300 Litres

$$\begin{aligned} &= 0.3 \times \frac{720}{760} \times \frac{298}{314} \\ &= 0.2697 \text{ Nm}^3 \end{aligned}$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble	=	2.08696 g
b Final weight of Thimble	=	2.09858 g
c Difference (b-a)	=	0.01162 g

Particulate Matter (mg/Nm³)

$$\begin{aligned} &= \frac{0.01162 \times 1000}{0.2697} \\ &= 43.08 \text{ mg/Nm}^3 \end{aligned}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep phosphates Address: Zuaringagar

Date & time of visit: 24/11/25 at 14:30 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>48</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.4</u>	Cross sectional area of stack m ³	<u>1.539</u>
	Type of fired heater	:	<u>NPK-A fumes stack</u>		
	No. of stacks	:	<u>CN-CB-901</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	<u>3% H₂O₂</u>	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>33</u>	Vol. of Abs. media	:	<u>100 ml</u>	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	<u>0.01</u>	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	<u>1 lpm</u>	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	<u>H₂SO₄+H₂O₂</u>	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	<u>25</u>	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	<u>685</u>	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	<u>760</u>		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01472</u>
	Final DGM reading	:	<u>33</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0467</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C + 273)	:	<u>306</u>	(1-Bow)	:	<u>0.9533</u>
	DGM temp (°C)	:	<u>33</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.678</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10</u>	× 0.44= <u>4.40</u>	<u>30.08</u>	<u>29.52</u>
	O ₂	:	<u>12</u>	× 0.32= <u>3.84</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	-	Wt. of Particulate gms	:	-
Final wt. of thimble gms	:	-		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	56	329	9.8				
2	0.2			10.7				
3	0.3			10.3				
4	0.4			11.4				
5	0.5			10.5				
6	0.6			10.6				
7	0.7			10.9				
8	0.8			10.5				
9	0.9			10.6				
10	1.0	56	329	10.7				
11	Arg	56	329	10.6				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- —	SO ₂ - —	NH ₃ - 6.56 mg/m ³
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Monitored By:



NPK-A Plant - Fumes Stack (N-CB 901)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (1.4)^2$$

$$= 1.539 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{10.6 \times 329}{720 \times 29.52}}$$

$$= 11.88 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 11.88 \times 3600 \times 1.539$$

$$= 65814.0 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 65814.0 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 65814.0 \times \frac{720}{760} \times \frac{298}{329}$$

$$= 56475.1 \text{ Nm}^3/\text{Hr}$$

5 Ammonia (mg/Nm³)

$$= \frac{OD \times CF \times 1000}{\text{Volume of Gas Sample}} \times \frac{\text{Total Volume of Abs.Soln}}{\text{Sample Aliquote}}$$

$$= \frac{0.447 \times 22.03 \times 1000}{30} \times \frac{100}{5}$$

$$= 6564.94 \text{ (}\mu\text{g/Nm}^3\text{)}$$

$$= 6.56 \text{ mg/Nm}^3$$

6 Ammonia Conc. in Kg/Hr

$$= \frac{\text{mg/Nm}^3 \text{ (amm)} \times \text{Stack flow rate (NTP)}}{10^6}$$

$$= \frac{6.56 \times 56475.1}{10^6}$$

$$=$$

$$= 0.37 \text{ Kg/Hr}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Parsadeep Phosphates Address: Zuaringar

Date & time of visit: 24/11/25 at 15:40 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>33</u>		
	I.D. Of Stack at port (mtr) D	:	<u>3.0</u>	Cross sectional area of stack m ³	<u>7.069</u>
	Type of fired heater	:	<u>NPK-A Dwyer stack</u>		
	No. of stacks	:	<u>(N-CB-301)</u>		
	Fuel used	:	<u>Natural Gas</u>		
	Fuel consumption (Kg/hr)	:	<u>214.34</u>		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>30</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.9458</u>
	Final DGM reading	:	<u>30</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04634</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>303</u>	(1-Bow)	:	<u>0.9537</u>
	DGM temp (°C)	:	<u>30</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.6338</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>4</u>	× 0.44=	<u>29.36</u>	<u>28.83</u>
	O ₂	:	<u>18</u>	× 0.32=		
	N ₂	:	<u>78</u>	× 0.28=		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.38478	Wt. of Particulate gms	:	0.01467
Final wt. of thimble gms	:	2.39945		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	46	319	4.8				
2	0.2			5.2				
3	0.3			5.7				
4	0.4			5.0				
5	0.5			6.0				
6	0.6			5.6				
7	0.7			5.1				
8	0.8			5.8				
9	0.9			5.5				
10	1.0			46	319	5.3		
11	Avg	46	319	5.4				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP – Differential Pressure(mm WC)

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 55.25 mg/Nm ³	SO ₂ - -	NO _x - -
-------------------	------------------------------	---------------------	---------------------

Monitored By:

NPK-A Plant - Dryer Stack (N-CB- 301)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (3)^2$$

$$= 7.069 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{5.4 \times 319}{720 \times 28.83}}$$

$$= 8.45 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 8.45 \times 3600 \times 7.069$$

$$= 214988.2 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 214988.2 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 214988.2 \times \frac{720}{760} \times \frac{298}{319}$$

$$= 190265.1 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{319}$$

$$= 0.2655 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\text{a Initial weight of Thimble} = 2.38478 \text{ g}$$

$$\text{b Final weight of Thimble} = 2.39945 \text{ g}$$

$$\text{c Difference (b-a)} = 0.01467 \text{ g}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.01467 \times 1000}{0.2655}$$

$$= 55.25 \text{ mg/Nm}^3$$



No. PPL/ENV/R-2025-26/82

13.03.2026

To,
Member Secretary,
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Dear Sir,

Sub.: Stack Emission Analysis Report for February 2026.

In compliance with the condition of the Common Air/Water/Hazardous Waste Consent to Operate Order vide letter No. 12/2023-PCB/1948660/R00013712 dated 14/06/2024 issued by your office, we are submitting herewith the reports of stack emission analysis carried out in **February 2026** by M/s. Aditya Environmental Services Pvt. Ltd. (AESPL), Raigad, Maharashtra, a laboratory recognized as "Environmental Laboratory" by Ministry of Environment and Forests under Letter No. F. No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt/491 dated 02nd June 2025.

As desired by your office vide. Letter No.6/5/98-PCB/VOL.V/533 dt.10/7/2000, we are also submitting the working sheets of the stack emission analysis carried out.

Thanking you,

Yours faithfully,
For **Paradeep Phosphates Limited, Goa Unit**


Suresh Pramanik
Chief Manufacturing Officer & Unit Head- Goa Plant

Encl.: as above

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com



Aditya Environmental Services Pvt. Ltd.

ISO 9001 : 2015 & ISO 45001 : 2018 certified Testing Laboratory

Laboratory: P-1, MIDC Commercial Plots, Mohopada, Rasayani, Dist. Raigad, 410222

E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 25/02/2026

Report No. AESPL/G/ST-26/02/01

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	AMMONIA PLANT-REFORMER/COMBUSTION CHAMBER FLUE GAS STACK (A-CA-101)
02	Date & Time of Monitoring	09/02/2026 at 11.30 Hrs.
03	Date of completion of Analysis	25/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	30
c.	Stack Height, meter	36.5
d.	Stack diameter, meter	3.50
e.	Stack Temperature, °C	131
f.	Stack flue Gas Velocity, m/s	9.70
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	335858.0
h.	Stack Gas Flow rate, Nm ³ /Hr.	234698.1
i.	Plant Load, %	80
j.	Plant Capacity, MT/day	1050

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No	Parameter	Unit	Result	Limit	Method of Analysis
01	Sulphur dioxide (SO ₂)	mg/Nm ³	20.16	NM	IS-11255, (part-2) 2019
		Kg/Hr.	4.73	NM	
02	Oxides of Nitrogen (NO ₂)	mg/Nm ³	178.77	NM	IS-11255, (part-7) 2017
		ppmv	95.02	NM	

Note 1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.

2. NM refers to not mentioned in consent.

3. The above stack analysis results related only to the conditions prevailing at the time of Sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2026	31/12/2026
03	UV-Vis Spectrophotometer	Systonics-104	02/02/2026	28/02/2026



Reshma S. Patil
(Authorized Signatory)

-End of Test Report-

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 26/02/2026

Report No. AESPL/G/ST-26/02/02

Client	Paradeep Phosphates Ltd.- Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	UREA PLANT PRILLING TOWER (U-IA-301)
02	Date & Time of Monitoring	09/02/2026 at 14.20 Hrs.
03	Date of completion of Analysis	26/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meter	53
d.	Stack diameter, meter	11.8
e.	Stack Temperature, °C	56
f.	Stack flue Gas Velocity m/s	1.87
g.	Stack gas flow rate at Stack condition m ³ /Hr.	601720.0
h.	Stack Gas Flow rate Nm ³ /Hr.	516337.6
i.	Plant Load %	86
j.	Plant Capacity, MT/day	1500

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	93.35	150	IS-11255, (Part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2026	31/12/2026



Reshma S. Patil
(Authorized Signatory)

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 26/02/2026

Report No. AESPL/G/ST-26/02/03

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	UREA PLANT DUST SEPERATOR (U-FD-304)
02	Date & Time of Monitoring	09/02/2026 at 15.40 Hrs.
03	Date of completion of Analysis	26/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meter	61
d.	Stack diameter, meter	1.12
e.	Stack Temperature, °C	55
f.	Stack flue Gas Velocity m/s	16.41
g.	Stack gas flow rate at Stack condition m ³ /Hr.	58221.6
h.	Stack Gas Flow rate Nm ³ /Hr.	49416.4
i.	Plant Load %	86
j.	Plant Capacity, MT/day	1500

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method of analysis
01	Particulate Matter (PM)	mg/Nm ³	62.6	150	IS-11255, (part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2026	31/12/2026



Reshma S. Patil
(Authorized Signatory)

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 25/02/2026

Report No. AESPL/G/ST-26/02/04

Client	Paradeep Phosphates Ltd. - Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	BOILER (S-BF- 101CA) (Boiler A&B Inlet)
02	Date & Time of Monitoring	10/02/2026 at 11.10 Hrs.
03	Date of completion of Analysis	25/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	30
c.	Stack Height, meter	50
d.	Stack diameter, meter	2.38
e.	Stack Temperature, °C	126
f.	Stack flue Gas Velocity, m/s	12.92
g.	Stack gas flow rate at Stack condition, m ³ /Hr.	206866.3
h.	Stack Gas Flow rate, Nm ³ /Hr.	144337.1
i.	Boiler Load, %	100
j.	Boiler Capacity A&B , MT/hr	140
k.	Fuel consumption for Boiler A&B Kg/Hr	8073.74
l.	Type of fuel used	Natural Gas

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No	Parameter	Unit	Result	Limit	Method of Analysis
01	Particulate matter	mg/Nm ³	37.92	NM	IS-11255, (part- 1,3) 2018-19
02	Sulphur dioxide (SO ₂)	mg/Nm ³	17.90	NM	IS-11255, (part-2) 2019
		Kg/Hr.	2.58	NM	
03	Oxides of Nitrogen (NO ₂)	mg/Nm ³	171.15	NM	IS-11255, (part-7) 2017
		ppmv	90.97	NM	

Note 1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of Sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2026	31/12/2026
03	UV-Vis Spectrophotometer	Systonics-104	02/02/2026	28/02/2026



Reshma S. Patil
(Authorized Signatory)

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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 25/02/2026

Report No. AESPL/G/ST-26/02/06

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A DEDUSTING STACK (N-CB-403)
02	Date & Time of Monitoring	10/02/2026 at 16.00 Hrs.
03	Date of completion of Analysis	25/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meter	33
d.	Stack diameter, meter	1.8
e.	Stack Temperature °C	40
f.	Stack flue Gas Velocity m/s	7.94
g.	Stack gas flow rate at Stack condition m ³ /Hr.	72769.0
h.	Stack Gas Flow rate Nm ³ /Hr.	65635.3
i.	Plant Load %	83
j.	Plant Capacity, MT/day	1600

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	51.04	150	IS 11255 (Part-1) 1985

Note:

- Limit prescribed as per Consent No 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartoris	01/01/2026	31/12/2026
03	UV-Vis Spectrophotometer	Systonics-104	02/02/2026	28/02/2026



Reshma S. Patil
(Authorized Signatory)

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GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 25/02/2026

Report No. AESPL/G/ST-26/02/07

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A DRYER STACK (N-CB-301)
02	Date & Time of Monitoring	10/02/2026 at 17.10 Hrs.
03	Date of completion of Analysis	25/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature °C	29
c.	Stack Height, meters	33
d.	Stack diameter, meter	3.0
e.	Stack Temperature, °C	45
f.	Stack flue Gas Velocity m/s	8.12
g.	Stack gas flow rate at Stack condition m ³ /Hr.	206548.0
h.	Stack Gas Flow rate Nm ³ /Hr.	183370.3
i.	Plant Load %	83
j.	Fuel consumption (Natural Gas) Kg/hr.	248.6
k.	Plant Capacity, MT/day	1600

TEST SPECIFICATION AS PER GOA STATE POLLUTION CONTROL BOARD (G.S.P.C.B)

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Particulate Matter (PM)	mg/Nm ³	57.37	150	IS-11255, (part- 1,3) 2018-19

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2026	31/12/2026



Reshma S. Patil
(Authorized signatory)

-End of Test Report-

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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 25/02/2026

Report No. AESPL/G/ST-26/02/05

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-A FUMES STACK(N-CB-901)
02	Date & Time of Monitoring	10/02/2026 at 14.10 Hrs.
03	Date of completion of Analysis	25/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature (°C)	31
c.	Stack Height (meter)	48.5
d.	Stack diameter (meter)	1.4
e.	Stack Temperature (°C)	55
f.	Stack flue Gas Velocity (m/s)	12.46
g.	Stack gas flow rate at Stack condition (m ³ /Hr.)	69039.4
h.	Stack Gas Flow rate (Nm ³ /Hr.)	57836.5
i.	Plant Load %	83
j.	Plant Capacity (MT/day)	1600

STACK GAS ANALYSIS REPORT

Sr. No.	Parameter	Unit	Result	Limit	Method
01	Ammonia (NH ₃)	mg/Nm ³	16.23	NM	IS 11255 (Part-6) 2019
		kg/Hr.	0.94	10	

Note:

- Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
- NM refers to not mentioned in consent.
- The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAILS

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	UV-Vis Spectrophotometer	Systonics-104	02/02/2026	28/02/2026



Reshma S. Patil
(Authorized signatory)

-End of Test Report-

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E-mail: pglab@aespl.co.in Tel: 9112844844

GSTN: 27AADCA4730B1Z8 | CIN: U74999MH2001PTC132091 | UDYAM-MH-19-0029787

Date: 26/02/2026

Report No. AESPL/G/ST-26/02/08

Client	Paradeep Phosphates Ltd. Goa Unit
Address	Jai Kisaan Bhawan, Zuarinagar Goa - 403 726

01	Sample Attached to	NPK-B STACK (05-5D-101)
02	Date & Time of Monitoring	11/02/2026 at 11.00 Hrs.
03	Date of completion of Analysis	26/02/2026
04	Parameter	
a.	Nature	STACK EMISSION MONITORING
b.	Ambient Temperature (°C)	31
c.	Stack Height (meter)	43.5
d.	Stack diameter (meter)	2.5
e.	Stack Temperature (°C)	52
f.	Stack flue Gas Velocity (m/s)	10.97
g.	Stack gas flow rate at Stack condition (m ³ /Hr.)	198294.6
h.	Stack Gas Flow rate (Nm ³ /Hr.)	172251.3
i.	Plant Load %	85
j.	Fuel consumption (Natural Gas) Kg/hr	272.56
k.	Plant Capacity (MT/day)	1600

STACK GAS ANALYSIS REPORT

Sr. No	Parameter	Unit	Result	Limit	Method of analysis
01	Particulate Matter (PM)	mg/Nm ³	55.68	150	IS-11255, (part- 1,3) 2018-19
02	Ammonia (NH ₃)	mg/Nm ³	11.04	NM	IS 11255 (Part-6) 2019
		kg/Hr.	1.90	10	

Note:

1. Limit prescribed as per Consent No. 12/2023-PCB/1948660/R00013712 Dated 14/06/2024.
2. NM refers to not mentioned in consent.
3. The above stack analysis results related only to the conditions prevailing at the time of sampling.

INSTRUMENT CALIBRATION DETAIL

Sr. No.	Name of Instrument	Make & model	Calibration Date	Calibration Due Date
01	Stack Kit INS/ST/01	Thermo	08/04/2025	07/04/2026
02	Balance	Sartorius	01/01/2026	31/12/2026
03	UV-Vis Spectrophotometer	Systonics-104	02/02/2026	28/02/2026



Reshma S. Patil
(Authorized Signatory)

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Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphate Address: Zuaringar

Date & time of visit: 09/02/2026 at 11.30 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>	
	Total Height of Stack (mtr)	:	<u>36.5</u>	
	I.D. Of Stack at port (mtr) D	:	<u>3.5</u>	Cross sectional area of stack m ³ <u>9.622</u>
	Type of fired heater	:	<u>Ammonia Reformer</u>	
	No. of stacks	:	<u>(A-CA-101)</u>	
	Fuel used	:		
	Fuel consumption (Kg/hr)	:		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	<u>300</u>
	DGM Temp °C	:	<u>130</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	<u>0.3</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	<u>20.16</u>
	Vol. of BaCl ₂ required	:	<u>0.9</u>	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	<u>4.73</u>
NO _x	Initial box temp.	:	<u>28</u>	Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:	<u>31</u>	Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	<u>178.77</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Initial pressure	:	685	NO _x (ppmv)	:	<u>95.02</u>
	Calculation Factor	:	<u>50</u>	Final pressure	:	760		:	
	Absorbance	:	<u>0.211</u>	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0197</u>
	Final DGM reading	:	<u>130</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0616</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C+ 273)	:	<u>403</u>	(1-Bow)	:	<u>0.9384</u>
	DGM temp (°C)	:	<u>130</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>6.1616</u>

Orsat analysis	Gas	% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	<u>10.2</u>	× 0.44= <u>4.49</u>	<u>29.8</u>	<u>29.8</u>
	O ₂	<u>10.8</u>	× 0.32= <u>3.46</u>		
	N ₂	<u>78</u>	× 0.28= <u>21.84</u>		
	CO		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:		Wt. of Particulate gms	:	
Final wt. of thimble gms	:			:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	131	404	5.5				
2	0.2			6.1				
3	0.3			5.9				
4	0.4			5.4				
5	0.5			5.7				
6	0.6			6.2				
7	0.7			6.5				
8	0.8			5.1				
9	0.9			5.3				
10	1.0	131	404	6.3				
11	Avg	131	404	5.8				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X Ts}{Ps X Ms}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{Ts}}$$

ΔP - Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM-	SO ₂ - 2016 mg/Nm ³	NO _x - 178.77 mg/Nm ³
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Monitored By:

Ammonia Plant - Reformer Stack/Combustion Chamber Stack (A-CA 101)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (3.5)^2$$

$$= 9.622 \quad \text{m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{5.8 \times 404}{720 \times 29.8}}$$

$$= 9.70 \quad \text{m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 9.70 \times 3600 \times 9.622$$

$$= 335858.0 \quad \text{m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 335858.0 \times \frac{P_{\text{atm}}}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 335858.0 \times \frac{720}{760} \times \frac{298}{404}$$

$$= 234698.1 \quad \text{Nm}^3/\text{Hr}$$

5 SO₂ (mg/m³)

$$= \frac{32.06 \times (S-B) \times N \times V_{\text{Soln}} \times 1000/V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 0.9 \times 0.01 \times 30 \times 1000/10}{30}$$

$$= 28.85 \quad (\text{mg/m}^3)$$

$$= 28.85 \times \frac{720}{760} \times \frac{298}{404}$$

$$= 20.16 \quad \text{mg/Nm}^3$$

SO₂ (Kg/Hr)

$$= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)}$$

$$= 20.16 \times 234698.1/1000000$$

$$= 4.73 \quad \text{Kg/Hr}$$

6 NO₂ (mg/Nm³)

Volume of gas sampled (Nm³)

$$= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} - \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})}$$

$$= 0.3858 \times (2000 - 100) \times \left[\frac{550}{(273 + 31)} - \frac{50}{(273 + 28)} \right]$$

$$= 0.3858 \times 1900 \times \left[\frac{550}{304} - \frac{50}{301} \right]$$

$$= 1180.3 \quad \text{Nm}^3$$

NO₂ (mg/Nm³)

$$= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}}$$

$$= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.211}{1180.3}$$

$$= 178.77 \quad \text{mg/Nm}^3$$

NO₂ (ppmv)

$$= 178.77 \times 24.45 \times \left[\frac{1}{46} \right]$$

$$= 95.02 \quad \text{ppmv}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Parsadeep phosphates Address: Zuaringar

Date & time of visit: 09/02/2028 at 14.20 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>	
	Total Height of Stack (mtr)	:	<u>53</u>	
	I.D. Of Stack at port (mtr) D	:	<u>11.8</u>	Cross sectional area of stack m ³ <u>89.4</u>
	Type of fired heater	:	<u>Unreg. Psilling Tower</u>	
	No. of stacks	:	<u>(U-2A-301)</u>	
	Fuel used	:		
	Fuel consumption (Kg/hr)	:		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>35</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0148</u>
	Final DGM reading	:	<u>35</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0818</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>327</u>	(1-Bow)	:	<u>0.9882</u>
	DGM temp (°C)	:	<u>35</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>3.1766</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.23</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.12821	Wt. of Particulate gms	:	0.02403
Final wt. of thimble gms	:	2.15224		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	56	329	0.2				
2	0.2			0.3				
3	0.3			0.2				
4	0.4			0.3				
5	0.5			0.2				
6	0.6			0.3				
7	0.7			0.2				
8	0.8			0.3				
9	0.9			0.3				
10	1.0			56	329	0.3		
11	Avg	56	329	0.26				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times C_p \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$R_m = C.F. \times C_p \sqrt{\frac{\Delta P}{T_s}}$$

ΔP - Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 93.35 mg/Nm ³	SO ₂ -	NO _x -
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Monitored By 

Urea Plant - Prilling Tower (U-AI - 301)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= 89.4 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{0.26 \times 329}{720 \times 29.23}}$$

$$= 1.87 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 1.87 \times 3600 \times 89.4$$

$$= 601720.0 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 601720.0 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 601720.0 \times \frac{720}{760} \times \frac{298}{329}$$

$$= 516337.6 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{329}$$

$$= 0.2574 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\text{a Initial weight of Thimble} = 2.12821 \text{ g}$$

$$\text{b Final weight of Thimble} = 2.15224 \text{ g}$$

$$\text{c Difference (b-a)} = 0.02403 \text{ g}$$

$$\text{Particulate Matter (mg/Nm}^3\text{)}$$

$$= \frac{0.02403 \times 1000}{0.2574}$$

$$= 93.35 \text{ mg/Nm}^3$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep phosphate Address: Zuaringar

Date & time of visit: 09/02/20 at 15:40 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>61</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.12</u>	Cross sectional area of stack m ³	<u>0.9853</u>
	Type of fired heater	:	<u>Urea Dust Separator</u>		
	No. of stacks	:	<u>(V-FD-304)</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	<u>1 lpm</u>	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>12</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01786</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.05618</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C + 273)	:	<u>305</u>	(1-Bow)	:	<u>0.94387</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>710</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>0.31786</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol. Wt. dry basis	M. Wt. (wet basis) (M _s) = [M _d × (1-Bow)] + (18 × Bow)
	CO ₂	:	<u>6</u>	× 0.44 = <u>2.64</u>	<u>29.6</u>	<u>29.2</u>
	O ₂	:	<u>16</u>	× 0.32 = <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28 = <u>21.84</u>		
	CO	:		× 0.28 =		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.29151	Wt. of Particulate gms	:	0.01594
Final wt. of thimble gms	:	2.30745		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	55	328	19.2				
2	0.2	/	/	20.0				
3	0.3			19.5				
4	0.4			20.1				
5	0.5			19.7				
6	0.6			20.4				
7	0.7			19.6				
8	0.8			19.9				
9	0.9			19.6				
10	1.0			55	328	20.0		
11	Avg	55	328	19.8				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X Ts}{Ps X Ms}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{Ts}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 62.6 mg/Nm ³	SO ₂ -	NO _x -
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Monitored By:



Urea Plant - Dust Separator (U-FD- 304)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times (d)^2$$

$$= \frac{3.14159}{4} \times (1.12)^2$$

$$= 0.98533 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{19.8 \times 328}{710 \times 29.2}}$$

$$= 16.41 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 16.41 \times 3600 \times 0.98533$$

$$= 58221.6 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 58221.6 \times \frac{P_{\text{BP}}}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 58221.6 \times \frac{710}{760} \times \frac{298}{328}$$

$$= 49416.4 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{710}{760} \times \frac{298}{328}$$

$$= 0.2546 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

a Initial weight of Thimble = 2.29151 g

b Final weight of Thimble = 2.30745 g

c Difference (b-a) = 0.01594 g

Particulate Matter (mg/Nm³)

$$= \frac{0.01594 \times 1000}{0.2546}$$

$$= 62.60 \text{ mg/Nm}^3$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuaminagar

Date & time of visit: 10/02/2020 at 11:10 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>50</u>		
	I.D. Of Stack at port (mtr) D	:	<u>2.38</u>	Cross sectional area of stack m ³	<u>4.449</u>
	Type of fired heater	:	<u>Boiler CS-BF-101(A)</u>		
	No. of stacks	:			
	Fuel used	:	<u>Natural Gas</u>		
	Fuel consumption (Kg/hr)	:	<u>8073.74</u>		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	<u>300</u>
	DGM Temp °C	:	<u>31</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	<u>0.3</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	<u>17.90</u>
	Vol. of BaCl ₂ required	:	<u>0.8</u>	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	<u>2.58</u>
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	<u>171.15</u>
	Vol. of Abs. media taken for titration	:	<u>10</u>	Initial pressure	:	685	NO _x (ppmv)	:	<u>90.97</u>
	Calculation Factor	:	<u>50</u>	Final pressure	:	760		:	
	Absorbance	:	<u>0.211</u>	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>12</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.0178</u>
	Final DGM reading	:	<u>31</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0059</u>
	Suction at meter (mm Hg) P _m	:	<u>50</u>	T _m (°C+ 273)	:	<u>304</u>	(1-Bow)	:	<u>0.9444</u>
	DGM temp (°C)	:	<u>31</u>	P _{bar} -P _m	:	<u>710</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>0.5898</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10.8</u>	× 0.44= <u>4.75</u>	<u>30.18</u>	<u>30.13</u>
	O ₂	:	<u>11.2</u>	× 0.32= <u>3.58</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>2.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.37502	Wt. of Particulate gms	:	0.00805
Final wt. of thimble gms	:	2.38307		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	126	399	9.9				
2	0.2			10.2				
3	0.3			9.7				
4	0.4			11.1				
5	0.5			10.9				
6	0.6			10.6				
7	0.7			10.3				
8	0.8			10.0				
9	0.9			10.8				
10	1.0	126	399	10.5				
11	Avg	126	399	10.4				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9 (Pbar+Pu)=760 mm Hg (Pbar-Pu)=610 mm Hg Tm=303 °K, M. Wt.=30

$$V = 34.97 \times C_p \sqrt{\frac{\Delta P X T_s}{P_s X M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms – Molecular weight on wet basis

$$R_m = C.F. \times C_p \sqrt{\frac{\Delta P}{T_s}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM-	SO ₂ -	NOx-
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Monitored By:

Boiler Plant Stack (S-BF 101CA)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (2.38)^2$$

$$= 4.449 \text{ m}^2$$

2 Stack Flue Gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{10.4 \times 399}{710 \times 30.13}}$$

$$= 12.92 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 12.92 \times 3600 \times 4.449$$

$$= 206866.3 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 206866.3 \times \frac{BP}{P_{atm}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 206866.3 \times \frac{710}{760} \times \frac{298}{399}$$

$$= 144337.1 \text{ Nm}^3/\text{Hr}$$

5 SO₂ (mg/Nm³)

$$= \frac{32.06 \times (S-B) \times N \times V_{soln} \times 1000/V_a}{V_s}$$

S = Sample Reading (ml)

B = Blank Reading (ml)

N = Normality of BaCl₂

V_{soln} = Volume of abs. solution (ml)

V_a = Aliquot taken for titration (ml)

V_s = Volume of gas in Ltr

$$= \frac{32.06 \times 0.8 \times 0.01 \times 30 \times 1000/10}{30}$$

$$= 25.65 \text{ (mg/m}^3\text{)}$$

$$= 25.65 \times \frac{71}{760} \times \frac{298}{399}$$

$$= 17.90 \text{ mg/Nm}^3$$

SO₂ (Kg/Hr)

$$\begin{aligned} &= \text{mg/Nm}^3 \times \text{Flow rate of gas (Nm}^3/\text{Hr)} \\ &= 17.90 \times 144337.1/1000000 \\ &= \mathbf{2.58 \quad Kg/Hr} \end{aligned}$$

6 Volume of gas sampled (Nm³)

$$= 0.3858 \times (2000 - \text{Vol. of abs. media}) \times \frac{\text{Final Pressure}}{(273 + \text{Final Temp.})} - \frac{\text{Initial pressure}}{(273 + \text{Initial Temp.})}$$

$$= 0.3858 \times (2000 - 100) \times \left[\frac{550}{(273 + 30)} - \frac{40}{(273 + 27)} \right]$$

$$= 0.3858 \times 1900 \times \left[\frac{550}{303} - \frac{40}{300} \right]$$

$$= \mathbf{1232.83 \quad Nm^3}$$

7 NO₂ (mg/Nm³)

$$= \frac{1000 \times 2 \times \text{Dil. Ratio} \times \text{Absorbance} \times \text{Calc. Factor}}{\text{Vol. of gas sampled at NTP (Nm}^3\text{)}}$$

$$= \frac{1000 \times 2 \times 100/10 \times 50 \times 0.211}{1232.83}$$

$$= \mathbf{171.15 \quad mg/Nm^3}$$

NO₂ (ppmv)

$$= 171.15 \times 24.45 \times \left[\frac{1}{46} \right]$$

$$= \mathbf{90.97 \quad ppmv}$$

Volume of gas sampled = 300 ltrs

$$= 0.3 \times \frac{720}{760} \times \frac{298}{399}$$

$$= \mathbf{0.2123}$$

8 Particulate Matter (mg/Nm³)

a Initial weight of Thimble

$$= 2.37502 \text{ g}$$

b Final weight of Thimble

$$= 2.38307 \text{ g}$$

c Difference (b-a)

$$= 0.00805 \text{ g}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.00805 \times 1000}{0.2123}$$

$$= \mathbf{37.92 \quad mg/Nm^3}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep phosphate Address: Zuam'nagar

Date & time of visit: 10/02/26 at 16:00 hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>33</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.8</u>	Cross sectional area of stack m ³	<u>2.545</u>
	Type of fired heater	:	<u>NPK-A Dedusting cooler</u>		
	No. of stacks	:	<u>CN-CB-403</u>		
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.1527</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04843</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C + 273)	:	<u>305</u>	(1-Bow)	:	<u>0.95156</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.8434</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(M _s)= [M _d ×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44 = <u>2.64</u>	<u>29.6</u>	<u>29.04</u>
	O ₂	:	<u>16</u>	× 0.32 = <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28 = <u>21.84</u>		
	CO	:		× 0.28 =		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crossectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.44644	Wt. of Particulate gms	:	0.01381
Final wt. of thimble gms	:	2.46025		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	40	313	5.0				
2	0.2			4.6				
3	0.3			4.8				
4	0.4			5.2				
5	0.5			4.9				
6	0.6			5.3				
7	0.7			4.5				
8	0.8			4.9				
9	0.9			4.7				
10	1.0	40	313	5.1				
11	Avg	40	313	4.9				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P \times T_s}{P_s \times M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP - Differential Pressure(mm WC)

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 51.04 mg/Nm ³	SO ₂ -	NOx-
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Monitored By



NPK-A Plant - Dedusting Cooler Stack (N-CB - 403)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (1.8)^2$$

$$= 2.545 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{4.9 \times 313}{720 \times 29.04}}$$

$$= 7.94 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 7.94 \times 3600 \times 2.545$$

$$= 72769.0 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 72769.0 \times \frac{BP}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 72769.0 \times \frac{72}{760} \times \frac{298}{313}$$

$$= 65635.3 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{313}$$

$$= 0.2706 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\text{a Initial weight of Thimble} = 2.44644 \text{ g}$$

$$\text{b Final weight of Thimble} = 2.46025 \text{ g}$$

$$\text{c Difference (b-a)} = 0.01381 \text{ g}$$

$$\text{Particulate Matter (mg/Nm}^3\text{)}$$

$$= \frac{0.01381 \times 1000}{0.2706}$$

$$= 51.04 \text{ mg/Nm}^3$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Parsadeep Phosphates Address: Zwarinagar

Date & time of visit: 10/02/26 at 17:10 hrs

Stack Details	Stack Appearance	:	<u>Round</u>	
	Total Height of Stack (mtr)	:	<u>33</u>	
	I.D. Of Stack at port (mtr) D	:	<u>3.0</u>	Cross sectional area of stack m ³ <u>7.069</u>
	Type of fired heater	:	<u>NPK-A Dryer stack</u>	
	No. of stacks	:	<u>CN-CB-301</u>	
	Fuel used	:	<u>Natural Gas</u>	
	Fuel consumption (Kg/hr)	:	<u>248.6</u>	

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	<u>3% H₂O₂</u>	Vol. of gas Sampled lit.	:	<u>1</u>
	DGM Temp °C	:	<u>30</u>	Vol. of Abs. media	:	<u>100 ml</u>	Vol. of air (at NTP) m ³	:	<u>1</u>
	Vol. of Abs. media taken for titration	:	<u>1</u>	Normality of BaCl ₂	:	<u>0.01</u>	SO ₂ mg/Nm ³	:	<u>1</u>
	Vol. of BaCl ₂ required	:	<u>1</u>	Sampling flow rate	:	<u>1 lpm</u>	SO ₂ kg/hr	:	<u>1</u>
NO _x	Initial box temp.	:	<u>1</u>	Abs. media	:	<u>H₂SO₄+H₂O₂</u>	Vol. of air sampled (ml)	:	<u>1</u>
	Final box temp.	:	<u>1</u>	Vol. of Abs. media	:	<u>25</u>	NO _x mg/Nm ³	:	<u>1</u>
	Vol. of Abs. media taken for titration	:	<u>1</u>	Initial pressure	:	<u>685</u>	NO _x (ppmv)	:	<u>1</u>
	Calculation Factor	:	<u>1</u>	Final pressure	:	<u>760</u>		:	<u>1</u>
	Absorbance	:	<u>1</u>	Dilution ratio	:	<u>1</u>		:	<u>1</u>

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.9458</u>
	Final DGM reading	:	<u>30</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04634</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C + 273)	:	<u>303</u>	(1-Bow)	:	<u>0.9537</u>
	DGM temp (°C)	:	<u>30</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.6338</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>4</u>	× 0.44= <u>1.76</u>	<u>29.36</u>	<u>28.83</u>
	O ₂	:	<u>18</u>	× 0.32= <u>5.76</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.39627	Wt. of Particulate gms	:	0.01528
Final wt. of thimble gms	:	2.41155		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	45	318	4.4				
2	0.2			5.6				
3	0.3			5.1				
4	0.4			4.9				
5	0.5			4.6				
6	0.6			5.4				
7	0.7			5.5				
8	0.8			4.5				
9	0.9			5.1				
10	1.0	45	318	4.9				
11	AVG	45	318	5.0				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X T_s}{P_s X M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP - Differential Pressure(mm WC)

$$R_m = C.F. \times Cp \sqrt{\frac{\Delta P}{T_s}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 57.37	SO ₂ -	NO _x -
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Monitored By:



NPK-A Plant - Dryer Stack (N-CB- 301)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (3)^2$$

$$= 7.069 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{5.0 \times 318}{720 \times 28.83}}$$

$$= 8.12 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 8.12 \times 3600 \times 7.069$$

$$= 206548.0 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 206548.0 \times \frac{BP}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 206548.0 \times \frac{720}{760} \times \frac{298}{318}$$

$$= 183370.3 \text{ Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{318}$$

$$= 0.2663 \text{ Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\text{a Initial weight of Thimble} = 2.39627 \text{ g}$$

$$\text{b Final weight of Thimble} = 2.41155 \text{ g}$$

$$\text{c Difference (b-a)} = 0.01528 \text{ g}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.01528 \times 1000}{0.2663}$$

$$= 57.37 \text{ mg/Nm}^3$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Paradeep Phosphates Address: Zuakinagar

Date & time of visit: 10/02/2026 at 14:10 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>44.5</u>		
	I.D. Of Stack at port (mtr) D	:	<u>1.4</u>	Cross sectional area of stack m ³	<u>1.539</u>
	Type of fired heater	:	<u>NPK-A Fumes stack (N-CB-901)</u>		
	No. of stacks	:			
	Fuel used	:			
	Fuel consumption (Kg/hr)	:			

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	
	DGM Temp °C	:	<u>33</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:		Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:		Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:		Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.01472</u>
	Final DGM reading	:	<u>33</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.0467</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>306</u>	(1-Bow)	:	<u>0.9533</u>
	DGM temp (°C)	:	<u>33</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.678</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>10</u>	× 0.44= <u>4.40</u>	<u>30.08</u>	<u>29.52</u>
	O ₂	:	<u>12</u>	× 0.32= <u>3.84</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:		Wt. of Particulate gms	:	
Final wt. of thimble gms	:			:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	SS	328	11.1				
2	0.2			11.5				
3	0.3			12.3				
4	0.4			11.9				
5	0.5			11.3				
6	0.6			12.1				
7	0.7			11.7				
8	0.8			11.8				
9	0.9			11.6				
10	1.0	SS	328	11.7				
11	Avg	SS	328	11.7				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times C_p \sqrt{\frac{\Delta P X T_s}{P_s X M_s}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms - Molecular weight on wet basis

ΔP - Differential Pressure(mm WC)

$$R_m = C.F. \times C_p \sqrt{\frac{\Delta P}{T_s}}$$

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM-	SO ₂ -	NO _x -
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Monitored By:



NPK-A Plant - Fumes Stack (N-CB 901)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (1.4)^2$$

$$= 1.539 \text{ m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{11.7 \times 328}{720 \times 29.52}}$$

$$= 12.46 \text{ m/s}$$

3 Stack Gas Flow Rate at Stack Condition (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 12.46 \times 3600 \times 1.539$$

$$= 69039.4 \text{ m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Condition (Nm³/Hr)

$$= 69039.4 \times \frac{BP}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp (K)}}$$

$$= 69039.4 \times \frac{720}{760} \times \frac{298}{328}$$

$$= 57836.5 \text{ Nm}^3/\text{Hr}$$

5 Ammonia (mg/Nm³)

$$= \frac{OD \times CF \times 1000}{\text{Volume of Gas Sample}} \times \frac{\text{Total Volume of Abs.Soln}}{\text{Sample Aliquote}}$$

$$= \frac{1.105 \times 22.03 \times 1000}{30} \times \frac{100}{5}$$

$$= 16228.77 \text{ (}\mu\text{g/Nm}^3\text{)}$$

$$= 16.23 \text{ mg/Nm}^3$$

6 Ammonia Conc. in Kg/Hr

$$= \frac{\text{mg/Nm}^3 \text{ (amm)} \times \text{Stack flow rate (NTP)}}{10^6}$$

$$= \frac{16.23 \times 57836.5}{10^6}$$

$$=$$

$$= 0.94 \text{ Kg/Hr}$$

Aditya Environmental Services Pvt. Ltd.

STACK MONITORING DATA SHEET

Name of the Client: Parsadeep Phosphates

Address: Zuwaingnagar

Date & time of visit: 11/02/2026 at 11:00 Hrs

Stack Details	Stack Appearance	:	<u>Round</u>		
	Total Height of Stack (mtr)	:	<u>43.5</u>		
	I.D. Of Stack at port (mtr) D	:	<u>2.5</u>	Cross sectional area of stack m ³	<u>5.0218</u>
	Type of fired heater	:	<u>NPK-B DAP</u>		
	No. of stacks	:	<u>(05-SD-101)</u>		
	Fuel used	:	<u>Natural Gas</u>		
	Fuel consumption (Kg/hr)	:	<u>272.56</u>		

GASEOUS SAMPLING

SO ₂	Suction at DGM mmHg	:	<u>0</u>	Abs. media	:	3% H ₂ O ₂	Vol. of gas Sampled lit.	:	<u>1</u>
	DGM Temp °C	:	<u>32</u>	Vol. of Abs. media	:	100 ml	Vol. of air (at NTP) m ³	:	
	Vol. of Abs. media taken for titration	:	<u>1</u>	Normality of BaCl ₂	:	0.01	SO ₂ mg/Nm ³	:	
	Vol. of BaCl ₂ required	:	<u>1</u>	Sampling flow rate	:	1 lpm	SO ₂ kg/hr	:	
NO _x	Initial box temp.	:		Abs. media	:	H ₂ SO ₄ +H ₂ O ₂	Vol. of air sampled (ml)	:	
	Final box temp.	:		Vol. of Abs. media	:	25	NO _x mg/Nm ³	:	
	Vol. of Abs. media taken for titration	:		Initial pressure	:	685	NO _x (ppmv)	:	
	Calculation Factor	:		Final pressure	:	760		:	
	Absorbance	:	<u>1</u>	Dilution ratio	:			:	

Molecular Weight Determination

Moisture	Initial DGM reading	:	<u>0</u>	Vol ^m of condensate (ml) V _c	:	<u>10</u>	$V_v = 0.003464 \frac{V_c \times T_m}{(P_{bar} - P_m)}$	:	<u>0.1527</u>
	Final DGM reading	:	<u>32</u>	Vol ^m of Air collected (m ³) V _m	:	<u>0.3</u>	$Bow = \frac{M}{100}$	:	<u>0.04843</u>
	Suction at meter (mm Hg) P _m	:	<u>40</u>	T _m (°C+ 273)	:	<u>305</u>	(1-Bow)	:	<u>0.9576</u>
	DGM temp (°C)	:	<u>32</u>	P _{bar} -P _m	:	<u>720</u>	$M = \frac{V_v \times 100}{V_v + V_m}$	:	<u>4.8434</u>

Orsat analysis	Gas		% Conc.	Mol. Wt.	Mol.Wt. dry basis	M.Wt.(wet basis)(Ms)= [Md×(1-Bow)]+(18×Bow)
	CO ₂	:	<u>6</u>	× 0.44= <u>2.64</u>	<u>29.6</u>	<u>29.04</u>
	O ₂	:	<u>16</u>	× 0.32= <u>5.12</u>		
	N ₂	:	<u>78</u>	× 0.28= <u>21.84</u>		
	CO	:		× 0.28=		

Velocity, Sampling flow rate & Particulate matter Determination

Minimum No. of traverses required	:	10	Static pressure inside stack mm Hg	:	
Static pressure inside stack mm wg	:		Crosssectional area of Nozzle m ³	:	
Nozzle diameter mm	:	8	Pitot tube constant	:	0.8386
Thimble No.	:			:	
Initial wt. of thimble gms	:	2.45506	Wt. of Particulate gms	:	0.01451
Final wt. of thimble gms	:	2.46957		:	

Traverse point	Distance from stack wall (mtr)	Flue Gas temp.		Velocity Pressure (Dp) ΔP	Velocity of Flue gas (m/s)	Sampling flow rate (lpm)	DGM reading	
		°C	°K=(°C+273)				Initial	Final
1	0.1	52	325	8.4				
2	0.2			9.2				
3	0.3			8.7				
4	0.4			9.3				
5	0.5			9.6				
6	0.6			9.0				
7	0.7			8.8				
8	0.8			9.5				
9	0.9			8.5				
10	1.0	52	325	9.0				
11	Avg	52	325	9.0				
12								

Considering

Cp = Pitot Tube constant()

(1-Bow)=0.9

(Pbar+Pu)=760 mm Hg

(Pbar-Pu)=610 mm Hg

Tm=303 °K, M. Wt.=30

$$V = 34.97 \times Cp \sqrt{\frac{\Delta P X Ts}{Ps X Ms}}$$

Where,

Ts-Stack Temp in °K

Ps- Static Pressure inside Stack (mm Hg)

Ms – Molecular weight on wet basis

$$Rm = C.F. \times Cp \sqrt{\frac{\Delta P}{Ts}}$$

ΔP – Differential Pressure(mm WC)

C.F. for nozzle 6mm - 133.4594

8mm - 237.2612

10mm - 370.7206

12mm - 533.8377

Permissible Limit	PM- 55.68 mg/Nm ³	SO ₂ -	NO _x NH ₃ - 11.04 mg/Nm ³
-------------------	------------------------------	-------------------	--

Monitored By:

NPK-B Plant - Stack (05-5D-101)

1 Cross sectional area of Stack (m²)

$$= \frac{\pi}{4} \times d^2$$

$$= \frac{3.14159}{4} \times (2.5)^2$$

$$= 5.0218 \quad \text{m}^2$$

2 Stack Flue gas Velocity (m/s)

$$= 34.97 \times 0.8386 \times \sqrt{\frac{9.0 \times 325}{720 \times 29.04}}$$

$$= 10.97 \quad \text{m/s}$$

3 Stack Gas Flow Rate at Stack Conditon (m³/Hr)

$$= \text{Velocity of Stack} \times 3600 \times \text{Area of Stack}$$

$$= 10.97 \times 3600 \times 5.0218$$

$$= 198294.6 \quad \text{m}^3/\text{Hr}$$

4 Stack Gas Flow Rate at N.T.P Conditon (Nm³/Hr)

$$= 198294.6 \times \frac{BP}{P_{\text{atm}}} \times \frac{298}{\text{Stack Temp(K)}}$$

$$= 198294.6 \times \frac{72}{760} \times \frac{298}{325}$$

$$= 172251.3 \quad \text{Nm}^3/\text{Hr}$$

5 Volume of Gas Sampled : 300 Litres

$$= 0.3 \times \frac{720}{760} \times \frac{298}{325}$$

$$= 0.2606 \quad \text{Nm}^3$$

6 Particulate Matter (mg/Nm³)

$$\begin{array}{lll} \text{a} & \text{Initial weight of Thimble} & = 2.45506 \text{ g} \end{array}$$

$$\begin{array}{lll} \text{b} & \text{Final weight of Thimble} & = 2.46957 \text{ g} \end{array}$$

$$\begin{array}{lll} \text{c} & \text{Difference (b-a)} & = 0.01451 \text{ g} \end{array}$$

Particulate Matter (mg/Nm³)

$$= \frac{0.01451 \times 1000}{0.2606}$$

$$= 55.68 \quad \text{mg/Nm}^3$$

7 Ammonia ($\mu\text{g}/\text{Nm}^3$)

$$= \frac{OD \times CF \times 1000}{\text{Volume of Gas Sample}} \times \frac{\text{Total Volume of Abs.Soln}}{\text{Sample Aliquot}}$$

$$= \frac{0.752 \times 22.03 \times 1000}{30} \times \frac{100}{5}$$

$$= 11044.37 \quad (\mu\text{g}/\text{Nm}^3)$$

$$= 11.04 \quad \text{mg}/\text{Nm}^3$$

Ammonia Conc. in Kg/Hr

$$= \frac{\text{mg}/\text{Nm}^3 (\text{amm}) \times \text{Stack flow rate (NTP)}}{10^6}$$

$$= \frac{11.04 \times 172251.3}{10^6}$$

$$= 1.90 \quad \text{Kg}/\text{Hr}$$



PARADEEP PHOSPHATES LIMITED
GOA UNIT

ENV-F-05
Rev No: 01
Date: 24.06.2022

PARADEEP PHOSPHATES LIMITED, GOA UNIT
WORK ZONE MONITORING

Date of Monitoring: 15.10.2025		
Sr. No.	Work Zone	Fugitive Ammonia Level (in ppm)
1.	RMH plant - Amm. Tanker unloading area	0
2.	Ammonia plant – Amm. Receiver/Economizer area	2
3.	Ammonia Horton sphere Amm. Pump area	5
4.	Urea plant – Amm. Pump area	4
5.	Urea plant – Amm. Condenser area	3
6.	NPK-A plant – Pre-Neutralizer area	7
7.	NPK-A plant – Amm. Granulator area	4
8.	NPK-A plant - Dryer area	1
9.	NPK-B plant – Pre-Neutralizer area	3
10.	NPK-B plant – Amm. Granulator area	6
11.	NPK-B plant - Dryer area	0
12.	Product Handling plant - Urea bagging area	2
13.	Product Handling plant - NPK-A bagging area	1
14.	Product Handling plant - NPK-B bagging area	0
15.	Product Handling plant - Urea bulk area	10
16.	Product Handling plant - NPK-A bulk area	8
17.	Product Handling plant - NPK-B bulk area	6

Instrument calibration detail			
S. No.	Name of Instrument	Make & Model	Calibration Date
1	Ammonia detector	Honeywell BW Solo	30/04/2025
			Calibration Due Date 29/10/2025

Signature	Checked by	Approved by
Designation	Dy. Manager – Environment	Manager – Environment



PARADEEP PHOSPHATES LIMITED
GOA UNIT

ENV-F-05
Rev No: 01
Date: 24.06.2022

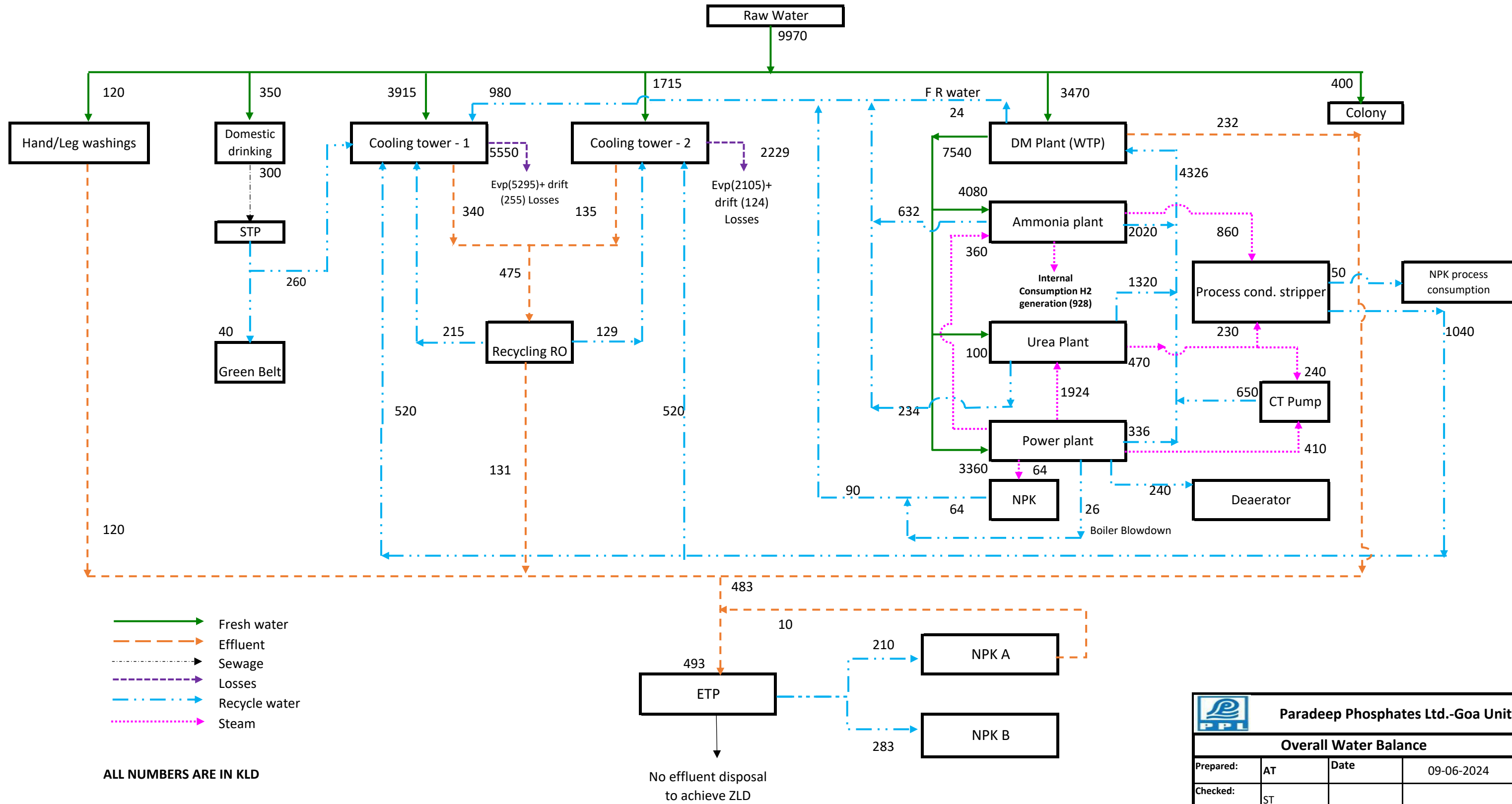
PARADEEP PHOSPHATES LIMITED, GOA UNIT
WORK ZONE MONITORING

Date of Monitoring: 09.01.2026		
Sr. No.	Work Zone	Fugitive Ammonia Level (in ppm)
1.	RMH plant - Amm. Tanker unloading area	1
2.	Ammonia plant – Amm. Receiver/Economizer area	3
3.	Ammonia Horton sphere Amm. Pump area	6
4.	Urea plant – Amm. Pump area	5
5.	Urea plant – Amm. Condenser area	4
6.	NPk-A plant – Pre-Neutralizer area	8
7.	NPk-A plant – Amm. Granulator area	3
8.	NPk-A plant - Dryer area	2
9.	NPk-B plant – Pre-Neutralizer area	4
10.	NPk-B plant – Amm. Granulator area	7
11.	NPk-B plant - Dryer area	0
12.	Product Handling plant - Urea bagging area	1
13.	Product Handling plant - NPk-A bagging area	0
14.	Product Handling plant - NPk-B bagging area	1
15.	Product Handling plant - Urea bulk area	9
16.	Product Handling plant - NPk-A bulk area	8
17.	Product Handling plant - NPk-B bulk area	8

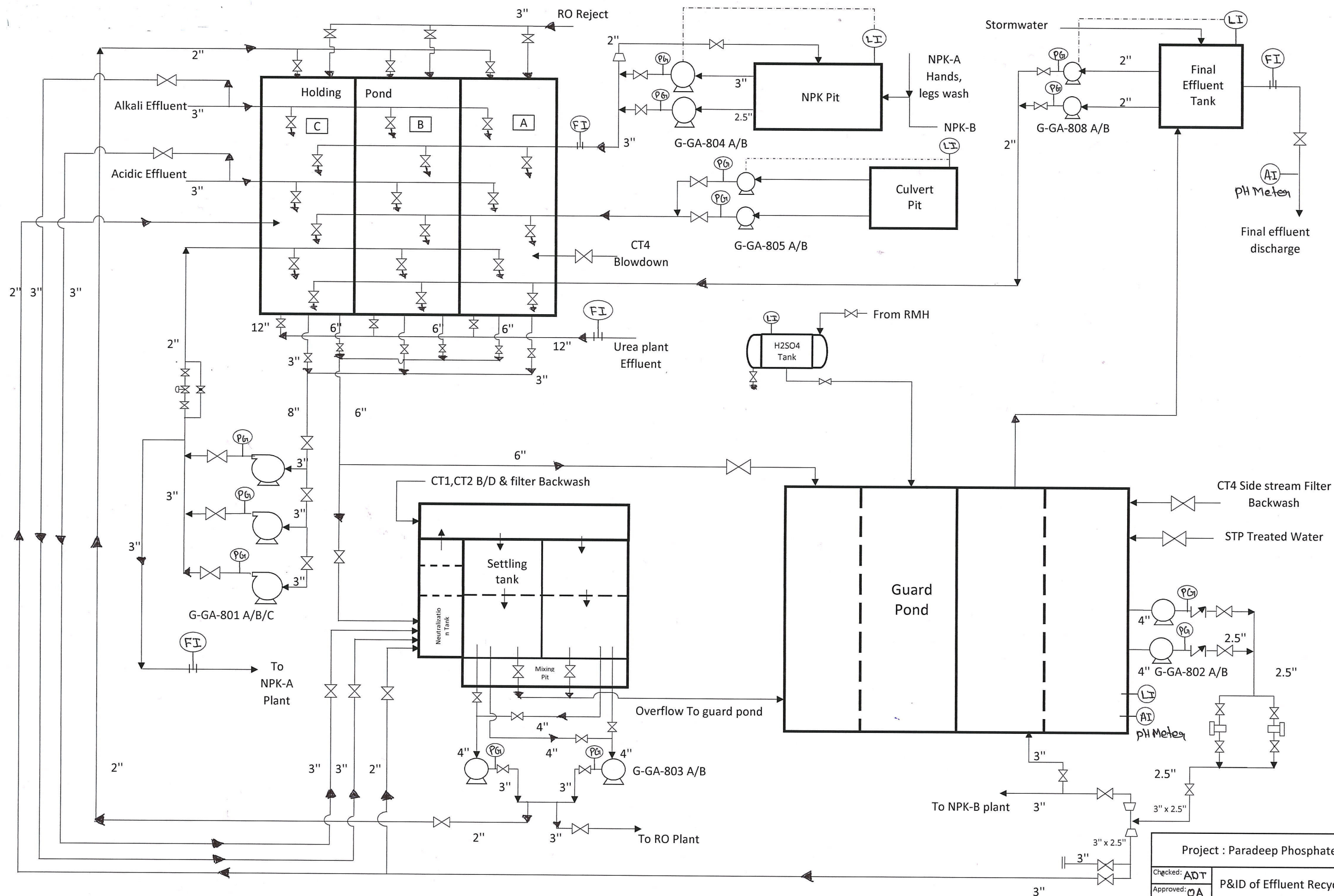
Instrument calibration detail			
S. No.	Name of Instrument	Make & Model	Calibration Date
1	Ammonia detector	Honeywell BW Solo	26/11/2025
			Calibration Due Date 25/05/2026

Signature	Checked by 	Approved by
Designation	Dy. Manager – Environment	Manager – Environment

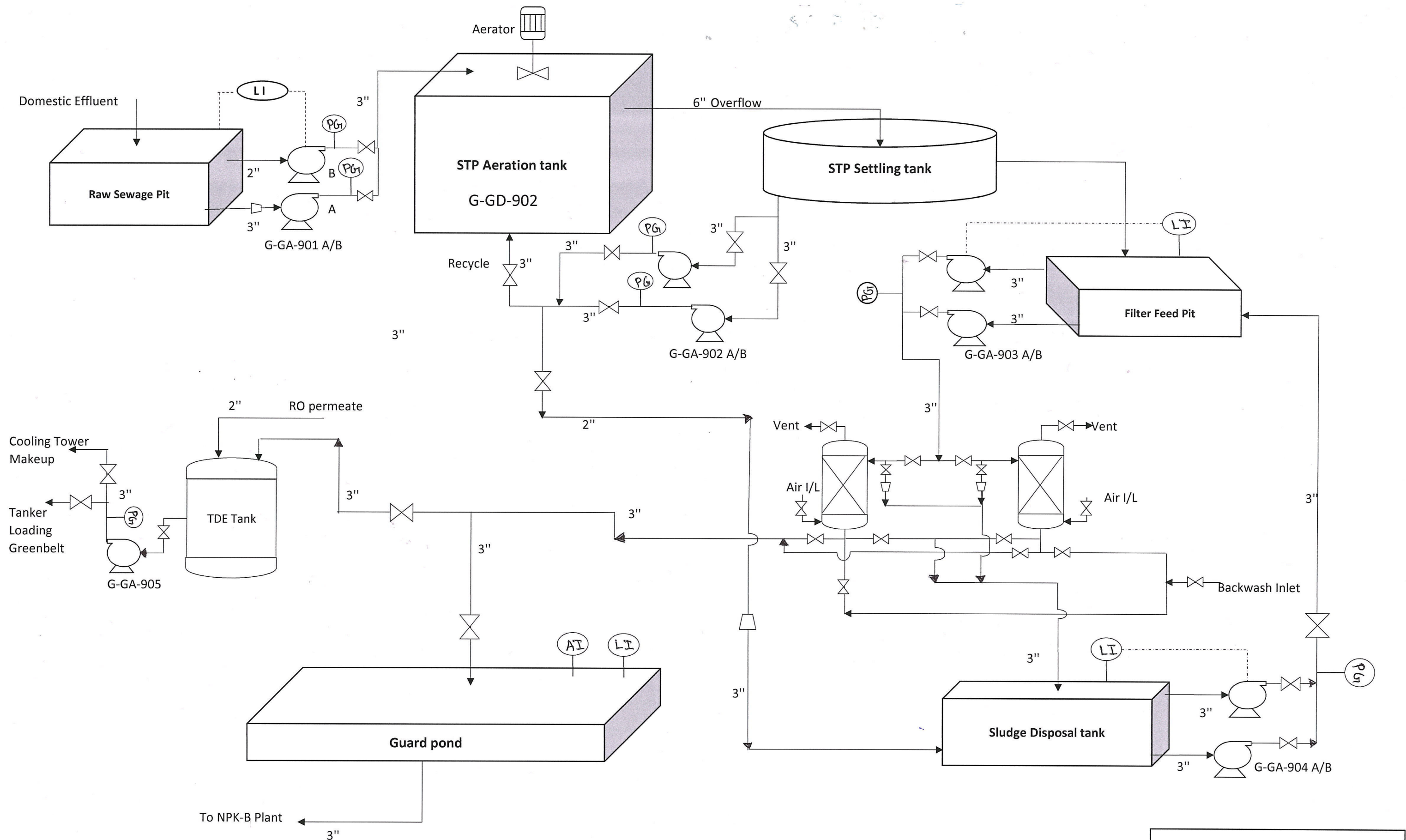
ANNEXURE-3



Paradeep Phosphates Ltd.-Goa Unit			
Overall Water Balance			
Prepared:	AT	Date	09-06-2024
Checked:	ST		
Approved:	OA	Rev:	1



Project : Paradeep Phosphates Ltd.				
Checked: ADT	P&ID of Effluent Recycling Plant			
Approved: OA				
Date: 09/06/24	Date:	09/06/2024		
Prepared: SB	Rev:	01		



Project : Paradeep Phosphates Ltd.			
Checked: ADT	P&ID of Sewage Treatment Plant		
Approved: DA			
Date: 09/06/2024			
Prepared: SB			
Date: 09/06/2024	Date:	09/06/2024	
Rev: 01	Rev:	01	

ANNEXURE-4

Sale Order No 200007416 Ref: Disposal of Spent Oil and LSHS	PARADEEP PHOSPHATES LIMITED Reg. Office: Jai Kisaan Bhawan, Zuarinagar, Goa 403 726 Tel No. : 0832 2592654 Fax : 0832 2595462	GST No. 30AABCP3276D1ZX PAN No.: AABCP3276D
To, SAHARA INDUSTRIES Gut No. 293/2, Village Usar, Kudus Kondle Road, Post: Uchaad, Taluka Wada, District: Palghar 421312, Maharashtra		

Date : 24.04.2025

Dear Sirs,

Sub. : Sale of Spent Oil and LSHS residue and Sludge with drums

Our Ref. : Event NoA0090 Dt 23.04.2025 Enquiry for Disposal of Spent Oil and LSHS Sludge

We have pleasure in awarding you the sale order for the following scrap items at the prices and terms specified.

1. Items, Qty, and Prices

S. No.	Items	Unit	Qty	Rate Rs.	Amount Rs.
1	Item Code : 102500019 SPENT OIL IN DRUMS & CARBUOYS (Category 5.1)	MT	50.000	20,100.00	10,05,000.00
2	Item Code : 102500050 LSHS SLUDGE (Category 3.1)	MT	100.000	1200.00	1,20,000.00
	"As is, where is". Note: Terms & Conditions as per Annexure I (Rupees Eleven Lakh Twenty Five Thousand only) GST: Payable extra 18% or as applicable , TCS: 1% or as applicable.				11,25,000.00

2. Validity

24.04.2025 to 24.04.2026.

3. Payment

5% EMD as security deposit for contract period, 100% advance payment to be made prior to lifting of material by RTGS/ DD on ICICI Bank, Vasco Goa/ State Bank of India Zuarinagar drawn in favour of Paradeep Phosphates Limited, Zuarinagar, Goa.

4. Delivery –Ex. Works- PPL Zuarinagar

Job to be done in co-ordination with our Stores Department / Environment Department.

5. GST

Payable extra 18% or as applicable, TCS: 1% or as applicable.

PLEASE SUBMIT YOUR VALID AUTHORISATION CERTIFICATE FOR SPENT OIL AND LSHS OIL SLUDGE CATEGORY BEFORE LIFTING THE MATERIAL

Please note if the payment as per clause 3 is not made within the period mentioned, we will have the option to forfeit your participation fee, & also the items to somebody else without going into any further correspondence with you. This letter is being sent to you in duplicate. Please return one copy duly signed as a token of acceptance of the terms and conditions stated herein.

Thanking You,

Yours faithfully,
For **PARADEEP PHOSPHATES LIMITED**

Authorised Signatory

ANNEXURE I

Sale Order no. 200007416 dt. 24.04.2025

Subject: **Sale of SPENT OIL AND LSHS SLUDGE IN DRUMS & CARBUOYS.**

1. The materials covered under this order are to be lifted within schedule period of the order date.
2. Material is to be lifted as per the direction of our Manager Stores. You will have to inform us one day in advance before lifting material so that necessary arrangements to deploy staff etc. can be made.
3. You will ensure that all your laborers/personnel are compulsorily covered under PF/ESI/ Workmen Compensation Insurance Policy and other statutory obligation as per Factories Act and they observe all the safety rules once inside our factory battery limits.
4. While we will endeavor to provide the quantities specified in the sale order it is to be noted that the qty stated is approximate and there no liability shall attach to us should the quantity made available for short of that specified.
5. The EMD Amount for this contract is Rs. 56,250.00 for the Lot. In case you fail to lift the material within Stipulated Time of imitation, the EMD/deposit stands forfeited without any further reference to you.
6. Classification and description of the scrap is as specified in sale order. Should any dispute arise regarding the same the decision of Jt. GM Commercial & Logistics shall be final and binding.
7. You shall ensure that personal protective Equipment are provided to all the workers engaged by you for execution of job and are strictly used during duty hours
8. In case any worker is found not using personal protective Equipment and moving in the plant areas without mandatory PPE's (Safety helmets and Safety shoes) or carrying out the job without required personal protective equipment as specified in the work permit issued by M/s PARADEEP PHOSPHATES LIMITED for the job, or working without valid Safety permit, PARADEEP PHOSPHATES LIMITED reserves the right to cancel the Gate passes/refuse entry to the worker involved.
9. A penalty will be levied and deducted from the contractor's bill for violation of the Safety requirements observed by company's job in charge /safety in charge : (a) Rs. 500 /- for 1st observed violation, (b) Rs. 1000/- for 2nd observed violation (c) Rs. 1500/- for 3rd observed violation.
10. In case of any accident involving contractor or his workman and if the investigation proves that the accident has taken place due to violation of any safety norms by you or your staff or due to unsafe action performed by your staff during the job, then PARADEEP PHOSPHATES LIMITED reserves the right to impose appropriate penalty depending upon the type and nature of the accident.
11. Complete dismantling of equipment will be in your scope. Further cutting into smaller pieces of bigger equipment, if required, should be at a site which will be marked by PPL. Transportation to such a site will in your scope. No gas cutting equipment's or any equipment, which are likely to cause damage, will be allowed in the premises. Only safe oxy-acetylene gas cutting equipment will be allowed with permission of seller. The decision of the seller or his authorized representative shall be final in this regard.

12. Job will be carried out only between 09.00 hrs to 17.00 hrs.
13. All PPL safety procedures shall be adhered to by your workmen. Safety permits shall be taken from Operations dept. before job commencement.
14. The buyer shall arrange for all tools and tackles, forklifts and hoists or cranes or labour at their own expenses. Based on availability, PPL will try to provide crane for lifting of equipment greater than 10 MT weight.
15. It will be successful purchaser's responsibility to weigh the empty Truck/trailer at the weighbridge and produce the weight certificate so that the weight of the empty truck/trailer will be deducted from the weight of the fully loaded truck/trailer .
16. Should the original purchaser wish to take delivery of the surplus material through a representative, he must authorize the latter by a letter of authority or continuing authority, which shall be presented to the seller. The seller may in his entire discretion decline to act on any such authority and it shall be for the purchaser to satisfy the seller that the authority is genuine. Delivery to such authorized person will constitute valid delivery and no claim shall lie against the seller on any account thereafter.
17. Once the goods / materials are taken out of the factory gate, purchaser will be solely responsible for all sorts of claims like shortage, missing parts, damage, incident, accident, loss of material etc.
18. Purchaser and his men are subject to the security rule of seller in force while in the seller's premises. The purchaser/s, their workmen agents or representatives shall not commit any nuisance, theft or indulge in any antisocial activities in the seller's premises and the purchaser shall be liable for the good conduct, safety & discipline of his workmen. In case of any such activity, delivery will be suspended and strict action as per law will be taken including forfeiture of EMD.
19. While taking delivery of the material, the Purchasers shall be responsible for any damage that may be done to premises / fittings of the SELLER in the course of removing the lot or lots purchased by them. The SELLER may at its option arrange to make good such damages and the purchaser shall pay for the same on demand. If such payment is not made on demand, the EMD/Security Deposit may be forfeited and the SELLER may stop delivery of the material till payment is made.
20. SELLER will not at any time be responsible for any injuries caused due to accident within its premises either to the buyer or his representative / labour etc., and the buyer will make proper arrangements for any claim arising out of the employment under any status. It is the responsibility of the buyer to provide necessary safety appliances (like hand gloves / safety shoes etc.,) to the labourers who are engaged for loading the materials.
21. If any accident or damage to the property / life etc. arises by reason of any act of negligence / omission / default or non-compliance with any of the Terms & Conditions or statutory regulations or rules and regulations applicable within the Seller's premises, on the part of the Buyer / his representative or employees, resulting in death or injury to any persons or damages to the property of the SELLER or any third party, then in such an event the Buyer will have to pay compensation to such person including the employees of the SELLER for such accident or injury / death or damage caused to their employees or to any of the Seller's employees or to others or to the Seller's property. The Buyer shall in such event, keep the SELLER fully indemnified from any demand, claims or proceedings thereof.

Sale Order No. 200007361 Ref: Sale of Spent LTS Catalyst and Alumina	PARADEEP PHOSPHATES LIMITED Reg. Office: Jai Kisaan Bhawan, Zuarinagar, Goa 403 726 Tel No. : 0832 2592654 Fax : 0832 2595462	GST No. 30AABCP3276D1ZX PAN No.: AABCP3276D
To, SPL ALLOYS AND MINERALS PRIVATE LIMITED Plot No C-33, MIDC HINGNA ROAD, HINGNA, NAGPUR- 440025		

Date : 05.04.2025

Dear Sirs,

Sub. : Sale of Primary Reformer & Secondary Reformer Catalyst

Our Ref. : Email Dt 21.12.2024 & 04.01.2025.

We have pleasure in awarding you the sale order for the following scrap items at the prices and terms specified.

1. Items, Qty, and Prices

S. No.	Items	Unit	Qty	Rate Rs.	Amount Rs.
1	Item Code : 102500238 SPENT PRIMARY/SECONDARY REFORMER CATALYST	MT	45.36	23,600.00	10,70,496.00
2	Item Code : 102500010 M.S. DRUMS 210 LTR. CAP	Nos	150.00	500.00	75,000.00
	Note: Terms & Conditions as per Annexure I (Rupees Eleven Lakh Forty Five Thousand Four Hundred and Ninety Six Only)				11,45,496.00
	GST: Payable extra 18% or as applicable, TCS: 1% or as applicable.				

2. Validity

05.04.2025 to 18.04.2025.

3. Payment

5% EMD as security deposit, 100% advance payment to be made prior to lifting of material by RTGS/ DD on State Bank of India Zuarinagar drawn in favour of PARADEEP PHOSPHATES LIMITED, Zuarinagar, Goa.

4. Delivery -Ex. Works- PPL Zuarinagar

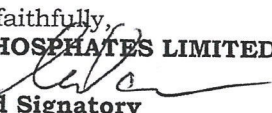
Job to be done in co-ordination with our Stores Department / Environment Department.

5. GST

Payable extra 18% IGST or as applicable, TCS: 1% Extra or as applicable.

Please note if the payment as per clause 3 is not made within the period mentioned, we will have the option to forfeit your participation fee, & also the items to somebody else without going into any further correspondence with you. This letter is being sent to you in duplicate. Please return one copy duly signed as a token of acceptance of the terms and conditions stated herein.

Thanking You,

Yours faithfully,
For **PARADEEP PHOSPHATES LIMITED**

Authorised Signatory

GOA STATE POLLUTION CONTROL BOARD

गोंय राज्य प्रदूषण नियंत्रण मंडळ

(An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 Certified Board)

Phone Nos : 0832- 2407700,
2407701, 2407703



Email Ids:
Chairman, GSPCB: chairman-gspcb.goa@nic.in
Member Secretary, GSPCB: gspcb.goa@nic.in
Office: mail.gspcb@gov.in

No. 19/2024-PCB/2561852/HWM000964/Tech

Date: 30/01/2025

Form 2
(See rule 6(2))

Authorization for Occupier or Operator Handling Hazardous Waste

Reference: 1) Your application dated 18/12/2024.

M/s.SPL Alloys & Minerals Pvt. Ltd. located at Plot No. C-33, MIDC Hingana Road, Tal. Hingna, Dist., Nagpur, Maharashtra is hereby granted an authorization for Collection and Transport of hazardous wastes of the following categories from the State of Goa, (through vehicles bearing No. AP 39 UY4889, AP39UY4886, AP39UY2879, AP39VF4887, AP16TH3449, AP16TD4479, TS08UL4797, TS08UJ2007, TS08UL1998, AP24TC3519, AP39TA2789, TS08UF8605, TS08UH5026, AP16TY8126) to M/s. SPL Alloys & Minerals Pvt. Ltd. located at Plot No. C-33, MIDC Hingana Road, Tal. Hingna, Dist., Nagpur, Maharashtra:

Sr.no.	Category of Hazardous Waste as per the schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity (MT/annum)
1.	18.1 Category: Spent Catalyst (Catalysts containing metals like Nickel - Ni)	To be sent for recycling to the facility of M/s. SPL Alloys & Minerals Pvt. Ltd. located at Plot No. C-33, MIDC Hingana Road, Tal. Hingna, Dist., Nagpur, Maharashtra as raw material for manufacturing of Ferro - Nickel	45 MT

The authorisation shall be valid for a period up till 18/12/2027.

The authorization is subjected to following general and specific conditions.

A. General condition of authorisation:

- 1) The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
- 2) The hazardous and other wastes shall be transported from an occupier's establishment to authorised disposal facility in accordance with the provisions of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 rules and its subsequent amendments.
- 3) The occupier of the Facility has to submit manifest copy of the disposal of Hazardous waste as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 rules and its subsequent amendments.
- 4) The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
- 5) The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
- 6) Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
- 7) The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as Spillages, leakages, fire etc at site and also during transportation and their possible impacts and also carry out mock drill in this regard at regular interval of time (atleast once in six months) and submit report to Goa State Pollution Control Board ;
- 8) The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
- 9) It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
- 10) The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
- 11) An application for the renewal of an authorisation shall be made as laid down under these Rules.
- 12) Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
- 13) Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B. Specific conditions:

1. The applicant should transport hazardous waste through a dedicated fleet of vehicles registered on the name of applicant or any of the partners/directors or have entered into contract with the person having such vehicles. The vehicles shall be dedicated for transportation of hazardous waste and they shall not be used for any other purpose. Transportation of the hazardous waste in vehicles other than the authorized dedicated authorized vehicles shall not be allowed. In case of change of vehicle (s) other than those for which authorization has been issued, then fresh authorization will be obtained by the operator.
2. The vehicles should be customized for transportation of the hazardous waste and should be in accordance with the provisions under the Motor Vehicles Act, 1988, and rules made there under. The transport vehicle should be designed suitably to handle and transport the hazardous waste of various characteristics. Further, the design of vehicle is such that there no spillage during transportation.
3. All the vehicle should have valid "Pollution Under Control Certificate" (PUCC) during the transportation of hazardous waste and should be properly displayed.
4. All the vehicle should be painted in blue color with white strip of 15 to 30 cm width running centrally all over the body. This is to facilitate easy identification. Vehicle should also be fitted with mechanical handling equipment as may be required for safe handling and transportation of the waste.
5. The word "HAZARDOUS WASTE" shall be displayed on all sides of the vehicle in Hindi, English and Vernacular language. Name of the transporter shall also be displayed on the vehicle.
6. Emergency phone numbers and TERM card in form 9 of Hazardous & other Wastes (Management and Transboundary Movement) Rule, 2016 shall be displayed properly. Vehicles should be fitted with- roll on/ roll-off covers if the individual containers do not possess the same.
7. The Transporter shall ensure that the
8. Transporter and the occupier/facility owner shall promptly attend spillage/accidents if any, by providing suitable remedial actions as may be required and shall report immediately to the occupier and State Pollution Control Board about the accident in Form 11.
9. The Transporter and the occupier/facility owner shall be liable for all damages caused to the environment or third party due to improper handling of the hazardous waste or disposal of hazardous waste.
10. Each vehicle shall carry first-aid kit, spill control equipment and fire extinguisher.
11. The containers used by the transporter should be as per specification in the "Guidelines for Transportation of the Hazardous Waste" published by CPCB. The containers need to be labeled by him as per the aforesaid guidelines. No other containers contrary to the above guidelines shall be used by the transporter for transportation of the hazardous waste.

12. Education qualification of the drivers shall be minimum of 10th pass (SSC). The drivers of the transport vehicles shall have valid driving license for heavy vehicles from the state Road Transport Authority and shall have experience in transporting the chemicals. Drivers shall be properly trained for handling the emergency situations and safety aspects involved in the transportation of hazardous wastes.
13. In case of change of driver (s), the transporter will inform the state pollution control Board about the change and will submit the requisite documents of the new drivers like driving license, mobile number, experience in transporting hazardous chemicals / waste and training imparted to him for handling the emergency situations and safety aspects involved in the transportation of hazardous waste. However, in no case the dedicated vehicles will be driven by the drivers other than those for which documents have been submitted to the State Board.
14. The applicant shall obtain necessary authorizations from State Pollution Control Boards through which the waste is being transported/ disposed, prior to transportation of Hazardous waste.
15. The Occupier/Facility operator shall ensure that the Hazardous waste which is not meeting the criteria for co processing in their Cement Klin or any rejected waste has to be disposed in the CHWTDF and the report has to be submitted to Goa State Pollution Control Board and Concerned State Pollution Control Board.

To,
M/s. SPL Alloys & Minerals Pvt. Ltd.
Plot No. C-33,
MIDC Hingana Road,
Tal. Hingna, Dist.,
Nagpur, Maharashtra.

Copy to:

1. Office file
2. Guard file

Received Hazardous Waste authorisation fees of:

Challan No.	Amount	Date
3480	Rs.15,000/-	07/01/2025

Shamila Dos
Milagres
Monteiro

Digitally signed
by Shamila Dos
Milagres Monteiro
Date: 2025.01.30
15:52:40 +05'30'

Dr. Shamila Monteiro
(Member Secretary)
Goa State Pollution Control Board

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: <http://mpcb.gov.in>
Email: robmw@mpcb.gov.in



Kalpataru Point, 2nd, 3rd
and 4th floor, Opp. Cine
Planet Cinema, Near Sion
Circle, Sion (E),
Mumbai-400022



Your Service is Our Duty

GRANT OR RENEWAL OF AUTHORISATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

1. Number of Authorisation: **BO/RO-HQ/HW_AUTH/2411000018** Dated: 21/11/2024
2. Your application dated 28-12-2023 MPCB-HW_AUTH-0000002490
3. SPL Alloys and Minerals Pvt. Ltd. hereby granted an authorisation based on the enclosed signed inspection report for recycling of hazardous wastes on the premises situated at, PLOT NO C-33, MIDC HINGNA

Details of Authorisation

MPCB/RO/ENV/HQ/HW_AUTH/24/HQ/HW/37

Sr.No.	Category of Hazardous Waste as per the H & OW (M & TBM) Rules, 2016	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity	UOM
1	Spent Nickel Catalyst (Schedule-IV)	Re-processing / Recycling	510	KL/A
2	Nickel Scrap (Schedule-II)	Re-Processing / Recycling	510	KL/A

- i. The authorisation shall be valid for a period of 31-10-2029.
- ii. The authorisation is subject to the following general and specific conditions
- A: General conditions of authorisation:
1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
 2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
 3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
 4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
 5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.

6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty."
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year

B: Specific conditions:

1. The Authorisation shall cease to be valid in case of expiry of the validity or suspension or cancellation of any of the existing consents under water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016 and as amended issued by the Maharashtra Pollution Control Board (MPCB)/ and shall remain invalid till consent (s) / authorization are obtained.
2. The Actual User / Recycler shall submit copies of the valid consents and authorization also to the auctioneer/seller at the time of each procurement.
3. The Actual User / Recycler shall be responsible to insure that the quantity of the waste (s) procured each time is endorsed in the Pass-Book by the authorized/seller/auctioneer. In case of import this endorsement should be obtained from the Customs authorities.
4. In case of import [where permitted as per Hazardous & Other Wastes (Management and Transboundary movement), Rules, 2016]. I. The Actual User /Recycler should submit the analysis report received from the exporter to the MPCB each time the consignment of recyclable waste is received.
5. The Authorised Actual User / Recycler shall maintain the records of above mentioned Recyclable Waste in Form - 3, procured for Actual Use / Recycling and submit the Annual Returns to the (MPCB) as per Form-4 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 by 30th June of every year.
6. This Authorisation shall be produced at the time of inspection upon request of an officer authorised by the Ministry of Environment & Forests (MoEF) / Central Pollution Control Board / MPCB.
7. The Actual User / Recycler shall not rent / lend / sell / transfer this Authorisation.
8. Any change in the recycling technology, disposal facility and equipment as given in the application shall only be carried out with prior permission of MPCB.

9. Transportation, processing, treatment and disposal of wastes shall be carried out strictly as per the Guidelines on Management & Handling of Hazardous Waste, 1991 issued by MoEF and in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
10. The hazardous waste generated from the recycling process shall be disposal off as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
11. The unit should take appropriate and adequate and measures to control fugitive emissions such that the Work Zone standards are met.
12. The unit should carryout Stack emission and Ambient Air Quality (AAQ) monitoring for SPM, RSPM, SO₂, NO_x and monitoring reports should be submitted by the unit to the MPCB, as per the consents conditions.
13. Application (in triplicate) for renewal of Authorisation shall be made well in advance to MPCB, at least three months before expiry, in the Form-1 along with each of the documents as per requirement of Rule-6 Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
14. At the time of submission of the application for renewal of Authorisation, the unit should submit a copy of the "Authorisation and Pass Book", along with details of the quantity of product (s) manufactured, process wastes generated, mode of final disposal during the validity period of Authorisation, and a statement showing point wise compliance status of the above conditions. This information should be supported with Central Excise/ sales tax details.
15. The Authorisation may be cancelled or suspended by MPCB as per Rule-7 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, in case the Actual User/Recycler fails to comply with any of the conditions of the registration or with any of the provisions of the Environment (Protection) Act, 1986 as amended or Rules made there under.
16. In addition to above MPCB may stipulate further conditions, if so required, in the interest of environment protection.
17. This Authorisation is issued as per the recommendation of committee constituted by the Board in the meeting held on 19-09-2024 and with the approval of competent authority.
18. Industry shall strictly follow Standard Operating Procedure and Checklist of Minimal Requisite Facilities for utilization of hazardous waste under Rule 9 of the Hazardous and Other Wastes (Management) Rules, 2016



1/24

c7f680d8
67bce047
4e186939
dd2850a5
3a004687
bc8dd0dc
417c2bd4
220cc74f

Signed by: Sujit Suhas Dholam
Regional Officer (BMW)
For and on behalf of
Maharashtra Pollution Control Board
robmw@mpcb.maharashtra.gov.in
2024-11-21 10:10 IST

Attachments:-

- i. Field Inspection Report Duly Signed by the Officer of the Board.
- ii. Passbook for maintaining records of purchase of Hazardous & Other Wastes

To,
SPL Alloys and Minerals Pvt. Ltd.,
PLOT NO C-33, MIDC HINGNA

Copy To:

Regional Officer, MPCB, Nagpur / Sub Regional Officer, MPCB, Nagpur II

They are directed to ensure the compliance of conditions prescribed in the authorisation.



Unique No. 1138

**Pass Book for Maintaining Records of Purchase
of Hazardous and other Wastes by Actual User,
under the H&OW (M&TM) Rules, 2016**

Name and Address of the Industry : M/s. SPL Alloys & Minerals Pvt.
Ltd., Plot No. C-33, MIDC
Hingana Road,
Taluka - Hingana, Dist. - Nagpur.
Telephone/Fax No. : 9960633471
E-mail Address : splalloys@gmail.com
Authorisation No. : MPCB/RO(HQ)/HSMD/AUTH/19/H&OW/94
Date of Issue : 13/02/2020
Validity Period : 31/01/2025

Type & quantity of the Hazardous & other Waste(s) permitted for procurement and recycling/utilisation :

S. No.	Hazardous & other waste; other than lead scrap	Quantity (Tons Per Annum)
1)	Spent Nickel Catalyst —	1020 MT/A [One Thousand Twenty Only]

All the conditions prescribed in the authorisation shall be complied all the time.

Date : 01/12/2023

Place : Mumbai

1
Authorized Signatory & Seal
Regional Officer (BMW)
Maharashtra Pollution Control Board
3rd Floor, Kalpataru Point, Opp. Cine Pinnacle,
Khar (E), Mumbai

MAHARASHTRA POLLUTION CONTROL BOARD

Phone: 24020781 / 24010437

Fax: 24024068 / 24044532

Email: robmw@mpcb.gov.in

Website: www.mpcb.gov.in



Kalpataru Point, 2nd, 3rd & 4th Floor,

Opp. Cine Planet,

Near Sion Circle, Sion (E),

Mumbai-400022.

RED / SSI (R-10)

Date: 01/11/2023

Consent No. BO/MPCB/RO(BMW)/Nagpur/CO/B- 2312000008

AMENDMENT OF CONSENT

Sub: Amendment of consent to operate granted to -

M/s Vidarbha Nickal Pvt. Ltd.,
Plot No. C-33, MIDC Area, Hingana Road,
Tal. Hingana, Dist. Nagpur

Ref: (1) Consent to operate granted by Board vide No. Format1.0/RO(BMW)/UAN
No.0000113230/CO/2204000360 dated 07/04/2022 valid up to 30/04/2027.
(2) Application of industry vide UAN MPCB-CONSENT_AMMENDMENT-
0000011784.

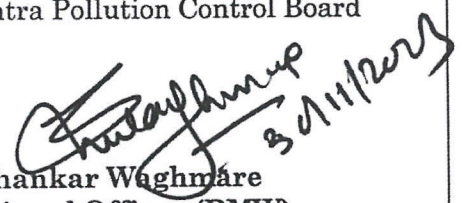
Consent to operate granted under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974; Under Section 21 of the Air ((Prevention & Control of Pollution) Act, 1981 & Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016 to M/s Vidarbha Nickal Pvt. Ltd., Plot No. C-33, MIDC Area, Hingana Road, Tal. Hingana, Dist. Nagpur vide Reference (1) above is hereby amended for following -

1) Name of the industry shall be read as -

M/s SPL Alloys & Minerals Pvt. Ltd.,
Plot No. C-33, MIDC Hingana Road,
Tal. Hingana, Dist. Nagpur

All other conditions mentioned in consent under reference (1) shall remain unchanged.

For and on behalf of
Maharashtra Pollution Control Board


Shankar Waghmare
Regional Officer (BMW)

Copy to:

1. Sr. Law Officer, (P & L Division) - for information
2. Regional Officer, Nagpur
3. Sub-Regional Officer, Nagpur-2

MAHARASHTRA POLLUTION CONTROL BOARD

Phone: 24020781 / 24010437

Fax: 24024068 / 24044532

Email: robmw@mpcb.gov.in

Website: www.mpcb.gov.in



Kalpataru Point, 2nd, 3rd & 4th Floor,
Opp. Cine Planet,
Near Sion Circle, Sion (E),
Mumbai-400022.

Authorization No. MPCB/RO(BMW)/HSMD/Auth/23/H & OW-701

Date: 01/12/2023

AMENDMENT OF AUTHORIZATION

Sub: Amendment of Authorization granted under Sub-Rule (6) of H & OW (M & TBM) Rules, 2016 to -

M/s Vidarbha Nickal Pvt. Ltd.,
Plot No. C-33, MIDC Area, Hingana Road,
Tal. Hingana, Dist. Nagpur

Ref: (1) Authorization granted by Board vide No. MPCB/RO(HQ)/HSMD/Auth/19/H & OW/-94 dated 13/02/2020 valid up to 31/01/2025.
(2) Application of industry vide UAN MPCB-CONSENT_AMMENDMENT-0000011784.

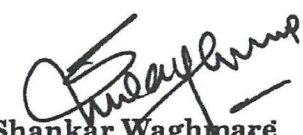
Authorization granted under Sub-Rule (6) of the Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016 to M/s Vidarbha Nickal Pvt. Ltd., Plot No. C-33, MIDC Area, Hingana Road, Tal. Hingana, Dist. Nagpur vide Reference (1) above is hereby amended for following -

1) Name of the industry shall be read as -

M/s SPL Alloys & Minerals Pvt. Ltd.,
Plot No. C-33, MIDC Hingana Road,
Tal. Hingana, Dist. Nagpur

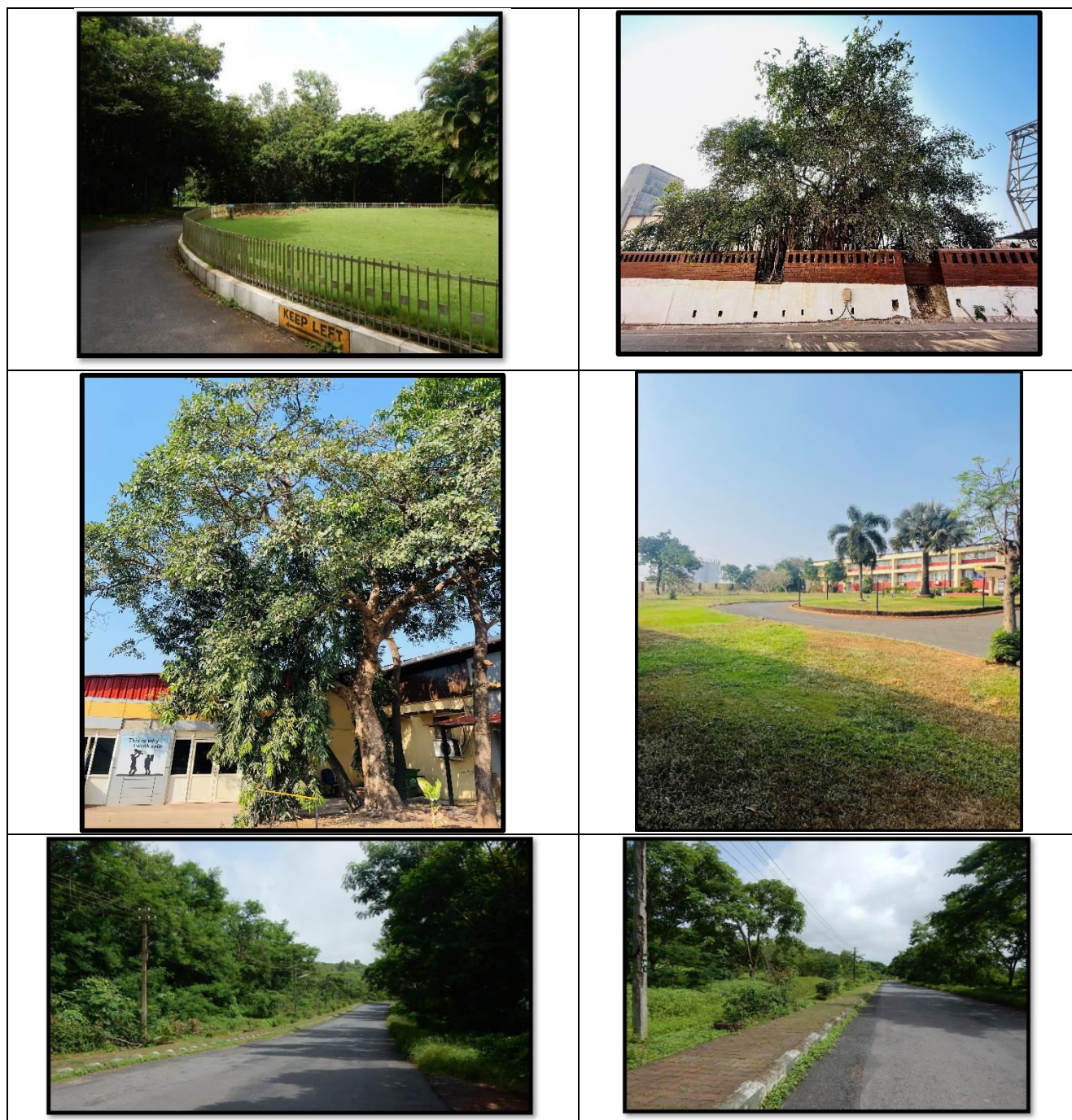
All other conditions mentioned in the authorization under reference (1) shall remain unchanged.

For and on behalf of
Maharashtra Pollution Control Board


Shankar Waghmare
Regional Officer (BMW)

Copy to:

1. Sr. Law Officer, (P & L Division) - for information
2. Regional Officer, Nagpur
3. Sub-Regional Officer, Nagpur-2

Photographs of the greenbelt at site**List of plant species in study area**

Abbreviations: M: Medicinal, T: timber. EF: edible fruit, G: Garden, A: Avenue, K: keystone species

Sr. No.	Name of the Plant	Family	Local Name	Wild (W) or Cultivated (C)	Uses
1	Lannea coromandelica	Anacardiaceae	Moi	W	Timber
2	Delonix regia	Fabaceae	Gulmohor	C	A
3	Tamarindus indica	--do--	chinch	C	m
4	Careya arborea	Lecythidaceae	Kumayo	W	M/F
5	Caryota urens	Arecaceae	Bhill mad	W	M
6	Mimusops elengi	Sapotaceae	Ovala/Bakul	C	M/A
7	Ziziphus jujuba	Rhamnaceae	Bora	W	EF/M

Sr. No.	Name of the Plant	Family	Local Name	Wild (W) or Cultivated (C)	Uses
8	Ficus benghalensis	Moraceae	Vad	W	K
9	Ficus glomerata	Moraceae	Rumbad	W	K
10	Alstonia scholaris	Apocynaceae	Satvin/Saptpar ni	W	M
11	Ixora brachiata	Rubiaceae	Lokandi	W	M
12	Terminalia paniculata	Combretaceae	Kindal	W	T
13	Terminalia elliptica	Combretaceae	Matti	W	T/state
14	Anacardium occidentale	Anacardiaceae	Kaju	C	EF/M
15	Grewia asiatica	Tiliaceae	Phalsa	W	M/EF
16	Microcos paniculata	Tiliaceae	hasoli	W	M/EF
17	Bombax ceiba	Malvaceae	Sawar	W	M
18	Gmelina arborea	Verbenaceae	Shivan	W	T
19	Tabebuia rosea	Bignoniaceae	—	C	A
20	Tecoma stans	Bignoniaceae	—	C	A/G
21	Casuarina equisetifolia	Casuarinaceae	Suru	C	A
22	Pithecellobium dulce	Fabaceae	Jungle jilebi	C	EF
23	Bambusa arundinacea	Poaceae	Bambu	C	T
24	Tabernaemontana alternifolia	Apocynaceae	Nagal kudo	W	M
25	Cocos nucifera	Arecaceae	Mad	C	EF
26	Monoon longifolium	Annonaceae	False Ashok	C	A
27	Manilkara zapota	Sapotaceae	Chikoo	C	EF
28	Mangifera indica	Anacardiaceae	Ambo	C	EF/T
29	Peltophorum pterocarpum	Fabaceae	Sonmohar	C	A
30	Carallia brachiata	Rhizophoraceae	makad bhindi	W	T
31	Eucalyptus globulus	Myrtaceae	Nilgiri	C	M
32	Bridelia retusa	Phyllanthaceae	Phatarphod	W	M/EF
33	Strychnos nux-vomica	Loganiaceae	Kajaro	W	M
34	Catunaregam spinosa	Rubiaceae	Gel	W	M
Shrubs					
1	Ziziphus rugosa	Rhamnaceae	Kanera	W	EF
2	Ziziphus xylopyrus	Rhamnaceae	ghot bor	W	M
3	Carissa carandas	Apocynaceae	Kanna	W	EF
4	Lantana camara	Verbenaceae	Ghaneri	W	M
5	Ixora coccinea	Rubiaceae	Pitkulni	W	M
6	Memecylon umbellatum	Melastomataceae	Anjan	W	M
7	Justicia adhatoda	Acanthaceae	Adulsa	C	M
8	Agave americana	Asparagaceae	Agave	C	A
9	Chromolaena odorata	Asteraceae	Ranmari	Introduced	—
Climbers					
1	Getonia floribunda	Combretaceae	Uski	W	M
2	Ziziphus oenoplia	Rhamnaceae	Chunna	W	EF
3	Ichnocarpus frutescens	Apocynaceae	Shamlata	W	M
4	Senegalia pennata	Fabaceae	—	W	M
5	Dalbergia volubilis	Fabaceae	—	W	M
6	Dalbergia horrida	Fabaceae	—	W	M

Sr. No.	Name of the Plant	Family	Local Name	Wild (W) or Cultivated (C)	Uses
7	Bougainvillea spectabilis	Nyctaginaceae	Bogenvila	C	G

Table: Frequency, Abundance and Density Calculated for the species within site

Abbreviations: Ac. NQ: number of quadrats studied; NP: Total number of plants in all quadrats; F: Frequency; A: Abundance; D: Density

Sr. No.	Name of the Plant	NQ	No. of Quadrats (Occurrence)	Np	F	A	D
1	Lannea coromandelica	10	8	50	80	625	5
2	Delonix regia	10	8	50	80	625	5
3	Tamarindus indica	10	5	4	50	80	0.4
4	Careya arborea	10	5	5	50	100	0.5
5	Caryota urens	10	5	5	50	100	0.5
6	Mimusops elengi	10	2	2	20	100	0.2
7	Ziziphus jujuba	10	2	2	20	100	0.2
8	Ficus benghalensis	10	2	2	20	100	0.2
9	Ficus glomerata	10	2	2	20	100	0.2
10	Alstonia scholaris	10	8	8	80	100	0.8
11	Ixora brachiata	10	9	25	90	278	2.5
12	Terminalia paniculata	10	9	10	90	111	1
13	Terminalia elliptica	10	9	10	90	111	1
14	Anacardium occidentale	10	8	50	80	625	5
15	Grewia asiatica	10	5	5	50	100	0.5
16	Microcos paniculata	10	5	10	50	200	1
17	Bombax ceiba	10	5	10	50	200	1
18	Gmelina arborea	10	5	5	50	100	0.5
19	Tabebuia rosea	10	5	10	50	200	1
20	Tecoma stans	10	5	10	50	200	1
21	Casuarina equisetifolia	10	8	50	80	625	5
22	Pithecellobium dulce	10	5	10	50	200	1
23	Bambusa arundinacea	10	5	20	50	400	2
24	Tabernaemontana alternifolia	10	5	20	50	400	2
25	Cocos nucifera	10	5	20	50	400	2
26	Polyalthia longifolia	10	5	20	50	400	2
27	Manilkara zapota	10	5	10	50	200	1
28	Mangifera indica	10	5	20	50	400	2
29	Peltophorum pterocarpum	10	6	20	60	333	2
30	Carallia brachiata	10	5	10	50	200	1
31	Eucalyptus globulus	10	2	10	20	500	1
32	Bridelia retusa	10	8	20	80	250	2
33	Strychnos nux-vomica	10	5	10	50	200	1
Shrubs							
1	Ziziphus rugosa	10	4	20	40	500	2

Sr. No.	Name of the Plant	NQ	No. of Quadrats (Occurrence)	Np	F	A	D
2	Carissa carandas	10	4	20	40	500	2
3	Lantana camara	10	5	20	50	400	2
4	Ixora coccinea	10	8	20	80	250	2
5	Memecylon umbellatum	10	5	12	50	240	1.2
6	Justicia adhatoda	10	2	2	20	100	0.2
7	Agave americana	10	8	30	80	375	3
8	Chromolaena odorata	10	8	50	80	625	5
9	Ziziphus xylopyrus	10	8	5	80	63	0.5
Climbers							
1	Getonia floribunda	10	10	50	100	500	5
2	Ziziphus oenoplia	10	2	20	20	1000	2
3	Ichnocarpus frutescens	10	10	10	100	100	1
4	Senegalia pennata	10	5	10	50	200	1
5	Dalbergia volubilis	10	5	10	50	200	1
6	Dalbergia horrida	10	5	10	50	200	1
7	Bougainvillea spectabilis	10	10	20	100	200	2

VERNA CLINIC:

Gr. Floor, GIDC Staff Quarters, Near GIDC Admin. Office
Opp. Verna Ind. Asso. Office, Verna Ind. Estate-403 722.
Ph. : 0832 2917659 Mobile : 9226 530122

PONDA CLINIC:

Office No. T14, Kala Shrikrishna J Kamat Towers,
Next to BSNL office, Old bus stand, Ponda Goa. 403401
Phone : 0832 2311122 | Mobile : 9637 331122

Name:	Prashant Salvi	Date: 12-01-2026	ID.No: PAA25/56
Organization:	Paradeep Phosphates Limited Goa Unit	DOB: 19-03-1974	Age: 52
Address:	Zuarinagar-Goa	Gender: Male	
Department:	Utilities	Designation: Sr. Assistant Operator	E.Code: 202036
Martial Status	Married	Identification Mark: Mole On Head	

Present Complains: Nil

Past and Family History

Disease	Self	Father	Mother
Hypertension	No	No	No
Diabetes	Yes	No	No
Heart disease	No	No	No
Tuberculosis	No	No	No
Epilepsy	No	No	No
Cancer	No	No	No
Asthma	No	No	No
Stroke	No	No	No

Previous Surgery:

No. of Children: 1

Personal History

Diet: Non-Veg

Addictions: Nil

Exercise: Irregular

Bowel Habits: Regular

Occupational History

	Name of the company	Years	Nature of Job
Present Job	Paradeep Phosphates Limited Goa Unit	30 Years	Sr. Assistant Operator
Previous Job			

Exposure to Occupationa Hazards: Noise

Anthropometry

Height in cms: 182

Weight in kgs: 77

Built: Average

BMI: 23.25

Expiration in cms: 85

Inspiration in cms: 90

General Examination			
Teeth: Normal	Thyroid: Normal	Throat: Normal	
Tonsils: Normal	Gums: Normal	Tongue: Normal	
Pallor: Absent	Icterus: Absent	Edema: Absent	
Lymph Nodes: NAD	Nails: Normal	Clubbing: Absent	
Examination of Eyes			
External Exam: Normal	Squint/Nystagmus: Absent	Colour Vision:	Normal
Distant Vision			
(Without Glasses) R/E:	6/18	L/E :	6/12
(With Glasses) R/E :	6/6	L/E :	6/6
Near Vision			
(Without Glasses)R/E :	N36	L/E :	N36
(With Glasses)R/E :	N8	L/E :	N8
Cardio Vascular System			
Pulse: 80/min Regular	Blood Pressure: 110/80 mm of Hg		
Peripheral Pulsations: Felt	Murmur: Absent	Heart Sounds:	S1 S2 Heard
Gastro Intestinal System			
Liver: Non Palpable	Spleen: Non Palpable	Abdominal Lumps: NAD	
Examination of Ear, Nose and Throat			
External Exam: Normal	Conversational Hearing: Normal		
Respiratory System			
Air Entry equal on both sides. No Adventitious sounds heard			
Central Nervous System			
Cranial Nerves are Normal. Pshychological Make up Normal			
Skin:	Normal		
Remarks:	Medically Fit		
Advice:	Regular Exercise		

Siddhivinayak Occupational Health Services

Name : Prashant Salvi Age : 52 Gender : Male Date: 12-01-2026

ID: PAA25/56

BLOOD EXAMINATION

Test	Results	Reference Range
------	---------	-----------------

Complete Blood Count

Hb	16.3	12 - 17 g/dL
PCV	43	35-50%
Total RBC	5.10	3.5-5.5 million/cu.mm
Total WBC	8400	4000 - 11000/cu.mm
Neutrophils	65	40 - 70%
Lymphocytes	29	20 - 40%
Eosinophils	2	0 - 6%
Basophils	0	< 2%
Monocytes	4	0 - 10
Platelet Count	1.86	1.5 - 4 lakhs/cu.mm

Blood Glucose Level

FBSL	108	74 - 120 mg/dl
------	-----	----------------

Lipid Profile

Total Cholesterol	163	<200 mg/dl
Triglycerides	126	<161 mg/dl
HDL	42	M:35-80 F:42-88 mg/dl
LDL	96	< 160 mg/dl
VLDL	25	0-34 mg/dl
LDL/HDL Ratio	2.29	Up to 3.5
TotalCholesterol/HDL Ratio	3.88	3.0-5.0

Liver Function Test

SGPT	24	M:upto 45 F:upto 34 IU/L
------	----	--------------------------

Kidney Function Test

Blood Urea	19	upto 45 mg/dl
Se.Creatinine	1.06	0.6-1.3 mg/dl
Uric Acid	5.6	M:3.5-7.2 F:2.6-6.0 mg/dl

URINE EXAMINATION

Physical Examination

Appearance:	Clear
Colour:	Pale Yellow

Chemical Examination

Proteins:	Absent
Sugar:	Absent
pH:	5.0
Specific Gravity:	1.025

Microscopic Examination

Pus cells:	0-2/Hpf
RBC's	Nil
Epithelial cells:	0-2/Hpf
Casts:	Absent
Crystals:	Absent
Others:	Nil

FORM No. 7

[rules 19(7) and 90N and Schedules III, IV, VIII, X, XIV, XVI, XX, XXI, XXIII, XXV, XXVII to rule 131]

HEALTH REGISTER

1. Serial number in the register of adult workers: 202036

3. Sex: Male

2. Name of worker: Prashant Salvi

4. Date of Birth: 19-03-1974

Department/Works		Medical examination and the results thereof					If declared unfit for work									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Name of hazardous process	Dangerous process/operation	Nature of job of occupation	Raw materials, products or byproducts likely to be exposed to	Date of posting	Date of leaving / transfer to other work	Reasons for discharge / leaving or transfer	Date	Signs and symptoms observed during examination	Nature of tests and results thereof	Result fit/unfit	Period of temp. withdrawal from that work	Reasons for such withdrawal	Date of declaring him unfit for that work	Date of issuing fitness certificate	Signature with the date of the Certifying Surgeon
Utilities	Fertilizer Industry	Schedule XII, XV, XXIV	Sr. Assistant Operator	Ammonia H ₂ SO ₄ phosphoric Acid	07/05/1996	NA	NA	Jan. 12, 2026	- NIL -	Reports Attached	1 FIT -	NA	NA	NA	07/01/2026	Dr. Savio De Pinto Souza MB.B.S., DOH

Note:- (1) Separate page should be maintained for individual worker (2) Fresh entry should be made for each examination.

GMC Reg. No. 1070

Occupational Health Physician
Siddhivinayak Occupational Health Services,
Ponda-Goa

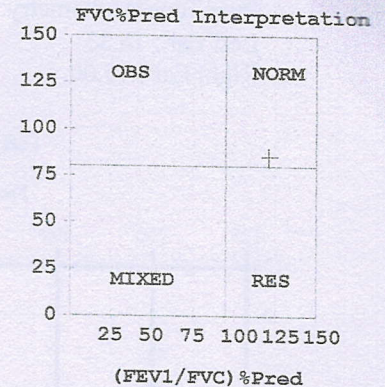
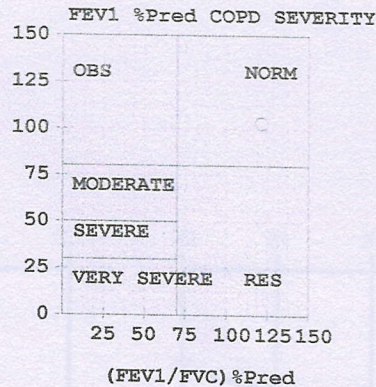
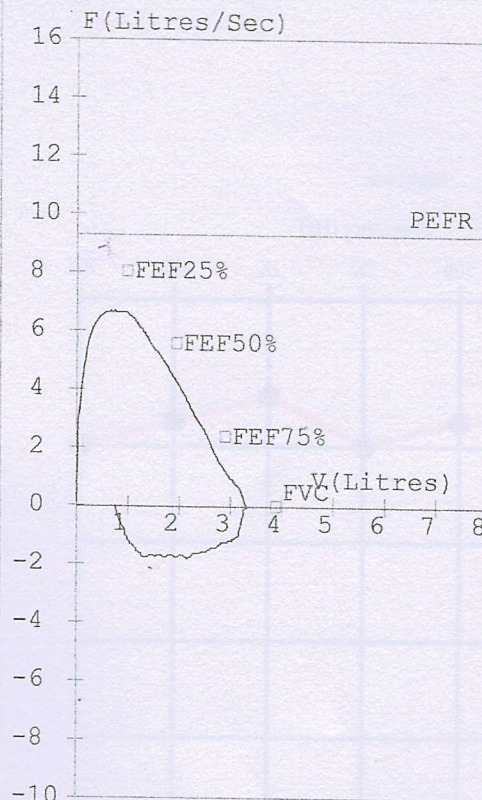
Siddhivinayak OHS

Ponda Goa

Patient: PRASHANT SALVI
Refd.By:
Pred.Eqns: RECORDERS
Date : 12-Jan-2026 04:36 PM

Age : 52 Yrs
Height : 182 Cms
Weight : 77 Kgs
ID : PAA56

Gender : Male
Smoker : No
Eth. Corr: 100
Temp :



FVC Results

Parameter	Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC (L)	03.88	03.29	085	-----	---	---
FEV1 (L)	03.06	03.14	103	-----	---	---
FEV1/FVC (%)	78.87	95.44	121	-----	---	---
FEF25-75 (L/s)	03.63	04.54	125	-----	---	---
PEFR (L/s)	09.28	06.65	072	-----	---	---
FIVC (L)	-----	02.55	---	-----	---	---
FEV.5 (L)	-----	02.50	---	-----	---	---
FEV3 (L)	03.77	03.29	087	-----	---	---
PIFR (L/s)	-----	01.78	---	-----	---	---
FEF75-85 (L/s)	-----	01.94	---	-----	---	---
FEF.2-1.2 (L/s)	06.69	06.31	094	-----	---	---
FEF 25% (L/s)	08.06	06.60	082	-----	---	---
FEF 50% (L/s)	05.57	05.11	092	-----	---	---
FEF 75% (L/s)	02.40	02.62	109	-----	---	---
FEV.5/FVC (%)	-----	75.99	---	-----	---	---
FEV3/FVC (%)	97.16	100.00	103	-----	---	---
FET (Sec)	-----	01.53	---	-----	---	---
ExptTime (Sec)	-----	00.06	---	-----	---	---
Lung Age (Yrs)	052	050	096	-----	---	---
FEV6 (L)	03.88	-----	---	-----	---	---
FIF25% (L/s)	-----	00.58	---	-----	---	---
FIF50% (L/s)	-----	01.32	---	-----	---	---
FIF75% (L/s)	-----	01.77	---	-----	---	---

Pre Test COPD Severity

Test within normal limits



Pre Medication Report Indicates

Spirometry within normal limits as (FEV1/FVC)%Pred >95 and FVC%Pred >80

25 mm/Sec @ 0.5 - 32Hz BPL GenX3

10 mm/mV 25 mm/Sec @ 0.5 - 32Hz BPL GenX3

0000767

Hospital: SIDDHIVINAYAK

Pat. ID: 0000767

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Sinus rhythm

Normal ECG

PIA31A07

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52 Years / Male

12-01-20/09 12:46

No

Dia: 0/0 mmHg

8cm / 8kg

Indian

No Medication

No Medication

Normal

Disclaimer: This report does not replace the diagnosis of a trained physician

ECG Within Normal Limits

[Signature]

Dr. Savio De Pinto Souza
M.B.B.S., D.O.H.

GMC Reg. No. 1070

Occupational Health Physician
Siddhivinayak Occupational Health Services,
Ponda-Goa

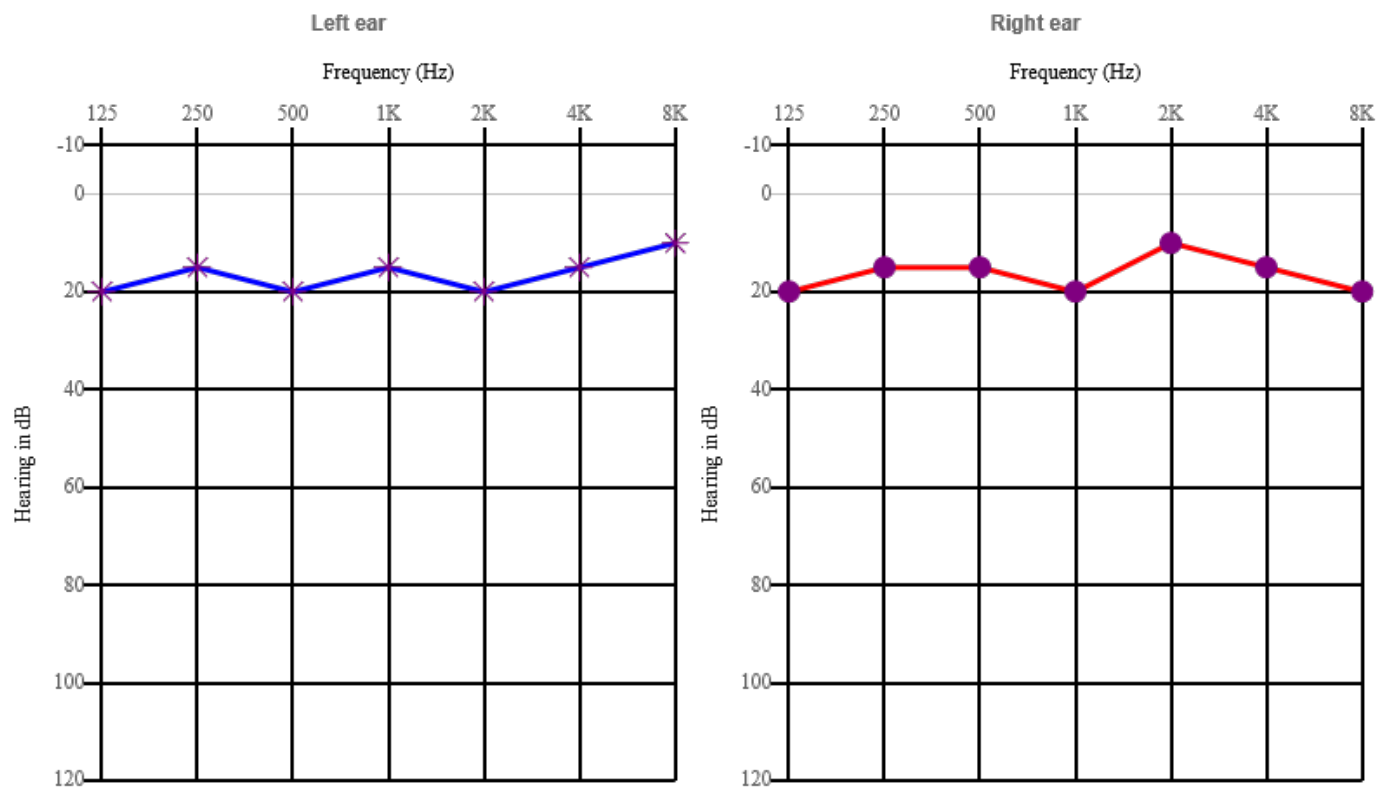
Sidhivinayak Occupational Health Services**Audiological Evaluation Report**

ID	Patient Name	Age	Gender	Designation	Date
PAA25/56	Prashant Salvi	52	Male	Sr. Assistant Operator	Jan. 12, 2026

Pure Tone Audiometry

Left Ear : 18.33

Right Ear : 15.00



Air

Bone

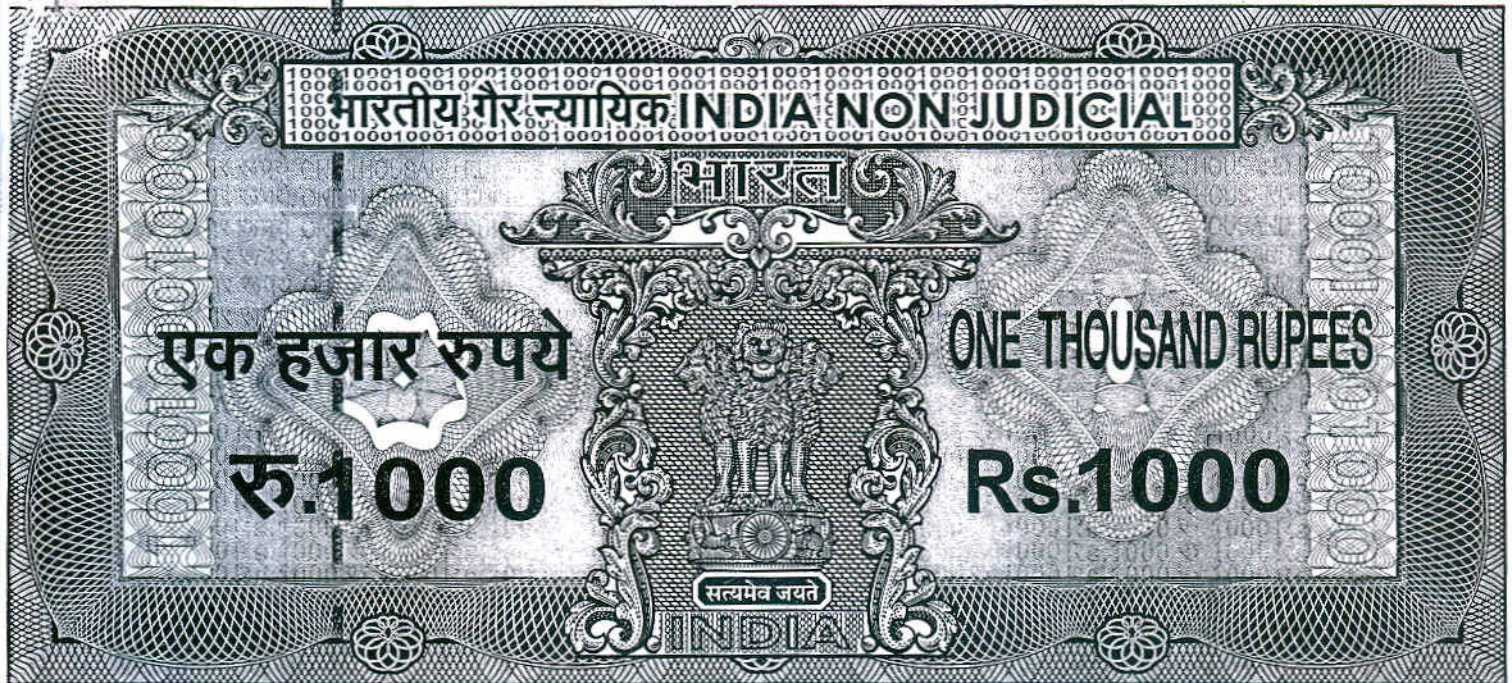
* = Left ear

▲ = Left ear

O = Right ear

□ = Right ear

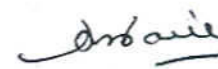
Audiologist Signature



गोवा GOA

Serial No. 25722... Place of Vend. Vasco Date... 24/12/13 212701
 Vendor Cedric M Fernandes R/O Chicalim
 Licence No JUD/STP/2/2000/MOR/AC
 Value of Stamp Paper... Rs. 1000/- (Amount... One Thousand Rupees)
 Name of Purchaser... LARA AGRO CHEMICALS LTD
 Resident of SANJANA... Name of Father...
 Purpose... Transacting Parties...
 As there is no one single paper for the value of Rs. 1000/-, additional stamp paper for the completion of the value is attached along with


 Signature of Stamp Vendor


 Signature of Purchaser

AGREEMENT

This Agreement is made at Panaji, on this 28th day of the month of March of year 2014.

...2/-




BETWEEN

The Governor of Goa (hereinafter called "the Government") of the One Part

AND

M/s. Zuari Agro Chemicals Limited, a Company incorporated under the Companies Act, 1956 (Act No. 1 of 1956), having its registered office at Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, represented in this Agreement by Shri R.Y. Patil, Chief General Manager and Company Secretary, by virtue of Resolution passed at the Meeting of its Board of Directors, held on 27th March 2012 (hereinafter called the "Company" which expression shall, unless it be repugnant to the context shall be deemed to mean and include its successors, liquidators, persons for the time being having control over the Company or its assets and affairs and permitted assignees) of the Other Part.

Whereas in terms of an Agreement for supply of water dated 20/10/2006 executed between the Government and M/s Zuari Industries Limited, the said M/s Zuari Industries Limited, inter alia, agreed to intake minimum daily quantity of 8500 m³ of water for its factory consumption (hereinafter referred to as the "said Agreement");

And whereas the validity of the said Agreement expires on 31/03/2016;

And whereas the Company vide its letter dated 04/12/2012 has stated that the actual water requirement of the factory for the various processes involved in the manufacture of fertilizers is around 10,000 cubic metres (10 MLD) per day and requested the Government to supply 10 MLD of raw water to it and for that purpose to install pumping facility at Verna alongwith the laying of 7-8 km of pipeline to Zuari Agro Chemicals Ltd. at Zuarinagar, Vasco;

And whereas the Government has completed the project of construction of raw water reservoir at Verna;

...3/-



And whereas the Government vide Technical Sanction Order No. 15-1/SE-CPO-WRD/2012-13/16 dated 21/02/2013, has accorded its technical sanction for the work of pumping of raw water from Verna Industrial Estate to Zuari Agro Chemicals Ltd. at Zuarinagar and pumping station of PWD at Cansua village in Mormugao Taluka for Rs 19,07,78,374/- (Rupees nineteen crores seven lakhs seventy eight thousand and three hundred seventy four only) which is inclusive of RITES charges and contingencies. (hereinafter referred to as the "said work");

And whereas the Government vide Order No. 3-3/81-CE-WRD/A/2012-13/1493 dated 19/03/2013 has further accorded its administrative approval amounting to Rs 20,38,73,900/-(Rupees twenty crores thirty eight lakhs seventy three thousand nine hundred only) for the said work;

And whereas the Government has agreed to the request of the Company to supply 10,000 cubic metres per day (10 MLD) of raw water from the Verna reservoir to the Company;

AND WHEREAS the Government has agreed to the new proposal of the Company which shall entail the revision of the proposed cost to the sanctioned project for laying the additional pipeline from Verna Reservoir to Zuari Agro Chemicals Limited. And it is further agreed that the said additional cost incurred shall be carried out by the Government on Depository basis on behalf of the Company;

 **AND WHEREAS** the Company has agreed to keep deposit with the Government in cash amounting Rs 15 crore (Rupees fifteen crores only) which shall be adjusted within a period of seven years towards off-take raw water supply billing.

AND WHEREAS the parties have decided to execute a fresh agreement in supersession of the said agreement dated 20.10.2006.

...4/-



NOW, THEREFORE, IN CONSIDERATION OF THE PREMISES AND MUTUAL COVENANTS, THIS AGREEMENT WITNESSES AND IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

- (1) The Company shall, on the day of the execution of this Agreement, deposit an amount of Rs 15 crore (Rupees fifteen crores only) with the Government on the premise that the Government shall concurrently complete the water supply pipeline from the Verna Reservoir to the Company's premises at Zuarinagar, Vasco, for supply of 10000 cubic metres per day (10 MLD) of raw water.
- (2) The Government agrees to ensure that the raw water is supplied to the Company regularly at least for a minimum guaranteed off-take of 10000 cubic metres per day (10 MLD) over a period of not less than 12 hours per day from the Verna Reservoir source and that the Company agrees to make regular payments for the water charges at the rate of **Rs.15/- per m³**. This rate shall stand automatically increased **every three years** on pro rata basis based on **price indices of RBI** or as and when the water supply tariff is increased by the Government from time to time whichever is earlier after the execution of this Agreement and fixation of such rate shall be binding on the Company.
- (3) Pursuant to the revamp/ expansion of its Plants or any Brown Field Projects, if the Company requires an increased quota of raw water supply from the Verna Reservoir, the Government shall endeavour to meet such requirement, but the Government shall not be liable to the Company in any manner whatsoever if it is unable to meet the Company's increased requirement of raw water.
- (4) The Government agrees that the aforesaid amount of deposit of Rs. 15 crore (Rupees fifteen crores only) shall be adjusted over a period of seven years from the water bills charged towards the off-take of raw water supply to the Company.



...5/-

- 5 -

- (5) The Company shall, within one month of the completion of the pipeline project, submit to the Government a Bank Guarantee amounting to **Rs. 135** lakhs from any scheduled Bank by way of guarantee that the minimum daily quantity of 10000 cubic metres (10 MLD) off-take of raw water shall be taken by the Company. The said Bank Guarantee of **Rs.135** lakhs shall be enforced by the Government in case of default committed by the Company of any of the terms and conditions of this Agreement. The said Bank Guarantee of **Rs.135** lakhs shall stand automatically revised as and when the water tariff is revised by the Government from time to time. The payment for water supply charges shall be made by the Company on monthly basis every month within fifteen days of receipt of demand from the Government.
- (6) The quantities of water actually supplied to the Company will be metered and registered, which shall be under the control of Water Resources Department. The installation of meter will remain sealed under the control of Water Resources Department though the cost of installation shall be borne by the Company and paid for within the period specified in the Department's regulations.
- (7) The Company agrees to make the payment of water charges at the agreed existing rate of **Rs.15** per cubic metre or such other rate as may be fixed by the Government from time to time.
- (8) Bank Guarantee for the amount of **Rs.135** lakhs or such other increased/revised amount as provided for in this Agreement shall always remain valid/or its validity shall be extended by the Company from time to time until the same is released by the Government.
- (9) The Government shall not be liable to pay any compensation to the Company in the case of breakdowns, if any, in the water supply or for delayed commencement of water supply or non-supply of raw water. In such circumstances, billing will be done on actual water supplied basis.



...6/-

- (10) The water supplied through the fixed meter shall be used for the purpose of industrial purpose of the factory only and no resale shall be permitted.

The Company should be allowed to confirm WRD meter reading everyday in the presence of duly authorized official of the Water Resources Department. Daily water meter readings alongwith other data shall be made available to the Company alongwith the monthly bill as an Annexure.

- (11) If the Company fails to comply with the terms and conditions of this Agreement, notwithstanding such other actions as provided for in this Agreement, the Company shall also be liable to pay to the Government damages that may be suffered by the Government by reasons of default or such default by the Company.
- (12) The minimum billing @ 5000 cubic metres per day (5 MLD) on monthly average basis shall be payable by the Company, even if the Company is not drawing this quantity, with effect from the date of commencement of supply of water to the Company, except under the following circumstances.

- (a) The billing shall be done as per actual water supplied whenever the actual supply of water is more than the minimum guaranteed off-take of water and whenever actual is less than the minimum guaranteed off-take of water because of shortage in supply of water, due to pipeline breakdown, power failure, voltage problems or any other causes in Verna or at Davorlim pumping station or for any other reason WRD reduces the minimum guaranteed off-take of water to the Company.

- (b) The quantity billed during the period of annual shut down of plant shall be 2000 cubic metres per day (2 MLD) for a maximum period of thirty days in a year if the off take is restricted by the Company during this period. The period of the shutdown of the Plants shall be intimated by the

 ...7/-

Company to the Government. However, if the Company draws more than 2000 cubic metres per day during this period, then the billing shall be on actual basis.

(c) The Company shall not be liable for payment for minimum 5000 cubic metres per day (5 MLD) during unforeseen events such as strike, lock-out, earthquake, major accident, terrorist activities, etc or the events covered under Force Majeure.

(13) In the event of major breakdown of pumping system at Davorlim or Davorlim - Verna raw water supply pipeline or breach of Canal supplying the raw water to Davorlim pumping station etc. or inability of the Government to restore the raw water supply within reasonable time, the Government shall endeavour to supply the proportionate additional quantity of treated water to the Company through existing PWD water supply system to mitigate the water crisis of the Company, but the Government shall not be liable to the Company in any manner whatsoever if it is unable to supply the additional quantity of treated water as aforesaid.

(14) **ARBITRATION.**

In the event of any question, dispute or differences of opinion arising under or out of or in any way relating to or concerning these presents or effects of these presents or in connection with the conditions herein contained or touching or concerning the meaning or effect thereof, or any matter contained therein as to the rights, duties or liabilities of the parties hereto, howsoever, in connection with this Agreement, the same shall be referred to the sole arbitration of a person to be appointed by the Secretary to the Government of Goa, Water Resources Department. The Company shall not raise any objection to such appointment on the ground that the arbitrator so appointed is a Government servant and that he had dealt with the matter to which this Agreement relates or that in the course of his duties as such Government servant, he had expressed views on all or any of the matters in dispute or difference. In the event of such arbitrator being



...8/-

transferred or vacates his office or refuses or is unable to act as such for any reason whatsoever, it shall be open to the Secretary to the Government of Goa, Water Resources Department, to appoint another person in his place. The arbitrator so appointed shall be entitled to proceed with the reference from the stage at which it was pending. The arbitrator, may, with the consent of both the parties to these presents, extend the time for making the award. The award of the arbitrator shall be final and binding on the parties to these presents. Save as aforesaid, the Arbitration and Conciliation Act, 1996 (Central Act 26 of 1996) and the rules made thereunder shall apply to the arbitration proceedings under this clause.

- (15) If the Company fails to comply with any of the terms and conditions mentioned in this Agreement and on the part of the Company to be observed and performed, or even otherwise, and in case the Company is found defaulting in making the payment as per the billing, the Government reserves the right to terminate this Agreement and shall recover the amount due from Bank Guarantee of **Rs.135** lakhs or as arrears of land revenue as deemed fit by the Government without prejudice to any other remedy open to the Government.
- (16) In the event of change in feedstock due to Government policy or otherwise or such other policies, which will have a bearing/impact on the operations of the Company, the parties agree to review the terms of this Agreement.
- (17) The Company agrees to abide by all the laws, rules, regulations and bye-laws in force from time to time governing the water supply system or any such laws, rules, regulations and bye-laws that may come in force in future.
- (18) The stamp duty payable on this agreement shall be borne by the Company.



...9/-

IN WITNESS WHEREOF the parties hereto have set their hands and seals
on the date, month and year first mentioned hereinabove.

SIGNED, SEALED AND DELIVERED

BY Shri S. T. Nadkarni



Chief Engineer- Water Resources Department,
For and on behalf of the Governor of Goa.

SIGNED, SEALED AND DELIVERED

BY Shri R.Y. Patil



Chief General Manager
& Company Secretary
For and on behalf of the Company.

(By virtue of Board Resolution dated 27-03-2012)



IN THE PRESENCE OF :-

1. 
S.V. PRABHAVALKAR

2. 
Nitin M. Kautak



- **Seven Eye checkup camps organised at Upasnagar, Zuarinagar, Lamani wada, Sancoale, MES Junction, Zari & Cortalim 1380 spectacles were given to needy with PPL branding overall 2314 villagers took benefit of the eye checkup camp. In addition two Thyroid camps were conducted at MES & Upasnagar .**
- **Water distribution to Bellem & Dando villages of Velsao Village Panchayat.**
- **Support to Orphanage home based in Ponda by providing Lockers to 54 students**
- **Provision of five each ICU beds , Cardiac Monitors ,Side tables to Dilasa Pallateive care center at Ponda**
- **Construction of Toilet block at Upasnagar for Anganwadi**
- **Provision of Smart board to Keshav smruty School at Dabolim & Upasnagar , Arlekar School at NewVaddem , Manohar Parrikar School & Govt. School , Vasco**
- **Laminar Air flow & refrigerated Centrifuge was made available to St.Joseph Vaz College Cortalim , the only microbiology college in South Goa.**
- **Three Engineering students were offered scholarship**
- **School students from North Goa were tarined on Cyber security 51 schools were imparted training.**
- **All Goa Quiz Competition was organised at Ravindra Bhawan Vasco 21 schools participated**
- **School Bags & stationary was made available to Kiran Niketan School in Slum area of Zuarinagar.**
- **Establishment of Laboratory at Manohar Parrikar Municipality high school, Vasco**
- **Photocopy Machine & Invertor was provided to Arlekar School at New Vaddem**
- **Training women on confectionery and food items in slum area of Margao was organised , this activity has created income generating source for two families.**

- **Cutting & Stitching training to SHG members in Sancoale Panchayat made available 30 Stitching Machines, Brand name "MAYECHA DHAGA" baby cloths is developed.**
- **Training & support to 118 farmers in Velsao Village for improvement in soil health through VP Velsao**
- **Electrification of " Mahila Bhawan" developed by SHG at Chikalim**
- **To educate Rural ladies on Mental & physical health ,training for 800 rural ladies was organised**
- **MRF facility was created at Waste Managemnet site in Sancoale village by installing Bailing , Machine , Conveyer belt , this has helped in reducing the black spots in Sancoale Village Panchayat.**
- **MRF facility revamping was taken up at Mapuca Municipality**
- **Tree planting was organised at Sancoale, Velsao, Upasnagar & Vidhyanagar 1200 Mango plants were planted by community in Velsao & Sancoale Village**
- **To reduce usage of plastic, cotton bags with PPL brand were distributed to slum area of Margao**
- **Rural ladies of SHG were imparted training on Basic tools of AI & digital platform to create a space for their produce on digital platform.**
- **Zuarinagar Slum area renovation to keep free from vector born diseases & to maintain hygiene**
- **Provision of sluice gate at Bella Band in Velsao Village was taken up to control sea water flowing in Paddy fields this has helped to protect 80 acres of paddy Field.**

CSR ACTIVITIES – PPL GOA UNIT

Soak Pit Work at Fabric Wada -Velsao



Soak pit work with 28 chambers at Fabric wada in Velsao benefiting 17 households

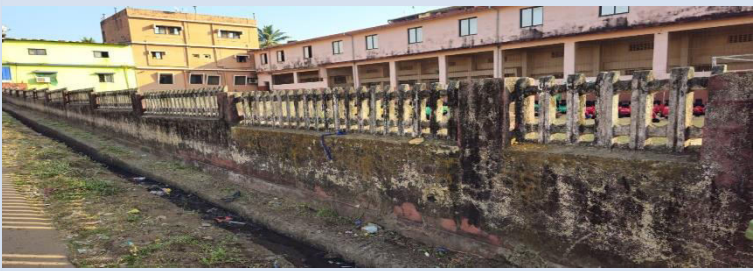
Approach Road Velsao beach 2nd Oct 2024

- Cleanliness drive from Infant Jesus school to Beach was taken up by local community along with PPL employees.



Kiran Niketan Zuarinagar 17th Sept 2024

- Cleanliness drive along with painting of Kiran Niketann at Zuarinagar with the help of Prasanna School of Public Health, Manipal.



Velsao Beach area 4th Jan 2025

- Cleanliness drive at Velsao Beach was organized by PPL to collect garbage accumulated on the eve of new year.



Tree Planting-2024-25



Two tree planting initiatives to preserve nature by planting 500 plants of Neem, coconut, Jackfruit & other species was organized.





Healthier Community,
cleaner Environment
through effective
Waste Management



यापुढे हरित कार्यपद्धती उद्योगांनाच परवानगी मुख्यमंत्री : कचरा व्यवस्थापनाबाबत सामंजस्य करार

प्रतिनिधी । गोवन वार्ता



कचरा व्यवस्थापनाबाबत सामंजस्य करार सोहळ्यात मुख्यमंत्री डॉ. प्रमोद सावंत सोबत अन्य.

काही राजकारणी पर्यटन बंद पाडण्याच्या प्रयत्नात

खाण बंद झाल्यावर इतकी वर्षे राज्याला पर्यटन उद्योगाने आधार दिला आहे. मात्र सध्या काही नवे राजकारणी पर्यटन क्षेत्र बंद पाडण्याच्या प्रयत्नात आहेत. पर्यटनाशी संबंधित व्यावसायिक संघटनांनी याविरोधात बोलले पाहिजे, असे मुख्यमंत्री म्हणाले.

गणपूक उद्योगांना आम्ही परवानगी देणार आहोत. ज्यांना हे जमत नसेल त्यांनी आपली आस्थापने बंद कराव्यात.

काही एनजीओ राज्यात येणाऱ्या जगाच्या प्रकल्पांना विरोध करतात.

शालेय अभ्यासक्रमात समावेश करणार

मुख्यमंत्र्यांनी सांगितले की, पर्यावरण, कचरा आणि त्याच्या व्यवस्थापनाबाबत जागृती निर्माण व्हावी यासाठी शालेय अभ्यासक्रमात पुस्तक आणण्याचा आमचा विचार सुरू आहे. यावर 'एससीईआरटी'चे काम सुरू आहे.

राज्यातील त्यांना नेत्रा देणार आहे.

लोकमत

आय विटनेस

समुद्र किनाऱ्याची स्वच्छता....



अॅमिटी युनिव्हर्सिटीच्या संशोधन पथकाने गोव्यातील समुद्रकिनारी वाढते प्लास्टिक प्रदूषण आणि त्यामुळे पर्यावरणावर होणाऱ्या विपरीत परिणामांबाबत सूचित केले होते. पारादीप फॉस्फेट्सने गांधी जयंती दिनी वेळसाव किनारी युनिट हेड नीलेश देसाई यांच्या मार्गदर्शनाखाली स्वच्छता मोहीम राबवली. वेळसावच्या सरपंच मारिया डायना, पंच सदस्य फ्रान्सिस ब्रागांझा, रुदिका आंताव यांनीही या मोहिमेत भाग घेतला.

GOAN VARTA
GOMANTAK
TARUN BHARAT

Cleanliness Drive Velsao, Waste
Management Sancoale

वेलसांव किनाऱ्यावर स्वच्छता अभियान



वेलसांव : वेलसांव किनाऱ्यावर आयोजित केलेल्या स्वच्छता अभियानात सहभागी झालेले पारादीप फॉस्फेट्स कंपनीचे अधिकारी व कर्मचारी वर्ग.

प्रतिनिधी
वास्को

पारादीप फॉस्फेट्स कंपनीतर्फे बुधवारी गांधी जयंतीनिमित्त वेलसांव किनाऱ्यावर स्वच्छता अभियान राबविण्यात आले.

कंपनीचे सीएमओ व युनिट प्रमुख नीलेश देसाई यांच्या मार्गदर्शनाखाली

आयोजित केलेल्या कार्यक्रमात प्रमुख पाहुण्या म्हणून वेलसांव पंचायतीच्या सरपंच मारिया डायना गोविया उपस्थित होत्या. यावेळी पंचायतीच्या पंच फ्रान्सिस ब्रागांझा व रुदिका आंताव उपस्थित होत्या. त्यांनी यावेळी स्वच्छता मोहिमेत भाग घेतला. वेलसांव समुद्र किनाऱ्याकडे

जाणाऱ्या रस्त्याची व किनाऱ्यावरील परिसराची यावेळी स्वच्छता करण्यात आली. यावेळी प्लास्टिक कचरा, काचेच्या बाटल्या गोळा करण्यात आल्या. या मोहिमेत पारादीप फॉस्फेट्स कंपनीचे अधिकारी व कर्मचारी वर्ग सहभागी झाला होता.

समुद्रकिनाऱ्यांवरील प्लास्टिक प्रदूषणाबाबत चिंता व्यक्त

अॅमिटी युनिव्हर्सिटीच्या संशोधन पथकातर्फे वेळसाव येथे स्वच्छता मोहीम

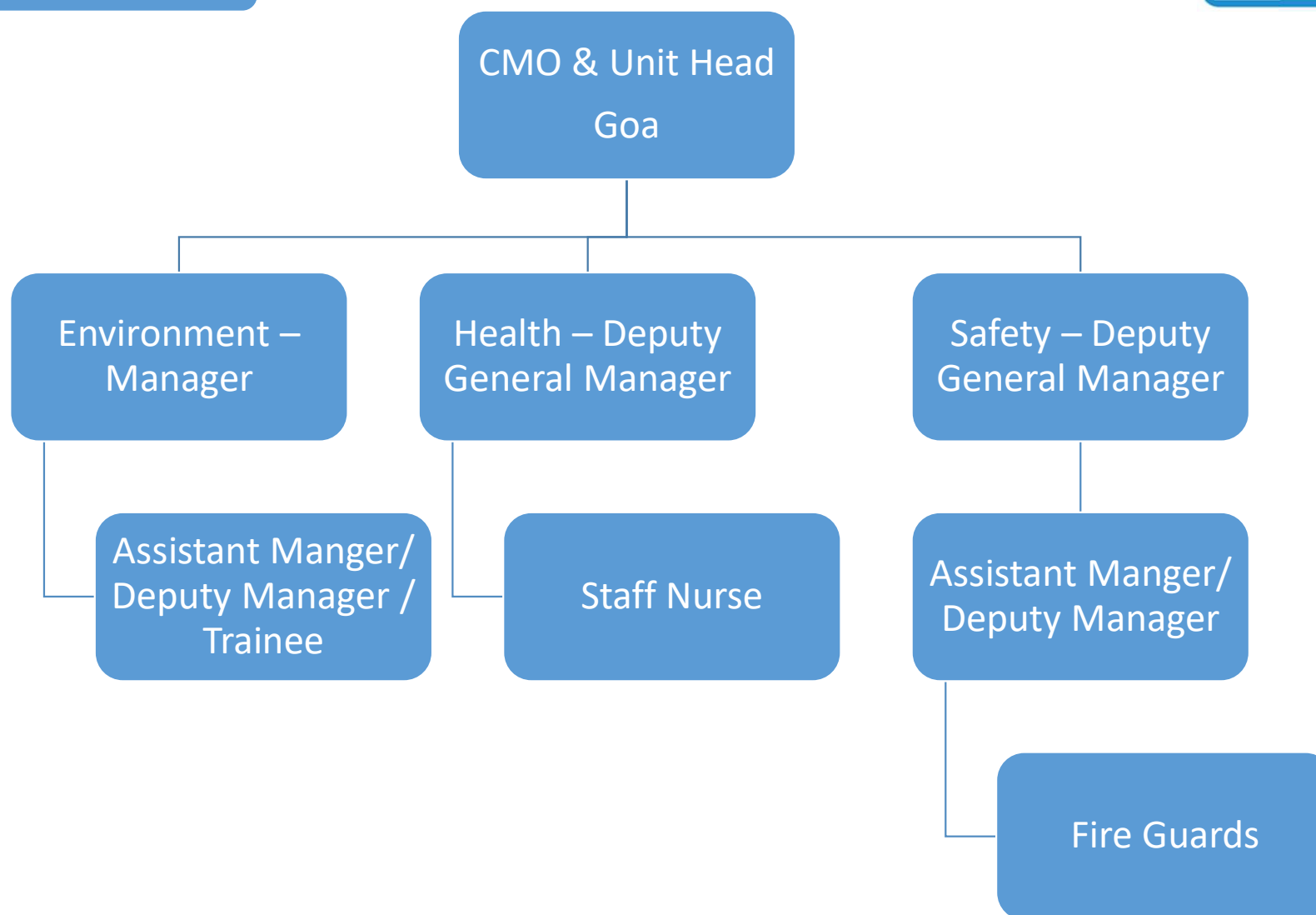
वास्को, ता. ४ (प्रतिनिधी): अॅमिटी युनिव्हर्सिटीच्या संशोधन पथकाने गोव्यातील समुद्रकिनाऱ्यावर वाढते प्लास्टिक प्रदूषण आणि त्यामुळे पर्यावरणावर होणाऱ्या विपरीत परिणामांबाबत चिंता व्यक्त केली आहे. पारादीप फॉस्फेट्सने गांधी जयंतीदिनी वेळसाव किनारी नीलेश देसाई यांच्या

मार्गदर्शनाखाली स्वच्छता मोहीम राबवली. वेळसावच्या सरपंच मारिया डायना, पंच ब्रागांझा, रुदिका आंताव यांनीही या मोहिमेत भाग घेतला. पारादीप फॉस्फेट्स लिमिटेड गोवाचे सीएमओ आणि युनिट प्रमुख नीलेश देसाई यांच्या मार्गदर्शनाखाली हा स्वच्छता उपक्रम हाती घेतला.



वेळसाव : समुद्रकिनारी स्वच्छता अभियानात भाग घेतलेले अॅमिटी युनिव्हर्सिटीचे संशोधन पथक.



EHS ORGANOGRAM



25th November 2025

NOTICE

Reconstitution of the Environment Management Cell (EMC)

The Environment Management Cell (EMC) is responsible for overseeing the organization's environmental management initiatives, ensuring compliance with environmental regulations, and monitoring the impact of operations on the environment.

The composition of the Environment Management Cell (EMC) at Paradeep Phosphate Limited, Goa Unit has been revised with effect from date of notice.

The EMC, shall now comprise the following members:

1. Mr. Shrikanth Tendulkar, Manager – Environment
2. Mr. Inderjit Singh, Consultant – Environment
3. Miss. Shruti Dessai – Environment
4. S. Uma Maheswara Rao, Manager – Laboratory


Suresh Pramanik
Chief Manufacturing Officer & Unit Head

PARADEEP PHOSPHATES LIMITED

CIN No.: L24129OR1981PLC001020

Goa Unit : Jaikisaan Bhawan, Zuarinagar, Goa - 403 726

Tel: +0832 2592180, 2592181, 6752399

Registered Office: Bayan Bhawan, Pandit J.N. Marg, Bhubaneswar - 751 001

www.paradeepphosphates.com

The Navhind Times
8th Sept, 2009


ZUARI INDUSTRIES LIMITED
NOTIFICATION

This is for the information of the general public that Zuari Industries Ltd. Zuarinagar Goa, has been accorded environmental clearance by the Ministry of Environment and Forests, Govt. of India, vide their letter no F. No. J-11011/217/2008-IA-II(I) dated: 1/9/09, for Revamp of Ammonia Plant for changeover of feedstock and fuel from Naphta to NG/RLNG and reduction of specific energy consumption along with debottlenecking the capacity of ammonia-urea plants, change over of fuel from FO to NG/RLNG in the utility boiler as also debottlenecking the capacity of NPK plant A&B alongwith product mix change.

Further, the copy of the clearance letter is available at the office of the Goa State Pollution Control Board, Dempo Towers, Pattoo, Panjim, Goa and is also displayed on the website of Ministry of Environment & Forests at <http://www.envfor.nic.in>

For ZUARI INDUSTRIES LTD.
Sd/-
L.M. Chandrasekaran
Vice President - Operations

Tarun Bharat
8th Sept, 2009


झुआरी इंडस्ट्रीज लिमिटेड
अधिसूचना

तमाम जनतेला याद्वारे कळविण्यात येते की, झुआरी इंडस्ट्रीज लि. झुआरीनगर, गोवा यांना नाफ्तापासून एनजी/आरएलएनजी असा फीडस्टॉक आणि इंधनामध्ये फेरबदल करण्यासाठी अमोनिया प्रकल्पाची पुनर्रचना आणि अमोनिया युरिया - प्रकल्पाच्या डीबॉटलनेकिंगसहित विशिष्ट उर्जा वापराच्या क्षमतेच्या कपातीकरिता युटिलिटी बॉयलरमधील एफओपासून एन जी/आर एल एन जी तसेच उत्पादन मिश्र फेरबदलसमवेत एनपीके ए आणि बी प्रकल्पाच्या डी बॉटलनेकिंगकरिता पर्यावरण आणि वन मंत्रालय, भारत सरकार यांनी आपले पत्र एफ क्र. जे ११०११/२१७/२००८ - I ए - II (I) दिनांक १/९/०९ ला अनुसरून पर्यावरण संमती दाखला दिला आहे. या दाखल्याची प्रत गोवा प्रदूषण नियंत्रण मंडळ धेंपो टॉवर्स, पाटो, पणजी, गोवा यांच्याकडे उपलब्ध आहे, तसेच पर्यावरण आणि वनमंत्रालयाच्या <http://www.envfor.nic.in> या वेबसाईटवरही प्रदर्शित करण्यात आली आहे.

झुआरी इंडस्ट्रीज लि. करिता
सही/-
एल. एम. चंद्रशेखरन
उपाध्यक्ष कार्यवाही

ld also continue.
e being raised over the
ed to conduct a thorough
at the truth comes out,"
tee comprises retired IPS
port Mr M R Reddy and
The committee would have
s, she said.

order one of ceful": MEA

Noting that the country has a very long border of over 3,000 km with China, Mr Krishna said, "There is a built-in mechanism which is in place and which takes care of such incursions."

"With China, I think the boundary has been one of the most peaceful. So, there is no issue on that. There is no problem on that. These incursions will be certainly sorted out," he said.

After helicopter incursions into Indian airspace, official sources said Chinese Army has violated the International Border in Ladakh region and painted boulders and rocks in the area red. Mr Krishna ruled out that these incursions were any "cause of concern".

best film

award has gone to Sharad Goyekar for his role in the Marathi film 'Tingya.' Sources said the Nargis Dutt award for best film on national integration has gone to Bhavna Talwar's 'Dharm'. The film has pipped other contenders in the category such as Anil Kapoor's 'Gandhi My Father' and SRK's 'Chak De India'. The feature film jury was headed by noted filmmaker Sai Paranjpe; other members included Ashok Viswanathan and Namita Gokhale. About 102 films and 106 non-feature films were considered.

- tenancy, leave and license, or otherwise howsoever, is required to make the same known in writing to the undersigned at their office at M/s. S. V. Pikale & Co., Shree Katayani Chambers, Apna Bazar Complex, Margao - Goa within fourteen days from the date hereof, otherwise all such claim, right, title, benefit or interest shall be disregarded and considered as waived and / or abandoned and not binding on our client.

DESCRIPTION OF THE PROPERTIES:

ALL THAT piece or parcel of land / properties called 'METADE DO VALADO DE ALAGOA DE BORDA' also known as 'SOCLEM CANDALEM' situated within the Margao Municipal area, Salcete Taluka, South Goa District, State of Goa described in the Land Registration office of Salcete under No. 1477 of Book B No. 4 New series, enrolled in the land Revenue office of Salcete under Matriz No. 801 and 2202.

I) Surveyed under Chalta No. 12, 14 to 24 of P.T. Sheet no. 112 admeasuring 1038 sq.mts bounded on the:

EAST by the paddy field of Alagoa Soclem Candalem of Comunidade; WEST paddy field of Borechi Addy of the Comunidade; NORTH by the other half of the same VALADO of Joao Alcantera Antao and SOUTH by a bridge.

Presently bounded as:
NORTH by Public Road; SOUTH by Public Road; EAST by Public Road; WEST by Comunidade Land.

ii) Surveyed under Chalta no. 13 of P.T. Sheet No. 112 admeasuring 1000 sq.mtrs. bounded on the:

EAST by the paddy field of Alagoa Soclem Candalem of Comunidade; WEST by paddy field of Borechi Addy of Comunidade; NORTH by the other half of the same Valado of Joao Alcantera Antao; SOUTH by the bridge.

Presently bounded on the
NORTH by the Chalta No. 5; EAST by Nallah; WEST by Public Road; SOUTH by Public Road.

Dated this 7th day of September, 2009.

For M/s. S. V. Pikale & Co. Advocates,
Sd/-
(S. V. Pikale)
Advocate

Website : <http://www.gsdcitd.com> Email : email@gsdcitd.com Date : 07/09/2009
CORRIGENDUM-I TO TENDER NOTICE NO. GSIDCE/ENGG/NIT-09/2009-10 DATED 20/08/2009 (WORK AT E)
Name of the work: **Construction of bridge between Tharmas to Ozari Sangaowada in Dhargal Constituency.**
Please note the following amendment to the above-cited Notice:
Last date of issue of Tender Papers : **7th October 2009**
Last date of submission of tenders : **9th October 2009 at 15.00 hrs**
Last date of opening of tenders: **9th October 2009 at 15.30 hrs**
Date and time of pre-bid meeting: **24th September 2009 at 15.00 hrs**
All other conditions remain unchanged.

MANAGING DIRECTOR
Vinsan Graphics



ZUARI INDUSTRIES LIMITED NOTIFICATION

This is for the information of the general public that Zuari Industries Ltd. Zuarinagar Goa, has been accorded environmental clearance by the Ministry of Environment and Forests, Govt. of India, vide their letter no F. No. J-11011/217/2008-IA-II(I) dated: 1/9/09, for Revamp of Ammonia Plant for changeover of feedstock and fuel from Naphta to NG/RLNG and reduction of specific energy consumption along with debottlenecking the capacity of ammonia-urea plants, change over of fuel from FO to NG/RLNG in the utility boiler as also debottlenecking the capacity of NPK plant A&B alongwith product mix change.

Further, the copy of the clearance letter is available at the office of the Goa State Pollution Control Board, Dempo Towers, Patto, Panjim, Goa and is also displayed on the website of Ministry of Environment & Forests at <http://www.envfor.nic.in>

For ZUARI INDUSTRIES LTD.
Sd/-
L.M. Chandrasekaran
Vice President - Operations

NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH (Ministry of Earth Sciences, Govt. of India)

Headland Sada, Vasco-da-Gama GOA 403 804, INDIA
Tel: 91- (0) 832 2525571 Telefax: 91- (0) 832 2525573
Email: warlu62@ncaor.org Website: www.ncaor.gov.in

PUBLIC TENDER

Director, National Centre for Antarctic & Ocean Research (NCAOR) invites sealed tender super scribing Tender No. Item and due date from well established/ reputed manufacturers / authorized and bonafide vendors for supply of the following:-

Sl. No.	Tender No.	Item Description	Qty.	Cost of Tender Doc. Rs.	EMD Rs
1	NCAOR/SOE-50129/PT-12	Fabrication & Supply of Container 20' x 8' x 8 1/2'	04 Nos.	500.00	15,000.00

Last date for issue of tender documents : **06.10.2009**

Last date for submission of quotation : **07.10.2009**

The details of tender documents are also available in our website <http://www.ncaor.gov.in>. Interested suppliers may download the details and submit the quotation on or before the due date along with tender fee.

The quotation without tender fee will not be considered.

The Director, NCAOR is not responsible for any transitional/postal delays.

The quotations will be opened on **08.10.2009** in the presence of tenderers or their authorized representatives.

The Director, NCAOR reserves the right to accept or reject any quotation in full or part thereof without assigning any reason.

Advtd. No. NCAOR/33/09

Sd/-
For & on behalf of NCAOR

धरण

णिक संप

गोव्यात मात्र कामगारांची अतिशय वाईट झाल्याचे श्री. गान्सेका यांनी निदर्शनास आणले. गोव्यात अकुशल कामगारांसाठी रु. २५० (प्रतिदिन), निमकुशल रु. २७५, कुशल रु. ३०० आणि अतिकुशल कामगारांसाठी रु. ३५० (प्रतिदिन) किमान वेतन ठरवण्याची मागणी आयटकने केली आहे.

२४ सप्टेंबर रोजी आंदोलन केल्यानंतर ९ ऑक्टोबर रोजी लाक्षणिक संप पुकारण्यात येणार आहे. कर्दब परिषदेत महामंडळाच्या कर्मचारी-कामगारांना सहावा वेतन आयोग लागू करावा, अशीदेखील आयटकची प्रमुख मागणी असून संपापूर्वी २१ दिवसांची नोटीस बजावण्यात येणार असल्याचे श्री. फोन्सेको म्हणाले.

८ रोजी प्राथमिक आरोग्य केंद्र साखळी येथे लायन्स क्लब साखळी यांच्या सहकार्याने मोतिबिंदूनिदान शिबिर आयोजित केले आहे.

हे शिबिर सकाळी ९ ते दुपारी १ पर्यंत चालणार असून मोतिबिंदू रुग्णांवर तद्नंतर गोवा मेडिकल कॉलेज, बांबोळी येथे मोफत शस्त्रक्रिया करण्यात येणार आहे.

FUNSKOOL (INDIA) LIMITED

REQUIRES

Workers (Male) to work in shifts and **Female workers** to work in General shifts.

Interested candidates may appear for Walk in Interview on 9th September to 12th September, 2009 between 9.00 am to 2.00 pm along with their handwritten application at our factory.

Funskool India Limited
Corlim, Tiswadi Goa 403 110
Phone No.
0832 - 6712222/6712208

Date and time of pre-bid meeting: 24th September, 2009 at 15.00 hrs
All other conditions remain unchanged.

MANAGING DIRECTOR
Vinsan Graphics

SMT. PARVATIBAI CHOWGULE CULTURAL FOUNDATION'S COLLEGE OF ARTS & SCIENCE, HIGHER SECONDARY SECTION MARGAO - GOA.

Walk in Interviews for the following posts on **lecture basis** will be held on 16/09/2009 at 12.00 noon in Principal's office. Eligible candidates are required to attend interview along with all relevant certificates in original & copies from S.S.C. onwards.

Retired Teachers also can apply.

1. Teacher Grade I in Economics.
2. Teacher Grade I in Psychology.

Qualifications:

A Master's degree in the subject and a degree in Education / Teaching (B.Ed.)

Remuneration: Rs. 150/- per lecture

PRINCIPAL

SANGAMPUR SARVAJANIK GANESHOTSAV MANDAL

SANGHEUM - GOA

Est: 1964

Reg. No. : 89/GOA/2008

DRAW OF DONATION COUPON

Date of Draw : 06/09/2009

PRIZES

1st	30283	SCORPIO
2nd	04413	MARUTI SWIFT
3rd	29048	MARUTI A-STAR LXI
4th	08946	MARUTI ALTO-STD
5th	04769	YAMAHA-FZ
6th	01874	SUZUKI (GS150R)
7th	22186	SUZUKI ACCESS
8th	08022	ACTIVA SELF NEW
9th	06193	HERO HONDA PLEASURE
10th	27524	OPTIMA PLUS (ELECTRIC BIKE)
11th	02802	YO SPEED INDUS (ELECTRIC BIKE)
12th	19024	LG LCD 32" TV

Note: Prizes should be collected within 30 days from the date of draw

CONTACT : 9823015271, 9270429836, 9637094356
Sd/-
SANJAY K. S. RAIKAR
President

अ' ते गोमांतक, वास्को पत्र क्र. ८८२७/०२/ ई ८ दिनांक २५ ऑगस्ट २००९

री इंजिनिअर सर्व्हिसेस

को-द-गामा, गोवा हे भारताच्या राष्ट्रपतीच्या वतीने खाली उल्लेखित कामासाठी मात्र सूचीबद्ध कंत्राटदार आणि कंत्राटदारांच्या निवडीकरीता पात्रता कसोट्या पूर्ण काम करणारे सूचीबद्ध असलेले / सूचीबद्ध नसलेले कंत्राटदार यांच्याकडून अर्ज

जीई गोमांतक अंतर्गत नोफरा येथे निश्चित अधिकाऱ्यांच्या क्वार्टर्सच्या बाह्य भागावर बुर्शी प्रतिबंधक रंगरंगोटीची तरतुद करणे.
रु. १२.५० लाख (रुपये बारा लाख पन्नास हजार फक्त)
०५ (पाच) महिने
रु. २५,०००/-
रु. ५००/-
१४ सप्टेंबर २००९

रु. 'ई', श्रेणी : 'अ'

(i) आवश्यक इतक्या मुल्यांची केलेली कामे वार्षिक उलाढाल, खेळते भांडवल, स्थिर मालमत्ता, इत्यादींना अनलक्षून एमईएस चे पटनोंदणीचे निकष पूर्ण करणे.

(ii) शास. विभागामध्ये कुठल्याही वसुलीची थकबाकी नसावी.

१६ सप्टेंबर २००९ किंवा त्यानंतर

१२ ऑक्टोबर २००९ रोजी १५०० वाजेपर्यंत

इशक त्या डीडी / बँकर्सचा चेक यांच्यासह नसणाऱ्या अर्जाचा निविदा प्रस्तुतीकरिता ईएस मध्ये सूचीबद्ध नसणाऱ्या कंत्राटदारांना वसुलीची थकबाकी नसल्याचा ता सिध्द करण्याकरिता आवश्यक ते दस्तावेज सोबत जोडावे लागतील. ३) निविदा एस अर्जदारास निविदा मुल्यांची रक्कम परत दिली जाईल. तरी सुध्दा कंत्राटदारास त्यावरील उच्च अभियांत्रिकी प्राधिकाऱ्याकडे म्हणजेच सीडब्ल्यूई (एन) वास्को निर्णय अंतिम व बांधील राहील व निविदा प्रस्तुती नाकारली जाण्याकरिता कंत्राटदार नसेल. ४) वरील सविस्तर माहिती एमईएसच्या www.mes.gov.in या जर्नल सुध्दा वर उपलब्ध आहे. निविदा आयएफडब्ल्यू - २१६२ संपूर्ण सूचना व याल्यामध्ये आणि वेबसाईटवर सुध्दा उपलब्ध आहेत.

झुआरी इंडस्ट्रीज लिमिटेड

अधिसूचना

तमाम जनतेला याद्वारे कळविण्यात येते की, झुआरी इंडस्ट्रीज लि. झुआरीनगर, गोवा यांना नाफ्तापासून एनजी / आरएलएनजी असा फीडस्टॉक आणि इंधनामध्ये फेरबदल करण्यासाठी अमोनिया प्रकल्पाची पुनर्रचना आणि अमोनिया युरिया - प्रकल्पाच्या डीबॉटलनेकिंगसहित विशिष्ट उर्जा वापराच्या क्षमतेच्या कपातीकरिता युटिलिटी बॉयलरमधील एफओपासून एन जी / आर एल एन जी तसेच उत्पादन मिश्र फेरबदलसमवेत एनपीके ए आणि बी प्रकल्पाच्या डी बॉटलनेकिंगकरिता पर्यावरण आणि वन मंत्रालय, भारत सरकार यांनी आपले पत्र एफ क्र. जे ११०११/२१७/२००८ - १ ए - ॥ (१) दिनांक १/९/०९ ला अनुसरून पर्यावरण संमती दाखला दिला आहे. या दाखल्याची प्रत गोवा प्रदूषण नियंत्रण मंडळ धेंपो टॉवर्स, पाटो, पणजी, गोवा यांच्याकडे उपलब्ध आहे, तसेच पर्यावरण आणि वनमंत्रालयाच्या <http://www.envfor.nic.in> या वेबसाईटवरही प्रदर्शित करण्यात आली आहे.

झुआरी इंडस्ट्रीज लि. करिता

सही/-

एल. एम. चंद्रशेखरन

उपाध्यक्ष कार्यवाही

BY REGISTERED AD

December 1, 2009

**Shri A.Manoharan
Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
Bangalore-560 010
Karnataka State**

Dear Sir,

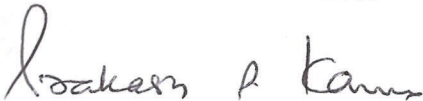
Subject: Submission of Report on Status of compliance of the stipulated EC conditions including results of monitored data

Reference: Environmental Clearance by Ministry of Environment and Forests vide letter no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009

With reference to above and in compliance with the condition no. A (vii) of the "Specific Conditions" and condition no. B (xvi) of the "General Conditions" mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the Report on Status of compliance of the stipulated EC conditions including results of monitored data for the period September 2009 to November 2009. The same is also being loaded on our Company's website at www.zuari.in

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



**S.F.J.VAZ
General Manager – Projects & Technical Services**

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postard / Packet / Parcel
Insured

2-170

Addressed to: Shri. A. Manoharan

Sr. Scientist & Incharge
Zonal Office-CPCB

1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road

7th Cross Shivnagar Score out the matter not required
BANGALORE 560010 * For insured articles only

KARNATAKA STATE

Neha 2500300/8/07

* Insured for Rupees

Date of delivery 05 200

5-12-09 09

Banarasi

Signature of addressee

December 1, 2009

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Plaza, Patto
PANAJI-403 00, Goa

Dear Sir,

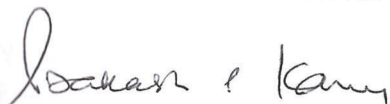
Subject: Submission of Report on Status of compliance of the stipulated EC conditions including results of monitored data

Reference: Environmental Clearance by Ministry of Environment and Forests vide letter no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009

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Thanking You,

Yours Faithfully,
For Zuari Industries Ltd.



S.F.J.VAZ
General Manager – Projects & Technical Services

Enclosed: as above

5/1/12/09
Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

December 1, 2009

Shri K. S. Reddy
Chief Conservator of Forests (Central)
Kendriya Sadan, 4th Floor, E&F Wing,
II Block, Koramangala,
Bangalore-560034
Karnataka State

Dear Sir,

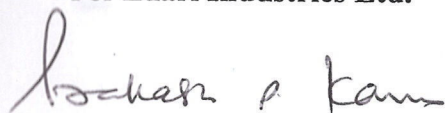
Subject: Submission of Report on Status of compliance of the stipulated EC conditions including results of monitored data

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Thanking You,

Yours Faithfully,
For Zuari Industries Ltd.



S.F.J.VAZ
General Manager – Projects & Technical Services

Enclosed: as above

BY REGISTERED AD

June 1, 2010

Mr. A.Manoharan
Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir,

Subject: Submission of Report on Status of compliance of the stipulated EC conditions as on June 1, 2010 including results of monitored data for Dec 2009 till May 2010

Reference: Environmental Clearance by Ministry of Environment and Forests vide letter no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009

With reference to above and in compliance with the condition no. A (vii) of the "Specific Conditions" and condition no. B (xvi) of the "General Conditions" mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the Report on Status of compliance of the stipulated EC conditions as on June 1, 2010 including results of monitored data for the period December 2009 to May 2010. The soft copy of the same is also sent to your office by e-mail at cpcbszo@yahoo.com today and is being loaded on our Company's website at www.zuari.in.

Thanking You,

Yours Faithfully,
For Zuari Industries Ltd.


S.F.J.VAZ

General Manager – Projects & Technical Services

Enclosed: as above

Achyt.

June 1, 2010

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 00,
Goa

Dear Sir,

Subject: Submission of Report on Status of compliance of the stipulated EC conditions as on June 1, 2010 including results of monitored data for Dec 2009 till May 2010

Reference: Environmental Clearance by Ministry of Environment and Forests vide letter no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009

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Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**


S.F.J. VAZ

General Manager – Projects & Technical Services

Enclosed: as above

 22/06/10
Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

June 1, 2010

Dr.S.K.SUSARLA
Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560 034

Dear Madam,

**Subject: Submission of Report on Status of compliance of the stipulated EC conditions
as on June 1, 2010 including results of monitored data for Dec 2009 till May 2010**

**Reference: Environmental Clearance by Ministry of Environment and Forests vide letter
no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009**

With reference to above and in compliance with the condition no. A (vii) of the "Specific Conditions" and condition no. B (xvi) of the "General Conditions" mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the Report on Status of compliance of the stipulated EC conditions as on June 1, 2010 including results of monitored data for the period December 2009 to May 2010. The soft copy of the same is also sent to your office by e-mail at roszmon@yahoo.in today and is being loaded on our Company's website at www.zuari.in.

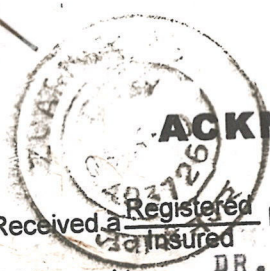
Thanking You,

Yours Faithfully,
For Zuari Industries Ltd.


S.F.J. VAZ

General Manager – Projects & Technical Services

Enclosed: as above



ACKNOWLEDGEMENT

No. 2745

Received a Registered Letter / Postard / Packet / Parcel
Insured

Addressed to : DR. S.K. SUSARLA (Director (S))
Ministry of Environment & Forests
17th Main Road, 2nd Block,
Koramangala, BANGALORE 34.

Score out the matter not required
* For insured articles only

Neha 2500300/8/07

* Insured for Rupees
Date of delivery _____ 200

Neha

Signature of addressee

BY REGISTERED AD

December 1, 2010

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 3rd Compliance Status Report of EC conditions including results of monitored data for the period April 2010 to September 2010

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 3rd Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2010 to September 2010. The soft copy of the same is also sent to your office today by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



S.F.J. VAZ
General Manager – Projects & Technical Services

Enclosed: as above

ACKNOWLEDGEMENT

No. *1112*

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to :

SR SCIENTIST & INCHARGE
ZONAL OFFICE + CPCB
NISARGA BHAVAN
BANGALORE - 560010

1112-10
Insured for Rupees
Date of delivery _____ 199

09.12.10
CENTRAL POLLUTION CONTROL BOARD
Score out the matter not required
For insured articles only
THIMMA AH MADA ROAD, 4th CROSS
OPP. PUSHPANJALI THEATRE, SHIVANAGAR
BANGALORE - 560 010

Signature of addressee

December 1, 2010

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 00, Goa

Dear Sir / Madam,

Subject: Submission of 3rd Compliance Status Report of EC conditions including results of monitored data for the period April 2010 to September 2010

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 3rd Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2010 to September 2010. The soft copy of the same is also sent to your office today by e-mail at goapcb@rediffmail.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



S.F.J.VAZ
General Manager – Projects & Technical Services

Enclosed: as above

15.01/2/10
Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

December 1, 2010

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 3rd Compliance Status Report of EC conditions including results of monitored data for the period April 2010 to September 2010

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



S.F.J. VAZ

General Manager – Projects & Technical Services

Enclosed: as above

ACKNOWLEDGEMENT

No. 1111

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to :

DIRECTOR-MINISTRY OF ENVIRONMENT &
FORESTS
KENDRIYA SADAN, KDRAMANGALA
BANGALORE - 560034

Score out the matter not required
For insured articles only

f Insured for Rupees

Date of delivery _____ 199

Signature of addressee

Ministry of Environment & Forests
Regional Office, Southern
Kendriya Sadan, Bangalore
Kendriya Sadan, Bangalore

INDIAN POSTS AND TELEGRAPHS
(Sender's Address)
BY REGISTERED AD

June 1, 2011

Sr. Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 4th Compliance Status Report of EC conditions including results of monitored data for the period October 2010 to March 2011

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 4th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2010 to September 2010. The soft copy of the same is also sent to your office today by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**


S.F.J. VAZ
General Manager – Projects & Technical Services

Enclosed: as above

ACKNOWLEDGEMENT

No. 117A

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to: sr. scientist in charge, ZO-CPCB.

1st & 2nd Floors, Nisarga Bhavan

A-block Thimmamma

Shivanagar,

BANGALORE-560010

Score out the matter not required

* For insured articles only

SOUTH ZONE OFFICE
1ST & 2ND FLOOR, "NISARGA BHAVANA"
KUMARIAH MAIN ROAD, 7th D CROSS
OPP. PUSHPANJALI THEATRE, SHIVANAGAR
BANGALORE-560010

* Insured for Rupees

Date of delivery 4-6 200

Signature of addressee

Net: 1 2500300/4/09

June 1, 2011

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001 Goa

Dear Sir / Madam,

Subject: Submission of 4th Compliance Status Report of EC conditions including results of monitored data for the period October 2010 to March 2011

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**


S.F.J. VAZ

General Manager – Projects & Technical Services

Enclosed: as above


Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

June 1, 2011

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 4th Compliance Status Report of EC conditions including results of monitored data for the period October 2010 to March 2011

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



S.F.J. VAZ

General Manager – Projects & Technical Services

Enclosed: as above

BY REGISTERED AD

December 1, 2011

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 5th Compliance Status Report of EC conditions including results of monitored data for the period April 2011 to September 2011

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi**

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 5th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2011 to September 2011. The soft copy of the same is also sent to your office today by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



Stephen Vaz

General Manager – Manufacturing

Enclosed: as above

December 1, 2011

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 5th Compliance Status Report of EC conditions including results of monitored data for the period April 2011 to September 2011

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 5th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2011 to September 2011. The soft copy of the same is also sent to your office today by e-mail at goapcb@rediffmail.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**


Stephen Vaz
General Manager – Manufacturing

Enclosed: as above


Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

December 1, 2011

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 5th Compliance Status Report of EC conditions including results of monitored data for the period April 2011 to September 2011

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 5th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2011 to September 2011. The soft copy of the same is also sent to your office today by e-mail at roszmon@yahoo.in and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Industries Ltd.**



Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT



RM 46830996 1 IN

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to: Director (S),
Ministry of Environment & Forests,
Regional office (South zone)

Neha 2500300/4/09

BANGALORE Score out the matter not required
560034 * For insured articles only
* Insured for Rupees 80807
Date of delivery 8/12 Signature of addressee

THIMMAIAH THEATRE, SHIVANAGAR
OPP. PUSHPANJALI THEATRE, SHIVANAGAR
BANGALORE-560 010

BY REGISTERED AD

June 1, 2012

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 6th Compliance Status Report of EC conditions including results of monitored data for the period October 2011 to March 2012

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi**

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 6th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period October 2011 to March 2012. The soft copy of the same is also sent to your office today by e-mail at cpbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Holdings Ltd.**



Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

SR. SCIENTIST & INCHARGE

Addressed to : ZONAL OFFICE - CPCB, 1st & 2nd FLOORS,

NISARGA BHAVAN, A BLOCK, THIMMAIAH MAIN ROAD,

7th CROSS, SHIVANAGAR, OPP. PUSHPANJALI

THEATRE, BANGALORE - 560 010

SOUTH ZONAL OFFICE

1ST & 2ND FLOOR, "NISARGA BHAVANA"

THIMMAIAH MAIN ROAD, 7th 'D' CROSS

OPP. PUSHPANJALI THEATRE, SHIVANAGAR

f. Insured for Rupees

Date of delivery BANGALORE-560 010

Signature of addressee



June 1, 2012

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 6th Compliance Status Report of EC conditions including results of monitored data for the period October 2011 to March 2012

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Holdings Ltd.**


Stephen Vaz
General Manager – Manufacturing

Enclosed: as above


Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

June 1, 2012

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 6th Compliance Status Report of EC conditions including results of monitored data for the period October 2011 to March 2012

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Holdings Ltd.**



Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to: DIRECTOR (S), MINISTRY OF ENVIRONMENT & FORESTS
REGIONAL OFFICE (SOUTHERN ZONE),

KENDRIYA SADAN, 4th FLOOR, E & F WINGS, 1st MAIN ROAD,
2nd BLOCK, KORAMANGALA
BANGLORE - 560034

Score out the matter not required
* For insured articles only

Neha 2500300/4/09

06-6-2
Insured for Rupees

Date of delivery _____ 200

Signature of addressee

BY REGISTERED AD

December 1, 2012

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 7th Compliance Status Report of EC conditions including results of monitored data for the period April 2012 to September 2012

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi**

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 7th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2012 to September 2012. The soft copy of the same is also sent to your office by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also being sent, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



S.F.J. VAZ

General Manager - Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to: Ss. Scientist & Incharge, Zonal office - C.PCB
1st & 2nd Floors, Nisarga Bhavan

A Block, Himmatnagar Main Road, 7th Cross
Shivnagar,

Score out the matter not required

*For insured articles only

*Insured for Rupees

Date of delivery 200

Signature of addressee

Maha 2500300/4/09

01/02/12

MAIN ROAD, 7th 'D' CROSS
OPP. PUSHPANATH THEATRE, SHIVNAGAR

December 1, 2012

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir

Subject: Submission of 7th Compliance Status Report of EC conditions including results of monitored data for the period April 2012 to September 2012

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 7th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2012 to September 2012. The soft copy of the same is also sent to your office by e-mail at goapcb@rediffmail.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also being sent, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


S.F.J. VAZ

General Manager - Manufacturing

Enclosed: as above


Goa State Pollution Control Board
E.D.C. Plaza, Patto
PANAJI-GOA-403001

BY REGISTERED AD

December 1, 2012

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 7th Compliance Status Report of EC conditions including results of monitored data for the period April 2012 to September 2012

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi**

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In compliance with the EC conditions, the Compliance Status Report is also being sent, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



S.F.J. VAZ
General Manager - Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postard / Packet / Parcel
Insured

Addressed to Director (S)

Ministry of Environment & Forests
Regional office (Southern Zone)

Score out the matter not required

* For insured articles only

Neha 2500300/4/09

* Insured for Rupees

Date of delivery

200

17th Main Road
Bangalore
560034

Signature of addressee

16/12/2

BY REGISTERED AD

May 30, 2013

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 8th Compliance Status Report of EC conditions including results of monitored data for the period October 2012 to March 2013

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 8th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period October 2012 to March 2013. The soft copy of the same is also sent to your office today by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to : Sr. Scientist & Incharge

Zonal Office - CPCB 1st & 2nd Floor, Nisarga,
Bhavan A Block, Thimmaiah Main Road,

Neha 2500300/4/09

7th Cross, Shivnagar, Opp
Pushpanjali Theatre

* Insured for Rupees

Date of delivery _____ 200

Score out the matter not required
* For insured articles only
BANGALORE
560 010

Signature of addressee

May 30, 2013

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 8th Compliance Status Report of EC conditions including results of monitored data for the period October 2012 to March 2013

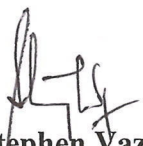
**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
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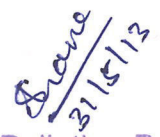
In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


Stephen Vaz
General Manager – Manufacturing

Enclosed: as above


Goa State Pollution Board
EDC, Patto Plaza
Panaji, Goa - 403 001

BY REGISTERED AD

May 30, 2013

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 8th Compliance Status Report of EC conditions including results of monitored data for the period October 2012 to March 2013

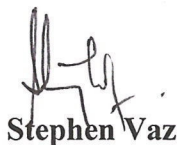
Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



Stephen Vaz

General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to : Director (S) Ministry of Environment & Forests
Regional Office (Southern Zone) Kendriya
Sadan, 1st Floor, E & F Wings, 17th Main Road,
2nd Block, Koramangala, Bangalore - 560034

Score out the matter not required
* For insured articles only

* Insured for Rupees

Date of delivery _____ 200

Neta 2500300/4/09

04.6.13

Stamp: M. DEF. RO. SL

Signature of addressee

4.6.2013

BY REGISTERED AD

November 29, 2013

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 9th Compliance Status Report of EC conditions including results of monitored data for the period April 2013 to September 2013

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 9th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2013 to September 2013. The soft copy of the same is also sent to your office today by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a ☒ Registered Letter / Postcard / Packet / Parcel
☐ Insured

Addressed to : Sr. Scientist & Incharge

Zonal office - CPCB, 1st & 2nd floors, Nisarga Bhavan

A Block, Thimmaiah Hall, 1st floor, Nisarga Bhavan
Central Pollution Control Board
Ministry of Environment & Forests, Govt. of India
Bangalore - 560 010

Opp. Rajawade Theatre, 1st floor, Nisarga Bhavan
Thimmaiah Main Road, 7th 'D' Cross
Nisarga Bhavan, Bengaluru - 560 010

* Insured for Rupees

Date of delivery 200

Signature of addressee

25/03/0014/09

November 29, 2013

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 9th Compliance Status Report of EC conditions including results of monitored data for the period April 2013 to September 2013

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

Goa State Pollution Control Board
EDC, Patto Plaza
Panaji, Goa - 403 001


02/12/2013

BY REGISTERED AD

November 29, 2013

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 9th Compliance Status Report of EC conditions including results of monitored data for the period April 2013 to September 2013

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to ZO-CPCB, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


Stephen Vaz
General Manager – Manufacturing

Enclosed: as above

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postard / Packet / Parcel
Insured

Addressed to: Director (S)

Ministry of Environment & Forests, Regional office (Southern zone)
Kendriya Sadan, 4th Floor, E & F Wings, 17th Main Road,
2nd Block, Koramangala,
Bangalore - 560034

Score out the matter not required

* For insured articles only

Neha 2500300/4/09

* Insured for Rupees

Date of delivery 200

Signature of addressee

Kendriya Sadan, 4th Floor, Koramangala
BANGALORE - 560 034

BY REGISTERED AD

May 30, 2014

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of ¹⁰ Compliance Status Report of EC conditions including results of monitored data for the period October 2013 to March 2014

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi

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In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


f **Stephen Vaz**
General Manager – Manufacturing

Enclosed: as above



RM 47872738 91N

GEMENT
No.

Received a ~~registered~~ Letter / Postcard / Packet / Parcel
Insured

Addressed to : Sr. Scientist & Incharge
Zonal office - CPCB, 1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road, 7th cross, Shivnagar,
Bangalore - 560010

Neha 2500300/4/09

* Insured for Rupees

Date of delivery _____ 200

Score out the matter not required
* For insured articles only

Signature of addressee _____

May 30, 2014

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 10th Compliance Status Report of EC conditions including results of monitored data for the period October 2013 to March 2014

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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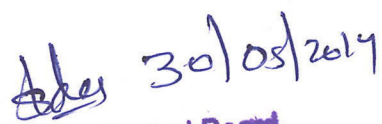
In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and ZO-CPCB, Bangalore.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


f **Stephen Vaz**
General Manager – Manufacturing

Enclosed: as above


Goa State Pollution Control Board
EDC, Patto Plaza
Panaji, Goa - 403 001

BY REGISTERED AD

May 30, 2014

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 10th Compliance Status Report of EC conditions including results of monitored data for the period October 2013 to March 2014

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


f **Stephen Vaz**
General Manager – Manufacturing

Enclosed: as above

RM 47872740 11N



Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to: Director (s)

Ministry of Environment & forests Regional office
(southern zone) Kendriya Sadan, 4th Floor, E & F wings
17th Main Road, 2nd Block,
Koramangala, Bangalore

Score out the matter not required

* For insured articles only
Ministry of Environment & Forests
क्षेत्रीय कार्यालय, दक्षिणी परिसर

Neha 2500300/4/09

* Insured for Rupees
Date of delivery

200

56 00 3

5/60

Signature of addressee

Kendriya Sadan, 4th Floor, Koramangala
बंगलूर / BANGALORE - 560 034

BY REGISTERED AD

November 29, 2014

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 11th Compliance Status Report of EC conditions including results of monitored data for the period April 2014 to September 2014

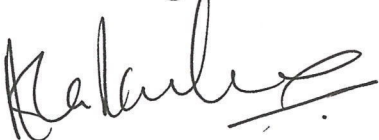
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Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

November 29, 2014

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 11th Compliance Status Report of EC conditions including results of monitored data for the period April 2014 to September 2014

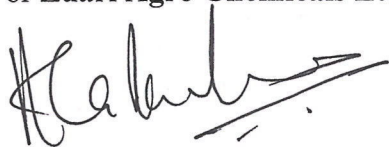
Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

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Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above



BY REGISTERED AD

November 29, 2014

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 11th Compliance Status Report of EC conditions including results of monitored data for the period April 2014 to September 2014

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**

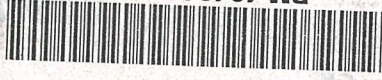


A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

ACI

RM 49481159 8IN



Received a Registered Letter / Postard / Packet / Parcel
Insured

Addressed to: Director(s) Ministry of Environment &
Forests. Regional Office (Southern Zone), Kendriya
Sadan, 4th floor, E&F wings, 17th Main Road, 2nd Block,
Koramangala,
BANGALORE - 560034

Score out the matter not required

* For insured articles only

Neha 2500300/4/09

* Insured for Rupees

Date of delivery _____ 200

Signature of addressee _____

BY REGISTERED AD

May 30, 2015

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 12th Compliance Status Report of EC conditions including results of monitored data for the period October 2014 to March 2015

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

INDIAN

A.A. Pacheco
GMM

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postard / Packet / Parcel
Insured

Addressed to: Sr. Scientist & Incharge
Zonal Office - CPCB
1st & 2nd Floors, Nisarga Bhavan,
A Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp. Rudrapur Theatre
Bangalore - 560 010

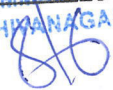
CENTRAL POLLUTION CONTROL BOARD
MIN. OF ENV. & FORESTS, GOV. OF INDIA
SOUTH ZONAL OFFICE
1st FLOOR, "NISARGA BHAVANA"
THIMMAIAH MAIN ROAD, 7th 'D' CROSS
SHIVANAGAR, BANGALORE - 560 010

f Insured for Rupees

Date of delivery 2013

Score out the matter not required
For insured articles only

Signature of addressee



May 30, 2015

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa



Dear Sir / Madam,

Subject: Submission of 12th Compliance Status Report of EC conditions including results of monitored data for the period October 2014 to March 2015

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Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

BY REGISTERED AD

May 30, 2015

Director (S)
Ministry of Environment & Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

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Subject: Submission of 12th Compliance Status Report of EC conditions including results of monitored data for the period October 2014 to March 2015

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Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**


A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

Pareesh Desai
Reg
Chickalim

RL ZUARINAGAR <403726>
A RM457218505IN
Counter No:1.OP-Code:04
To: PARESH P DESSAI, POLICE
CHICALIM, PIN:403711
From: ZUARI AGRO CHEMICAL LTD . ZUARINAGAR
Wt:22grams.
PM:27.00. . 27/05/2015 . 11:19
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भारतीय डाक

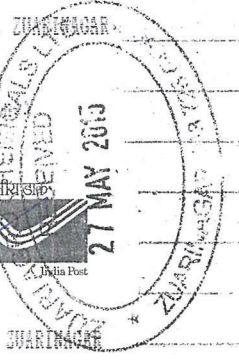
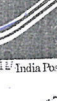


S. A Gosa
Reg AID.

Jesuy Alves
Reg

RL ZUARINAGAR <403726>
A RM457218575IN
Counter No:1.OP-Code:04
To: JESUS C ALVES, 55 LAWRENCE
ILHAS, PIN:403204
From: ZUARI AGRO CHEMICAL LTD . ZUARINAGAR
Wt:22grams.
PM:27.00. . 27/05/2015 . 11:27
<<Track on www.indiapost.gov.in>>

भारतीय डाक

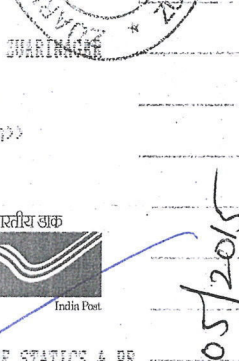


Z. A Guman
Zuari Agri
Ltd.
(sp)

Vinay Gema
Reg

RL ZUARINAGAR <403726>
A RM457218519IN
Counter No:1.OP-Code:04
To: VINAY GEMA, H NO 46
CHICALIM, PIN:403711
From: ZUARI AGRO CHEMICAL LTD . ZUARINAGAR
Wt:20grams.
PM:22.00. . 27/05/2015 . 11:17
<<Track on www.indiapost.gov.in>>

भारतीय डाक



Shri N.N. S
(sp)

Statistical officer
Reg

RL ZUARINAGAR <403726>
A RM457218598IN
Counter No:1.OP-Code:04
To: STATISTICAL OFFICER, DEPT OF STATISTICS & PR
PORVORIM, PIN:403501
From: ZUARI AGRO CHEMICALS LMT . ZUARINAGAR
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<<Track on www.indiapost.gov.in>>

भारतीय डाक



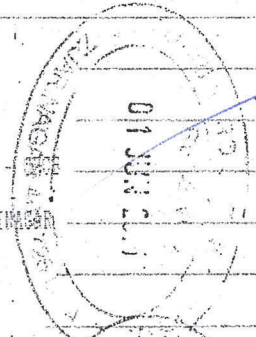
28/05/2015

Shri Sar
Pandita
(sp)

Dr. Scientist &
Incha
Reg AID

<Duplicate> RLAD ZUARINAGAR <403726>
A RM457218611IN
Counter No:1.OP-Code:04
To: DR SCIENTIST & INCH, ZONAL OFFICE
BANGALORE, PIN:560010
From: ZUARI AGRO CHEMICALS LTD . ZUARINAGAR
Wt:90grams.
PM:45.00. . 01/06/2015 . 11:14
<<Track on www.indiapost.gov.in>>

भारतीय डाक

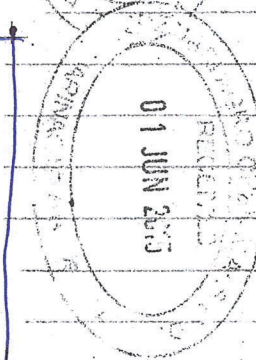


Dr. Prabha
K. Jadh
(Reg AID)

Director, Ministry
of Env
Reg AID.

RLAD ZUARINAGAR <403726>
A RM457218540IN
Counter No:1.OP-Code:04
To: DIRECTOR, MINISTRY OF ENVIRONMENT
BANGALORE, PIN:560034
From: ZUARI AGRO CHEMICALS LTD . ZUARINAGAR
Wt:30grams.
PM:45.00. . 01/06/2015 . 11:16
<<Track on www.indiapost.gov.in>>

भारतीय डाक



Posted on
01/06/2015

Asst. Dir.
Safety
Reg AID.



BY REGISTERED AD

December 01, 2015

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 13th Compliance Status Report of EC conditions including results of monitored data for the period April 2015 to September 2015

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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Thanking You.

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**

A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holdings Limited)

Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.
Telephone : (0832) 2592180, 2592181, Fax : (0832) 2555279, CIN-L65910GA2009PLC006177
Website : www.zuari.in



RM461920516IN

ACKNOWLEDGEMENT

No.

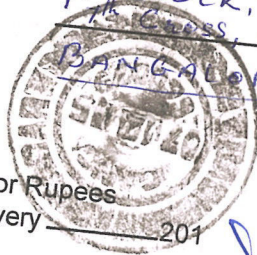
Received a Insured

Packet / Parcel

Addressed to:

Sr. Scientist & Incharge
Zonal Office - CPCB
1st & 2nd Floors, Nisarga Bhavan

'A' Block, Thimmaiah Main Road,
'D' Cross, Shivanagar, Opp. Pushpanjali Theatre
BANGALORE - 560 010



CENTRAL POLICE CONTROL BOARD
MIN. OF H.V. & T. INDIA
SOUTH ZONE OFFICE

1st & 2nd FLOOR, "NISARGA BHAVANA"
THIMMAIAH MAIN ROAD, 7th 'D' CROSS
SHIVANAGAR, BANGALORE - 560 010

f Insured for Rupees

Date of delivery

201

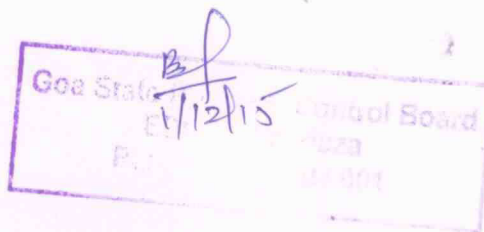
Signature of addressee

07/12



December 01, 2015

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa



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Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.



BY REGISTERED AD

December 01, 2015

Director (S)
Ministry of Environment, Forest & Climate change
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 13th Compliance Status Report of EC conditions including results of monitored data for the period April 2015 to September 2015

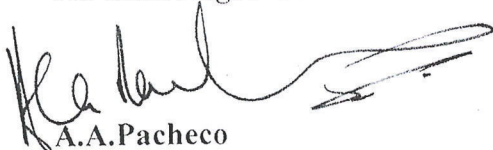
Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A. Pacheco
General Manager – Manufacturing

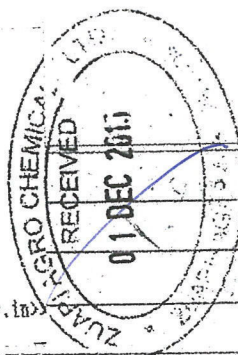
Enclosed: as above

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Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.
Telephone : (0832) 2592180, 2592181, Fax : (0832) 2555279, CIN-L65910GA2009PLC006177
Website : www.zuari.in

Dazy Travellers
Jaipur
S/P

SP ZUARINAGAR <403726>
EM5333549991N
Counter No:1, OP-Code: PAGI
To: DAZY TRAVELLERS, SAHAR MARG
JAIPUR, PIN: 302001
From: MR R V PATIL, Z NAGAR
Wt: 20grams,
FM: 40.00, 01/12/2015, 11:19
Taxe: Rs. 5.00 <Track on www.indiapost.gov.in>

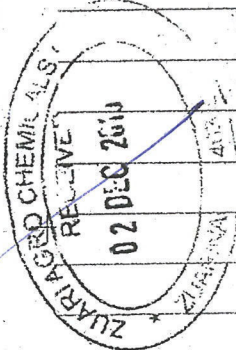


Purnima
Re
Lud

<<Track on www.indiapost.gov.in>>



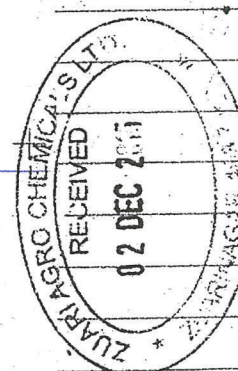
RP ZUARINAGAR <403726>
A CM6523934681N
Counter No:1, OP-Code: PAGI
To: ASHOK R GOSAVI,
LANJA, PIN: 416701
From: ABHIJIT, Z NAGAR
Wt: 1140grams,
FM: 68.00, 02/12/2015, 13:27
<<Track on www.indiapost.gov.in>>



Surekha
pattans
Reg AD

Sr Scientist &
Bangalore
Reg AD

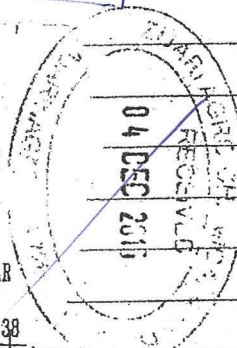
RLAD ZUARINAGAR <403726>
A RM4619205161N
Counter No:1, OP-Code: PAGI
To: SR SCIENTIST CPCB,
BANGLORE, PIN: 560010
From: ZAC, Z NAGAR
Wt: 25grams,
FM: 45.00, 02/12/2015, 13:28
<<Track on www.indiapost.gov.in>>



Sunil Ga
(Reg)

Dto. of Env
Bangalore
Reg AD

RLAD ZUARINAGAR <403726>
A RM4619206181N
Counter No:1, OP-Code: PAGI
To: DTR M OF ENV FOREST,
BANGLORE, PIN: 560034
From: ZAC, Z NAGAR
Wt: 25grams,
FM: 45.00, 02/12/2015, 13:29

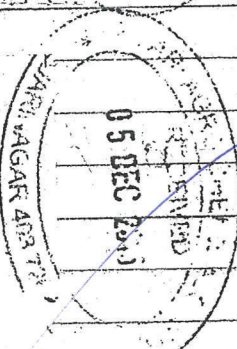


Posted on
02/12/2015

V. Krunal
(Reg)

R. G Furtado
Reg AD

<Duplicate> RLAD ZUARINAGAR <403726>
A RM4619205811N
Counter No:1, OP-Code: PAGI
To: R G FURTADO,
FATORDA, PIN: 403602
From: L AND S DEPT, Z NAGAR
Wt: 20grams,
FM: 25.00, 04/12/2015, 10:38



Asst. Dir. cele
Safety
(Reg AD)

R. G Furtado
Reg AD

RLAD ZUARINAGAR <403726>
A RM4619206661N
Counter No:1, OP-Code: PAGI
To: R G FURTADO,
FATORDA, PIN: 403602
From: ZAC, Z NAGAR
Wt: 20grams,
FM: 25.00, 05/12/2015, 10:36
<<Track on www.indiapost.gov.in>>

Joelly Nunez
(Sp)

June 01, 2016

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 14th Compliance Status Report of EC conditions including results of monitored data for the period October 2015 to March 2016

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 14th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period October 2015 to March 2016. The soft copy of the same is also sent to your office today by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also sent today, both on hard copy as well as by e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holdings Limited)

Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.
Telephone : (0832) 2592180, 2592181, Fax : (0832) 2555279, CIN-L65910GA2009PLC006177
Website : www.zuari.in

AD ZHARINAGAR <403726>
RN492715713IN
unter No:1.OP-Code:PAGI
SCIENTIST & INCHARGE.ZONAH
BANGALORE. PIN:560010
om:ZACL . ZHARINAGAR
:50grams.
:35.00. .01/06/2016 .13:21
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ACKNOWLEDGEMENT

No.

Received as Registered Letter / Postard / Packet / Parcel
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Addressed to : Sr. Scientist & Incharge,
Zonal Office - CPCB, 1st & 2nd Floors,
Nisarga Bhawan, A-Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp- Pushpanjali Theatre,
Bangalore - 560010

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Date of delivery _____ 201

CENTRAL POLLUTION CONTROL BOARD
MIN. OF ENV. & FORESTS, GOVT. OF INDIA
SOUTH ZONAL OFFICE
1st & 2nd FLOOR, "NISARGA BHAVANA"
THIMMAIAH MAIN ROAD, 7th CROSS
SHIVANAGAR, BENGALURU - 560 010

Signature of addressee



June 01, 2016

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 14th Compliance Status Report of EC conditions including results of monitored data for the period October 2015 to March 2016

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 13th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period October 2015 to March 2016. The soft copy of the same is also sent to your office today by e-mail at goapcb@rediffmail.com and the same is being uploaded on our Company's website at www.zuari.in.

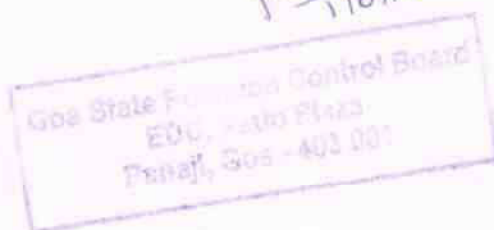
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Thanking You,

Yours Faithfully,
For Zuari Agro Chemicals Ltd.

A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above



ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holdings Limited)

Registered Office : Jai Kisan Bhawan, Zuarinagar, Goa - 403 726, India.
Telephone : (022) 2777-1000

adventz**BY REGISTERED AD**

June 01, 2016

Director (S)
Ministry of Environment, Forest & Climate change
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 2nd Block, Koramangala,
BANAGALORE-560034

Dear Sir / Madam,

Subject: Submission of 14th Compliance Status Report of EC conditions including results of monitored data for the period October 2015 to March 2016

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi**

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Thanking You.

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
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Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.
Telephone : (0832) 2592180, 2592181, Fax : (0832) 2555279, CIN-L65910GA2009PLC006177
Website : www.zuari.in



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ZUARINAGAR	01/06/2016	KORAMANGALA	45.00	RLAD	KORAMANGALA	06/06/2016

Detailed Track Events for : RM492715700IN

Date	Time	Office	Event
06/06/2016	15:47:06	KORAMANGALA	Article Delivered
06/06/2016	08:56:28	KORAMANGALA	Bag Opened
06/06/2016	08:44:49	KORAMANGALA	Bag Received
05/06/2016	15:53:24	BANGALORE CITY RMS (CRC)	Bag Despatched to KORAMANGALA
05/06/2016	15:05:21	BANGALORE CITY RMS (CRC)	Article Bagged to KORAMANGALA
05/06/2016	11:53:50	BANGALORE CITY RMS (CRC)	Bag Opened
05/06/2016	11:50:13	BANGALORE CITY RMS (CRC)	Bag Received
03/06/2016	04:24:12	PANAJI SORTING (CRC)	Bag Despatched to BANGALORE CITY RMS (CRC)
03/06/2016	01:36:31	PANAJI SORTING (CRC)	Article Bagged to BANGALORE CITY RMS (CRC)
02/06/2016	19:08:25	PANAJI SORTING (CRC)	Bag Opened
02/06/2016	19:02:20	PANAJI SORTING (CRC)	Bag Received
01/06/2016	14:31:28	ZUARINAGAR	Article Bagged to PANAJI SORTING (CRC)
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BY REGISTERED AD

December 01, 2016

Sr. Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
BANAGALORE-560 010

Dear Sir/Madam,

Subject: Submission of 15th Compliance Status Report of EC conditions including results of monitored data for the period April 2016 to September 2016

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 15th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2016 to September 2016. The soft copy of the same is also sent to your office by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also submitted, both on hard copy which has a CD version of the report firmly attached to the last page of the report as well sent as soft copy through e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

All necessary contact details are also submitted herewith as Annexure I.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**

A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holdings Limited)

Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.
Telephone : (0832) 2592180, 2592181, Fax : (0832) 2555279, CIN-L65910GA2009PLC006177
Website : www.zuari.in

9881193259.



RM534277879IN

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No.

Received a registered Letter / Postard / Packet / Parcel
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Addressed to :

Sr. Scientist & Incharge
Zonal office - CPCB
1st & 2nd FLOOR, CONTROL BOARD
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
MIN. OF ENV. & FORESTS, GOVT. OF INDIA
7th Cross, SOUTH ZONAL OFFICE
BANGALORE, "NISARGA BHAVANA" Pushpanjali
1st & 2nd FLOOR, 7th D' CROSS
THIMMAIAH MAIN ROAD, 7th
SHIVANAGAR, BENGALURU Theatre



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Date of delivery _____ 201

Signature of addressee



December 01, 2016

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
PANAJI-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 15th Compliance Status Report of EC conditions including results of monitored data for the period April 2016 to September 2016

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

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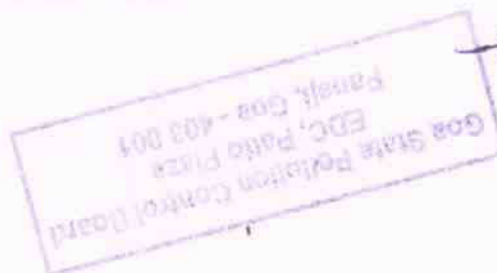
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A.A. Pacheco
General Manager – Manufacturing



Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holdings Limited)

Registered Office : Jai Kisan Bhawan, Zuarinagar, Goa - 403 726, India.



BY REGISTERED AD

December 01, 2016

The Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forests & Climate change
Regional Office (Southern Zone)
4th Floor, E&F Wings,
Kendriya Sadan, Koramangala,
Bengaluru - 560034

Dear Sir / Madam,

Subject: Submission of 15th Compliance Status Report of EC conditions including results of monitored data for the period April 2016 to September 2016

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

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All necessary contact details are also submitted herewith as Annexure I

Thanking You,

Yours Faithfully,
For Zuari Agro Chemicals Ltd.

A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holdings Limited)

Registered Office : Jai Kisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Telephone : (0832) 2592180, 2592181, Fax : (0832) 2555279, CIN-L65910GA2009PLC006177

Website : www.zuari.in

June 01, 2017

Sr.Scientist & Incharge
Zonal Office-CPCB
1st & 2nd Floors, Nisarga Bhavan
A Block, Thimmaiah Main Road
7th Cross, Shivanagar, Opp. Pushpanjali Theatre
Banagalore-560 010

Dear Sir/Madam,

Subject: Submission of 16th Compliance Status Report of EC conditions including results of monitored data for the period October 2016 to March 2017

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

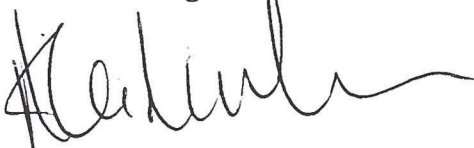
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All necessary contact details are also submitted herewith as Annexure I.

Thanking You,

Yours Faithfully,
For **Zuari Agro Chemicals Ltd.**



A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

(Formerly known as Zuari Holdings Limited)

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403726, India

Tel: +0832 259 2180, 259 2181 Fax: +0832 255 5279

www.zuari.in

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to: Sr. Scientist & Incharge, Zonal Office-CPCB,
1st & 2nd Floors, Nisarga Bhawan, A Block,
Thimmaiah Main Road, 7th Cross Shivanagan,
Opp. Pushpanjali Theatre Bangalore - 560 010

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Date of delivery _____ 201

Signature of addressee

June 01, 2017

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
Panaji-403 001, Goa

Dear Sir / Madam,

Subject: Submission of 16th Compliance Status Report of EC conditions including results of monitored data for the period October 2016 to March 2017

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi.**

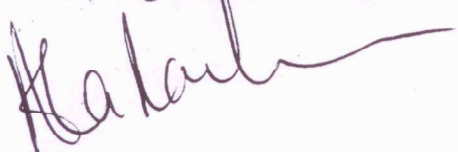
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For **Zuari Agro Chemicals Ltd.**


A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

(Formerly known as Zuari Holdings Limited)

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403726, India

Tel: +0832 259 2180, 259 2181 Fax: +0832 255 5279

www.zuari.in



26/60A
July-2017



BY REGISTERED AD

June 01, 2017

The Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forests & Climate change
Regional Office (Southern Zone)
4th Floor, E&F Wings,
Kendriya Sadan, Koramangala,
Bengaluru - 560034



Dear Sir / Madam,

Subject: Submission of 16th Compliance Status Report of EC conditions including results of monitored data for the period October 2016 to March 2017

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A.A. Pacheco
General Manager – Manufacturing
Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

(Formerly known as Zuari Holdings Limited)

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403726, India

Tel: +0832 259 2180, 259 2181 Fax: +0832 255 5279

www.zuari.in

December 07, 2017

Sr.Scientist & Incharge,
Zonal Office-CPCB,
1st & 2nd Floors, Nisarga Bhavan,
A Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp. Pushpanjali Theatre,
Banagalore-560 010

Sir/Madam,

Subject: Submission of 17th Compliance Status Report of EC conditions including results of monitored data for the period April 2017 to September 2017

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

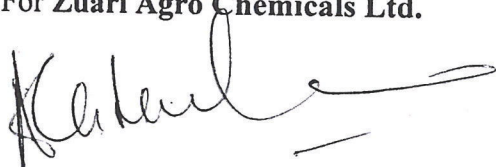
With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 17th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2017 to September 2017. The soft copy of the same is also sent to your office by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

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A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

(Formerly known as Zuari Holding Limited)

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403726, India

Tel: +0832 259 2180, 259 2181 Fax: +0832 255 5279

www.zuari.in

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to :

Sr. Scientist & Incharge
Zonal Office - CPC B,
1st & 2nd Floors, Nisarga Bhavan,
'A' Block, Thimmaiah Main Road,
7th Cross, Shivanaagar, Opp. Pushpangali
BANGALORE - 560010. The title,



Score out the matter not required

f For insured articles only

REGIONAL DIRECTORATE (S)
'NISARGA BHAVAN'
BANGALURU 560079
Ph 23233739

f Insured for Rupees

Date of delivery _____ 201

12/12/18

Signature of addressee

December 07, 2017

Member Secretary
Goa State Pollution Control Board
Dempo Tower, I Floor
EDC Complex, Patto Plaza
Panaji-403 001, Goa

Dear Sir,

Subject: Submission of 17th Compliance Status Report of EC conditions including results of monitored data for the period April 2017 to September 2017

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

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For **Zuari Agro Chemicals Ltd.**



A.A. Pacheco
General Manager – Manufacturing

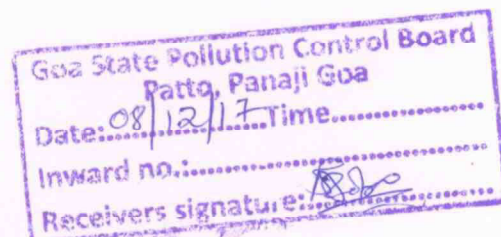
Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED
(Formerly known as Zuari Holding Limited)

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403726, India

Tel: +0832 259 2180, 259 2181 Fax: +0832 255 5279



BY REGISTERED AD

December 07, 2017

The Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forests & Climate change
Regional Office (Southern Zone)
4th Floor, E&F Wings,
Kendriya Sadan, Koramangala,
Bengaluru - 560034

Sir / Madam,

Subject: Submission of 17th Compliance Status Report of EC conditions including results of monitored data for the period April 2017 to September 2017

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

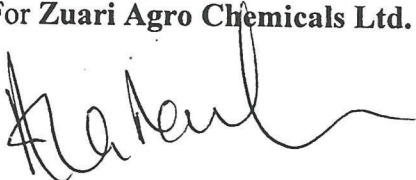
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Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403726, India

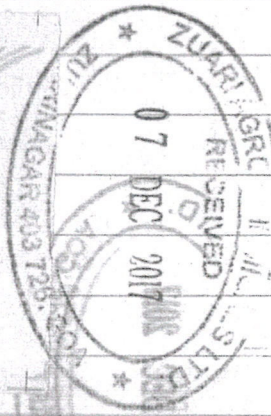
Tel: +0832 259 2180, 259 2181 Fax: +0832 255 5279

www.zuari.in

Track on www.indiapost.gov.in
Dial 1800 266 6868

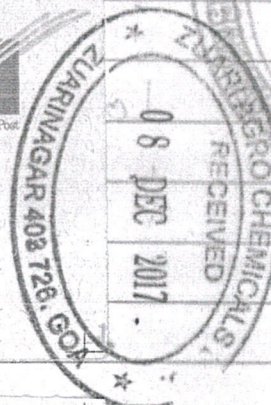
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PIN:403504, Richolia S.O
From:ZNL,ZHAGAR
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Track on www.indiapost.gov.in



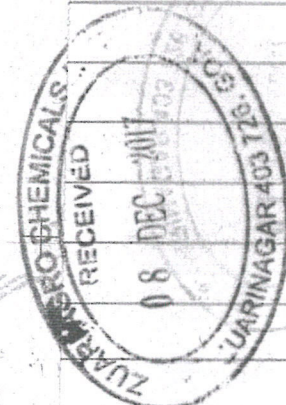
Ras Ventures.
(Reg)

RN511725980IN IVR:8277511725980
RP ZUARI NAGAR S.O <403726>
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To:MR GOVIND ANAND SINARI
PIN:403513, Colvale S.O
From:ZNL,ZHAGAR
Wt:20gms
Amt:0.00PS:22.00
Track on www.indiapost.gov.in
Dial 1800 266 6868



Govind Anand Sinari
Pirana
Reg

RN511726013IN IVR:8277511726013
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Counter No:1,08/12/2017,14:15
To:THE ADDITIONAL PRINCIPAL
PIN:560034, Koramangala S.O
From:A A PACHEED,GN
Wt:90gms
Amt:0.00PS:45.00
Track on www.indiapost.gov.in
Dial 1800 266 6868



Pollution Control Board
Bangalore
Reg AD

RN511726027IN IVR:8277511726027
RP ZUARI NAGAR S.O <403726>
Counter No:1,08/12/2017,14:15
To:SR SCIENTIST AND INCHARGE
PIN:560010, Rajajinagar H.O
From:A A PACHEED,GN
Wt:90gms
Amt:0.00PS:45.00
Track on www.indiapost.gov.in
Dial 1800 266 6868

M.O.Environment
Bangalore
Reg AD

BY REGISTERED AD



June 11, 2018

Sr.Scientist & Incharge,
Zonal Office-CPCB,
1st & 2nd Floors, Nisarga Bhavan,
A Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp. Pushpanjali Theatre,
Banagalore-560 010

Sir/Madam,

Subject: Submission of 18th Compliance Status Report of EC conditions including results of monitored data for the period October 2017 to March 2018

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 18th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period October 2017 to March 2018. The soft copy of the same is also sent to your office by e-mail at cpcbso@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also submitted, both on hard copy which has a CD version of the report firmly attached to the last page of the report as well sent as soft copy through e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

All necessary contact details are also submitted herewith as Annexure I.

Thanking You,

Yours faithfully,
For Zuari Agro Chemicals Ltd.

A handwritten signature in black ink, appearing to read 'A.A. Pacheco', written over a horizontal line.

A.A.Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

www.zuari.in

ACKNOWLEDGEMENT

No.

Received a Registered Letter / Postcard / Packet / Parcel
Insured

Addressed to : Sr. Scientist & Incharge
Zonal Office - C.P.C.B.
1st & 2nd Floor, Nisarga Bhavan,
'A' Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp. Pushpangali Theatre
BANGALORE - 560 010.

Score out the matter not required

f For insured articles only

f Insured for Rupees

Date of delivery _____ 2013

CENTRAL POLLUTION CONTROL BOARD
MINISTRY OF ENVIRONMENT FORESTS &
CLIMATE CHANGE, GOVT. OF INDIA
REGIONAL DIRECTORATE (SOUTH)
1ST & 2ND FLOOR, "NISARGA BHAVAN"
7TH 'D' MAIN, THIMMAIAH ROAD,
SHIVANAGAR BENGALURU - 560 070

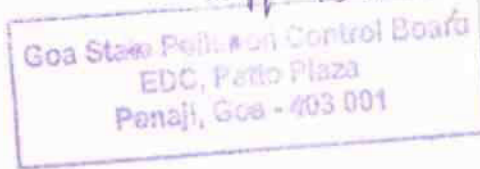
Signature of addressee

Acknowledgement Copy



June 11, 2018

Member Secretary
Goa State Pollution Control Board
Dempo Tower, 1 Floor
EDC Complex, Patto Plaza
Panaji-403 001, Goa



Dear Sir,

Subject: Submission of 18th Compliance Status Report of EC conditions including results of monitored data for the period October 2017 to March 2018

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

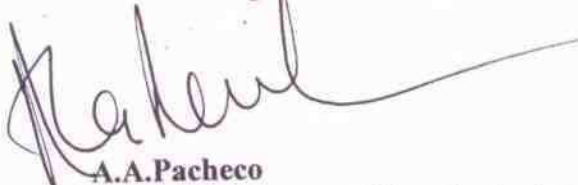
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Thanking You,

Yours faithfully,
For **Zuari Agro Chemicals Ltd.**


A.A. Pacheco
General Manager – Manufacturing

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

Inderjit Singh

From: Alex A Pacheco
Sent: Tuesday, June 19, 2018 2:28 PM
To: 'rosz.bng-mef@nic.in'; 'roszmon@yahoo.in'; 'cpbszo@yahoo.com'; 'goapcb@rediffmail.com'; 'ms-gspcb.goa@nic.in'
Cc: Ranjit Chugh; R Y Patil; V Vinay; Inderjit Singh
Subject: Submission of 18th Compliance Status Report of EC conditions including results of monitored data for the period October 2017 to March 2018
Attachments: 18th EC compliance report (ZACL) to GSPCB.pdf; 18th EC compliance Report (ZACL) to MoEFCC.pdf; 18th EC compliance report (ZACL) to CPCB.pdf

Kind Attention:

**Additional Principal Chief Conservator of Forests (C)
RO-MoEF&CC
Bangaluru**

**Sr. Scientist & In charge
ZO-CPCB
Bangaluru**

**Member Secretary
GSPCB
Panaji, Goa**

Dear Sir,

Subject: Submission of 18th Compliance Status Report of EC conditions including results of monitored data for the period October 2017 to March 2018.

Reference: EC No. - F.No.J-11011/217/2008-IA-II(I) dated September 1, 2009 issued by MoEF, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith as attachment the 18th Compliance Status Report of the stipulated EC conditions including the results of monitored data for the period October 2017 to March 2018.

The hard copy of the same is also being sent to your respective office as required. The same is also being uploaded on the Company's website at www.zuari.in

Thanking you,

Yours faithfully,

for Zuari Agro Chemicals Ltd.

regards,

A.A. Pacheco

General Manager-Manufacturing



ZUARI AGRO CHEMICALS LTD

GOA-INDIA

LAND LINE (O):+91-832-2592393

(R):+91- 832-2592505

BY REGISTERED AD

December 04, 2018

Sr. Scientist & Incharge,
Zonal Office-CPCB,
1st & 2nd Floors, Nisarga Bhavan,
A Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp. Pushpanjali Theatre,
Banagalore-560 010

Sir/Madam,

Subject: Submission of 19th Compliance Status Report of EC conditions including results of monitored data for the period April 2018 to September 2018

**Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and
Corrigendum dated 30th October, 2009 issued by Ministry of Environment and
Forests, New Delhi**

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the 19th Compliance Status Report of the stipulated EC conditions including results of monitored data for the period April 2018 to September 2018. The soft copy of the same is also sent to your office by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also submitted, both on hard copy which has a CD version of the report firmly attached to the last page of the report as well sent as soft copy through e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

All necessary contact details are also submitted herewith as Annexure I.

Thanking You,

Yours faithfully,
For **Zuari Agro Chemicals Ltd.**


N. G. Dessai
Chief General Manager – Operations

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

www.zuari.in

भारतीय डाक
RMS30490004ATN UR:R77550490004
RI THIRUVANANTHAPURAM S.O (401724)
Counter No:1,05/17/2018, India Post
MIN OF ENVIRONMENT, FOREST & CLIMATE
PO:540074, Kozhikode S.O
From:THIRUVANANTHAPURAM
Wt:70gms
Amt:15.00(Cash)PA:70.00
(Track on www.indiapost.gov.in)
CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403724

Ministry of Environment
Reg A/D

भारतीय डाक
RMS30490004ATN UR:R77550490004
RI THIRUVANANTHAPURAM S.O (401724)
Counter No:1,05/17/2018, India Post
THIRU. SCIENTIST, BANNARJEE
PO:540010, Rajahmundry S.O
From:THIRUVANANTHAPURAM
Wt:90gms
Amt:15.00(Cash)PA:70.00
(Track on www.indiapost.gov.in)
CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403724

Sr Scientist
Reg A/D.

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RMS30490004ATN UR:R77550490004
RI THIRUVANANTHAPURAM S.O (401724)
Counter No:1,05/17/2018, India Post
MEMBER SECRETARY, NEW DELHI
PO:110017, Shalimar S.O
From:THIRUVANANTHAPURAM
Wt:145gms
Amt:30.00(Cash)PA:70.00
(Track on www.indiapost.gov.in)
CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403724

Member Secretary New Delhi
Reg A/D.

भारतीय डाक
RMS30490004ATN UR:R77550490004
RI THIRUVANANTHAPURAM S.O (401724)
Counter No:1,05/17/2018, India Post
MR. AVINAND, MCFL
PO:575010, Pondicherry S.O
From:THIRUVANANTHAPURAM
Wt:70gms
Amt:10.00(Cash)PA:70.00
(Track on www.indiapost.gov.in)
CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403724

Mr. Avinand, MCFL
(Reg A/D)

Mr. Kanthimathi. T.

Acknowledgement Copy



December 04, 2018

To,
Member Secretary
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

Amite
04/12/2018
Goa State Pollution Control Board
Opp. Saligao Seminary
Saligao, Bardez Goa

Dear Madam,

Subject: Submission of 19th Compliance Status Report of EC conditions including results of monitored data for the period April 2018 to September 2018

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

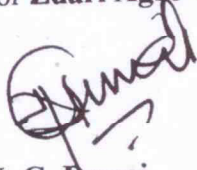
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All necessary contact details are also submitted herewith as Annexure I.

Thanking You,

Yours faithfully,
For **Zuari Agro Chemicals Ltd.**


N. G. Dessai
Chief General Manager – Operations

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisan Bhawan, Zuarinagar, Goa - 403 726, India.

BY REGISTERED AD

December 04, 2018

The Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forests & Climate change
Regional Office (Southern Zone)
4th Floor, E&F Wings,
Kendriya Sadan, Koramangala,
Bengaluru - 560034

Sir / Madam,

Subject: Submission of 19th Compliance Status Report of EC conditions including results of monitored data for the period April 2018 to September 2018

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N. G. Dessai
Chief General Manager – Operations

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

www.zuari.in

भारतीय डाक
RMS30490004ATN UR:RMT30490004
RI THIRUVANANTHAPURAM 403726
Counter No:1, 05/12/2018, India Post
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE
PO:540074, Kozhikode S.O.
From:THIRUVANANTHAPURAM
Wt:70gms
Amt:15.00/Cash/PA:70.00
(Track on www.indiapost.gov.in)
CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403726

Ministry of Environment
Reg A/D

भारतीय डाक
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THIRU. SCIENTIST, BANGALORE
PO:540010, Rajajinagar H.O.
From:THIRUVANANTHAPURAM
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Amt:15.00/Cash/PA:70.00
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CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403726

Sr Scientist
Reg A/D.

भारतीय डाक
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MEMBER SECRETARY, NEW DELHI
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05 DEC 2018
THIRUVANANTHAPURAM 403726

Member Secretary New Delhi
Reg A/D.

भारतीय डाक
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Amt:15.00/Cash/PA:70.00
(Track on www.indiapost.gov.in)
CNIL 1800 744 4949

05 DEC 2018
THIRUVANANTHAPURAM 403726

Mr. Avinand, MCFL
(Reg A/D)

Mr. Kanthimathi. T.

BY REGISTERED AD

June 08, 2019

Sr. Scientist & Incharge,
Zonal Office-CPCB,
1st & 2nd Floors, Nisarga Bhavan,
A Block, Thimmaiah Main Road,
7th Cross, Shivanagar, Opp. Pushpanjali Theatre,
Banagalore-560 010

Sir/Madam,

Subject: Submission of 20th Compliance Status Report (Final Report) of EC conditions including results of monitored data for the period October 2018 to March 2019

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi

With reference to above and in compliance with the stipulated conditions mentioned in the Environmental Clearance (EC) issued to us, we are submitting herewith the Final Compliance Report (20th Compliance Status Report) of the stipulated EC conditions including results of monitored data for the period October 2018 to March 2019. The soft copy of the same is also sent to your office by e-mail at cpcbszo@yahoo.com and the same is being uploaded on our Company's website at www.zuari.in.

In compliance with the EC conditions, the Compliance Status Report is also submitted, both on hard copy which has a CD version of the report firmly attached to the last page of the report as well sent as soft copy through e-mail, to RO-MoEF, Bangalore and GSPCB, Goa.

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Thanking You,

Yours faithfully,
For **Zuari Agro Chemicals Ltd.**



N. G. Dessai
Chief General Manager – Operations

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

www.zuari.in



Sign In

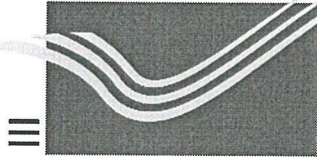
Register



हिन्दी



भारतीय डाक



India Post

Department of Posts
Ministry of Communications
Government of India



सत्यमेव जयते

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* Consignment
Number

RM518657958IN

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Booked At	Booked On	Destination Pincode	Tariff	Article Type	Delivery Location	Delivered On
Zuarinagar S.O	11/06/2019 11:47:03	560079	46.00	Registered Post	Rajajinagar H.O	15/06/2019 17:01:19

Event Details For : RM518657958IN**Current Status : Item Delivery Confirmed**

Date	Time	Office	Event
15/06/2019	17:01:19	Basaveshwaranagar S.O	Item Delivery Confirmed
15/06/2019	09:30:10	Basaveshwaranagar S.O	Out for Delivery
15/06/2019	08:21:49	Basaveshwaranagar S.O	Item Received
15/06/2019	04:05:56	CCRC Bengaluru	Item Dispatched
15/06/2019	03:24:31	CCRC Bengaluru	Item Bagged
14/06/2019	22:49:38	CCRC Bengaluru	Item Received
14/06/2019	10:50:21	Rajajinagar H.O	Item Redirected to Basaveshwaranagar S.O INSUFFICIENT ADDRESS
14/06/2019	08:30:36	Rajajinagar H.O	Item Received
13/06/2019	16:46:58	CCRC Bengaluru	Item Dispatched
13/06/2019	16:22:37	CCRC Bengaluru	Item Bagged
13/06/2019	11:01:28	CCRC Bengaluru	Item Received
12/06/2019	03:43:45	Panaji Sorting L1R	Item Dispatched

Acknowledgement Copy



June 08, 2019

To,
Member Secretary
Goa State Pollution Control Board,
Nr. Pilerne Industrial Estate,
Opp. Saligao Seminary,
Saligao-Bardez
Goa 403511

10/06/19
Goa State Pollution Control Board
Opp. Saligao Seminary
Saligao Goa 403 511

Dear Madam,

Subject: Submission of 20th Compliance Status Report (Final Report) of EC conditions including results of monitored data for the period October 2018 to March 2019

Reference: EC no. F.No. J-11011/217/2008-IA-II(I) dated 1st September, 2009 and Corrigendum dated 30th October, 2009 issued by Ministry of Environment and Forests, New Delhi.

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Yours faithfully,
For **Zuari Agro Chemicals Ltd.**

N. G. Dessai
Chief General Manager – Operations

Enclosed: as above

ZUARI AGRO CHEMICALS LIMITED

CIN No.: L65910GA2009PLC006177

Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

www.zuari.in

BY REGISTERED AD

June 08, 2019

The Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forests & Climate change
Regional Office (Southern Zone)
4th Floor, E&F Wings,
Kendriya Sadan, Koramangala,
Bengaluru - 560034

Sir / Madam,

Subject: Submission of 20th Compliance Status Report (Final Report) of EC conditions including results of monitored data for the period October 2018 to March 2019

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Chief General Manager – Operations

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CIN No.: L65910GA2009PLC006177

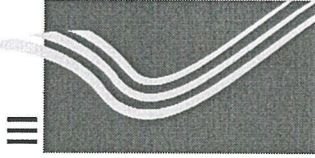
Registered Office: Jaikisaan Bhawan, Zuarinagar, Goa - 403 726, India.

Tel: +0832 2592180, 2592181, 6752399

www.zuari.in

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Zuarinagar S.O	11/06/2019 11:47:03	560034	46.00	Registered Post	Koramangala S.O	14/06/2019 16:49:10

Event Details For : RM518657825IN

Current Status : Item Delivery Confirmed

Date	Time	Office	Event
14/06/2019	16:49:10	Koramangala S.O	Item Delivery Confirmed
14/06/2019	10:00:19	Koramangala S.O	Out for Delivery
14/06/2019	08:46:51	Koramangala S.O	Item Received
13/06/2019	16:46:58	CCRC Bengaluru	Item Dispatched
13/06/2019	15:55:33	CCRC Bengaluru	Item Bagged
13/06/2019	11:01:28	CCRC Bengaluru	Item Received
12/06/2019	03:43:45	Panaji Sorting L1R	Item Dispatched
12/06/2019	01:03:51	Panaji Sorting L1R	Item Bagged
11/06/2019	20:59:17	Panaji Sorting L1R	Item Received
11/06/2019	11:47:03	Zuarinagar S.O	Item Booked

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GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
क्षेत्रीय कार्यालय (दक्षिण वलय)

Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road,
2nd Block, Koramangala, Bangalore - 560 034.

ANNEXURE-12

No. :
तार : पर्यावरण, बंगलूर
Telegram : PARYAVARAN
BANGALORE
दूरभाष :
Telephone :

No. EP/ 12.1/ 232/GOA
Dated: 25th September, 2013.

14192

To,

The General Manager -Manufacturing,
M/s. Zuari Agro Chemicals Ltd,
Jaikisaan Bhawan,
Zuarinagar -403 726.
Goa.

Subject: Certified copy of the compliance report - Revamp of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG / RLNG and reduction of specific energy consumption along with debottlenecking the capacity of Ammonia and Urea plants, changeover of fuel from FO to NG / RLNG in the Utility Boilers as also debottlenecking the capacity of NPK plants A & B along with product mix change at Zuarinagar, Goa by M/s. Zuari Agro Chemicals Ltd - Reg.

Reference: 1. MoEF Lr. J-11011/217/2008-IA-II (I) dt. 1.9.2009 and Corrigendum dt. 30.10.2009.
2. Your letter dt.25.6.2013.

Sir,

With reference to your letter cited above (reference no. 2), please find enclosed herewith a certified copy of compliance report of M/s Zuari Agro Chemicals Ltd, Goa.

Yours faithfully


(Dr.C.KALIYAPERUMAL)
DIRECTOR 'S'

Encl: As above.

Certified copy of the compliance report:-

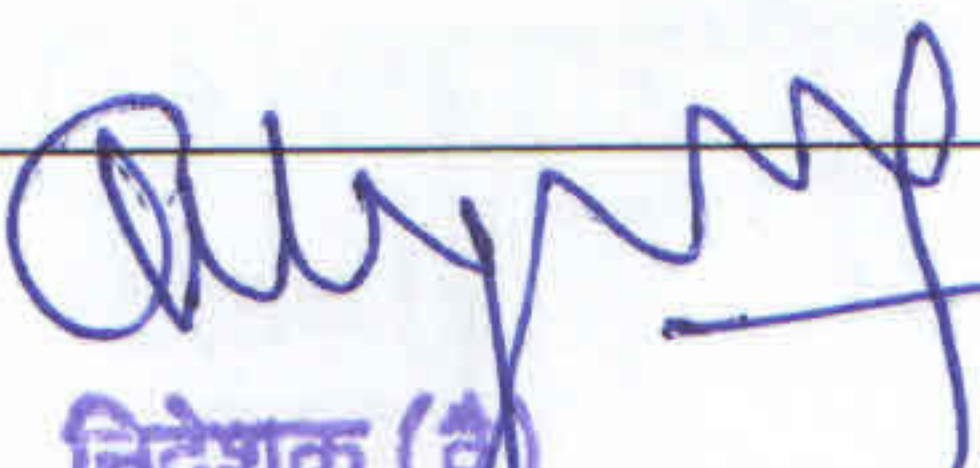
Date of monitoring: 08.08.2013.

Subject: Revamp of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG / RLNG and reduction of specific energy consumption along with debottlenecking the capacity of Ammonia and Urea plants, changeover of fuel from FO to NG / RLNG in the Utility Boilers as also debottlenecking the capacity of NPK plants A & B along with product mix change at Zuarinagar, Goa by M/s. Zuari Agro Chemicals Ltd.

Reference: MoEF.Cl.Lt.No. J-11011/217/2008-IA-II (I) dt. 1.9.2009 and Corrigendum dt. 30.10.2009.

A. SPECIFIC CONDITIONS:

i)	The project authority shall treat the industrial and domestic effluent as per the standards notified under Environment (Protection) Rules, 1986 or prescribed by Goa State Pollution Control Board whichever are stringent. The treated wastewater shall be recycled/reused/used for irrigation/green belt development and zero discharge shall be maintained.	The project authorities have provided an ETP and the treated effluent is recycled and reused in both NPK-A and NPK-B plants. STP has been installed for the domestic sewage and treated sewage is also fully recycled and reused in the cooling tower as a part of make up water. They have also installed RO plant and the permeate is recycled to cooling tower as part make up water. Occasionally, the treated effluent is used for green belt maintenance within the complex. Zero effluent discharge is being maintained.
ii)	The water consumption shall not exceed 10135 m ³ /day and the permission for drawl of same shall be obtained from concerned Department and a copy shall be submitted to the Ministry and its Regional Office at Bangalore within 3 months.	As stated by the project authorities the water consumption is within 10135 m³/day i.e around 10,000 m³/day. The water is drawn from three sources such as 1). PWD supply from Salauli dam, 2). Bore well supply (18 bore wells) from the project site and 3). Water reservoir located within the project site. Flow meters have been installed in the bore wells. The project authorities stated that all the bore wells are registered with Ground water cell, Water Resources Dept. The renewal of the same is pending as they have some issues with the Government regarding the enhancement of the water charges.
iii)	The project authorities shall install efficient air pollution control system like vibropriller to Urea Prilling Tower, low NO _x burners to Reformer, Scrubbers, Ammonia Stripper etc. to	The project authorities have installed vibropriller in urea prilling tower. However, during the visit lot of urea escapes from urea prilling tower was noticed.


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	control particulate and gaseous emissions from the plant to achieve the prescribed standards.	Low NO _x burners to Reformer, Scrubbers, Ammonia Stripper etc. to control particulate and gaseous emissions from the plant also has been installed. The particulate and gaseous emissions from process plants are monitored through the authorized lab as stipulated by the GSPCB and the levels are within the limits.
iv)	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. Emission data shall be periodically monitored and reports submitted to Ministry's Regional Office, CPCB & SPCB.	The stack emission in 18 stacks (NH ₃ , Particulate Matter, SO ₂ and NO _x) are being monitored through the external laboratory recognized by MoEF as well as GSPCB on a monthly basis. As per the reports the parameters are within the limit. Further the monitoring report along with the monitored data are being submitted to CPCB, SPCB and RO, MoEF (once in six months).
v)	The Company shall undertake measures to reduce fugitive emissions especially of ammonia. The Company shall submit the Risk Assessment study report for the storage and handling of ammonia in the campus.	The project authorities have provided sensors in the ammonia storage tank area to detect the ammonia escape/leakage into the environment. The details of measures to reduce fugitive emissions taken by project authorities are given in general condition no.viii. As gathered that the risk assessment study report for the storage and handling of ammonia in the campus has been submitted to the Ministry on 6.11.2009 and a copy of the same was also submitted to RO on 15.12.2009.
vi)	The Company shall install the hooter system for leak detection of ammonia in the plant premises.	The project authorities have installed the hooter system for leak detection of ammonia in the plant premises.
vii)	The proponent shall upload the status of compliance of the stipulated EC conditions, including monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant namely; SPM, RSPM, SO ₂ , NO _x (Ambient levels as well as stack emissions) or NH ₃ , indicated for the project shall be monitored and displayed at the convenient location near the main gate of the Company in public domain.	The EC compliance reports along with the monitored data has been uploaded on the company's website and the same is being updated periodically. Further, the EC compliance report has been submitted to RO, Bangalore once in six months regularly. The latest compliance report for the period October 2012 till March 2013 also have been submitted. As per the reports all the parameters are within the limit. The PM-2.5, PM-10, SO₂, NO_x and NH₃ are being monitored in ambient air twice a week on 24 hourly basis at four AAQM stations by an external laboratory recognized by MoEF and the results are being displayed near the main gate of

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2

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		the company which is in public domain on the national highway (near BITS, Goa Campus). Similarly the process stack emission (NH₃, Particulate Matter, SO₂ and NO_x) monitoring is also carried out by an external laboratory recognized by MoEF every month and the stack emission parameters are displayed (electronic display) near the main gate no.1 which is in public domain and it is in operation since August 2010 onwards.
viii)	Spent catalysts shall be sold to authorized vendors for its metal value. The other solid wastes shall be segregated and stored in the separate storage space and finally sold to the authorized vendors.	As gathered that the spent catalyst is being sold to an authorized recyclers.
ix)	As proposed the Company shall maintain the green belt covering 50% land area of the plant to mitigate the effect of fugitive emissions and noise as per the CPCB guidelines.	The total land area of the project is around 410 ha of which 50% of the area is 205 ha. The company began the operation in the year 1973. As gathered that more than 50% of the area is brought under green belt (215 ha) and the survival rate is around 40%. However during the visit it was observed that lot of vacant areas is available for plantation and for that the project authorities told that every year during monsoon about 2000 plants have been planted within the complex. Further a separate Estate Department with a horticulture specialist have been assigned the job of development and maintenance works of greenbelt development.
x)	The Company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for fertilizer industries.	CREP conditions are complied. The project authorities have planned to replace with the non-arsenic based solution in March 2013. However it is programmed to complete in March 2014 along with other hardware changes in the CO ₂ absorbtion system in the ammonia plant.
xi)	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.	The project authorities have established a health centre with a doctor and supporting staff including other facilities. OHS is being carried out and record is being maintained.
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	The project authorities stated that all the labours are coming from local and going back to every day after their works and existing toilet and drinking water facilities are extended to them.


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3

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	drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.																
B. GENERAL CONDITIONS																	
i)	The project authorities shall strictly adhere to the stipulations of the GSPCB / State Government or any Statutory body.	The officials of PCB those who accompanied the visit stated that all the stipulations of PCB are implemented.															
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 adequacy of conditions imposed and to add additional environmental protection measures required, if any.	The project authorities planning to go for an expansion and the details are as given below: <table border="1"> <thead> <tr> <th>Products</th><th>Existing (MTPA)</th><th>Proposed Expansion (MTPA)</th></tr> </thead> <tbody> <tr> <td>Urea</td><td>376200 399300*</td><td>118800</td></tr> <tr> <td>Complex fertilizers in NPK A plant</td><td>150000</td><td>350000</td></tr> <tr> <td>Complex fertilizers in NPK B plant</td><td>150000</td><td>350000</td></tr> <tr> <td>Ammonia (Intermediate Product)</td><td>220000</td><td>126500</td></tr> </tbody> </table>	Products	Existing (MTPA)	Proposed Expansion (MTPA)	Urea	376200 399300*	118800	Complex fertilizers in NPK A plant	150000	350000	Complex fertilizers in NPK B plant	150000	350000	Ammonia (Intermediate Product)	220000	126500
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Ammonia (Intermediate Product)	220000	126500															
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.	The process stack emissions as well as ambient air quality are monitored through a MoEF recognized external laboratory and as per the reports the levels are within limits. The project authorities have agreed to shut down the unit in case of any pollution control system failure and restart after rectifying the problem.															
iv)	The locations of ambient quality monitoring stations shall be reviewed in consultations with 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.	Four ambient air quality monitoring stations were established as per the maximum Ground Level Concentration (GLC). As gathered that the study by CPCB as well as NEERI has been undertaken to review the AAQ stations and they have not suggested for additional monitoring stations.															
v)	Dedicated scrubbers and stacks of appropriate height as per the CPCB guidelines shall be provided to control the emissions from various vents. The scrubber water shall be sent to ETP for further treatment.	Dedicated scrubbers have been provided to the stacks with appropriate height as per the CPCB guidelines and the entire scrubbed water is recycled within the plant. As stated by the project authorities the revamp (fuel from Naphtha to gas) work will reduce the SO ₂ emission by about 98%.															

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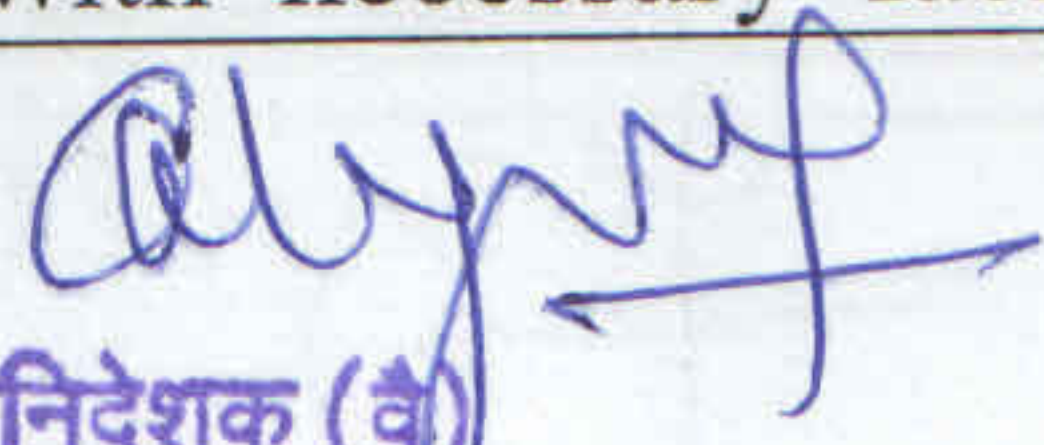
vi)	The Company shall undertake following Waste Minimization measures a) Metering and control of quantities of active ingredients to minimize waste b) Reuse of by-products from the process as raw materials or as raw material substitute in other processes c) Use of "Closed Feed" system into batch reactors d) Venting equipment through vapour recovery system e) Use of high pressure hoses for equipment cleaning to reduce wastewater generation.	The waste minimization measures such as a). Metering and control of quantities of active ingredients, b) Reuse of by-products from the process as raw materials or as raw material substitute in other processes, c) Use of "Closed Feed" system into batch reactors, d) Venting equipment through vapour recovery system and e) Use of high pressure hoses for equipment cleaning to reduce wastewater generation are being practiced regularly.
vii)	Fugitive emissions in the work zone environment, product, and raw material storage area shall be regularly monitored. The emissions shall conform to the limits imposed by SPCB/CPCB.	As gathered that the project authorities have carried out an in house survey in all the process plants and the storage area to identify the possible areas of fugitive emissions and have worked on the same. At many places like pumps handling hazardous chemicals, the seals are replaced with leak proof mechanical seals. Likewise, the flange gaskets on pipelines handling hazardous chemicals are replaced with better grade gaskets. The valve glands are replaced with better type of gland packing and if required, the valve itself are replaced with better class of valves wherein the glands are leakproof. During the shut down jobs which involves draining of pipelines, vessels etc, this is done through the scrubbers already available in the system to minimize the emissions. Further they have installed sensors & hooters to detect the leaks of Ammonia, Chlorine if any at various locations. In the work zone i.e in process plants, product and raw material storage areas at different locations the ammonia is monitored once in three months and records is maintained. As per the reports the ammonia level is within the limit of SPCB.
viii)	The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of	The project authorities have obtained the permission from GSPCB under MSHIC Rules and Hazardous Waste Rules and being

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5

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	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.	implemented. The hazardous waste authorization is valid upto 31.12.2014.
ix)	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).	The noise levels are monitored at different locations in the factory periphery once in three months and the records are being maintained. Ear protective equipments have been provided to the workers and they are using. As per the reports the levels are within the limits. Further acoustic hoods, silencers, enclosures etc also has been provided at all sources of generation.
x)	The Company shall develop rain water harvesting structures to harvest runoff water for recharge of ground water.	The project authorities have provided rain water harvesting structures to harvest the runoff water for recharge of ground water.
xi)	The Company shall undertake eco-development 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.	The project authorities have taken up the eco-development measures like afforestation, and green belt in and around the factory. Further as gathered that the project authorities have undertaken community welfare measures like providing land for sulabh toilets for general public in the neighborhood, development of playground in neighboring Govt school, maintenance of public gardens in Vasco city, beautification of highway road divider, awarding scholarships, conducting health camps, cleanliness drive and school for poor neighboring community etc. as part of Corporate Social Responsibility Schemes. The project authorities stated that a report on "Eco-development plan and Community Welfare Measures" has been submitted to GSPCB, Goa on 18.3.2010.
xii)	The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA / EMP report.	The project authorities implementing the environmental protection measures and safeguards proposed in the EIA/EMP reports.
xiii)	A separate Environmental Management Cell equipped with full fledged laboratory	The project authorities have established a full fledged laboratory with necessary facilities


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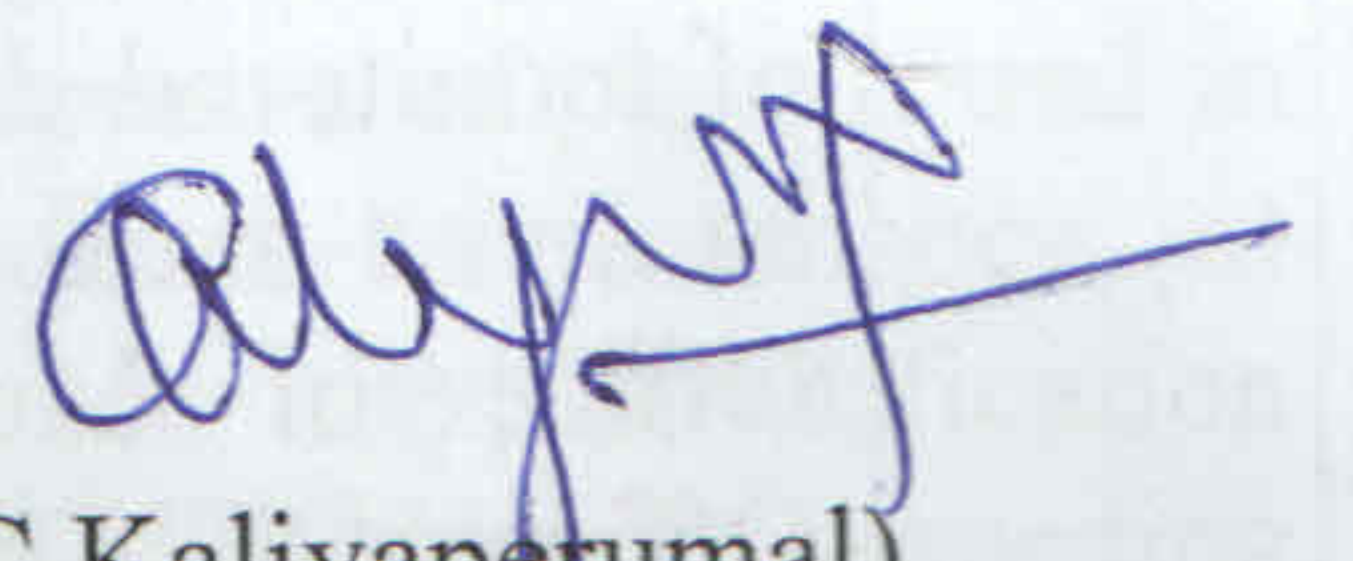
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	facilities shall be set up to carry out the Environmental Management and Monitoring functions.	for carrying out analysis and monitoring. Stack emission and ambient air quality are monitored through the MoEF approved laboratory. A person of Deputy General Manager level is in-charge of overall environmental management functions and he is assisted by an Environment Engineer.
xiv)	The project authorities shall earmark adequate funds to implement the conditions stipulated by the MoEF as well as the State Govt. along with the implementation schedule for all the conditions stipulated herein. The fund so provided shall not be diverted for any other purpose.	An amount of Rs. 25 crores has been allocated for capital investment and out of this Rs. 2.5 crores has been spent (in the debottlenecking the plant). About Rs. 1.5 crore/annum is being spent for the recurring cost such as maintenance of ETP, RO plant, scrubbers and cyclones, operation & maintenance of display boards and green belt development works as well as and its maintenance.
xv)	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 the monitoring agencies and shall be posted on the website of the Company.	The project authorities submitting six monthly compliance reports to RO and as gathered that the reports are also uploaded on the company's website.
xvi)	The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including results of monitored data (both hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and SPCB.	The project authorities submitting six monthly compliance reports along with monitored data to RO both hard copy as well as by e-mail.
xvii)	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and Local NGO, if any, from whom suggestions/representations if any, were received while processing the proposal. The clearance letter shall also be put up on website of the Company by the proponent.	The project authorities told that a copy of the EC was sent to concerned panchayat.
xviii)	The 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 and may also be	The project authorities had given and advertisement in two local news papers.


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	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.	
xix)	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 as amended subsequently, shall also to be put on the website of the Company along with the status of compliance of EC condition and shall also be sent to the respective Regional Office of MoEF by e-mail.	As gathered that Environmental Statement for each financial year ending 31 st March in Form-V as mandated under EP Rules, 1986 is being submitted to GSPCB, Goa every year before scheduled date and the same are uploaded in the company's website also.
xx)	The project proponent 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.	The project authorities have informed the date of start of expansion work to Regional Office.



(Dr. C.Kaliyaperumal)
Director 'S'

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F. No. EP/12.1/232/Goa 1168
Government of India
Ministry of Environment, Forest & Climate Change
Regional Office, Southern Zone, Bangalore-34

Kendriya Sadan, 4th Floor, F-Wing
17th Main Road, II Block
Koramangala, Bangalore

Dated: 27/11/2017

To

Shri. Ranjith Singh Chugh
Chief Manufacturing Officer
M/s Zuari Agro Chemicals Ltd,
Zuarinagar, Goa

Subject: Issue of certified compliance report to M/s. Zuari Agro Chemicals Ltd., Goa-Reg.

Dear Sir,

This has reference to your letter dated 09.10.2017 requesting for the certified compliance report. It is informed that M/s. Zuari Agro Chemicals Ltd., Zuari Nagar, Goa was inspected by this Regional Office on 15.11.2017. The compliance to the various conditions of environment clearance is satisfactory. The copy of the report is enclosed for reference.

Yours faithfully,

Encl: as above


(E. Thirunavukkarasu)
Scientist 'D'
Email: e.thirun@nic.in

GOVERNMENT OF INDIA
Ministry of Environment, Forest and Climate Change
(Regional Office, Southern Zone) Bangalore-34

MONITORING REPORT PART -I

F. No. EP/12.1/232/Goa

uploaded
30/11/17

1.Name of the project

Revamp of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG / RLNG and reduction of specific energy consumption along with debottlenecking the capacity of Ammonia and Urea plants, changeover of fuel from FO to NG / RLNG in the Utility Boilers as also debottlenecking the capacity of NPK plants A & B along with product mix change at Zuarinagar, Goa by M/s. Zuari Agro Chemicals Ltd.

2. Clearance letter No.& date

No. J-11011/217/2008-IA-II (I) dt. 01.09.2009 and Corrigendum dt. 30th October, 2009

3. Location

Zuarinagar, Goa, *Singh*

4.Address for correspondence

Shri. Ranjith Chugh, Chief Manufacturing Officer
Zuari Agro Chemicals Ltd, Zuarinagar, Goa

5. Date of site visit for this report: 15.11.2017

6. Date of previous visit(s) if any: ---

7. Brief on the project along with the present status: The visit was made to this project on 15.11.2017. Shri. Ranjith Chugh, Chief Manufacturing Officer, Shri Nilesh G Desai, GM (Engg), Shri V.Vinay, Jt, GM, Shri Inderjit Singh Matharu, Dy GM (Envnt), Ms Liselle Pereira, Dy Manager (Envnt) were present.

EC was granted by the Ministry in the year 2009 for the Revamp of Ammonia plant changeover of feedstock and fuel from Naphtha to NG / RLNG and reduction specific energy consumption with debottlenecking the capacity of Ammonia and Urea plants, changeover of fuel from FO to NG / RLNG in the Utility Boilers as debottlenecking the capacity of NPK plants A & B along with product mix change. PA has obtained consent from PCB.

The first phase of feed and fuel change over from Naphtha to NG / RLNG in Ammonia plant and fuel changeover from Furnace Oil to NG / RLNG in Utilities Boilers has been successfully carried out on line without any plant stoppage during February 2013. For the revamp for debottlenecking the capacity of Ammonia and Urea (including Granulation) plants and at reduced specific energy consumption, the delivery of the Basic Engineering Design Package (BEDP) was completed in July-2016 by M/s CASALE, Switzerland. The next phase of the Ammonia-Urea Plant Revamp would be the Financial Closure and award of EPC Contract which is expected to be completed by November/December, 2017.



Also, the Revamp of Steam-Power Generation Facility along with the Installation of Urea Granulation unit are integrated with the Revamp of Ammonia, Urea Plants. The Process of obtaining EC for these additional features is underway. In the Ammonia plant, in compliance with the EC/CREP, the Solution in the CO₂ Removal section has been swapped from Arsenic bearing Modified Benfield Solution to Non-Arsenic based GV Solution (V₂O₅ based). Necessary hardware additions were also done along with the Solution Swap. The disposal of the modified Benfield Solution through Solidification/Stabilization has been completed in February, 2017. For debottlenecking the capacity of NPK plant-A along with product mix change, the Plant post Revamp is operational with effect from December, 2015. For debottlenecking the capacity of NPK Plant-B along with product mix change, the Basic Engineering Design Package by M/s Jacobs, USA, Detailed Engineering by JEIL, Mumbai are completed. The Procurement, Erection & Construction activities have been completed to achieve 'Mechanical Completion' status in May, 2017 and Commissioning will follow.

Effluent treatment and Disposal: The industrial effluent is treated and is totally recycled to NPK-A and NPK-B plants for process use. Thus, zero effluent discharge is being maintained. The installed marine outfall has been locked and key is reported to be with Goa SPCB. A camera has been provided at the motor and connected to the webs server of Goa PCB and CPCB. The domestic effluent is treated separately in Sewage Treatment Plant and the treated domestic effluent is totally recycled to cooling towers as part make up. Reverse Osmosis (RO) Unit is also installed in ETP to enhance the effluent treatment facility and the permeate is recycled to cooling tower as part make up. Occasionally, the treated effluent is used for green belt maintenance within the complex. The latest report on the analysis of the treated effluent confirms the norms.

It was observed that there are cracks in the sludge drying beds and STP requires revamping. PA has been advised for necessary action and PA has agreed to the above.

Air Pollution Control and monitoring: Vibropriller has been installed in Urea Prilling Tower. Modern design burners with lower NO_x emissions are installed in Reformer, Process Heaters and fired Boilers as part of revamp for Gas Conversion. Ammonia Stripper for treatment of process condensate and Scrubbers to control particulate and gaseous emissions from process plants have been provided.

PA carry outs periodical stack emissions monitoring through external laboratory recognized by MoEF for NH₃, Particulate Matter, SO₂ and NO₂ and the reports are being submitted to GSPCB, Goa once in every three months and to Ministry along with six monthly Compliance Status Reports. As per the monitoring reports, the particulate and gaseous emissions from process plants are within the standards prescribed by GSPCB, Goa.

The PM-2.5, PM-10, SO₂, NO₂ and NH₃ are being monitored in ambient air twice a week on 24 hourly basis at four AAQM stations by an external laboratory recognized by MoEF. The reports are being sent to GSPCB, Goa every month and the results are being displayed and updated on electronic display boards at four different locations in public domain.



The fugitive emission in the work zone environment in process plants, product and raw material storage areas etc are being monitored for Ammonia once in three months and the results conform to the limits prescribed. The compiled data is being submitted to RO-MoEF, ZO-CPCB and GSPCB, Goa.

Risk Assessment: PA has prepared Risk Assessment study for the storage and handling of ammonia. According to the Risk Assessment, mock drills are conducted once in six months with local officials. Mock drills on off site emergency conducted twice so far by National Disaster Management Authority.

Implementation of CREP: As required under the "CREP for Fertilizer Industries", PA has phased out of use of Arsenic for CO₂ absorption system in Ammonia plant and has been totally replaced with non-arsenic dual activator based GV solution. The Arsenic bearing solution was disposed off in a scientific manner using Solidification and Stabilization process developed by NEERI, Nagpur. Consent from Goa State Pollution Control Board was received for the above.

Detailed compliance status to different conditions of the environmental clearance is given in this report. The Compliance is Satisfactory.



(E.Thirunavukkarasu)
Scientist 'D'

PART-II- Compliance status in brief

Status of compliance to the Environmental clearance issued vide Ref: No. J-11011/217/2008-IA-II (I) dt. 01.09.2009 and Corrigendum dt. 30th October, 2009 to M/s Zuari Agro Chemicals Ltd, for revamping of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG / RLNG and reduction of specific energy consumption along with debottlenecking the capacity of Ammonia and Urea plants, changeover of fuel from FO to NG / RLNG in the Utility Boilers as also debottlenecking the capacity of NPK plants A & B along with product mix change at Zuarinagar, Goa

Sl. No	SPECIFIC CONDITIONS	COMPLIANCE
i.	Treatment of Industrial and domestic effluent	Pl refer Part-III
ii.	The water consumption shall not exceed 10135 m ³ /day	Complied
iii.	The gaseous emissions shall confirm to the standards	Complied
iv.	Measures to reduce fugitive emissions	Complied
v.	Hooter system for leak detection of ammonia in the plant premises.	Complied
vi.	Uploading the status of compliance of the stipulated EC conditions	Complied
vii.	Spent catalysts shall be sold to authorized venders for its metal value.	Complied
viii.	Green belt development	Complied
ix.	Charter on Corporate Responsibility	Complied
x.	Occupational health surveillance of the workers	Complied
xi.	Provision shall be made for the housing of construction labour	Complied
GENERAL CONDITIONS		
xii.	Compliance with the stipulations of the GSPCB / State Government	Complied
xiii.	No further expansion or modifications	Complied
xiv.	emissions shall exceed the prescribed limits.	Complied
xv.	The locations of ambient quality monitoring stations	Complied
xvi.	Dedicated scrubbers and stacks of appropriate height	Complied
xvii.	Waste Minimization measures	Complied
xviii.	Fugitive emissions in the work zone environment,	Complied
xix.	Compliance with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989	Complied
xx.	The overall noise levels in and around the plant area	Complied
xxi.	Rain water harvesting	Complied
xxii.	Eco-development measures	Complied
xxiii.	Compliance safeguards proposed in the EIA / EMP report.	Complied
xxiv.	A separate Environmental Management Cell.	Complied
xxv.	Adequate funds to implement the conditions stipulated by the	Complied
xxvi.	Six monthly compliance status report	Complied
xxvii.	Advertisement about grant of EC	Complied
xxviii.	Submission of environmental statement	Complied
xxix.	Financial closure and final approval of the project	Complied



PART-III- Compliance status in detail

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EC CONDITIONS FOR COMPLIANCE

A. SPECIFIC CONDITIONS:

- i) **The project authority shall treat the industrial and domestic effluent as per the standards notified under Environment (Protection) Rules, 1986 or prescribed by Goa State Pollution Control Board whichever are stringent. The treated wastewater shall be recycled/reused/used for irrigation/green belt development and zero discharge shall be maintained.**

According to the PA, the industrial effluent is treated and is totally recycled to NPK-A and NPK-B plants for process use. Thus, zero effluent discharge is being maintained. The installed marine outfall has been locked and key is reported to be with Goa SPCB. A camera has been provided at the motor and connected to the webs server of Goa PCB and CPCB. The domestic effluent is treated separately in Sewage Treatment Plant and the treated domestic effluent is totally recycled to cooling towers as part make up. Reverse Osmosis (RO) Unit is also installed in ETP to enhance the effluent treatment facility and the permeate is recycled to cooling tower as part make up. Occasionally, the treated effluent is used for green belt maintenance within the complex. The latest report on the analysis of the treated effluent confirms the norms.

It was observed that there are cracks in the sludge drying beds and STP requires revamping. PA has been advised for necessary action and PA has agreed to the above.

- ii) **The water consumption shall not exceed 10135 m³/day and the permission for drawl of same shall be obtained from concerned Department and a copy shall be submitted to the Ministry and its Regional Office at Bangalore within 3 months.**

PA informed that the entire water requirement is obtained from the PWD supply and a lake. According to the records produced, the water consumption is within the prescribed limit of 10135 KLD.

- iii) **The project authorities shall install efficient air pollution control system like vibropriller to Urea Prilling Tower, low NOX burners to Reformer, Scrubbers and Ammonia Stripper etc. to control particulate and gaseous emissions from the plant to achieve the prescribed standards.**

Vibropriller has been installed in Urea Prilling Tower. Modern design burners with lower NO_x emissions are installed in Reformer, Process Heaters and fired Boilers as part of revamp for Gas Conversion. Ammonia Stripper for treatment of process condensate and Scrubbers to control particulate and gaseous emissions from process plants have been provided. As per the monitoring reports, the particulate and gaseous emissions from process plants are within the standards prescribed by GSPCB, Goa.

- iv) **The gaseous emissions (SO₂, NO_x, NH₃, Urea dust) & Particulate Matter from various process units shall confirm 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 & SPCB.**

PA carry outs periodical stack emissions monitoring through external laboratory recognized by MoEF for NH₃, Particulate Matter, SO₂ and NO₂ and the reports are being submitted to GSPCB, Goa once in every three months and to Ministry along with six monthly Compliance Status Reports. The reports confirms the prescribed norms.



- v) **The Company shall undertake measures to reduce fugitive emissions especially of ammonia. The Company shall submit the Risk Assessment study report for the storage and handling of ammonia in the campus.**

PA has prepared Risk Assessment study for the storage and handling of ammonia. According to the Risk Assessment, mock drills are conducted once in six months with local officials. Mock drills on off site emergency conducted twice by National Disaster Management Authority. Bello seal wall has been provided in Dehydrator of Ammonia plant to prevent leakage and fugitive emission.

- vi) **The Company shall install the hooter system for leak detection of ammonia in the plant premises.**

The hooter systems -Sensors have been provided to detect ammonia leakage.

- vii) **The proponent shall upload the status of compliance of the stipulated EC conditions, including monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant namely; SPM, RSPM, SO₂, NO_x (Ambient levels as well as stack emissions) or NH₃, indicated for the project shall be monitored and displayed at the convenient location near the main gate of the Company in public domain.**

The Compliance Status Reports of EC conditions including results of monitored data are displayed on website and the same is being updated periodically. Also the reports are sent to RO-MoEF, ZO-CPCB and GSPCB, Goa.

The PM-2.5, PM-10, SO₂, NO₂ and NH₃ are being monitored in ambient air twice a week on 24 hourly basis at four AAQM stations by an external laboratory recognized by MoEF. The reports are being sent to GSPCB, Goa every month and the results are being displayed and updated on electronic display boards at four different locations in public domain.

The process stack emission monitoring is carried out by an external laboratory recognized by MoEF for NH₃, Particulate Matter, SO₂ and NO₂ and the reports are being submitted to GSPCB, Goa once in three months. Stack emissions electronic display board is installed near gate no.1 which is in public domain.

- viii) **Spent catalysts shall be sold to authorized vendors for its metal value. The other solid wastes shall be segregated and stored in the separate storage space and finally sold to the authorized vendors.**

Spent catalysts and other hazardous waste are collected and sold to the authorized agencies. PA has valid authorization from PCB.

- ix) **As proposed the Company shall maintain the green belt covering 50% land area of the plant to mitigate the effect of fugitive emissions and noise as per the CPCB guidelines.**

PA has developed and maintains vast green belt area. PA informed that in 1973 when the Company began operation, the entire land was barren with very low coverage of vegetation. Over the last four decades in operation, through sustained efforts a green belt covering approx. 50% total land area has already been developed and is being maintained.

- x) **The Company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for fertilizer industries.**

As required under the "CREP for Fertilizer Industries", PA has phased out of use of Arsenic for CO₂ absorption system in Ammonia plant and has been totally replaced with non-arsenic dual activator based GV solution. The Arsenic bearing solution was disposed off in a scientific manner using Solidification and Stabilization process developed by NEERI, Nagpur. Consent from Goa State Pollution Control Board was received for the above.

- xi) **Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.**

PA has a separate center with full-fledged Doctor and supporting staff for looking after occupational health surveillance of the workers.

- 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, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.**

There are no construction work at the site. PA informed that implementation of revamp/debottlenecking project of the existing plants involves minimal temporary manpower for which the necessary infrastructure and facilities are available at site and in the near vicinity. The required housing, necessary infrastructure and other facilities were provided to the construction labour.

B. GENERAL CONDITIONS

- i) **The project authorities shall strictly adhere to the stipulations of the GSPCB / State Government or any Statutory body.**

PA has valid consent orders from PCB and complied with the conditions stipulated by GSPCB.

- ii) **No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry.**

Agreed by the PA

- 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.**

The monitoring reports of process stack emission monitoring as well as ambient air quality monitoring carried out by a MoEF recognized external laboratory confirms the prescribed limits. PA informed that in case of failure of any pollution control system, the concerned plant will be shut down until the problem is identified and rectified.



- iv) **The locations of ambient quality monitoring stations shall be reviewed in consultations with 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.**

PA has established four ambient air quality monitoring stations at the locations recommended by CPCB after a proper technical study involving simulations for identifying the distance of maximum GLC of pollutants. A simulation study which was done through NEERI does not indicate any significant change in the pollutants level in ambient air as well as in the distance of max. GLC of pollutants.

- v) **Dedicated scrubbers and stacks of appropriate height as per the CPCB guidelines shall be provided to control the emissions from various vents. The scrubber water shall be sent to ETP for further treatment.**

Dedicated scrubbers have been provided and the scrubber water is totally recycled within the plants. As part of revamp project, the fuel was changed from Naphtha/Furnace Oil to Natural Gas, which is a clean fuel with traces of Sulphur. With this change in fuel, SO₂ emissions have reduced drastically by about 98%. The heights of all the stacks are found to be appropriate and adequate as per CPCB guidelines.

- vi) **The Company shall undertake following Waste Minimization measures**

- a) **Metering and control of quantities of active ingredients to minimize waste**
- b) **Reuse of by-products from the process as raw materials or as raw material substitute in other processes**
- c) **Use of "Closed Feed" system into batch reactors**
- d) **Venting equipment through vapour recovery system**
- e) **Use of high pressure hoses for equipment cleaning to reduce wastewater generation.**

The waste minimization measures like metering, control of raw material usage by keeping close watch on specific consumption, reduction of effluent at source itself, reuse/recycle of treated industrial as well as domestic effluent in the process, use of ETP sludge in the process, use of high pressure hoses for cleaning of equipment etc. are being practiced regularly.

- vii) **Fugitive emissions in the work zone environment, product, and raw material storage area shall be regularly monitored. The emissions shall conform to the limits imposed by SPCB/CPCB.**

As per the records produced, the fugitive emission in the work zone environment in process plants, product and raw material storage areas etc are being monitored for Ammonia once in three months and the results conform to the limits prescribed. The compiled data is being submitted to RO-MoEF, ZO-CPCB and GSPCB, Goa.

- viii) **The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989**

PA has valid Authorization from GSPCB, Goa for collection, storage and disposal of Hazardous Wastes. The provisions under MSIHC Rules under EP Act are being complied on regular basis.

- ix) **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).**

Major source of noise is compressor house in Ammonia Plant and DG sets. DG sets are located in acoustic enclosure. PPE for operating personnel at compressor house are provided. As per the records, the ambient noise level at the factory periphery at different locations in all directions is being monitored once in three months and the results conform to the standards prescribed. The compiled data is being submitted to RO-MoEF, ZO-CPCB and GSPCB, Goa along with six monthly Compliance Status Reports.

- x) **The Company shall develop rain water harvesting structures to harvest runoff water for recharge of ground water.**

PA has developed a Rain water harvesting for storage in the form of captive lake of 235 MG capacity already.

- xi) **The Company shall undertake eco-development 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.**

PA informed that during its operation for last four decades, the Company has already undertaken many eco-development measures like afforestation, creation and maintenance of green belt around the factory premises etc. Also undertaken community welfare measures like providing land for sulabh toilets for general public in the neighborhood, maintenance of public gardens in Vasco city, beautification of highway road divider, awarding scholarships, providing skills training to local youth in domestic Electrician, Data Entry, and Tailoring, conducting health camps, supply of safe drinking water to nearby villages, creation of self-help groups, assistance to the present self-help groups, cleanliness drive, distribution of free saplings as a part of tree plantation drive etc. as part of Corporate Social Responsibility Schemes.

Report on "Eco-development plan and Community Welfare Measures" already undertaken by the Company was submitted to GSPCB, Goa. An amount of Rs 1.06 crores for the year 2016-17 have been earmarked and spent towards the above.

- xii) **The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA / EMP report.**

As proposed in EIA / EMP report, environmental protection measures and safeguards such as installation of low NO_x burners in Heaters and Boilers, switching over from furnace oil to Natural gas in Hot Air Generator in NPK Plant, Hooters for leak detection, air pollution control measures-strippers, scrubbers, RO plant for enhance the treated water quality and its reuse etc.



- xiii) **A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.**

A separate Environmental Management Cell with dedicated Environment Engineers along with full fledged laboratory have been established to look after the Environmental Management and Monitoring functions.

- xiv) **The project authorities shall earmark adequate funds to implement the conditions stipulated by the MoEF as well as the State Govt.**

According to the PA, approximately Rs.35 crores for capital investment has been earmarked for implementing EC conditions and environment protection measures and Rs.2.5 crores/annum has been earmarked to take care of recurring cost. The major portion of this fund will be utilized for the revamp of scrubbing systems in NPK-A and NPK-B Plants.

- xv) **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 the monitoring agencies and shall be posted on the website of the Company.**

&

- xvi) **The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including results of monitored data .**

The PA is submitting the six monthly Compliance Status Reports of EC conditions including results of monitored data regularly.

- xvii) **A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and Local NGO, if any,**

Complied.

- xviii) **The 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 and may also be seen at Website of the Ministry at <http://envfor.nic.in>.**

Complied.

- xix) **The environmental statement for each financial year ending 31st March in Form-V**

PA submits the Environmental Statement for each financial year ending 31st March in Form-V as mandated under EP Rules, 1986 to GSPCB, Goa every year before scheduled date.

- xx) **The project proponent 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.**

Details submitted in the six monthly compliance reports.


(E.Thirunavukkarasu)
Scientist 'D'

MEMORANDUM OF ASSOCIATION OF PARADEEP PHOSPHATES LIMITED

- I. The name of the Company is PARADEEP PHOSPHATES LIMITED.
- II. The Registered Office of the Company will be situated in the State of ORISSA.
- III. The objects for which the Company is established are :-

A. MAIN OBJECTS TO BE PURSUED ON INCORPORATION

(i) To carry on in India or in any part of the world all kinds of business relating to fertilizers, heavy chemicals, heavy water and their by-products and in particular to carry on the business of manufacturing, storing, packing, distributing, transporting, converting, maintaining and rendering assistance and services of all and every kinds of any description, buying, selling, exchanging, altering, improving and dealing in artificial fertilizers, heavy chemicals of every description whether required for civil commercial or military defence purpose and requirements or otherwise;

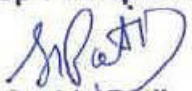
(ii) To carry on all kinds of business including manufacture, marketing, import and export of all kinds of chemicals, including agricultural chemicals and pesticides or any mixture, derivatives and compounds thereof;

(iii) To carry on in India or in any part of the world all kinds of business including manufacture, production, processing, marketing, import and export of all kinds of seeds and agri-inputs and agri-outputs.

B. INCIDENTAL OBJECTS

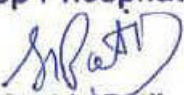
(i) To manufacture, store, maintain, sell, buy, repair, alter and exchange let on hire, export, import and deal in all kinds of articles and things (including all kinds of conveyances and all component parts, fittings, tools, implements, accessories, materials and all articles and things used in connection therewith in any way whatsoever) which may be required for the purposes of any of the business of the Company or are commonly supplied or dealt with by persons engaged in any such business or which may seem capable of being profitably dealt with in connection with any of the business of the Company;

For Paradeep Phosphates Limited


Sachin Patil
Company Secretary

- (ii) To act as agents for Government or authorities or for any manufactures, merchants and others and to carry on agency business of every kind and of any description connected with the business of the Company;
- (iii) To acquire, establish, construct, provide and maintain and administer factories, townships, estates, railway sidings, building yards, wells, water reservoirs, channels, pumping installations, purification plants, pipe lines, landing grounds, hangers, garages, storage sheds and accommodation of all description connected with the business of the Company;
- (iv) To acquire, build provide and maintain wells, tubewells, reservoirs, canals, embankments, aqueducts, dams, barrages, infiltration galleries and contrivances for the purpose of securing adequate supply of water required in any way in connection with the business of the Company or as incidental thereto;
- (v) To acquire, establish, construct, provide and maintain facilities for the generation of steam, power and other utilities and few materials required in connection with the business of the Company;
- (vi) To establish, maintain and operate training institutions, to obtain trained personnel to meet the manpower requirements of the Company;
- (vii) To manufacture, buy, sell, exchange, instal, work, alter, improve, manipulate, prepare for market, import of export and otherwise deal in all kinds of plant and machinery, wagons, rolling stock apparatus, tools, utensils, substances, materials and things necessary or convenient for carrying on any of the businesses which the Company is authorised to carry on directly or indirectly or which is usually dealt in by persons engaged in such business;
- (viii) To make, draw, accept, endorse, execute and Issue Cheques, Promissory Notes, Bills of Exchange, Bills of Lading, Debentures and other negotiable or transferable instruments;
- (ix) To invest and deal with the moneys of the Company in any securities, shares, investments and properties movable and immovable in such manner as may from time to time be determined and to sell transfer or deal with the same;
- (x) Subject to the provisions of the Companies Act 1956, to borrow, raise money or receive money on deposit at interest or otherwise in such manner as the Company may think fit and in particular by the issue of debentures or debenture stock, perpetual or otherwise, including debentures or debenture stock convertible into shares in this Company, or perpetual annuities and in security or any such money so borrowed, raised or received to mortgage, pledge or

For Paradeep Phosphates Limited


Sachin Patil
Company Secretary

charge the whole or any part of the property, assets or revenues, rights, privileges or concessions of the Company, present or future, including its uncalled capital by assignment or otherwise or to transfer or convey the same absolutely or in trust and to purchase, redeem or pay off any such securities;

(xi) To create any depreciation fund, reserve fund, sinking fund, insurance fund or any special or other fund whether for description or for repairing, improving, extending or maintaining any of the properties of the Company or for redemption of debentures or redeemable preference shares or for special dividends or equalising dividends or for any other purpose whatsoever and to transfer any such fund or part thereof to any of the other funds herein mentioned;

(xii) To amalgamate or, enter into partnership, Joint venture, or profit sharing arrangement partially with amalgamate or acquire an interest in any business or venture of or cooperate in any way with or assist or subsidies or enter into reciprocal concession or mutual assistance arrangement with any Company, firm or person, either in India or outside India, and to give or accept by way of consideration for any of the aforesaid acts, deeds or things or for any property, right, exchange or concession acquired, any shares, debentures, debenture stock, or securities that may be agreed upon and to hold retain or sell, mortgage, or deal with any shares, debentures, debentures stock, including. those so received;

(xiii) To carry on the business of analytical and consulting chemists and to undertake analytical and research work connected with the business of the Company;

(xiv) To acquire by technical or financial collaboration or otherwise the formulate, recipes and full technical and other information for process of manufacture and the right and/or licence to manufacture and market and to deal in any of the products and things which the Company is entitled to manufacture;

(xv) To promote or concur in the promotion of any Company the promotion of which shall be considered desirable;

(xvi) To search for and to purchase or otherwise acquire from any Government State or Authority any licences, concessions, grants, decrees, rights, powers and privileges whatsoever which may seem to the company capable of being turned to account and to work, develop, carry out, exercise and turn to account the same;

(xvii) To purchase, take on lease or in exchange or under amalgamation, licence or concession or otherwise, absolutely or conditionally, solely or jointly with others and to make, construct, maintain work, hire, hold, improve, alter, manage, let, sell, dispose of, exchange, roads, canal,

water courses, ferries, piers, aerodromes, lands, buildings, warehouses, works, factories, mill, workshop, railway sidings, tramways, engines, machinery and apparatus, water rights, way leaves, trademarks, patents and designs, privileges or rights of any descriptions or kind for the business of the Company;

(xviii) To enter into any contract or arrangement for the more efficient conduct of the business of the Company or any part thereof and to sublet any contracts from time to time;

(xix) To establish, provide, maintain and conduct or otherwise subsidise research laboratories, design cells and experimental workshops for scientific and technical research, design work and experiments and tests of all kinds, to promote studies and researches both scientific and technical, investigations and inventions by providing subsidising, endowing or assisting laboratories, workshops, libraries, lectures, meetings and conferences and by providing or contributing to the remuneration of scientific or technical professors or teachers and by providing or contributing to the awards of scholarships, prizes, grants to students or otherwise and generally to encourage, promote and reward studies, researches, investigations, experiments, tests and inventions of any kind that may be considered likely to assist any business which the Company is authorised to carry on and to enter into any arrangement with Government or any other party in India or elsewhere for aforesaid purpose;

(xx) To take up, undertake, acquire and hold shares, debentures, debenture stock, books, obligations and securities by original subscription or otherwise issued or guaranteed by other Company, or Corporation, statutory or otherwise constituted for carrying a business in India or elsewhere, having objects altogether or in part similar to those of this Company and to underwrite solely or jointly with another or others, shares in any such Company, to take otherwise acquire shares in any other Company if the acquisition of such shares seem likely to promote further or benefit the business or interest of this Company;

(xxi) To acquire or take over with or without consideration and carry on the business of agents by themselves or in partnership with other Companies or enter into partnerships with concerns whose objects may be similar, in part or in whole to those of this Company;

(xxii) To apply for memberships or become a member of any Company, association, society or body corporate having any main objects similar to or identical with those of the Company or likely directly or indirectly to promote the interests of the Company;

(xxiii) To acquire and undertake the whole or any part of the business, property and liabilities of any person, firm or company carrying on any business which the company is authorised to carry on or processed of property suitable for the purpose of this Company;

(xxiv) To let out on hire all or any of the property of the Company whether immovable or movable including all and every description of apparatus or appliances;

(xxv) To enter into partnership or into any arrangement for sharing or pooling of profits, amalgamation, union of interests, cooperation, joint venture, reciprocal concession or otherwise or amalgamate with any person or company carrying on or engaged in or about to carry on or engage in any business, or transaction which this Company is authorised to carry on or engage or in any business undertaking or transaction which may seem capable or being carried on or conducted so as directly or indirectly to benefit this company;

(xxvi) To pay for any properties, rights or privileges acquired by the Company, either in shares in this Company or partly in shares and partly in cash or otherwise;

(xxvii) To promote and undertake to formation of any institution or company for the purpose of acquiring all or any of the property and liabilities of this Company or for any other purpose which may seem directly or indirectly calculated to benefit this Company or from any subsidiary company or companies, to carry on any business which may seem capable of being carried on conveniently with the business or main objects of the Company and to acquire any interests in any Industry and undertaking;

(xxviii) To lend money or mortgage of immovable property or on hypothecation or pledge of movable property without security to such persons and on such terms as may seem expedient and in particular to customers and persons having dealing with the Company;

(xxix) To apply for purchase or otherwise acquire and protect prolong and renew, whether in India or elsewhere, any patents, patent rights, brevets inventions trademarks, designs, licences, protections and concessions and the like, conferring any exclusive, non exclusive or limited right to use, or any secret or other information or invention which may appear likely to be advantageous or useful to the Company and to use and turn to account and manufacture under or grant licences or privileges in respect of the same and to spend money in experimenting upon and testing and improving or seeking to improve any patents, patent rights, protection, inventions or rights which the Company may acquire or propose to acquire;

(xxx) To apply for, promote or obtain any act, order, rule, regulation, Charter, direction, authorisations, or privilege from any Government, Country, State Municipality, authority or

agencies for enabling the Company to obtain all powers and authorities necessary or expedient to carry out or extend any of the main objects or powers of the Company or for any other purpose which may seem expedient and to oppose any proceedings or applications which may seem calculated directly or indirectly to prejudice the Company's interest;

(xxxix) To enter into any arrangements with the Government of India or any Local or State Government in India or with the Government or any other State, Country or Dominion or with any authorities, local or otherwise or with any other persons, firms, Associations and Corporations that may seem conducive to the Company's objects or any of them and to obtain from them any rights, powers, privileges, licences, grants, authorisations. Charters and concessions which the Company may think it desirable to obtain and to carry out, exercise and comply with any such arrangements, rights, privileges and concessions;

(xxxvii) To adopt such means or making known the business of the Company or of any Company in which this Company is interested as may seem expedient and in particular by advertising in the press, radio, television and cinema, by circulars, by purchase and exhibition of works of art of interest, by publications and granting prizes, rewards, premia and donations by laying out field demonstrations and organising such other promotional activities as may deem necessary;

(xxxviii) To construct, execute, carry out, improve, work, develop, conveniences of all kinds, which expression in this Memorandum includes railways, tramways, ropeways, docks, harbours, piers, wharves, canals, reservoirs, embankments, irrigation, reclamation, improvement, sewage, drainage, sanitary, water, gas, electric light, telephonic, telegraphic and power supply works and hotels, warehouses, markets and buildings, which may be required from time to time for furtherance of main objects;

(xxxix) To apply for tender, purchase or otherwise acquire and contract and concessions for or in relation to the construction, execution, carrying out improvement management, administration or control of works and conveniences and to undertake, execute, carryout, dispose of or otherwise turn to account the same;

(xxxv) To guarantee the payment of money unsecured or secured, to guarantee or become sureties for the performance or any contracts or obligations;

(xxxvi) To acquire or hold shares in any undertaking or company, to acquire the right to use or manufacture and to put up telegraphs, telephones, phonographs, radio transmitting or receiving stations of sets, dynamos, accumulators and all apparatus in connection with the generation, accumulation, distributions, supply and employment of electricity or any power that can be

used as a substitute therefore, including all cable, wires or appliances for connecting apparatus at a distance with other apparatus, and including the formation of exchange or centres and

(xxxvii) To construct, maintain, lay down, carryout, work, self-let on hire and deal in telephonic and all kinds of works, machinery, apparatus, conveniences and in particular any cable, wires, lines, stations, exchanges, reservoirs, accumulators, lamps, meters, which may be required from time to time for furtherance of main objects.

C. OTHER OBJECTS

(i) To carry on in India and elsewhere the business of minors, contractors, merchants, importers, exporters and farmers in all their respective branches;

(ii) To purchase take on lease under license or concession or otherwise lands, buildings, works, mines, mineral deposits, mining rights, plantations, forests and any rights and privileges or interests therein and to explore, work, exercise, develop and to turn to account the same.

(iii) To carry on the business of manufacturers of and dealers in explosives ammunitions, fire-works and other explosive products and accessories of all kinds and of whatsoever composition and whether for military, sporting, mining, industrial or any other purpose;

(iv) To carry on the business of carriers by land, sea and air;

(v) To carry on the business of chemical, mechanical, civil and electrical engineering in all their branches in India or in any part of the world.

IV. The liability of the Members is limited;

*V. The Authorised Share Capital of the Company is INR 1,130,00,00,000 (Indian Rupees One Thousand One Hundred and Thirty Crores only) divided into 105,00,00,000 (One Hundred and Five Crores) Equity Shares of face value INR 10 (Indian Rupees Ten only) amounting to INR 1,050,00,00,000 (Indian Rupees One Thousand Fifty Crores only) and 80,00,000 (Eighty Lakhs) 7% non-cumulative redeemable preference shares of INR 100 each (Indian Rupees Hundred only), amounting to INR 80,00,00,000 (Indian Rupees Eighty Crores Only), with a power to increase or reduce the capital of the Company in accordance with the provisions of the Companies Act, 2013 and to classify or reclassify the Share Capital."

"The Authorised Share capital of the Company was amended pursuant to the Composite Scheme of Arrangement amongst Mangalore Chemicals & Fertilizers Limited, Paradeep Phosphates Limited and their respective shareholders and creditors as approved by the Hon'ble National Company Law Tribunal, Bengaluru Bench and Cuttack Bench vide their orders dated September 24, 2025 and September 26, 2025 respectively."

-7- Partanna

We, the several persons, whose names and addresses are subscribed, are desirous of being
 med into a Company in pursuance of this Memorandum of Association and we respectively agree to
 the number of shares in the capital of the Company set opposite our respective names :

Name, address, description and occupation of subscriber	No. of shares taken by each Subscriber	Signature of Subscriber	Name, address, description, occupation and Signature of witness
President of India through Sharan Mohan Kerkar S/o M.V. Kerkar Joint Secretary Ministry of Petroleum, Chemicals and Fertilizers (Department of Chemicals and Fertilizers) New Delhi	2 (Two) Equity Shares	S. M. Kerkar	Witness to all K. Venkataraman S/o Late K.V. Kerkar Agar K. Venkataraman K. Venkataraman Order Secretary Ministry of Petroleum, Chemicals & Fertilizers New Delhi Dy. Secy.
Virendra Kumar S/o Late Shri Dhyananjan Joint Secy and Financial Adviser, Ministry of Petroleum, Chemicals and Fertilizers (Department of Chemicals and Fertilizers), New Delhi	2 (Two) Equity Shares		
Subashin Jaish S/o I. D. Chacko Executive Director Indian Farmers Fertiliser Cooperative Limited, 34, Nehru Place, New Delhi.	1 (One) Equity Share	Subashin Jaish	
Total Shares taken	5 (Five) Equity Shares		

Dated the 23rd day of December 1981

Certified True Copy

For PARADEEP PHOSPHATES LTD

Suresh Krishnan

N. Suresh Krishnan
Managing Director

DIN 200021965

For Paradeep Phosphates Limited

Sachin Patil
Sachin Patil
Company Secretary

Quantitative Risk Assessment Study Report for Ammonia Horton Sphere Facility at Paradeep Phosphate Limited, Goa

Client	Paradeep Phosphates Limited
QRA Site location	Goa
Report issue date	26/07/2024
Report number	J1832 Rev. 02



<u>Contents</u>	<u>Page No.</u>
1. PROJECT DETAILS	4
Revision History	4
2. ABBREVIATIONS	5
3. EXECUTIVE SUMMARY	6
4. INTRODUCTION	8
4.1 Facility Description	8
5. OBJECTIVE AND SCOPE OF WORK	8
5.1 Objective	8
5.2 Scope of the Study	9
6. QRA METHODOLOGY	9
6.1 Introduction to QRA	9
6.2 Detailed Approach	11
6.2.1 Rules Sets and Assumptions	11
6.3 Hazard Identification	11
6.3.1 Enumeration and selection of incidents	12
6.3.2 Characterising the failures	12
6.4 Operating Parameters	12
6.5 Inventory	12
6.6 Loss of containment	13
6.7 Failure Cases	13
6.8 Consequence Analysis	13
6.9 Source Strength Parameters	14
7. INPUT DATA & RESULTS	16
7.1 Isolatable Sections	16
7.2 Inventory Analysis	18
7.3 Consequence Analysis	19
7.4 Frequency Analysis	25
8. RISK ASSESSMENT – FINDINGS	27
8.1 Location Specific Individual Risk	27
8.2 Individual Risk Per Annum (IRPA)	28
8.3 Societal Risk	30
9. Conclusion and Recommendations	31
9.1 Conclusion	31
9.2 Available Mitigation System	31
9.3 Observation during site visit	32
9.4 Recommendations	32
10. Consequence Contours:	34
10.1 PPL_ISO04	34
10.2 PPL_ISO03	37
10.3 PPL_ISO5	39
10.4 PPL_ISO01	42
11. REFERENCES	45
APPENDIX A Assumptions Register	46
Assumption 01 – Meteorological Data	46
Assumption 02 – Release Direction / Release Height	48
Assumption 03 – Representative Hole Sizes	49

Assumption 04 – Release Frequencies	50
Assumption 05 – Isolatable Section and Inventories	53
Assumption 06 – Isolation Time	54
Assumption 07 – Hazard Scenario	55
Assumption 08 – Ignition Probabilities	56
Assumption 09 – Representative Streams	57
Assumption 10 – Impact Criteria	58
Assumption 11 – Occupancy Data	61
Assumption 12 – Risk Acceptance Criteria	62
Assumption 13 – Consequence Models	65
APPENDIX B LEGAL DISCLAIMER AND LIABILITY	66

List of Tables

Table 6-1 Weather Parameters	15
Table 7-1 List of Scenario/ Isolatable Sections	16
Table 7-2 Inputs for the Isolatable Sections	17
Table 7-3 Inventory Calculation	18
Table 7-4 Consequence Analysis Results	19
Table 7-5 Representative hole sizes	25
Table 7-6 Failure Frequency for the isolatable sections (/year)	26
Table 8-1 IRPA and Risk Assessment	29
Table 2 Atmospheric Conditions of Vasco Da Gama, Goa	47
Table 3 Failure frequencies of pipes	50
Table 4 Failure frequencies of Road Tankers	50
Table 5 Failure frequencies of storage tanks	51
Table 6 Failure frequencies for stationary vessels	51
Table 7 Thermal Radiation Harm Criteria	58
Table 8 Vulnerability Criteria	58
Table 9 Overpressure Harm Criteria	59
Table 10 Occupancy Data	61
Table 11 Risk Criteria	62

	PARADEEP PHOSPHATES LIMITED, GOA UNIT	F&S-F-060 Rev No: 03 Date: 18.06.22
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Emergency Response Mock Drill Report

1. GENERAL DETAILS

1.1	Mock Drill No.	:	PPL/01/2025
1.2	Mock Drill Conducted on	:	20.06.2025
1.3	Plant /Installation	:	Ammonia
1.4	Previous Mock Drill Conducted on	:	31.12.2024
1.5	Overall Incharge	:	Mr. Suresh Pramanik (CMO & Unit Head)
1.6	Chief Coordinator	:	Mr. Srinivas Somalanka (GM- Production)
1.7	Site Coordinator	:	Mr. Sankalp Kulkarni (Jt.GM - Nitrogen)
1.8	Fire & Safety Coordinator	:	Mr. Govind Lotlikar (DGM – Fire, Safety& Training)
1.9	Fire & Safety Team Members	:	Mr. Rohit Shirate (Dy. M- F&S), Mr. Ketan Kale (AM – Fire & Safety), Mr. Pradipkumar Rajput (AM – Fire & Safety) & PPL Fire Fighting team
1.10	Medical Coordinator	:	Dr. Ajit Vaidya (Jt. GM – Medical)
1.11	Maintenance Coordinator	:	Mr. Shanmugam P (GM – Maintenance)
1.12	Environmental coordinator	:	Mr. Shrikant Tendulkar (M –Env)
1.13	Time of Incident	:	10:58 Hrs.
1.14	All Clear Time	:	11:21 Hrs.
1.15	Duration of Drill	:	23 Minutes

2. EMERGENCY RESPONSE MOCK DRILL DETAILS

2.1	Plant /Installation	:	Ammonia Unloading Station
2.2	Equipment Involved	:	Tanker flange on Station no. 2
2.3	Nature of Emergency/Text of Scenario	:	Ammonia leak

3. MUTUAL AID AND RESPONSE GROUPS CONTACTED /RESPONSE TIME

SN	Mutual Aid	Time Contacted	Time Reached	Response Time	Time Left site
3.1	None	-	-	-	-

	PARADEEP PHOSPHATES LIMITED, GOA UNIT	F&S-F-060 Rev No: 03 Date: 18.06.22
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4. RESPONSE TIME DURING EMERGENCY

Time	Actions Taken
10:58 Hrs	Call received from Ammonia control room stating that there is Ammonia leak at unloading station no. 2. On receiving the call, the Fire driver immediately informed the Safety Officer in charge & Main gate.
10:58 Hrs	After observing the prevailing wind direction both fire tender i.e., Water mist cum DCP tender & Water cum Foam Tender was mobilized along with crew (Safety Officer, Fire Driver, and guards 02 nos. respectively) to the affected site.
10:59 Hrs	Head guard took charge of the fire station, informing the Emergency Coordinator using Emergency Broadcast system & mobile phones.
10:59 Hrs	Fire crew reached the site, Site coordinator briefed the Firefighting crew about the situation & Fire & safety officer allotted responsibilities to Firefighting crew
11:00 Hrs	Security personals barricaded road and simultaneously all gates coming towards factory was closed.
11:03 Hrs	Firefighting team laid two hoses, one connected to a multipurpose branch and the other to a water curtain and commenced vapour suppression operations to mitigate the spread of ammonia vapours.
11:03 Hrs	Ambulance reached at site.
11:03 Hrs	Emergency Coordinators reported at the Emergency Control Centre
11:06 Hrs	Search & Rescue Team brought trapped technician from the control room and was sent to health center in ambulance. Same was reported the Site coordinator and same was conveyed to ECC.
11:14 Hrs	Maintenance & Safety person wearing encapsulated chemical suits and SCBA set approached the leaking flange and tightened the flange.
11:15 Hrs	Open drains near the DAP truck loading point were blocked to contain the ammonical water and prevent it from leaving the factory premises and was reported to ECC.
11:15 Hrs	Site Coordinator informed the ECC that leak is arrested at Ammonia tanker flange.
11:16 Hrs	Chief coordinator instructs to stop deluge system and fire hydrant branch & curtains.
11:17 Hrs	Head count of all assembly points were reported to ECC
11:19 Hrs	Environment Coordinator monitors the area with ammonia meter and reported to Chief coordinator that ammonia concentration is now below 25 ppm.

	PARADEEP PHOSPHATES LIMITED, GOA UNIT	F&S-F-060 Rev No: 03 Date: 18.06.22
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Time	Actions Taken
11:20 Hrs	Chief coordinator consulted with maintenance coordinator and Fire & Safety coordinator & gave all clear to ECC.
11:21 Hrs	All clear was declared from ECC after approval of Overall in-charge.

5. EFFICIENCY OF EQUIPMENTS OPERATED

SN	Equipment	Numbers	Performance observed / Remarks
5.1	Chemical suit	02	Satisfactory
5.2	Tychem 6000 suit	06	Satisfactory
5.3	SCBA set	04	Satisfactory
5.4	Portable Ammonia meter	01	Satisfactory
5.5	Fire hoses	04	Satisfactory
5.6	Multipurpose branch & water curtain	01 each	Satisfactory
5.7	Ammonia Canister with Full Face Mask	02	Satisfactory

6. Positive Observations by Observers and Mutual Aid Members

- 6.1 Communication of emergency reporting to Fire station was good.
- 6.2 Coordination between the site & ECC was good.
- 6.3 Response time of first responders and fire personnel was good.
- 6.4 Firefighting operation to mitigate the ammonia vapours was prompt & swift.

7. Suggestions & Points for Improvement by Observers and Mutual Aid Members

- 7.1 Wind direction also to be communicated with landmark of building/structures for easy understanding.
- 7.2 Traffic cone with flash lights to be procured for road barricading.

	PARADEEP PHOSPHATES LIMITED, GOA UNIT	F&S-F-060 Rev No: 03 Date: 18.06.22
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Emergency Response Mock Drill Report

1. GENERAL DETAILS

1.1	Mock Drill No.	: PPL/02/2025
1.2	Mock Drill Conducted on	: 22.12.2025
1.3	Plant /Installation	: Ammonia
1.4	Previous Mock Drill Conducted on	: 20.06.2025
1.5	Overall Incharge	: Mr. Suresh Pramanik (CMO & Unit Head)
1.6	Chief Coordinator	: Mr. Sankalp Kulkarni (Jt.GM - Nitrogen)
1.7	Site Coordinator	: Mr. Avinav Tiwari (CM - Ammonia)
1.8	Fire & Safety Coordinator	: Mr. Divyaprakash Bajpayee (DGM – Fire & Safety)
1.9	Fire & Safety Team Members	: Mr. Rohit Shirate (Dy. M- F&S) & PPL Fire Fighting team
1.10	Medical Coordinator	: Dr. Ajit Vaidya (Jt. GM – Medical)
1.11	Maintenance Coordinator	: Mr. Shanmugam P (GM – Maintenance)
1.12	Environmental coordinator	: Mr. Shrikant Tendulkar (M –Env)
1.13	Time of Incident	: 19:32 Hrs.
1.14	All Clear Time	: 19:57 Hrs.
1.15	Duration of Drill	: 25 Minutes

2. EMERGENCY RESPONSE MOCK DRILL DETAILS

2.1	Plant /Installation	: Ammonia Plant, Natural Gas (N.G) Skid
2.2	Equipment Involved	: PIC 1074 upstream flange
2.3	Nature of Emergency/Text of Scenario	: Fire due to simulated leakage of Natural Gas at the skid area, resulting in jet fire.

3. MUTUAL AID AND RESPONSE GROUPS CONTACTED /RESPONSE TIME

SN	Mutual Aid	Time Contacted	Time Reached	Response Time	Time Left site
3.1	None	-	-	-	-

4. RESPONSE TIME DURING EMERGENCY

Time	Actions Taken
19:32 Hrs	Call received from Ammonia control room stating that there is fire in NG skid area. On receiving the call, the Fire driver immediately informed the Safety Officer in charge & Main gate.



**PARADEEP PHOSPHATES LIMITED,
GOA UNIT**

F&S-F-060
Rev No: 03
Date: 18.06.22

Time	Actions Taken
19:33 Hrs	After observing the prevailing wind direction both fire tender i.e., Water mist cum DCP tender & Water cum Foam Tender were mobilized along with crew (Safety Officer, Fire Driver, and guards 02 nos. respectively) to the incident site.
19:34 Hrs	Head guard took charge of the fire station, informing the Emergency Coordinator using Emergency Broadcast system & mobile phones.
19:34 Hrs	Fire crew reached the site, Site coordinator briefed the firefighting team on the scenario and area conditions. Fire & safety officer allotted responsibilities to Firefighting crew.
19:36 Hrs	Firefighting team laid two stream hoses from different fire hydrants, one connected to a multipurpose branch and the other to a water curtain to cool adjacent equipment and prevent escalation. Dry Chemical Powder (DCP) system was kept standby.
19:37 Hrs	GAIL was informed to close the main valve of the NG line
19:37 Hrs	Emergency Coordinators reported at the Emergency Control Centre
19:38 Hrs	Search & Rescue Team safely evacuated the trapped technician from the affected area using Nomex suit and sent to Health Centre through Ambulance. The same was informed to the Site Coordinator and communicated to the Emergency Control Centre.
19:42 Hrs	Isolation of Natural Gas supply carried out by closing upstream at GAIL receiving terminal.
19:47 Hrs	Fire considered under control after effective isolation of gas source. Cooling continued to avoid re-ignition
19:49 Hrs	Environment Coordinator monitored the area for gas presence and confirmed safe conditions to Site Coordinator communicated to the Emergency Control Centre.
19:51 Hrs	Site coordinator instructs to shut off fire hydrant branch & curtains.
19:54 Hrs	Head count of all assembly points were reported to ECC.
19:56 Hrs	Chief coordinator consulted with maintenance coordinator and Fire & Safety coordinator & gave all clear to ECC.
19:57 Hrs	All clear was declared from ECC after approval of Overall in-charge.

	PARADEEP PHOSPHATES LIMITED, GOA UNIT	F&S-F-060 Rev No: 03 Date: 18.06.22
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5. EFFICIENCY OF EQUIPMENTS OPERATED

SN	Equipment	Numbers	Performance observed / Remarks
5.1	Fire retardant Nomex suit	02	Satisfactory
5.2	Portable LEL meter	02	Satisfactory
5.3	Fire hoses	09	Satisfactory
5.4	Multipurpose branch & water curtain	01 each	Satisfactory

6. Positive Observations by Observers and Mutual Aid Members:

- 6.1 Fire crew response time and approach strategy were satisfactory.
- 6.2 Coordination between the site & ECC was good.
- 6.3 Emergency reporting and communication to Fire Station and ECC was prompt.
- 6.4 Gas isolation and cooling actions were executed in a systematic and safe manner.

7. Suggestions & Points for Improvement by Observers and Mutual Aid Members:

- 7.1 Display of prominent emergency isolation valve signage at Natural Gas Skid area for quicker identification during emergencies.
- 7.2 Signages for assembly points to be improved.
- 7.3 Explore possibility for Installation of illuminated wind direction indicators for night-time emergencies.
- 7.4 Strengthen barricading and traffic control arrangements near the skid to prevent unauthorized entry during emergencies at night.



PHOTOGRAPHS

