PPL/Env. Mgt. /F-05/2025-26/79

29th November 2025

The Deputy Director General of Forest (C),
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office,
A/3, Chandrasekharpur,
Bhubaneswar -751023

Sub: Half Yearly EC compliance report for the period from April 2025 to September 2025.

Ref: i. Environment Clearance vide letter No. 11011/17/86-IA-II dated 23rd July 1990.

ii. Environment Clearance vide letter No.- J-11011/251/2003-IA.II (I) dated 02nd December 2004.

iii. Environment Clearance vide letter No. J-11011/370/2008-IA. II (I) dated 05th October 2010.

iv. Environment Clearance vide letter No. J-11011/370/2009-IA-II (I) dated 27th August 2020.

Respected Sir,

With Reference to the above subject & Environment Clearance, we are submitting herewith the half yearly compliance report for the period from April 2025 to September 2025 along with the relevant annexures for your kind perusal.

Thanking you

Yours faithfully,

For M/s Paradeep Phosphates Limited

29/11/25

Palanisamy Velusamy

Chief Manufacturing Officer & Unit Head

Encl: As above.

CC: 1.The Member Secretary, Central Pollution Control Board, Paribesh Bhawan, East Arjun Nagar, New Delhi -110032.

2.The Rigonal Director, Central Pollution Control Board, South end conclave, 5th Floor 1582, Rajdanga Main Road , Kolkata-700107

3.The Member Secretary, State, Pollution Control Board, Odisha, A/118, Nilkantha Nagar, Unit-VIII, Bhubaneswar -751012.

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Registered Office: Bayan Bhawan, Pt. J. N. Marg, Bhubaneswar -751001

HALF YEARLY
EC COMPLIANCE REPORT

For the period from April 2025 to September 2025

PARADEEP PHOSPHATES LIMITED
PARADEEP, JAGATSINGHPUR, ODISHA -754145

STATUS OF COMPLIANCE OF ENVIRONMENTAL CLEARANCE CONDITIONS
REF: LETTER No. 11011/17/86-IA-II; DATED. 23rd JULY 1990

Sl. No.	CONDITIONS	COMPLIANCE STATUS
1	The project authority must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government of Odisha.	We are strictly adhering to the stipulations made by the State Pollution Control Board, Odisha and the State Government of Odisha.
1.DAP PLANT :		
i	All stacks shall confirm to the prescribed norms of 150 mg/Nm^3	The stacks emissions (PM) are well within the prescribed limit. Please refer ***Appendix – A.***
ii	In exigency when waste water cannot be recycled shall discharge to effluent drain leading to the Effluent Treatment Plant.	Effluent is recycled to PAP through close pipeline in case of emergency effluent is being sent to ETP through close pipeline.
2.SULPHURIC ACID PLANT :		
i	Quantification of Sulphur muck generation, its use in DAP plant shall be done and submitted to the Board.	Quantity of Sulphur muck generation and utilization is being submitted to the State Pollution Control Board regularly on monthly basis. Please refer ***Annexure-I.***
ii	Sulphur Dioxide emission through stack shall not exceed 2 Kg/Ton of 100% concentrated acid produced.	SO_2 emission through stack is well within the prescribed limit. Please refer ***Appendix – A.***
3. PHOSPHORIC ACID PLANT :		
i	No effluent shall be discharged outside the premises of Phosphoric acid plant except Gypsum pond.	PPL has maintained the closed loop system from PAP Plant to Gypsum Pond and vice versa recycled back to PAP. The plant is not discharging any effluent to outside premises.
ii	The unit shall provide scrubbing arrangements for reduction of fluoride from the gaseous emission.	Scrubbing system has been provided for reduction of fluoride from the gaseous emission.
4.CAPTIVE POWER PLANT :		
1	DM plant waste water to be neutralized before discharge.	DM plant waste water is being recycled to PAP.
2	Any further expansion of the plant either with existing product or any new product can be taken up only with the prior approval of this Ministry.	Noted and Agreed.
3	The project authorities should come with a proposal for bringing the stack emission levels within standards. An action plan in this regard should be prepared and submitted to this Ministry within a period of one year.	Stack emissions level through all the plants are well within the prescribed standards of CPCB/OSPCB. Please refer ***Appendix – A.***
4	Adequate number (a minimum of 3 to 5) of air quality monitoring stations should be set up in the down-	The following online analysers have been installed in PPL. Details are as under:

	wind direction as well as where the maximum ground level concentration is anticipated. Also stack emission should be monitored by setting up automatic stack monitoring units.	1. Continuous Ambient Air Quality Monitoring Station -1 near Main gate (Time office). 2. Continuous Ambient Air Quality Monitoring Station -2 near Guest House 3. Continuous Ambient Air Quality Monitoring Station -3 near MOP Silo 4. Continuous Ambient Air Quality Monitoring Station -4 near Rock Silo. 5. Continuous stack emission monitoring analysers are installed at Diammonium Phosphate Plant, Sulphuric Acid Plant and Phosphoric acid plant.
5	There should be no change in the stack design without the approval of the State Pollution Control Board.	Noted.
6	A re-examination of the discharge into river should be undertaken at the time of operation of the plant, and if necessary relocation of discharge points into the coastal water should be envisaged.	PPL has installed a recycling arrangement of the treated water from ETP to PAP and for lime slurry preparation. Zero discharge is achieved at both storm drains during non -monsoon.
7	Cooling tower blow down along with spillages, floor washings etc. from Phosphoric acid plant may be fully treated.	Cooling water blow down of Phosphoric acid plant is recycled to Gypsum Pond in a closed circuit. Washings and spillages are re-circulated to reactor through Gypsum Pond.
8	A comprehensive waste water treatment for treating all the liquid effluents including domestic sewage should be set up.	Two numbers of waste water treatment plants namely Effluent Treatment Plant and Sewage Treatment Plant are in place to take care of the industrial effluent as well as domestic sewage respectively.
9	Routine Toxicity – Bioassay based on the effluent with fish and fish food organisms must be carried out at least once a year.	The Bio-assay study is conducted every year. Report for the year 2025 is enclosed as ***Annexure-II.***
10	Fluoride which present in the effluent should be recovered and converted into useful product within a period of two years, in order to meet the effluent standard stipulated by Orissa State Prevention and Control of Pollution Board.	The effluent generated from the PAP is being collected in the Gypsum Pond which is not allowed to go out of the closed circuit of Phosphoric acid plant; it is re-circulated in the process for recovery of P2O5 and fluorine.
11	Slurry water from ponds should be treated for removal of fluoride and phosphate before recycling.	Gypsum Pond water is being re-circulated in the process to recover phosphate and fluoride present in it. The recycling is an integral part of process.
12	The supernatant liquid from Gypsum Ponds at no stage should be allowed to escape into drains.	The water level in gypsum pond is properly maintained with free board to avoid any overflow of liquid and is recycled continuously

<table>
<tr><td></td><td></td><td>to PAP.</td></tr>
<tr><td>13</td><td>The treated effluent confirming to the prescribed standards should be utilized for green belt development to the maximum extent possible. The green belt should preferably be developed within the plant boundary.</td><td>Sewage effluent is treated in STP of 150 m^3/hr capacity and treated water quality is well within the prescribed limit. Water sprinkler system has been installed in the Township, plant gardens and lawns for utilization of treated water. PPL has planted massive plantation comprising around more than 7.2 lakhs trees within plant premises, colony area and road side. The Green Belt coverage area is achieved 40% of the total area. Please refer Annexure – III.

Treated effluent water quality monitoring report of STP is enclosed as Appendix – A.</td></tr>
<tr><td>14</td><td>A plan for complete utilization of gypsum should be worked out within 3 years and in the interim period. The gypsum has to be stored in ponds and a close monitoring of ground water in the vicinity of ponds has to be carried out.</td><td>Gypsum is being stored in the Gypsum Pond with proper stack management. Some of this is being sold to outside parties. Ten number of test wells have been constructed around Gypsum pond and close monitoring of ground water quality around Gypsum pond are being carried out. The sale figure of Gypsum /utilization for last six months are as follows;
<table>
<tr><th colspan="3">GYPSUM GENERATION, CONSUMPTION & SALE DETAILS</th></tr>
<tr><th>MONTH</th><th>GENERATION (MT)</th><th>CONSUMPTION/ SOLD (MT)</th></tr>
<tr><td>Apr-25</td><td>156100</td><td>112986</td></tr>
<tr><td>May-25</td><td>176150</td><td>129414</td></tr>
<tr><td>Jun-25</td><td>230950</td><td>133367</td></tr>
<tr><td>Jul-25</td><td>200450</td><td>130407</td></tr>
<tr><td>Aug-25</td><td>183200</td><td>109280</td></tr>
<tr><td>Sep-25</td><td>218150</td><td>107407</td></tr>
<tr><td>TOTAL</td><td>1165000</td><td>722861</td></tr>
</table>
Moreover, a Zypmite plant having capacity of 240 TPD is installed and commissioned for utilization of Gypsum. Also 1200 meters Road is made by Gypsum in consultation with CPCB and CRRI as a pilot project which has approved by IRC, Delhi.</td></tr>
<tr><td>15</td><td>A preliminary study on the radioactivity level in gypsum and its likely impact on the environment should be carried out within six months.</td><td>As per the MoEF&CC condition every shipment of rock phosphate along with its produced gypsum samples are being analyzed of U-238 & Ra -226. The test results are well within the norms and there is no impact on the environment. Please refer Annexure -IV.</td></tr>
</table>

16	A detailed risk analysis study should be undertaken. Disaster management plan should be prepared after risk assessment within six months.	Already Complied. Please refer ***Annexure-V.***
17	A separate Environment Management Cell with suitable qualified people to carry out various functions related to environmental management should be set up under the control of a Senior Technical Personnel who will report directly to the head of the organization.	A full-fledged Environment Management Section consisting of qualified personnel under a senior technical person has been set up for the periodical monitoring of all environmental related jobs in the plant.
18	The project authorities must set up a laboratory facility for collection and analysis of samples under the supervision of competent technical personnel who will directly report to the Chief Executive.	A well-equipped and full-fledged Environment Management laboratory with NABL accreditation is set up with latest and sophisticated modern analytical instruments for the measurement and analysis of Environmental parameters. The results are informed to the top management as well as the concerned in charge.
19	The project authority will provide adequate funds for environmental control measures along with implementation schedule for all the conditions stipulated above.	Adequate funds have been provided for environmental control measures.
20	The Ministry or any other competent authority may stipulate any further condition after reviewing the impact assessment report or any other reports prepared by the project authority.	Noted.
21	The Ministry may revoke clearance if implementation of the stipulated conditions is not satisfactory.	Noted.
22	The above conditions will be enforced interalia under the Water (Prevention and Control of Pollution) Act, 1974, The Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986 along with their amendments.	Noted.

STATUS OF COMPLIANCE OF ENVIRONMENTAL CLEARANCE CONDITIONS FOR RETROFITTING OF PHOSPHORIC ACID PLANT (PAP) FROM 750MTPD TO 1400MTPD & INSTALLATION OF ADDITIONAL TRAIN OF 2000 MTPD SULPHURIC ACID PLANT
REF: LETTER No- J-11011/251/2003-IA.II (I); DATED. 02nd DECEMBER 2004

A. Specific Conditions:

Sl. No.	CONDITIONS	COMPLIANCE STATUS
1	The gaseous emissions from various process units should conform to the standards prescribed by the concerned authorities from time to time. The State Pollution Control Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission levels should go beyond the prescribed standards. In the event of failure of pollution control system (s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	Being Complied. Gaseous emission level from various process units of the Plant confirms the prescribed norms of CPCB/OSPCB. Adequate air pollution control devices are installed and commissioned to take care of the gaseous emissions. Monitoring report of gaseous emission from various process units is enclosed as ***Appendix-A.***
2	The effluent generation shall not exceed 1860 m3/d in the proposed expansion. The company shall totally utilize the treated effluent by undertaking recycling/ reuse measures. In the existing plant, the waste water generation shall be 1632m3/d. The waste water after treatment after confirming to the prescribed standards shall be discharged into Atharabanki river. The company shall construct guard pond at the outlet of treatment plant before final discharge of effluent into Atharabanki river. The Bio-assay test should be carried out to assess the toxicity of the treated waste water. The treated sewage should be utilized for green belt development.	Effluent generated from plant is treated in ETP and treated water quality is well within the prescribed limit. Treated water is being used in PAP. Zero liquid discharge is maintained during non –monsoon. Treated sewage is being utilized for green belt development. The Bio-assay study is conducted every year. Report for the year 2025 is to be provided in the next Half yearly report.
3	The company shall achieve SO_2 emission of 1Kg/Ton of Sulphuric acid produced. The acid mist emission should confirm to the prescribed standard of 50 mg/Nm3. The stack height for the Sulphuric acid plant shall be provided as per the guidelines and on the basis of normal plant operations. The scrubbed gases should be let out at the same height of the plant.	The plant is designed to achieve SO_2 emission less than 1Kg/Ton of Sulphuric acid produced and maintains the same accordingly. The acid mist emission is well within the prescribed limit of 50 mg/Nm3. Pl refer ***Appendix-A***. The stack height for the Sulphuric acid plant has been designed as per the guidelines which is 120 meter height from the ground level. The scrubbed gas passes through the same.
4	To control the total fluoride emission within the prescribed standards of 25mg/Nm3 in the Phosphoric acid plant, the company shall provide fume scrubber system to scrub the fluoride.	Fumes Scrubber has already been installed and commissioned to control the fluoride emission in the Phosphoric acid plant. We are regularly monitoring the fluoride in the stack and results are found well within the prescribed standard, Pl refer ***Appendix – A.***

		 Fumes Scrubber
5	The company shall explore the possibility and technical feasibility of treating Hydrofluorosilisic acid and intimate to this Ministry.	The plant has been installed and commissioned the Fluorine Recovery Unit (FRU) to take care of Hydrofluorosilisic acid.
6	The company shall continuously monitor the SO2 emission in both the Sulphuric acid plant streams at the same time. The emission from the Sulphuric acid plant shall be controlled by installation of alkali scrubber. Monitoring of SO2 and fluorine should be carried out continuously as per the Central Pollution Control Board guidelines.	SO_2 emission level is being monitored through online continuous SO_2 analyzer and real time data is being transmitted to the OSPCB and CPCB server. Alkali scrubber has been provided to control emission from Sulphuric acid plant. Online HF analyzer has been installed and commissioned in Phosphoric acid plant stack.
7	Waste heat generated during Sulphur burning shall be utilized for power generation	In Sulphuric acid Plant during Sulphur burning, the waste heat is being recovered through waste heat recovery boiler for power generation.
8	The gypsum pond shall be provided with proper lining at the bottom as well as side of the dykes. Accumulated gypsum shall be properly capped. The low –lying areas in the south of gypsum pond should be rehabilitated. The Sulphur muck should be disposed off in the impervious lined pit. The project should take immediate measures to remove the gypsum from the channels in the existing ponds so that adequate space in the channel is available for leachate collection especially during monsoon. The leachate should be sent to ETP for further treatment. Further a new gypsum storage pond properly lined with HDPE along with drainage channel should be constructed for gypsum disposal. The ground water quality around the gypsum disposal area should be monitored and data submitted to the Ministry.	The Sulphur muck is being reused in DAP plant as filler. The old gypsum pond -1 is not in use. Gypsum Pond -2 has been constructed with HDPE lining as per guidelines of CPCB guideline which in operation. PPL is selling gypsum to cement industries and gypsum board factories. In addition to this PPL has been installed and commissioned the 240 TPD Zypmite plant for utilization of gypsum.

9	Green belt of adequate width and density in 25% of the plant area should be provided to mitigate the effects of fugitive emission all around the plant. The development of green belt should be consultation with the DFO as per the CPCB guidelines.	PPL has planted massive plantation comprising around more than 7.2 lakhs trees within plant premises, colony area and road side. The Green Belt coverage area is achieved 40% of the total area. Please refer ***Annexure-III.***
10	The company should take measures for the harvesting of rain water to recharge the ground water.	The average ground water table in the project area is 2 to 3 meters below ground level. During rainy season almost all open area are submerged. PPL has number of open ponds inside PPL Township which naturally receive surface runoff of the township area during rainy season and recharge the ground water.
11	Recommendations made in the Risk Assessment report for the risk mitigation should be strictly complied with.	Already Complied. Please refer ***Annexure -V.***
B. General Conditions:		
Sl. No.	CONDITIONS	COMPLIANCE STATUS
1	The project authority shall strictly adhere to the stipulations of the Orissa Pollution Control Board.	The plant is strictly adhering to all stipulations of statutory bodies relevant to the plant.
2	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 alteration in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted.
3	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January,2000. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety inspectorate etc. must be obtained.	We are strictly complying with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000.
4	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of Hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 2003.Authorisation from State	The Plant is being complied with the rules and regulations concerning handling and disposal of Hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 2003.

	Pollution Control Board must be obtained for collection/treatment/storage /disposal of hazardous wastes.	Authorisation obtained from OSPCB, Odisha vide no - IND-IV-HW-02/68/2, dated 31.03.2025 is valid up to 31-03-2027.
5	The overall noise levels in and around the plant area should be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should confirm to the standards prescribed under EPA rules,1989 viz. 75dBA(day time and 70 dBA (night time).	Necessary measures are taken by the Plant to keep the work zone and ambient noise level well within the limit. Noise monitoring report is enclosed as ***Appendix – A.***
6	Occupational health surveillance programme should be undertaken as regular exercise for all the employees, especially for those engaged in handling hazardous substances. The first Aid facility in the occupational health centre should be strengthened and the medical records of each employee should be maintained separately.	Occupational health surveillance of the workers is being carried out on a regular basis and records are being maintained. During the year 2024-25 medical checkup has been done for 669 Nos. of Employees and 2656 Nos. of contract workers.
7	The project proponent should have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction,, education of children ,festivals , health centre sanitation facilities , drinking water supply community awareness and employment to local people whenever and wherever possible both for technical and nontechnical jobs .	M/s. PPL has taken various initiatives for the socio-economic development of its surrounding villages. CSR report for the year 2025-26 shall be submitted in the next half year report.
8	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and Risk Analysis Report.	Already Complied. Please refer ***Annexure -V.***
9	A separate Environment management cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions.	Environment management cell with full-fledged laboratory facilities is already in place.
10	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment & Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purpose.	M/s. PPL has provided adequate funds and no fund is diverted to any other purpose.

11	The implementation of the project vis-a-vis environmental action plans will be monitored by Ministry's Regional Office at Bhubaneswar / State Pollution Control Board / Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	We are submitting six monthly compliance status report to Ministry's regional office at Bhubaneswar/ State Pollution Control Board/ Central Pollution Control Board.
12	The project proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in .This should be advertised within seven days from the date of issue of the clearance letter at least in two local News papers 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 should be forwarded to the Regional office .	Already Complied.
13	The project authorities should inform the Regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work if any.	Already Complied.

COMPLIANCE OF CONDITIONS OF ENVIRONMENT CLEARANCE FOR ENHANCEMENT OF PRODUCTION CAPACITY
REF: LETTER No - J-11011/370/2008-IA.II (I); DATED. 05th OCTOBER 2010

A. Specific Conditions:

Sl. No.	Conditions	Compliance status
1	The company shall comply with all the conditions stipulated in the environmental clearance issued vide letter no. J -11011/17/86-IA-II dated 23rd July ,1990.	We are submitting herewith the separate compliance status of environmental clearance issued vide letter no. J -11011/17/86-IA-II dated 23rd July, 1990.
2	On line SO2, NOx and NH3 analyzer shall be installed to monitor ambient air. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. Nom 826(E) dated 16th November, 2009 shall be followed.	On line Ambient Air Quality monitoring stations for SO2, NOx and NH3 have been installed and commissioned. The real time data thus generated is meeting the prescribed standards. Please refer ***Appendix – A.***
3	The gaseous emissions (PM2.5, PM10, SO2, NOx, HCl, and NH3 and urea dust) from various units shall conform to the prescribed standards. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system (s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	We are strictly monitoring the gaseous emissions from various units. It is observed that the emission levels are well within norms. Please refer ***Appendix – A.*** Monitoring of parameters like HCL & Urea dust are not applicable to our Industry since we are not manufacturing Urea.
4	As proposed, wet scrubbing system to DAP and Alkali scrubbing system to PAP plant shall be provided to control fluoride and emissions. Cyclones, Venturi scrubbers and mist eliminators along with stack of adequate height shall be provided to DAP plant to control particulate emissions. Alkali scrubber shall be provided to Sap unit to control SO2 and SO3 .V2O5 catalyst and candle filters shall be provided to SAP unit to improve efficiency and reduce emissions. PM2.5, PM10, SO2, NOx, HCl,NH3 and fertilizer dust emissions shall be monitored.	Wet scrubbing system at DAP plant, fumes scrubbing system at PAP Plant have been installed and commissioned to control fluoride and emissions. Cyclones, Venturi scrubbers and mist eliminators along with stack of adequate height have been provided to DAP plant to control particulate emission. Alkali scrubber has been installed and commissioned in SAP Plant to control SO_2 and SO_3.
5	Double Contact Double Absorption (DCDA) process shall be adopted in Sulfuric Acid Plant (SAP). Continuous SO2 monitoring system shall be provided in the stack of SAP unit. Fluorine Recovery Unit (FRU) shall be installed for recovering Fluoro- silicic acid and fluoride levels shall be monitored in ambient air.	Double Contact Double Absorption (DCDA) process has been adopted in Sulfuric Acid Plant (SAP). Continuous SO_2 monitoring system in stack of SAP unit has been provided. Fluorine Recovery Unit (FRU) has been installed and commissioned.

6	Fugitive emissions from different sources shall be controlled, regularly monitored and reports submitted to the Regional Office at Bhubaneswar. To control fugitive emissions, regular monitoring of sub floor environment shall be carried .Leakages in form of gases, liquid and dust emission shall be checked and mitigative measures taken. The company shall provide de-dusting system at all the transfer points in the bagging system.	Bag filters are installed at all the transfer points from Jetty to Plant to control fugitive emissions. We are monitoring fugitive emissions from different sources regularly. The six monthly monitoring report is herewith enclosed as ***Appendix - A***.
7	The company shall upload the status of compliance of the stipulated environmental clearance conditions including results of monitored data on its web site 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 Orissa Pollution Control Board . The levels of RSPM (PM10,PM2.5), NH3 and NOx (ambient levels) and emissions from the stacks shall be monitored and displayed at a convenient location near the main gate of the company and at important public places.	Compliance status of the stipulated environmental clearance conditions including results of monitored data is being uploaded on our company web site. The same data is being submitted to Regional office of MoEF, CPCB and State Pollution Control Board Odisha respectively. We are monitoring the levels of RSPM (PM10, PM2.5), NH3 and NOx (ambient levels) and emissions from the stacks. The same data are being displayed at our main gate of the company through electronic digital display board.
8	Specific energy consumption shall not exceed 5.127G.cal/MT of Urea production. Optimization of cycle of concentration (COC) to 6 and blow down frequency from the cooling towers shall be reduced.	This condition is not applicable to our industry since we are not manufacturing Urea.
9	Steam stripping system shall be installed in the ammonia plant to recover ammonia as well as bottom water from condensate.	This condition is not applicable to our industry since we are not manufacturing ammonia
10	Total water requirement from Taladanda Canal shall not exceed 15,000 m3 /day and prior permission shall be obtained for drawl of water from the competent authority. A copy of permission shall be submitted to the Ministry's Regional Office at Bhubaneswar within 3 months of issue of environment clearance letter.	Agreement letter regarding drawl of water from water resources department, Govt. of Odisha is enclosed as ***Annexure-VI***.
11	All the pond water shall be completely recycled and reused. Zero discharge shall be adopted and no waste water shall be discharged outside the premises.	We are recycling all the Gypsum Pond water to process. Effluent Treatment Plant has been installed for treatment of waste water. Zero discharge is adopted and no waste water is being discharged outside the premises.
12	The specific water consumption and waste water generation shall not exceed 5.1 m3/MT of urea and 0.9 m3/MT of urea respectively. Accordingly the company shall undertake measures for water conservation.	This condition is not applicable to our industry since we are not manufacturing Urea.

13	The waste water from Phosphoric acid Plant (gypsum slurry) shall be sent to gypsum pond. The overflow from PAP, DAP plant, Offsite and entire effluent from SAP shall be treated in effluent treatment plant (ETP). The waste water from Captive Power Plant (CPP) shall be treated in neutralization tank. Waste water from the existing Gypsum pond shall be pumped to ETP for further treatment. Treated water from ETP shall be reused in Ball Mill of PAP .The Sewage and all other effluents shall treated in the Sewage treatment plant (STP) and used for green belt development after meeting the norms specified by CPCB and OSPCB.	We are sending the waste water from Phosphoric acid Plant (gypsum slurry) to gypsum pond. The washings from PAP, DAP plant, Offsite and entire effluent from SAP is being treated in effluent treatment plant (ETP) and treated water is used in Ball mill of PAP. The waste water from Captive Power Plant (CPP) is being treated in neutralization tank. STP has been provided for sewage effluent treatment and treated water is being reused for green belt development after meeting the norms specified by CPCB and OSPCB.
14	Ground water shall be monitored in around the project site through peizometer wells as per CPCB guidelines.	Piezometers are installed and ground water is being monitored.
15	Another gypsum pond with protective liner shall be constructed as per recommendations of NEERI as per CPCB guidelines.	New gypsum pond is constructed with protective liner (HDPE) as per CPCB guidelines.
16	Phospho gypsum shall be sold to cement manufacturers or a granulation plant shall be installed as proposed to utilize Phospho gypsum.	Phospho gypsum is sold to cement manufacturers. We have installed Zypmite plant of capacity 240 TPD and received Consent to Operate. The plant is running successfully.
17	Spent Catalyst (V_2O_5) shall be properly stored as per the CPCB guide lines and disposed off to TSDF. Sulfur muck and ETP sludge shall be reused in-house as filler in DAP plant. Spent resin from DM plant shall be sold to authorized agency. Used or spent oil shall be disposed off to authorized re-processor.	Spent Catalyst and Spent Resin has been properly stored and disposed off in PPL Engineering Landfill area. We are reusing Sulfur muck and ETP sludge in-house in DAP plant. Used oil is being disposed to authorized re-cycler/re-processor.
18	As proposed green belt shall be developed in 854 acres (37%) out of 2282.4 acres.	PPL has planted massive plantation comprising around more than 7 lakhs trees within plant premises, colony area and road side. The plant has installed water sprinkler system in the Township, plant gardens and lawns. The Green coverage area is achieved 40% of the total area. Please refer ***Annexure-III.***
19	Action plan prepared for the complete remediation of the site shall be implemented in consultation with NEERI within 5 years of the issue of this environment clearance and six monthly report submitted to the Ministry and its Regional Office at Bhubaneswar.	Already Complied. Please refer ***Annexure-VII.***

20	All recommendation mentioned in the risk assessment report shall be implemented in a time bound manner and an action plan shall be prepared and submitted to the Ministry and its Regional Office at Bhubaneswar.	Complied. Please refer ***Annexure -V.***
21	Risk analysis shall be done again after one year and report submitted to the Ministry and its Regional Office at Bhubaneswar. Efforts shall also be made to reduce risk mentioned in the risk assessment report.	Complied. Please refer ***Annexure -V.***
22	The ammonia unloading arms in the jetty shall be provide with "Quick release couplings" for automatic disconnection of ships from unloading arm during unloading in case of bad weather.	"Quick release coupling" has already been provided in ammonia unloading arms in the jetty.
23	Total quantity of ammonia storage in the plant shall not exceed 40,000Tons at a time.	Total quantity of ammonia storage in the plant is not exceeding 40,000Tons at a time.
24	The company shall undertake adequate protection measures for handling of ammonia vapor in case of plant upset condition. Safety valve exhaust and drains shall be connected to flare and vent stack. During transfer of materials spillage shall be avoided and garland drains shall be constructed to avoid mixing of accidental spillage with domestic waste and storm drains.	Ammonia flare system is installed and commissioned for handling of ammonia vapor in case of plant upset. Safety valve exhaust and drains has been connected to flare and vent stack. Garland drains have been constructed to avoid mixing of accidental spillage with domestic waste and storm drains.
25	The company shall make the arrangement for protection of possible fire hazards as per OISD 117 during manufacturing process in material handling.	We have full phase Fire & safety department along will state -of -art equipment, facilities to protect all possible fire hazards as per OISD 117 during manufacturing process in material handling.
26	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.	Occupational health surveillance of the workers is being carried out on a regular basis and records are being maintained. During the year 2024-25 medical checkup has been done for 669 Nos. of Employees and 2656 Nos. of contract workers.
27	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for fertilizer industries shall be implemented.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for fertilizer industries have been implemented. Please refer ***Annexure -VIII.***
28	Provision shall be made for the housing of construction labor 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.	Complied.

B. General Conditions:

Sl. No.	CONDITIONS	COMPLIANCE STATUS
1.	The project authority shall strictly adhere to the stipulations of the Orissa Pollution Control Board (OPCB) / State Government or any statutory body.	We are strictly adhering to all stipulations of the statutory bodies relevant to our plant.
2	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 alteration in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted and agreed.
3	The gaseous emissions (SO2, HCl, NOx, NH3, fertilizer dust) and particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time, Emission data shall be periodically monitored and reports submitted to Ministry's Regional office at Bhubaneswar, CPCB and OPCB.	We are strictly monitoring the gaseous emissions ($PM_{2.5}$, PM_{10}, SO_2, NO_x and NH_3, fertilizer dust) from various units. Results of the same are well within the prescribed standards. Half yearly reports are being submitted to the Ministry's Regional office at Bhubaneswar, CPCB and OPCB. Monitoring of HCL is not applicable to us.
4	All the waste waters generated from the various processes shall be recycled/reused in the plant and zero discharge shall be maintained. The domestic waste water shall be treated in septic tanks and treated waste shall be used for irrigation in the green belt.	All the waste water generated from DAP plant is recycled to process itself. Further, adequate Effluent Treatment Plant has been provided to treat all the waste water from other processes and the treated water is being used in the plant. STP has also been provided to treat the domestic waste water and treated water is used for greenbelt development.
5	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.	It is being complied.
6	The locations of ambient air quality monitoring stations shall be reviewed in consultation with the OPCB and additional stations shall be installed, if required, in the down wind direction as well as where maximum ground level concentrations are anticipated.	We have already reviewed the existing locations in consultation with the SPCB Odisha officials and four Nos. of online AAQMS (Ambient air quality monitoring station) have been installed.

7	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.	Scrubber and appropriate height of stacks are provided as per CPCB guidelines for control of emissions. All scrubbed water is taken to ETP for further treatment.
8	All the storage tanks will be under negative pressure to avoid any leakage. Breather valves, N2 Blanketing and secondary condensers with brine chilling system shall be provided for all the storage tanks to minimize vapor losses. All liquid raw materials shall be stored in Storage Tanks and drums.	All the Storage Tanks are operated and maintained as per design parameters & conditions provided by the manufacturer. All liquid raw materials are stored in Storage Tanks and drums.
9	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 substitute in other processes. ➢ Use of automated filling to minimize spillage. ➢ Use of closed feed system into batch reactors. ➢ Venting equipment through vapor recovery system ➢ Use of high pressure hoses for equipment cleaning to reduce waste water generation.	Waste Material taken as filler in DAP plant are Sulphur Muck, Storm water drain sludge & ETP sludge. New initiatives have been implemented to minimize the waste.
10	Fugitive emissions in work zone environment, product and raw material storage area shall be regularly monitored. The emissions shall conform to the limits imposed by the State Pollution Control Boards/ Central Pollution Control Board.	We are regularly monitoring the fugitive emissions. Results of the same are within the prescribed standards. Last six months data for the same is mentioned under special condition no.6 as above.
11	The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 as amended time to time.	We are abiding by all the rules as mentioned under Manufacture. Storage and Import of Hazardous Chemicals Rules, 1989 and Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 as amended time to time.
12	The overall noise levels in and around the plant area shall be kept well within the standards by noise control measures including acoustic hoods , silencers, enclosures etc. on all sources of noise generation. The ambient noise level shall conform to the standards prescribed under Environment (Protection) Act' 1986 Rules' 1989 viz. 75dBA (day time) and 70 dBA (night time).	Stationary noise levels are being monitored at different locations of the plant. Acoustic hoods, silencers, enclosures etc. are provided to control the noise level. Monitoring data of Ambient & Work Zone noise levels is enclosed here with as ***Appendix – A***.

13	The company shall develop rain water harvesting structures to harvest the runoff water for recharge of ground water.	The average ground water table in the project area is 2 to 3 meters below ground level. During rainy season almost all open area are submerged. PPL has number of open ponds inside PPL Township that naturally receive surface runoff of the township area during rainy season and recharge the ground water.
14	The company shall undertake eco developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco development plan should be submitted to the SPCB within three months of receipt of this letter for approval.	Complied
15	A separate Environment management cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions.	Environment management cell is already in place with full-fledged laboratory facilities. It carries out all relevant Environmental Management and monitoring functions. Our Environment laboratory is also NABL accredited.
16	As proposed, Rs 25.02 Crores and Rs 1.24 Crores shall be ear marked towards capital cost and recurring cost / annum for pollution control measures 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 therein. The funds so provided shall not be diverted for any other purpose.	Noted and being complied.
17	The implementation of the project vis-à-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry / OPCB/CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the website of the company.	We are submitting six monthly compliance status reports to MoEF&CC, OSPCB, CPCB and uploading the same data in website of the company.
18	A copy of the clearance letter shall be sent by the proponent to the 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.	Already Complied.
19	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 in hard copies as well as by	It is being complied.

	e mail) to the respective Regional Office of MoEF&CC, the respective zonal office of CPCB and the Orissa Pollution Control Board.	
20	The environmental Statement for each financial year ending 31st March in Form-V as is mandated shall be submitted 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 along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional offices of MoEF by e-mail.	The environmental Statement for each financial year ending 31st March in Form-V is being submitted to the State Pollution Control Board Odisha and the same is being displayed in the company website.
21	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 OPCB/Committee and may also be seen at website of the Ministry at http:/envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional office of the Ministry.	Complied.
22	The project authority 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.	Already Complied.

COMPLIANCE TO THE CONDITIONS OF ENVIRONMENT CLEARANCE FOR EXPANSION OF FERTILIZER MANUFACTURING UNIT BY M/s. PARADEEP PHOSPHATE LIMITED AT PPL TOWNSHIP, DISTRICT – JAGATSINGHPUR, ORISSA.
REF: LETTER No - J-11011/370/2009-IA-II (I); DATED. 27th AUGUST 2020

A. Specific Conditions:

Sl. No.	CONDITIONS	COMPLIANCE STATUS
1.	The Company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	It is being complied.
2.	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises. Treated effluent shall be reused in the process/utilities. Treated Industrial effluent shall not be used for gardening /green belt development/horticulture.	Zero Liquid Discharge is being maintained and treated effluent is used reused in the process. No waste/treated water is discharged outside the premises.
3.	Continuous Online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge & the pollutants concentration and the data to be transmitted to the CPCB & SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.	Continuous Online (24x7) monitoring system for stack emission, flue gas effluent for the completed projects are installed and real time monitoring data is transmitted to OSPCB/CPCB server.
4.	Total fresh water requirement shall not exceed 1276 cum/hr, proposed to be met from the Taladanda Canal. Prior permission in this regards shall be obtained from the concerned regulatory authority.	Noted. Total fresh water quantity shall not exceed 1276 cum/hr.
5.	Process effluent/any waste water shall not be allow to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.	Process effluent is not allowed to mix with storm water. Storm water is separated from effluent system.
6.	Occupational health center for surveillance of the worker's health shall be set up. The health data shall be used in deploying the duties of the workers. All workers and employees shall be provided with required safety kits/mask for personal protection.	Occupational health center for surveillance of the worker's health has set up. The health data is used in deploying the duties of the workers. All the required PPE's are provided for workers & employees.

7.	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Safety and visual reality training shall be provided to employees.	Training is imparted to all employees on safety and health aspects of chemicals handling. Safety and visual reality training is also provided to employees on regular basis.
8.	The unit shall make arrangements for protection of possible fire hazards during manufacturing process in material handling. Fire-fighting systems shall be as per the norms.	Arrangements are made for protection of possible fire hazards. Firefighting systems are implemented as per the norms.
9.	The Project Proponent shall undertake waste minimization measures as below: (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 substitutes in other processes, (c) Use of automated filling to minimize spillage, (d) Use of close feed system into batch reactors, (e) Venting equipment through vapor recovery system, (f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.	Noted and being complied.
10.	The green belt of at least 5 -10 m width shall be developed in nearly 33% of the total project area, mainly along the plant periphery. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department. Records of the tree canopy shall be monitored through remote sensing map.	The plant has developed greenbelt more than 40% of the total area with plant species in consultation with the Forest dept.
11.	As committed Rs. 27.64 Crores shall be allocated for Corporate Environment Responsibility (CER), and shall be utilized for meeting the commitment of issues raised during public consultation / hearing. The CER plan shall be completed before commissioning/expansion of the project.	Noted, allocated fund shall not be diverted for any other purpose.
12.	A separate Environmental Management Cell (having qualified person with Environmental Science/ Environmental Engineering/ specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the environmental management and monitoring functions.	A separate Environmental Management Cell (having qualified person with Environmental Science/ Environmental Engineering/ specialization) equipped with full-fledged NABL accredited laboratory is in place to carry out the environmental management and monitoring functions.
13.	The Project Proponent shall implement site specific conservation plan and wild life management plan for the presence of Schedule - 1 species in the study area. The recommendations shall be implemented in consultation with the State Forest/Wildlife Department in a time bound manner.	Noted.

14.	The Project Proponent has agreed to install 1 MW Solar Power Unit.	Noted and agreed, presently 256 KW Solar Power Unit has installed and 1 MW solar power in under process.
B. <u>General Conditions</u>:		
Sl. No.	CONDITIONS	COMPLIANCE STATUS
1.	No further expansion or modifications in the plant other that mentioned in EIA Notification, 2006 and its amendments shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. In case of deviations or alternations in the project proposal from those submitted to the Ministry/SEIAA, as applicable, to access the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable.
2.	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.	Complied.
3.	The overall noise levels in and around 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 level shall conform to the standards prescribed under the Environment (Protection) Act, 1986, Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	It is being maintained. Pl refer ***Appendix -A***
4.	The company shall undertake all relevant measures for improving the Socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administrations and shall be implemented. The company shall undertake eco- developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Noted and being implemented.
5.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose	It is being complied. The earmarked funds for environment management/ pollution control measures are not diverted for any other purpose.

6.	A copy of clearance letter shall be sent by the project proponent to the concerned Panchayat, Zila parishad/municipal corporation, urban local body and the NGO, if any from whom suggestions/ representations, if any, were received while processing the proposal.	Complied.
7.	The project proponent shall also submit six monthly on the status of compliance of the stipulated Environmental Clearance conditions including result of monitoring data (both in hard copies as well as e-mail) to the respective Regional Office of MOEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.	Being complied.
8.	The Environmental Statement for each financial year ending 31st March in FORM - V as is mandated shall be submitted 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 along with the status of compliance of the Environmental Clearance conditions and shall also be sent to the respective Regional Offices of MOEF&CC by e-mail.	Being complied.
9.	The project proponent shall inform the public that the project has been accorded Environmental Clearance by the Ministry and the copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of Ministry and at https://parivesh.nic.in/. This shall be advertise 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.	Already published in newspaper as under  **PARADEEP PHOSPHATES LIMITED** Pt. Jawaharlal Nehru Marg, Bhubaneswar - 751 001 **PUBLIC NOTICE** This has to inform all that M/s Paradeep Phosphates Limited has received Environment Clearance from Ministry of Environment, Forest and Climate Change for expansion of its Fertilizer manufacturing unit for existing **DAP Plant** from 1.5MMTPA to 1.9MMTPA and new **Coal Handling Plant** of 7.0MMTPA, **Ammonia Plant** of 2.178 MMTPA, **Urea Plant** of 1.3MMTPA, **Ammonium Nitrate Plant** of 0.35MMTPA, **Nitric Acid Plant** of 0.33(0.05MMTPA Conc.Nit.Acid), **GSSP Plant** of 0.5 MMTPA and **Aluminium Fluoride Plant** of 9500 MMTPA. The copy of the clearance letter is available with OSPCB / Committee and also may be seen at website of the Ministry **www.moef.gov.in** and at **https://parivesh.nic.in/**  **PARADEEP PHOSPHATES LIMITED** Pt. Jawaharlal Nehru Marg, Bhubaneswar - 751 001 **ସର୍ବସାଧାରଣ ସୂଚନା** ଏତଦ୍ଦ୍ୱାରା ସର୍ବସାଧାରଣଙ୍କ ସୂଚନାକୁ ନିମନ୍ତେ ଜଣାଇ ଦିଆଯାଉଛି ଯି, ମେସର୍ସ ପାରାଦୀପ ଫସ୍ଫେଟସ୍ ଲିମିଟେଡ୍ ତା'ର ସାର ନିର୍ମାଣ ପ୍ରକଳ୍ପର ବର୍ତ୍ତମାନ ଥିବା ଡି.ଏ.ପି ପ୍ଲାଣ୍ଟର ୧.୫ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ରୁ ୧.୯ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ରୁ ଜମତା ବୃଦ୍ଧି ଏବଂ ନୂତନ ୭.୦ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ବିଶିଷ୍ଟ କୋଇଲ୍ ହ୍ୟାଣ୍ଡଲିଙ୍ଗ ପ୍ଲାଣ୍ଟ, ୨.୧୭୮ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ଆମୋନିଆ ପ୍ଲାଣ୍ଟ, ୧.୩ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ୟୁରିଆ ପ୍ଲାଣ୍ଟ, ୦.୩୫ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ଆମୋନିୟମ ନାଇଟ୍ରେଟ୍ ପ୍ଲାଣ୍ଟ, ୦.୩୩ ନାଇଟ୍ରିକ୍ ଏସିଡ୍ ପ୍ଲାଣ୍ଟ (୦.୦୫ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ଘନ ନାଇଟ୍ରିକ୍ ଏସିଡ୍), ୦.୫ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ଜି.ଏସ୍.ଏସ୍.ପି ପ୍ଲାଣ୍ଟ ଏବଂ ୯୫୦୦ ଏମ୍.ଏମ୍.ଟି.ପି.ଏ ଆଲୁମିନିୟମ ଫ୍ଲୋରାଇଡ୍ ପ୍ଲାଣ୍ଟର ସ୍ଥାପନ ନିମନ୍ତେ ଜାରତ ସରକାରଙ୍କ ପରିବେଶ, ବନଜ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ ଠାରୁ ଅନୁମତିପତ୍ର ପାଇଥିବେ । ଉକ୍ତ ଅନୁମତିପତ୍ରର କପି ଓଡିଶା ପ୍ରଦୂଷଣ ନିୟନ୍ତ୍ରଣ ବୋର୍ଡ / କମିଟି ଏବଂ ମନ୍ତ୍ରାଳୟର ୱେବ୍‌ସାଇଟ୍ **www.moef.gov.in** ଓ **https://parivesh.nic.in/** ରେ ଉପଲବ୍ଧ ଅଛି । **The Samaja dtd 1.9.2020**

10.	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.	Complied, already informed.
11.	This Environmental Clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Noted.

LIST OF ENCLOSURES

Sl. No.	ENCOSURES	DESCRIPETION
1	APPENDIX - A	SIX MONTHLY MONITORING REPORT
2	ANNEXURE - I	SULPHUR MUCK GENERATION & UTILIZATION
3	ANNEXURE - II	BIO -ASSAY (TOXICITY) STUDY
4	ANNEXURE - III	PLANTATION & GREEN BELT
5	ANNEXURE - IV	RADIOACTIVITY REPORT
6	ANNEXURE - V	RISK ANALYSIS REPORT
7	ANNEXURE - VI	WATER WITHDRAWAL AGRREMENT
8	ANNEXURE - VII	NEERI COMPLIANCE REPORT
9	ANNEXURE - VIII	CREP INITIATIVES

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/054 | **Issue Date : May 03, 2025** | **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/054	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Respirible Dust Sampler
Sampling Location	: Near AAQMS # 01	ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 02.11.25
Date & Time of sampling	: 25.04.2025 (10:15 A.M.)-26.04.2025 (10:15 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs.	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 37.0°C & Min: 27.0°C
Sampling Carried out by	: Mr. Souvik Banerjee	Barometric Presure : 755 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 26.04.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 03.05.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m^3	57.1	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m^3	60.5	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m^3	6.30	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m^3	15.16	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m^3	13.71	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m^3	15.01	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m^3	0.743	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m^3	0.091	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m^3	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m^3	0.371	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m^3	1.27	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m^3	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m^3, Arsenic: 0.25 ng/m^3, Benzene: 1 µg/m^3 & Benzo(a)Pyrene: 0.5 ng/m^3

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/055 | **Issue Date : May 03, 2025** | **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/055
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 02
Date & Time of sampling	: 24.04.2025 (10:00 A.M.)-25.04.2025 (10:00 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Souvik Banerjee
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 26.04.2025
Analysis Completed on	: 03.05.2025

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Resperible Dust Sampler
ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear
Temperature : Max: 37.0°C & Min: 27.0°C
Barometric Presure : 755 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m^3	54.2	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m^3	59.1	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m^3	6.66	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m^3	19.49	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m^3	15.92	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m^3	13.53	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m^3	0.760	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m^3	0.075	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m^3	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m^3	0.371	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m^3	1.67	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m^3	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m^3, Arsenic: 0.25 ng/m^3, Benzene: 1 µg/m^3 & Benzo(a)Pyrene: 0.5 ng/m^3

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/056 | **Issue Date : May 03, 2025** | **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/056
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 03
Date & Time of sampling	: 22.04.2025 (09:30 A.M.)-23.04.2025 (09:30 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Souvik Banerjee
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 26.04.2025
Analysis Completed on	: 03.05.2025

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Respirible Dust Sampler
ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear
Temperature : Max: 36.0°C & Min: 27.0°C
Barometric Presure : 755 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m³	52.5	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	57.8	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.21	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	20.45	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	14.81	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	14.82	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.800	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.087	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

AR

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/057 | **Issue Date : May 03, 2025** | **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/057	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Respirible Dust Sampler
Sampling Location	: Near AAQMS # 04	ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 02.11.25
Date & Time of sampling	: 23.04.2025 (09:45 A.M.)-24.04.2025 (09:45 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs.	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 37.0°C & Min: 27.0°C
Sampling Carried out by	: Mr. Souvik Banerjee	Barometric Presure : 755 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 26.04.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 03.05.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m³	45.0	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	63.2	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.37	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	21.17	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	11.73	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	15.50	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.821	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.066	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	1.00	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

AS

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/163 | **Issue Date: April 28, 2025** | **Page 1 of 1**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/163	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2025)
Date & time of sampling	: 22.04.2025 (03:30 P.M. to 04:15 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Souvik Banerjee	***Chemical :*** SO_2 & Acid Mist
Analysis Started on	: 26.04.2025	
Analysis Completed on	: 28.04.2025	

A. General information about stack :

1. Stack connected to : SAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	55
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	13.12
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	230013

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	689.5
2.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
3.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
4.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.6
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	36.94

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

AN

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/164 | **Issue Date: April 28, 2025** | **Page 1 of 1**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/164	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2025)
Date & time of sampling	: 22.04.2025 (04:25 P.M. to 05:10 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Souvik Banerjee	***Chemical :*** SO_2 & Acid Mist
Analysis Started on	: 26.04.2025	
Analysis Completed on	: 28.04.2025	

A. General information about stack :

1. Stack connected to : SAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	58
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	12.95
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	222787

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	713.88
2.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
3.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
4.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.4
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	41.99

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/165 | **Issue Date: April 28, 2025** | **Page 1 of 1**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/25-26/165
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 23.04.2025 (03:30 P.M. to 04:06 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Souvik Banerjee
Analysis Started on	: 26.04.2025
Analysis Completed on	: 28.04.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2025)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

PM & TF

A. General information about stack :

1. Stack connected to : PAP # 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 1.0 m
4. No. of Traverse point : 12 Nos.
5. Height of the sampling point from GL : 45 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	50
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	14.17
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	35285

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.8	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	37.30	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	4.59	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/166 **Issue Date: April 28, 2024**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/166	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2025)
Date & time of sampling	: 24.04.2025 (12:40 P.M. to 01:10 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Souvik Banerjee	*Chemical :* SO_2, NO_2,HC & PM
Analysis Started on	: 26.04.2025	
Analysis Completed on	: 28.04.2025	

A. General information about stack :

1. Stack connected to : Diesel Generator Set - 2
2. Emission due to : Burning of H.S.D
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes
6. Generator capacity : 1 MVA

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30.0 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 0.46 m
4. No. of Traverse point : 08 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : H.S.D 2. Fuel consumption : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 35 °C

E. Finding of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	430
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	49.62
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	12216

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per Environment (Protection) Amendment Rules 2002, for > 800 kw
1	Oxygen	IS 13270 (By Orsat): 1992	% v/v	10.8	Not Specified
2	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	94.79	Not Specified
3	Nitrogen dioxide	IS 11255 : Part 7 : 2005	mg/Nm^3	183.49	
4	Total Hydrocarbon as HC	EPA Method 18	gm/kw-hr	2.80	4.0
			gm/kw-hr	0.07	
5	Carbon monoxide	USEPA 10:2017	mg/Nm^3	4.64	
			mg/Nm^3	140	
			gm/kw-hr	2.14	3.5
6	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	<0.2	
7	Particulate Matters	IS 13270 (By Orsat): 1992	% v/v	7.8	Not Specified
		IS 11255 : Part 1 : 1985	mg/Nm^3	27	
			gm/kw-hr	0.41	0.2

G. Pollution control device

Details of pollution control devices attached with the stack : Nil.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/175 **Issue Date: 30 April 2025** **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/175
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	ETP Outlet
Sample Drawn by us on	:	25.04.2025 at 12:25 P.M.
Sample Carried out by	:	Mr. A.Manna
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.04.2025
Analysis completed on	:	30.04.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29°C, Transported in Ice box, Cold chain maintained

Parameter Tested:

pH, TSS, O & G, F, NH_3-N, TKN, NH_3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.86	6.5 – 8.5
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	10	100 (Max.)
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2	10 (Max.)
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	0.70	10 (Max.)
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	0.15	50 (Max.)
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	0.18	75 (Max.)
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	< 0.1	4 (Max.)
8	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	0.18	5 (Max.)
9	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	11.6	20 (Max.)

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.1mg/l.

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/176 | **Issue Date: 30 April 2025** | **Page 1 of 2**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/176
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	25.04.2025 at 5:20 P.M.
Sample Carried out by	:	Mr. A.Manna
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.04.2025
Analysis Completed on	:	30.04.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 28°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, BOD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	6.70	6.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	46	< 100
3	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 1993	mg/l	6.8	< 30

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/176 **Issue Date: 30 April 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/176
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	25.04.2025 at 5:20 P.M.
Sample Carried out by	:	Mr. A.Manna
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.04.2025
Analysis completed on	:	29.04.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 28°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
Microbiological : Faecal Coliform

MICROBIOLOGICAL TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	Faecal Coliform	APHA 24th edition 9221E	MPN/ 100 ml	63	< 1000

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Pijush Kanti Dutta)
Sr. Microbiologist
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/087A-090A **Issue Date : April 30, 2025**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your P.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/087A-090A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED
	: Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Souvik Banerjee
Date of Monitoring	: 22.04.2025 to 25.04.2025

Equipment used:

Sound Level Meter
ID No.: RVB/SLM/07
(Cal. Validity: 07.05.2025)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}
Test Method : IS 4758 : 1968

A. SOUND LEVEL MONITORING A

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	24.04.2025	Near AAQMS - 1	60.8	65.1	63.3	75 dB(A)	48.3	54.2	51.8	70 dB(A)
2	22.04.2025	Near AAQMS - 3	58.1	65.4	62.4		50.4	53.1	51.9	
3	23.04.2025	Near AAQMS - 4	53.9	57.9	55.7		45.1	50.2	48.0	

B. SOUND LEVEL MONITORING AT AMBIENT LOCATION : RESIDENTIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	25.04.2025	Near AAQMS - 2	52.9	56.8	54.1	55 dB(A)	41.9	44.8	43.1	45 dB(A)

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

AN

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/091-093 **Issue Date : April 30, 2025** **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your W.O. Ref. no.	: 5500007609, dtd. 16.08.2024

Description of Sample	: Sound Level Monitoring	**Equipment used:**
Sample ID No.	: AP-SL/25-26/091-093	Sound Level Meter
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED Paradeep, Odisha.	ID No.: RVB/SLM/07 (Cal. Validity: 07.05.2025)
Sampling Plan :	: RVB/FM/45	**Parameters Tested** : L_{Min}, L_{Max} & L_{eq}
Sampling Carried out by	: Mr. Souvik Banerjee	**Test Method** : IS 4758 : 1968
Date of Monitoring	: 22.04.2025 to 25.04.2025	

SOUND LEVEL MONITORING :

Sl. No.	Locations	TIME	Noise Level in dB(A)			Permissible Noise Exposure for Industrial Workers as per The Noise Pollution (Regulation And Control) Rules, 2000
			L_{Min}	L_{Max}	L_{eq}	
1.	Bagging Section	02:00 P.M. - 02:05 P.M.	67.2	72.1	71.0	**90 dB(A)**
2.	SAP Plant	02:15 P.M. - 02:20 P.M.	56.2	59.2	58.0	
3.	Off Side	11:00 A.M. - 11:05 A.M.	53.2	56.0	55.0	

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

AN

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0127 | Issue Date : June 03, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/0127	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Sampling Location	: Near AAQMS # 01	Respirble Dust Sampler
Date & Time of sampling	: 23.05.2025 (10:30 A.M.)-24.05.2025 (10:30 A.M.)	ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25
Duration of Sampling	: 24Hrs.	**Environmental conditions**
Sampling Plan :	: RVB/FM/45	Weather Condition: Clear
Sampling Carried out by	: Mr. Partha Pratim Mandal	Temperature : Max: 36.5°C & Min: 27.0°C
Method of Sampling	: As per CPCB guidelines (Volume-I)	Barometric Presure : 756 mmHg
Analysis Started on	: 27.05.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3,
Analysis Completed on	: 03.06.2025	CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	59.0	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	66.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.30	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	15.00	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	14.00	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2016	µg/m³	13.70	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.680	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.006	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2016	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/10 (AAS Method) Issue No. 04, Issue Date: 10.01.2016	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004.	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0128 | Issue Date : June 03, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/0128	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Sampling Location	: Near AAQMS # 02	Respirble Dust Sampler
Date & Time of sampling	: 22.05.2025 (10:15 A.M.)-23.05.2025 (10:15 A.M.)	ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25
Duration of Sampling	: 24Hrs.	**Environmental conditions**
Sampling Plan :	: RVB/FM/45	Weather Condition: Clear
Sampling Carried out by	: Mr. Partha Pratim Mandal	Temperature : Max: 34.0°C & Min: 27.0°C
Method of Sampling	: As per CPCB guidelines (Volume-I)	Barometric Presure : 756 mmHg
Analysis Started on	: 27.05.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3,
Analysis Completed on	: 03.06.2025	CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	48.8	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	56.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.70	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	19.60	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	15.20	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	12.80	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.720	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.070	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	1.25	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0129 | Issue Date : June 03, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/0129	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Respirble Dust Sampler
Sampling Location	: Near AAQMS # 03	ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25
Date & Time of sampling	: 20.05.2025 (09:40 A.M.)-21.05.2025 (09:40 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs.	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 36.0°C & Min: 27.0°C
Sampling Carried out by	: Mr. Partha Pratim Mandal	Barometric Presure : 758 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 27.05.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 03.06.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	55	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	57.8	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.20	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	20.30	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	14.80	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	13.50	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra Red (NDIR) spectroscopy	mg/m³	0.750	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.820	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	0.3	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006	µg/m³	1.02	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0130 | Issue Date : June 03, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0130
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 04
Date & Time of sampling	: 21.05.2025 (10:00 A.M.)-22.05.2025 (10:00 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Method of Sampling	: As per CPCB guidelines (Volume-I)

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Respirble Dust Sampler
ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear
Temperature : Max: 36.0°C & Min: 27.0°C
Barometric Presure : 756 mmHg

Analysis Started on	: 27.05.2025
Analysis Completed on	: 03.06.2025

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m³	47.0	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	6.3	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.40	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	21.00	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	12.20	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No : RVB/SOP/01/13 [Indophenol Method] Issue No. 04, Issue Date: 10.01.2018	µg/m³	15.00	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.800	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.950	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0299 Issue Date: May 27, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0299	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 22.05.2025 (11:30 A.M. to 12:09 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	***Chemical :*** SO_2 & Acid Mist
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : SAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	63
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	14.15
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	253596

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	679.20
2.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
3.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
4.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.6
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	41.59

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0300 Issue Date: May 27, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0300
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 22.05.2025 (12:20 P.M. to 01:02 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 27.05.2025
Analysis Completed on	: 27.05.2025

Equipment used:
Stack Monitoring Kit
ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202

Parameters Tested
Physical & General :
Temp., Velocity, Gas flow, O_2, CO_2 & CO
Chemical :
SO_2 & Acid Mist

A. General information about stack :

1. Stack connected to : SAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	68
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	12.81
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	226586

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	638.83
2.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
3.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
4.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.6
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	38.61

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0301 **Issue Date: May 27, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0301
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 22.05.2025 (04:05 P.M. to 04:41 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 27.05.2025
Analysis Completed on	: 27.05.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

SO_2 & Acid Mist

A. General information about stack :

1. Boiler connected to : SAP - C
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	71
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	6.69
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	115654

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	558.59
2.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
3.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
4.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.8
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	41.26

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0302 | Issue Date: May 27, 2025 |

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0302	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 24.05.2025 (11:30 A.M. to 12:06 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	*Chemical :* PM
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : Zypmite - I
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 1.03 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel cocsumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	46
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	14.53
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	39963

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
2.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.8
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	33

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0303 **Issue Date: May 27, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0303	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2026)
Date & time of sampling	: 24.05.2025 (12:15 P.M. to 12:51 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	***Chemical :*** PM
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.85 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	49
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	14.99
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	27523

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
2.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.4
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.4
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	31

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0304 | Issue Date: May 27, 2025 |

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0304	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 24.05.2025 (02:00 P.M. to 02:32 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General*** : Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	***Chemical*** : PM
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 3
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.5 m
4. No. of Traverse point : 8 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	32
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	3.78
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	2585

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 (By Orsat): 1992	% v/v	<0.2
2.	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	0.2
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	20.0
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	33

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

9, BENTINCK STREET, KOLKATA - 700 001

Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Website : www.rvbriggs.com

E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0305 | Issue Date: May 27, 2025 |

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, drd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	Equipment used:
Sample ID No.	: AP-FG/24-25/0305	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 21.05.2025 (12:10 P.M. to 12:46 P.M.)	*Parameters Tested*
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	*Chemical :* PM, NH_3 & TF
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : DAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 20 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	58
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	15.56
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	285430

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.8	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	65	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.82	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	177.06	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0306 Issue Date: May 27, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0306	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 21.05.2025 (01:00 A.M. to 01:36 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	*Chemical :* PM, NH_3 & TF
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : DAP - B
2. Emission due to : Process Ummision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	62
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.12
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	286590

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.8	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	69.8	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.56	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	221.34	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0307 Issue Date: May 27, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0307	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 21.05.2025 (05:10 P.M. to 05:43 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	***Chemical :*** PM, NH_3 & TF
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : DAP - C
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	65
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	17.31
3.	Quantity of gas flow	IS 11255 Part 3:2008	NM^3/hr	312505

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	59	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	4.11	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	187.24	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0308 Issue Date: May 27, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0308
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Date & time of sampling	: 21.05.2025 (06:00 P.M. to 06:36 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 27.05.2025
Analysis Completed on	: 27.05.2025

Equipment used:
Stack Monitoring Kit
ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202

Parameters Tested
Physical & General :
Temp., Velocity, Gas flow, O_2, CO_2 & CO
Chemical :
PM, NH_3 & TF

A. General information about stack :

1. Stack connected to : DAP - D
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	60
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.65
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	303632

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	72	150 max.
5.	Total Fluoride	IS 11255 (Part - 5) : 1990	mg/Nm^3	3.62	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	144.35	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0309 **Issue Date: May 27, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, drd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0309	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.202
Date & time of sampling	: 20.05.2025 (04:35 P.M. to 05:20 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	***Chemical :*** PM & TF
Analysis Started on	: 27.05.2025	
Analysis Completed on	: 27.05.2025	

A. General information about stack :

1. Stack connected to : PAP # 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	45
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	5.15
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	94991

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	44	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	5.30	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0310 **Issue Date: May 27, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0310
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 20.05.2025 (12:16 P.M. to 12:58 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 27.05.2025
Analysis Completed on	: 27.05.2025

Equipment used:
Stack Monitoring Kit
ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2026)

Parameters Tested
Physical & General :
Temp., Velocity, Gas flow, O_2, CO_2 & CO
Chemical :
PM & TF

A. General information about stack :

1. Stack connected to : PAP # 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 1.0 m
4. No. of Traverse point : 12 Nos.
5. Height of the sampling point from GL : 45 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 38 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	49
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	12.82
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	32545

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 (By Orsat): 1992	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	39.7	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	4.20	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0311 Issue Date: May 27, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	Equipment used:	
Sample ID No.	: AP-FG/24-25/0311	Stack Monitoring Kit	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 30.04.2026)	
Date & time of sampling	: 24.05.2025 (03:10 P.M. to 03:34 P.M.)	Parameters Tested	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO	
Sampling Carried out by	: Mr. Partha Pratim Mandal	*Chemical :* SO_2, NO_2,HC & PM	
Analysis Started on	: 27.05.2025		
Analysis Completed on	: 27.05.2025		

A. General information about stack :

1. Stack connected to : Diesel Generator Set - 2
2. Emission due to : Burning of H.S.D
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes
6. Generator capacity : 1 MVA

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30.0 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 0.4 m
4. No. of Traverse point : 08 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : H.S.D 2. Fuel consumption : ---

D. Environmental conditions :

1. Barometric pressure : 756 mmHg 2. Temperature : 32 °C

E. Finding of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	241
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	15.40
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	3900

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per Environment (Protection) Amendment Rules 2002, for > 800 kw
1	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	88.20	Not Specified
2	Nitrogen dioxide	IS 11255 : Part 7 : 2005	mg/Nm^3	147.52	
3	Total Hydrocarbon as HC	EPA Method 18	gm/kw-hr	0.72	4.0
			gm/kw-hr	0.03	
4	Carbon monoxide	USEPA 10:2017	mg/Nm^3	6.96	
			mg/Nm^3	139	
			gm/kw-hr	0.68	3.5
5	Carbon dioxide	IS 13270 (By Orsat): 1992	% v/v	<0.2	
6	Particulate Matters	IS 13270 (By Orsat): 1992	% v/v	7.4	Not Specified
		IS 11255 : Part 1 : 1985	mg/Nm^3	26	
			gm/kw-hr	0.13	0.2

G. Pollution control device

Details of pollution control devices attached with the stack : Nil.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

9, BENTINCK STREET, KOLKATA - 700 001

Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Website : www.rvbriggs.com

E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/331 **Issue Date: 30 May 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/331
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	ETP Outlet
Sample Drawn by us on	:	24.05.2025 at 2:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	26.05.2025
Analysis completed on	:	30.05.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 30°C, Transported in Ice box, Cold chain maintained

Parameter Tested:

pH, TSS, O & G, F, NH_3-N, TKN, NH_3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	8.20	6.5 – 8.5
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	57	100 (Max.)
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2	10 (Max.)
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.0	10 (Max.)
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	46.8	50 (Max.)
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	47.2	75 (Max.)
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	2	4 (Max.)
8	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	0.74	5 (Max.)
9	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	12	20 (Max.)

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.1mg/l.

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

T. Mukherjee

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/332 | **Issue Date: 30 May 2025** |

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/332
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	24.05.2025 at 2:40 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	26.05.2025
Analysis Completed on	:	30.05.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29.5°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, BOD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.36	6.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	12	< 100
3	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 1993	mg/l	10	< 30

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/332
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	24.05.2025 at 2:40 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	26.05.2025
Analysis completed on	:	28.05.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29.5°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
Microbiological : Faecal Coliform

MICROBIOLOGICAL TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	Faecal Coliform	APHA 24th edition 9221E	MPN/ 100 ml	< 2	< 1000

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Pijush Kanti Dutta)
Sr. Microbiologist
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0232A-0235A **Issue Date : May 28, 2025**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your P.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/0232A-0235A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED
	: Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Date of Monitoring	: 20.05.2025 to 23.05.2025

Equipment used:

Sound Level Meter
ID No.: RVB/SLM/09
(Cal. Validity: 07.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}

Test Method : IS 4758 : 1968

A. SOUND LEVEL MONITORING A

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	23.05.2025	Near AAQMS - 1	56.2	58.4	57.5	75 dB(A)	45.8	49.1	47.6	70 dB(A)
2	20.05.2025	Near AAQMS - 3	55.4	59.1	57.5		48.6	51.3	50.0	
3	21.05.2025	Near AAQMS - 4	56.1	59.2	58.2		47.7	51.5	50.1	

B. SOUND LEVEL MONITORING AT AMBIENT LOCATION : RESIDENTIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	22.05.2025	Near AAQMS - 2	51.5	54.8	53.5	55 dB(A)	42.5	44.5	44.4	45 dB(A)

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

AN

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0236-0242 **Issue Date : May 28, 2025** **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your W.O. Ref. no.	: 5500007609, dtd. 16.08.2024

Description of Sample	: Sound Level Monitoring	**Equipment used:**
Sample ID No.	: AP-SL/25-26/0236-0242	Sound Level Meter
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED Paradeep, Odisha.	ID No.: RVB/SLM/09 (Cal. Validity: 07.05.2026)
Sampling Plan :	: RVB/FM/45	**Parameters Tested** : L_{Min}, L_{Max} & L_{eq}
Sampling Carried out by	: Mr. Partha Pratim Mandal	**Test Method** : IS 4758 : 1968
Date of Monitoring	: 20.05.2025 to 23.05.2025	

SOUND LEVEL MONITORING :

Sl. No.	Locations	TIME	Noise Level in dB(A)			Permissible Noise Exposure for Industrial Workers as per The Noise Pollution (Regulation And Control) Rules, 2000
			L_{Min}	L_{Max}	L_{eq}	
1.	PAP Plant	10:10 A.M. - 10:15 A.M.	79.9	84.1	82.4	**90 dB(A)**
2.	Bagging Section	10:20 A.M. - 10:25 A.M.	72.5	77.7	75.5	
3.	SAP Plant	10:40 A.M. - 10:45 A.M.	72.8	76.2	74.8	
4.	DAP- AB Side	11:00 A.M. - 11:05 A.M.	86.4	89.1	87.9	
5.	DAP - CD Side	11:10 A.M. - 11:15 A.M.	87.5	89.6	88.7	
6.	Zypmite Plant	10:00 A.M. - 10:05 A.M.	78.6	87.9	84.2	
7.	Off Side	10:30 A.M. - 10:35 A.M.	72.8	76.1	74.9	

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

AN

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0209 | Issue Date : June 30, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0209
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 01
Date & Time of sampling	: 23.06.2025 (10:40 A.M.)-24.06.2025 (10:40 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Method of Sampling	: As per CPCB guidelines (Volume-I)

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/14, Cal. Valid upto: 12.07.25
Respirable Dust Sampler
ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear
Temperature : Max: 31°C & Min: 27.0°C
Barometric Presure : 756 mmHg

Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	52.0	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	59.6	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.00	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	13.00	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	12.00	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	16.00	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra Red (NDIR) spectroscopy	mg/m³	0.600	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.282	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0210 | Issue Date : June 30, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0210
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 02
Date & Time of sampling	: 22.06.2025 (10.35 A.M.)-23.06.2025 (10.35 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Method of Sampling	: As per CPCB guidelines (Volume-I)

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/14, Cal. Valid upto: 12.07.25
Respirble Dust Sampler
ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear
Temperature : Max: 31.0°C & Min: 27.0°C
Barometric Presure : 756 mmHg

Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	42.0	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	51.5	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.20	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	15.40	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	13.20	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No : RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	16.80	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.700	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.008	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No : RVB/SOP/01/15 (AAS Method) issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.5	20
10.	Arsenic as As	SOP No : RVB/SOP/01/16 (AAS Method) issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0211 | Issue Date : June 30, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0211
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 03
Date & Time of sampling	: 20.06.2025 (10:00 A.M.)-21.06.2025 (10:00 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/14, Cal. Valid upto: 12.07.25
Respirible Dust Sampler
ID No.: RVB/RDS/APM460/BL/15, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear
Temperature : Max: 31.0°C & Min: 27.0°C
Barometric Presure : 758 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	47.6	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	52.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	4.96	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	18.00	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	13.00	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	20.00	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.720	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.810	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	0.28	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	1.03	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0212 | Issue Date : June 30, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0212
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 04
Date & Time of sampling	: 21.06.2025 (10:15 A.M.)-22.06.2025 (10:15 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Method of Sampling	: As per CPCB guidelines (Volume-I)

Equipment used:

Ambient Fine Dust Sampler

ID No.: RVB/AFDS/PM2.5/14, Cal. Valid upto: 12.07.25

Respirble Dust Sampler

ID No.: RVB/RDS/APM450/BL/15, Cal. Valid upto: 02.11.25

Environmental conditions

Weather Condition: Clear

Temperature : Max: 30.0°C & Min: 27.0°C

Barometric Presure : 756 mmHg

Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	39.8	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	49.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.60	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	19.50	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	11.70	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No: 04, Issue Date: 10.01.2018	µg/m³	18.20	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra Red (NDIR) spectroscopy	mg/m³	0.760	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.880	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No: 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No: 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0524 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0524
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 23.06.2025 (10:40 A.M. to 11:19 A.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

SO_2 & Acid Mist

A. General information about stack :

1. Stack connected to : SAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	65
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	14.31
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	251152

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	665.05
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	41.84

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0525 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0524
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 23.06.2025 (10:30 A.M. to 12:12 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

SO_2 & Acid Mist

A. General information about stack :

1. Stack connected to : SAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	66
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	12.84
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	227029

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	625.47
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.0
5.	Acid Mist	SOP No : RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	32.35

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0526 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0526	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** *Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO *Chemical :* SO_2 & Acid Mist
Date & time of sampling	: 22.06.2025 (02:20 P.M. to 03:02 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Boiler connected to : SAP - C
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	69
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	5.94
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	102695

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	532.50
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4
5.	Acid Mist	SOP No : RVB/SOP/01/20, Issue No : 04, Issue Date: 10.01.2018	mg/Nm^3	38.82

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0527 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit (ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0527	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** *Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO *Chemical :* PM, NH_3 & TF
Date & time of sampling	: 21.06.2025 (03:30 P.M. to 04:06 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : DAP - A
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	56
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	15.32
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	282528

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	57	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.24	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	155.18	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

Certificate No. AP-FG/24-25/0528 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit (ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0528	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** *Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO *Chemical :* PM, NH_3 & TF
Date & time of sampling	: 21.06.2025 (04:20 P.M. to 04:59 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : DAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from Gl. : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	60
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	15.53
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	281444

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.2	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	62	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.71	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	134.24	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0529 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0529	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** *Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO *Chemical :* PM, NH_3 & TF
Date & time of sampling	: 21.06.2025 (11:35 A.M. to 12:11 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : DAP - C
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	64
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.95
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	303651

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	51	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.33	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	165.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0530 Issue Date: June 30, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0530	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	***Parameters Tested*** *Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO *Chemical :* PM, NH_3 & TF
Date & time of sampling	: 21.06.2025 (12:30 P.M. to 01:06 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : DAP - D
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	63
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.45
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	289952

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	63.5	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.17	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	123.07	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

< END OF TEST REPORT >

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0531 | Issue Date: June 30, 2025 |

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0531	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** *Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO *Chemical :* PM & TF
Date & time of sampling	: 20.06.2025 (03:50 P.M. to 04:32 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : PAP # 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 36 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	47
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	5.63
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	104234

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	35	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.58	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

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TEST REPORT

Certificate No. AP-FG/24-25/0532 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0532	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Date & time of sampling	: 20.06.2025 (12:15 P.M. to 12:57 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General* : Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	*Chemical* : PM & TF
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : PAP # 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 1.0 m
4. No. of Traverse point : 12 Nos.
5. Height of the sampling point from GL : 45 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	55
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	13.38
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	33014

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	33.2	150 max.
5.	Total Fluoride	IS 11255 (Part -5) : 1990	mg/Nm^3	2.84	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

Certificate No. AP-FG/24-25/0533 Issue Date: June 30, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/24-25/0533	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** ***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO ***Chemical :*** PM
Date & time of sampling	: 22.06.2025 (03:30 P.M. to 04:06 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr. Partha Pratim Mandal	
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 1.03 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	51
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	15.05
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	40523

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	31

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0534 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0534
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 22.06.2025 (04:15 P.M. to 04:51 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

PM

A. General information about stack :

1. Stack connected to : Zypmite - 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.85 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	53
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	15.98
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	28682

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	35.0

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0535 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/0535	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
Date & time of sampling	: 22.06.2025 (05:00 P.M. to 05:32 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General* : Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. Partha Pratim Mandal	*Chemical* : PM
Analysis Started on	: 24.06.2025	
Analysis Completed on	: 30.06.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 3
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.5 m
4. No. of Traverse point : 8 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	33
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	3.74
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	2532

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.2
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	28

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

< END OF TEST REPORT >

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/0536 Issue Date: June 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/0536
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 23.06.2025 (03:00 p.M. to 03:44 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. Partha Pratim Mandal
Analysis Started on	: 24.06.2025
Analysis Completed on	: 30.06.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

SO_2, NO_2, HC & PM

A. General information about stack :

1. Stack connected to : Diesel Generator Set - 2
2. Emission due to : Burning of H.S.D
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes
6. Generator capacity : 1 MVA

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30.0 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 0.4 m
4. No. of Traverse point : 08 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : H.S.D 2. Fuel consumption : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 34 °C

E. Finding of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	239
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	18.81
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	4756

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per Environment (Protection) Amendment Rules 2002, for > 800 kw
1	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	82.02	Not Specified
2	Nitrogen dioxide	IS 11255 : Part 7 : 2005	mg/Nm^3	156.13	
			gm/kw-hr	0.93	4.0
3	Total Hydrocarbon as HC	EPA Method 18	gm/kw-hr	0.03	
			mg/Nm^3	5.86	
4	Carbon monoxide	USEPA 10.2017	mg/Nm^3	146	
			gm/kw-hr	0.87	3.5
		IS 13270 : 1992 (By Orsat)	% v/v	<0.2	
5	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	7.2	Not Specified
6	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm^3	28	
			gm/kw-hr	0.17	0.2

G. Pollution control device

Details of pollution control devices attached with the stack : Nil.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/534 | **Issue Date: 30 June 2025** | **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/534
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	ETP Outlet
Sample Drawn by us on	:	23.06.2025 at 2:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	24.06.2025
Analysis completed on	:	30.06.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 30°C, Transported in Ice box, Cold chain maintained

Parameter Tested:

pH, TSS, O & G, F, NH_3-N, TKN, NH_3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	8.44	6.5 – 8.5
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	20	100 (Max.)
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2	10 (Max.)
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.0	10 (Max.)
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	33.7	50 (Max.)
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	34.2	75 (Max.)
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	2.5	4 (Max.)
8	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	3.14	5 (Max.)
9	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	8	20 (Max.)

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.1mg/l.

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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TAHER MANSION, 1ST FLOOR

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Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Website : www.rvbriggs.com

E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/535 **Issue Date: 30 June 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/535
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	23.06.2025 at 2:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	24.06.2025
Analysis Completed on	:	30.06.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29.5°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, BOD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.54	6.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	14	< 100
3	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 1993	mg/l	8.5	< 30

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

T Mukherjee

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Issued to	:	M/s. PARADEEP PHOSPHATE LIMITED Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/535
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	23.06.2025 at 2:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	24.06.2025
Analysis completed on	:	26.06.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29.5°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
Microbiological : Faecal Coliform

MICROBIOLOGICAL TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	Faecal Coliform	APHA 24th edition 9221E	MPN/ 100 ml	< 2	< 1000

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Pijush Kanti Dutta)
Sr. Microbiologist
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0481-0486 **Issue Date :June 30, 2025** **Page 1 of 1**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your W.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/0481-0486
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. S Sen
Date of Monitoring	: 20.06.2025 to 23.06.2025

Equipment used:

Sound Level Meter
ID No.: RVB/SLM/06
(Cal. Validity: 02.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}
Test Method : IS 4758 : 1968

SOUND LEVEL MONITORING :

Sl. No.	Locations	TIME	Noise Level in dB(A)			Permissible Noise Exposure for Industrial Workers as per The Noise Pollution (Regulation And Control) Rules, 2000
			L_{Min}	L_{Max}	L_{eq}	
1.	PAP Plant	11:00 A.M. - 11:05 A.M.	79.8	84.6	82.4	90 dB(A)
2.	Bagging Section	10:10 A.M. - 10:15 A.M.	70.4	73.4	71.9	
3.	SAP Plant	02:30 P.M. - 02:35 P.M.	68.2	73.6	71.1	
4.	DAP- AB Side	10:30 A.M. - 10:35 A.M.	85.4	88.8	87.4	
5.	DAP - CD Side	10:50 A.M. - 10:55 A.M.	86.8	89.2	88.2	
6.	Zypmite Plant	03:00 P.M. - 03:05 P.M.	79.9	83.1	81.7	
7.	Off Side	11:00 A.M. - 11:05 A.M.	70.8	74.4	72.6	

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

AN

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0487A-0490A **Issue Date : JUNE 30, 2025**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your P.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/0487A-0490A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED : Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. Partha Pratim Mandal
Date of Monitoring	: 20.06.2025 to 23.06.2025

Equipment used:
Sound Level Meter
ID No.: RVB/SLM/06
(Cal. Validity: 02.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}
Test Method : IS 4758 : 1968

A. SOUND LEVEL MONITORING AT AMBIENT LOCATION : INDUSTRIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	23.06.2025	Near AAQMS - 1	52.8	55.9	54.6	75 dB(A)	48.6	51.1	50.1	70 dB(A)
2	20.06.2025	Near AAQMS - 3	51.9	56.2	54.1		46.8	50.2	48.7	
3	21.06.2025	Near AAQMS - 4	54.3	57.1	55.9		49.8	53.7	51.8	

B. SOUND LEVEL MONITORING AT AMBIENT LOCATION : RESIDENTIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	22.06.2025	Near AAQMS - 2	50.8	54.1	52.7	55 dB(A)	41.7	44.2	44.5	45 dB(A)

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/PPL/01 | Issue Date : July 26, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/PPL/01	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Sampling Location	: Near AAQMS # 01	Respirible Dust Sampler
Date & Time of sampling	: 22.07.2025 (11:10 A.M.)-23.07.2025 (11:10 A.M.)	ID No.: RVB/ROS/APM460/NL/05, Cal. Valid upto: 26.06.26
Duration of Sampling	: 24Hrs.	**Environmental conditions**
Sampling Plan :	: RVB/FM/45	Weather Condition: Clear
Sampling Carried out by	: Mr. S. Roy	Temperature : Max: 34°C & Min: 27.0°C
Method of Sampling	: As per CPCB guidelines (Volume-I)	Barometric Presure : 748 mmHg
Analysis Started on	: 24.07.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 26.07.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	44.2	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	51.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.36	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	14.57	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	18.00	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	22.01	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.762	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.080	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method), Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5162 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/PPL/02 | Issue Date : July 26, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**	
Sample ID No.	: AP-AAQ/25-26/PPL/02	Ambient Fine Dust Sampler	
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD., Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26	
Sampling Location	: Near AAQMS # 02	Respirble Dust Sampler	
Date & Time of sampling	: 21.07.2025 (10:50 A.M.)-22.07.2025 (10.50 A.M.)	ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26	
Duration of Sampling	: 24Hrs.	**Environmental conditions**	
Sampling Plan :	: RVB/FM/45	Weather Condition: Clear	
Sampling Carried out by	: Mr.S. Roy	Temperature : Max: 34.5°C & Min: 26.5°C	
Method of Sampling	: As per CPCB guidelines (Volume-I)	Barometric Presure : 748 mmHg	
Analysis Started on	: 24.07.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP	
Analysis Completed on	: 26.07.2025		

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	36.3	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	48.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.61	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	12.92	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	15.02	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2016	µg/m³	19.62	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.820	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.065	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2016	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2016	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/PPL/03 | Issue Date : July 26, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	Equipment used:	
Sample ID No.	: AP-AAQ/25-26/PPL/03	Ambient Fine Dust Sampler	
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26	
Sampling Location	: Near AAQMS # 03	Respirible Dust Sampler	
Date & Time of sampling	: 19.07.2025 (10:00 A.M.)-20.07.2025 (10:00 A.M.)	ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26	
Duration of Sampling	: 24Hrs.	Environmental conditions	
Sampling Plan :	: RVB/FM/45	Weather Condition: Clear	
Sampling Carried out by	: Mr. S. Roy	Temperature : Max: 34.0°C & Min: 26.5°C	
Method of Sampling	: As per CPCB guidelines (Volume-I)	Barometric Pressure : 748 mmHg	
Analysis Started on	: 24.07.2025	Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3,	
Analysis Completed on	: 26.07.2025	CO, Pb, Ni, As, C_6H_6, BaP	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	32.1	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	43.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.14	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	14.10	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	15.71	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	18.65	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra Red (NDIR) spectroscopy	mg/m³	0.751	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.750	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	1.06	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/PPL/04 | Issue Date : July 26, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/PPL/04	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Respirible Dust Sampler
Sampling Location	: Near AAQMS # 04	ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26
Date & Time of sampling	: 20.07.2025 (10:30 A.M.)-21.07.2025 (10:30 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs.	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 35.0°C & Min: 27.0°C
Sampling Carried out by	: Mr.S. Roy	Barometric Presure : 748 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 24.07.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 26.07.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	34.6	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	44.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	4.99	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	16.45	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	11.99	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	19.49	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra Red (NDIR) spectroscopy	mg/m³	0.879	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.800	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/01 **Issue Date: July 30, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/01	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 22.07.2025 (03:00 P.M. to 03:42 P.M.)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Chemical :*** SO_2 & Acid Mist
Sampling Carried out by	: Mr. S. Banerjee	
Analysis Started on	: 28.07.2025	
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : SAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	60
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	14.24
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	243452

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	699.74
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	27.12

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/02 **Issue Date: July 30, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/02	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 22.07.2025 (04:00 P.M. to 04:45 P.M.)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Chemical :***
Sampling Carried out by	: Mr.S. Banerjee	SO_2 & Acid Mist
Analysis Started on	: 28.07.2025	
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : SAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	62
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	13.05
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	220901

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	657.34
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	25.32

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/03 **Issue Date: July 30, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/03	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 19.07.2025 (12:05 P.M. to 12:43 P.M.)	***Physical & General :***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. S. Banerjee	***Chemical :***
Analysis Started on	: 28.07.2025	SO_2 & Acid Mist
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Boiler connected to : SAP - C
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	76
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	6.52
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	110019

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	567.64
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	22.48

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

Certificate No. AP-FG/24-25/PPL/04 Issue Date: July 30, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/04	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha.	ID No.: RVB/SMK/04(Cal. Validity: 04.05.26)
Date & time of sampling	: 20.07.2025 (11:50 A.M. to 12:24 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.S. Banerjee	***Chemical :*** PM, NH_3 & TF
Analysis Started on	: 24.07.2025	
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : DAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	58
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.69
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	299894

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.2	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	46.45	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	1.55	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	134.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

Certificate No. AP-FG/24-25/PPL/05 | Issue Date: July 30, 2025 | Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/24-25/PPL/05
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 20.07.2025 (12:35 P.M. to 01:09 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. S. Banerjee
Analysis Started on	: 28.07.2025
Analysis Completed on	: 30.07.2025

Equipment used:

Stack Monitering Kit

ID No : RVB/SMK/04 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

PM, NH_3 & TF

A. General information about stack :

1. Stack connected to : DAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	62
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	17.06
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	299846

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	55.08	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	1.40	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	122.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

Certificate No. AP-FG/24-25/PPL/06 Issue Date: July 30, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/06	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
Date & time of sampling	: 20.07.2025 (03:25 P.M. to 03:57 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	*Physical & General :* Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.S. Banerjee	*Chemical :* PM, NH_3 & TF
Analysis Started on	: 28.07.2025	
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : DAP - C
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	60
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.74
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	303234

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	48.33	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	1.95	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	130.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/07 | Issue Date: July 30, 2025 |

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit
Sample ID No.	: AP-FG/24-25/PPL/07	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested***
Date & time of sampling	: 20.07.2025 (04:15 P.M. to 04:50 P.M.)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Chemical :*** PM, NH_3 & TF
Sampling Carried out by	: Mr. S. Banerjee	
Analysis Started on	: 28.07.2025	
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : DAP - D
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34°C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	65
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.23
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	285450

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	54.8	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	1.72	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	115.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/08 **Issue Date: July 30, 2025** **Page 1 of 1**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/08	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 19.07.2025 (03:00 P.M. to 03:38 P.M.)	***Physical & General*** :
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. S. Banerjee	***Chemical*** :
Analysis Started on	: 28.07.2025	PM & TF
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : PAP # 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 32 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 33 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	45
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	6.07
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	112334

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	38.18	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	4.05	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

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TEST REPORT

Certificate No. AP-FG/24-25/PPL/09 **Issue Date: July 30, 2025** **Page 1 of 1**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/09	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 22.07.2025 (11:30 A.M. to 12:06 P.M.)	***Physical & General :***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. S. Banerjee	***Chemical :***
Analysis Started on	: 28.07.2025	PM & TF
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : PAP # 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 1.0 m
4. No. of Traverse point : 12 Nos.
5. Height of the sampling point from GL : 30 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	50
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	14.21
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	35414

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	35.72	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.52	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

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TEST REPORT

Certificate No. AP-FG/24-25/PPL/10 **Issue Date: July 30, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/10	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 21.07.2025 (03:00 P.M. to 03:32 P.M.)	*Physical & General :*
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. S. Banerjee	*Chemical :*
Analysis Started on	: 28.07.2025	PM
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 1.03 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 35 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	50
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	16.63
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	44089

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	32

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/11 Issue Date: July 30, 2025 Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/11	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/SMK/06 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 21.07.2025 (03:45 P.M. to 04:19 P.M.)	*Physical & General :*
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.S. Banerjee	*Chemical :*
Analysis Started on	: 28.07.2025	PM
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.85 m
4. No. of Traverse point : 15 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 33 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	52
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	16.11
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	28922

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	30.4

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/12 **Issue Date: July 30, 2025**

Issued to	: **M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/24-25/PPL/12	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 21.07.2025 (04:30 P.M. to 05:02 P.M.)	***Physical & General :***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. S. Banerjee	***Chemical :***
Analysis Started on	: 28.07.2025	PM
Analysis Completed on	: 30.07.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 3
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.5 m
4. No. of Traverse point : 8 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 750 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	36
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	4.16
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	2675

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	26

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/24-25/PPL/13 **Issue Date: July 30, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.		
Address	: Paradeep, Odisha.		
Your S.O. No.	: 5500007609, dtd. 16.08.2024		
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**	
Sample ID No.	: AP-FG/24-25/PPL/13	Stack Monitoring Kit	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/SMK/04 (Cal. Validity: 04.05.26)	
Date & time of sampling	: 21.07.2025 (10:40 A.M. to 11:04 A.M.)	***Parameters Tested***	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO	
Sampling Carried out by	: Mr.S. Banerjee	***Chemical :*** SO_2, NO_2,HC & PM	
Analysis Started on	: 28.07.2025		
Analysis Completed on	: 30.07.2025		

A. General information about stack :

1. Stack connected to : Diesel Generator Set - 2
2. Emission due to : Burning of H.S.D
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes
6. Generator capacity : 1 MVA

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30.0 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 0.4 m
4. No. of Traverse point : 08 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : H.S.D 2. Fuel consumption : ---

D. Environmental conditions :

1. Barometric pressure : 748 mmHg 2. Temperature : 34 °C

E. Finding of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	138
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	50.32
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	11768

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per Environment (Protection) Amendment Rules 2002, for > 800 kw
1	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	93.03	Not Specified
2	Nitrogen dioxide	IS 11255 : Part 7 : 2005	mg/Nm^3	152.71	
3	Total Hydrocarbon as HC	EPA Method 18	gm/kw-hr gm/kw-hr mg/Nm^3	2.25 0.02 5.74	4.0
4	Carbon monoxide	USEPA 10:2017	mg/Nm^3 gm/kw-hr	142 2.09	3.5
		IS 13270 : 1992 (By Orsat)	% v/v	<0.2	
5	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	8.0	Not Specified
6	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm^3 gm/kw-hr	25 0.37	0.2

G. Pollution control device

Details of pollution control devices attached with the stack : Nil.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/740 | **Issue Date: 28 July 2025** | **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/740
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	ETP Outlet
Sample Drawn by us on	:	22.07.2025 at 11:40 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.07.2025
Analysis completed on	:	28.07.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29°C, Transported in Ice box, Cold chain maintained

Parameter Tested:

pH, TSS, O & G, F, NH_3-N, TKN, NH_3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	8.20	6.5 – 8.5
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	39	100 (Max.)
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	<2	10 (Max.)
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.18	10 (Max.)
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	21	50 (Max.)
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	35.6	75 (Max.)
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	1.8	4 (Max.)
8	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	3.0	5 (Max.)
9	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	5.2	20 (Max.)

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.1mg/l.

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/741 | **Issue Date: 28 July 2025** | **Page 1 of 2**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/741
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	22.07.2025 at 12:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.07.2025
Analysis Completed on	:	28.07.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 30°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, BOD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.25	6.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	42	< 100
3	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 2023	mg/l	6.0	< 30

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Issued to	:	M/s. PARADEEP PHOSPHATE LIMITED Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/741
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	22.07.2025 at 12:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.07.2025
Analysis completed on	:	21.07.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 30°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
Microbiological : Faecal Coliform

MICROBIOLOGICAL TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	Faecal Coliform	APHA 24th edition 9221E	MPN/ 100 ml	< 2	< 1000

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Pijush Kanti Dutta)
Sr. Microbiologist
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

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CIN : U51109WB1931PTC007007

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TEST REPORT

Certificate No. AP-SL/25-26/PPL/01/07/01 | Issue Date : July 22, 2025 | Page 1 of 1

Issued to	: **M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your W.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/PPL-01-07
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. S. Roy
Date of Monitoring	: 19.07.2025 to 22.07.2025

Equipment used:
Sound Level Meter
ID No.: RVB/SLM/07
(Cal. Validity: 02.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}
Test Method : IS 4758 : 1968

SOUND LEVEL MONITORING :

Sl. No.	Sample ID No.	Locations	TIME	Noise Level in dB(A)			Permissible Noise Exposure for Industrial Workers as per The Noise Pollution (Regulation And Control) Rules, 2000
				L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/PPL-01	SAP Plant	11:00 A.M. - 11:05 A.M.	53.9	57.8	56.0	90 dB(A)
2.	AP-SL/25-26/PPL-02	PAP Plant	11:20 A.M. - 11:25 A.M.	60.1	63.5	62.0	
3.	AP-SL/25-26/PPL-03	DAP- AB Side	10:30 A.M. - 10:35 A.M.	53.6	56.6	55.0	
4.	AP-SL/25-26/PPL-04	DAP - CD Side	02:20 P.M. - 02:25 P.M.	55.8	57.9	57.0	
5.	AP-SL/25-26/PPL-05	Zypmite Plant	02:00 P.M. - 02:05 P.M.	57.8	59.8	59.0	
6.	AP-SL/25-26/PPL-06	Bagging Section	11:30 A.M. - 11:35 A.M.	74.2	75.8	75.0	
7.	AP-SL/25-26/PPL-07	Off Side	11:10 A.M. - 11:15 A.M.	51.0	52.8	52.0	

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

SR

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/PPL/08A/11A/01 **Issue Date : July 22, 2025**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**	
Address	: Paradeep, Odisha.	
Your P.O. Ref. no.	: 5500007609, dtd. 16.08.2024	
Description of Sample	: Sound Level Monitoring	**Equipment used:**
Sample ID No.	: AP-SL/25-26/PPL/08/11	Sound Level Meter
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED	ID No.: RVB/SLM/07
	: Paradeep, Odisha.	(Cal. Validity: 07.05.2026)
Sampling Plan :	: RVB/FM/45	**Parameters Tested** : L_{Min}, L_{Max} & L_{eq}
Sampling Carried out by	: Mr. S. Banerjee	**Test Method** : IS 4758 : 1968
Date of Monitoring	: 19.07.2025 to 22.07.2025	

A. SOUND LEVEL MONITORING A

Sl. No	Sample ID No.	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/PPL/08	Near AAQMS - 3	53.4	56.4	55.0		47.5	50.1	49.0	
2	AP-SL/25-26/PPL/09	Near AAQMS - 4	54.2	58.2	56.7	**75 dB(A)**	46.2	50.3	48.6	**70 dB(A)**
3	AP-SL/25-26/PPL/10	Near AAQMS - 1	54.8	57.2	56.1		46.4	50.2	48.4	

B. SOUND LEVEL MONITORING AT AMBIENT LOCATION : RESIDENTIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/PPL/11	Near AAQMS - 2	51.4	54.7	54.1	**55 dB(A)**	40.8	43.9	43.7	**45 dB(A)**

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

SR

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0781 A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/25-26/0781 A
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 20.08.2025 (04:10 P.M. to 04:49 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr. P.P. Mondal
Analysis Started on	: 23.08.2025
Analysis Completed on	: 26.08.2025

Equipment used:

Stack Monitoring Kit
ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :
Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :
PM

A. General information about stack :

1. Stack connected to : Zypmite - 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 1.03 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 754 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	48
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	20.25
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	54167

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	33

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0782 A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/25-26/0782 A	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested*** ***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO ***Chemical :*** PM
Date & time of sampling	: 20.08.2025 (04:55 P.M. to 05:37 P.M.)	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	
Sampling Carried out by	: Mr.P.P.Mondal	
Analysis Started on	: 23.08.2025	
Analysis Completed on	: 26.08.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.85 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 754 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	41
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	13.31
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	24879

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	35.7

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0783A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/25-26/0783A	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested***
Date & time of sampling	: 20.08.2025 (05:40 P.M. to 06:08 P.M.)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Chemical :*** PM
Sampling Carried out by	: Mr.P.P.Mondal	
Analysis Started on	: 23.08.2025	
Analysis Completed on	: 26.08.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 3
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.5 m
4. No. of Traverse point : 8 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 754 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	32
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	4.81
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	3247

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	28

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0784 A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:** Stack Monitoring Kit, ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Sample ID No.	: AP-FG/25-26/0784 A	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	***Parameters Tested***
Date & time of sampling	: 21.08.2025 (04:10 P.M. to 04:43 P.M.)	***Physical & General*** : Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Chemical*** : PM & TF
Sampling Carried out by	: Mr.P.P.Mondal	
Analysis Started on	: 23.08.2025	
Analysis Completed on	: 26.08.2025	

A. General information about stack :

1. Stack connected to : PAP # 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	48
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	7.21
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	129767

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	42	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	4.66	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0785 A Issue Date: August 26, 2025

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0785 A	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)
Date & time of sampling	: 22.08.2025 (11:30 A.M. to 12:09 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P. Mondal	***Chemical :*** PM, NH_3 & TF
Analysis Started on	: 23.08.2025	
Analysis Completed on	: 26.08.2025	

A. General information about stack :

1.	Stack connected to	: DAP - A
2.	Emission due to	: Process Emmision
3.	Material of construction of stack	: M.S.
4.	Shape of stack	: Circular.
5.	Whether stack is provided with permanent platform & ladder : Yes.	

B. Physical characteristics of stack :

1.	Height of the stack from ground level	: 50 m
3.	Diameter of the stack at sampling point	: 2.8 m
4.	No. of Traverse point	: 30 Nos.
5.	Height of the sampling point from GL	: 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	52
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	14.22
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	259173

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	59.9	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.96	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	191.10	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0786 A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0786 A	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)
Date & time of sampling	: 22.08.2025 (12:20 P.M. to 12:56 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P. Mondal	***Chemical :*** PM, NH_3 & TF
Analysis Started on	: 23.08.2025	
Analysis Completed on	: 26.08.2025	

A. General information about stack :

1. Stack connected to : DAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	57
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	15.83
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	284357

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	63.3	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	4.02	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	144.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0787 A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/25-26/0787 A
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Date & time of sampling	: 22.08.2025 (01:15 P.M. to 01:51 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr.P.P. Mondal
Analysis Started on	: 23.08.2025
Analysis Completed on	: 26.08.2025

Equipment used:

Stack Monitoring Kit
ID No.: RVB/SMK/07(Cal. Validity 04.05.26)

Parameters Tested

Physical & General :
Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :
PM, NH_3 & TF

A. General information about stack :

1. Stack connected to : DAP - C
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	65
2.	Velocity of gas in duct	IS 11255 Part 3:2008	m/sec	16.55
3.	Quantity of gas flow	IS 11255 Part 3:2008	NM^3/hr	295877

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	57	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.88	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	135.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0788 A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/25-26/0788A
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 22.08.2025 (02:00 P.M. to 02:39 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr.P.P. Mondal
Analysis Started on	: 23.08.2025
Analysis Completed on	: 26.08.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

PM, NH_3 & TF

A. General information about stack :

1. Stack connected to : DAP - D
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 752 mmHg 2. Temperature : 30°C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	66
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	17.13
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	292589

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.2	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	61.2	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.65	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	125.00	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0790A **Issue Date: August 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/25-26/0790A
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 19.08.2025 (04:40 P.M. to 05:19 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr.P.P.Mondal
Analysis Started on	: 23.08.2025
Analysis Completed on	: 26.08.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

SO_2 & Acid Mist

A. General information about stack :

1. Boiler connected to : SAP - C
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 754 mmHg 2. Temperature : 30 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	72
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	6.75
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	115531

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	802.80
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
5.	Acid Mist	SOP No. RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	28.7

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

AMBIENT AIR

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0354 A | Issue Date : August 30, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0354A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 01
Date & Time of sampling	: 22.08.2025 (10:30 A.M.)-23.08.2025 (10:30 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. S. Roy
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 23.08.2025
Analysis Completed on	: 30.08.2025

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/22, Cal. Valid upto: 20.01.26
Resperible Dust Sampler
ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26

Environmental conditions

Weather Condition: Clear
Temperature : Max: 34°C & Min: 26.0°C
Barometric Presure : 754 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	39.6	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	48.9	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.27	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	8.40	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	10.53	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	14.99	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.653	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.090	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0355A | **Issue Date : August 30, 2025** | **Page 1 of 1**

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0355A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 02
Date & Time of sampling	: 21.08.2025 (10:15 A.M.)-22.08.2025 (10:15 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr.S. Roy
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 23.08.2025
Analysis Completed on	: 30.08.2025

Equipment used:

Ambient Fine Dust Sampler

ID No.: RVB/AFDS/PM2.5/22, Cal. Valid upto: 20.01.26

Resperible Dust Sampler

ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26

Environmental conditions

Weather Condition: Clear

Temperature : Max: 32°C & Min: 26.5°C

Barometric Presure : 754 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m³	37.1	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	46.4	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	7.02	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	7.90	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	11.02	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	12.29	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.722	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.078	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0356A | Issue Date : August 30, 2025 | Page 1 of 1

Issued to	: **M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0356A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 03
Date & Time of sampling	: 19.08.2025 (10:00 A.M.)-20.08.2025 (10:00 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. S. Roy
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 23.08.2025
Analysis Completed on	: 30.08.2025

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/22, Cal. Valid upto: 20.01.26
Respirable Dust Sampler
ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26

Environmental conditions

Weather Condition: Clear
Temperature : Max: 34.0°C & Min: 27°C
Barometric Presure : 754 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	42.1	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	52.8	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.52	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	12.10	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	13.42	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	10.99	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.822	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.500	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	0.482	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	1.24	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(Dr. R. RARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0357A | Issue Date : August 30, 2025 | Page 1 of 1

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0357A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 04
Date & Time of sampling	: 20.08.2025 (10:20 A.M.)-21.08.2025 (10:20 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr.S. Roy
Method of Sampling	: As per CPCB guidelines (Volume-I)

Equipment used:

Ambient Fine Dust Sampler

ID No.: RVB/AFDS/PM2.5/22, Cal. Valid upto: 20.01.26

Resperible Dust Sampler

ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26

Environmental conditions

Weather Condition: Clear

Temperature : Max: 34.0°C & Min: 27.0°C

Barometric Presure : 754 mmHg

Analysis Started on	: 23.08.2025
Analysis Completed on	: 30.08.2025

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m^3	35.0	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m^3	47.7	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m^3	8.31	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m^3	10.13	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m^3	10.84	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m^3	10.61	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m^3	0.780	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m^3	0.650	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m^3	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m^3	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m^3	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m^3	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m^3, Arsenic: 0.25 ng/m^3, Benzene: 1 µg/m^3 & Benzo(a)Pyrene: 0.5 ng/m^3

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/888 **Issue Date: 30 August 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/888
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	ETP Outlet
Sample Drawn by us on	:	22.08.2025 at 3:40 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.08.2025
Analysis completed on	:	30.08.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29°C, Transported in Ice box, Cold chain maintained

Parameter Tested:

pH, TSS, O & G, F, NH_3-N, TKN, NH_3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.70	6.5 – 8.5
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	42	100 (Max.)
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2	10 (Max.)
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.05	10 (Max.)
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	26	50 (Max.)
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	44	75 (Max.)
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	1.6	4 (Max.)
8	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	1.8	5 (Max.)
9	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	4.8	20 (Max.)

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.1mg/l.

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(J.Das)

Dy.Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/889A **Issue Date: 30 August 2025** **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED.** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/888A
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	Strom Drain - 1, At Zero Point
Sample Drawn by us on	:	25.08.2025 at 1:20 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.08.2025
Analysis completed on	:	30.08.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, O & G, F, NH3-N, TKN, NH3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results
1	pH Value	APHA 24th edition-4500H+B	...	7.20
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	45
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.20
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	28.4
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	30
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	2.2
8	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	4.5
9	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	2.72
10	Chemical Oxygen Demand (COD)	APHA 24th edition 5220B	mg/l	18
11	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 2023	mg/l	5.0

Note: Minimum Detection Limit of O & G .. 2 mg/l.

Report Verified by

Reviewed & Authorised by

(J.Das)

Dy.Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/889 **Issue Date: 30 August 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/889
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	22.08.2025 at 3:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.08.2025
Analysis Completed on	:	30.08.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, BOD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	6.80	6.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	39	< 100
3	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 2023	mg/l	6.7	< 30

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(J.Das)
Dy.Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/889 **Issue Date: 30 August 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/889
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	22.08.2025 at 3:10 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	25.08.2025
Analysis completed on	:	29.08.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 29°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
Microbiological : Faecal Coliform

MICROBIOLOGICAL TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	Faecal Coliform	APHA 24th edition 9221E	MPN/ 100 ml	79	< 1000

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Pijush Kanti Dutta)
Sr. Microbiologist
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0760A/0763A/01 **Issue Date : August 22, 2025**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your P.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/0760A-0763A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED
	: Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. P.P. Monal
Date of Monitoring	: 19.08.2025 to 22.08.2025

Equipment used:
Sound Level Meter
ID No.: RVB/SLM/07
(Cal. Validity: 07.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}

Test Method : IS 4758 : 1968

A. SOUND LEVEL MONITORING A

Sl. No	Sample ID No.	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/0760	Near AAQMS - 3	53.9	57.4	55.7	75 dB(A)	49.6	53.3	51.7	70 dB(A)
2	AP-SL/25-26/0761	Near AAQMS - 4	56.9	61.1	59.4		50.9	54.1	52.8	
3	AP-SL/25-26/0762	Near AAQMS - 2	51.2	54.1	53.2		42.7	46.4	45.1	

B. SOUND LEVEL MONITORING AT AMBIENT LOCATION : RESIDENTIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/0763	Near AAQMS - 1	49.8	54.6	53.7	55 dB(A)	40.0	44.4	44.1	45 dB(A)

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

SR

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0764/0770/01 A | Issue Date : August 22, 2025 | Page 1 of 1

Issued to	: **M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your W.O. Ref. no.	: 5500007609, dtd. 16.08.2024
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/0764-0770 A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr.P.P. Mondal
Date of Monitoring	: 19.08.2025 to 22.08.2025

Equipment used:
Sound Level Meter
ID No.: RVB/SLM/07
(Cal. Validity: 02.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}
Test Method : IS 4758 : 1968

SOUND LEVEL MONITORING :

Sl. No.	Sample ID No.	Locations	TIME	Noise Level in dB(A)			Permissible Noise Exposure for Industrial Workers as per The Noise Pollution (Regulation And Control) Rules, 2000
				L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/0764 A	Bagging Section	11:00 A.M. - 11:05 A.M.	80.2	81.9	81.0	90 dB(A)
2.	AP-SL/25-26/0765 A	SAP Plant	12:10 P.M. - 12:15 P.M.	57.4	58.5	58.0	
3.	AP-SL/25-26/0766 A	Off Side	10:40 A.M. - 10:45 A.M.	60.9	62.9	62.0	
4.	AP-SL/25-26/0767 A	DAP- AB Side	11:10 A.M. - 11:15 A.M.	57.5	58.7	58.0	
5.	AP-SL/25-26/0768 A	DAP - CD Side	11:20 A.M. - 11:25 A.M.	53.0	54.7	54.0	
6.	AP-SL/25-26/0769 A	PAP Plant	12:00 P.M. - 12:05 P.M.	62.5	63.5	63.0	
7.	AP-SL/25-26/0770 A	Zypmite Plant	12:30 P.M. - 12:35 P.M.	63.0	64.8	64.0	

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0956 **Issue Date: September 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0956	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Date & time of sampling	: 20.09.2025 (12:10 P.M. to 12:40 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr. P.P. Mondal	***Chemical :*** PM
Analysis Started on	: 24.09.2025	
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 1.03 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	49
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	18.92
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	50517

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	29.42

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

SR

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0957 **Issue Date: September 26, 2025**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0957	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 20.09.2025 (12:50 P.M. to 01:56 P.M.)	***Physical & General :***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P.Mondal	***Chemical :***
Analysis Started on	: 24.09.2025	PM
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.85 m
4. No. of Traverse point : 12 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	47
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	15.09
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	27712

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	32.06

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0958 **Issue Date: September 26, 2025**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0958	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Date & time of sampling	: 20.09.2025 (01:30 P.M. to 01:58 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P.Mondal	***Chemical :*** PM
Analysis Started on	: 24.09.2025	
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : Zypmite - 3
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30 m
3. Diameter of the stack at sampling point : 0.5 m
4. No. of Traverse point : 8 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	35
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	3.15
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	3159

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	22.35

G. Pollution control device

Details of pollution control devices attached with the stack : Bagfilter, Cyclone

Report Verified by.

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0959 **Issue Date: September 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0959	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Date & time of sampling	: 16.09.2025 (03:40 P.M. to 04:16 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P.Mondal	***Chemical :*** PM & TF
Analysis Started on	: 24.09.2025	
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : PAP # 1
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	43
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	6.28
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	116465

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	33	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.96	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

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TEST REPORT

Certificate No. AP-FG/25-26/0960 **Issue Date: September 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0960	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
Date & time of sampling	: 16.09.2025 (04:50 P.M. to 05:12 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P.Mondal	***Chemical :*** PM & TF
Analysis Started on	: 24.09.2025	
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : PAP # 2
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 1.0 m
4. No. of Traverse point : 12 Nos.
5. Height of the sampling point from GL : ----

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 32 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	53
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	13.22
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	32879

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	28	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.20	20 max.

G. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0961 **Issue Date: September 26, 2025** **Page 1 of 1**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500007609, dtd. 16.08.2024
Sample Description	: Stack Gas / Flue Gas
Sample ID No.	: AP-FG/25-26/0961
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.
Date & time of sampling	: 18.09.2025 (11:30 A.M. to 12:12 P.M.)
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)
Sampling Carried out by	: Mr.P.P. Mondal
Analysis Started on	: 24.09.2025
Analysis Completed on	: 26.09.2025

Equipment used:

Stack Monitoring Kit

ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)

Parameters Tested

Physical & General :

Temp., Velocity, Gas flow, O_2, CO_2 & CO

Chemical :

PM, NH_3 & TF

A. General information about stack :

1. Stack connected to : DAP - A
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	49
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	12.91
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	244106

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	57.0	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.20	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	152.36	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0962 A **Issue Date: September 26, 2025**

Issued to	: **M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0962 A	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No : RVB/SMK/07(Cal. Validity: 04.05.26)
Date & time of sampling	: 18.09.2025 (12:25 P.M. to 01:04 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P. Mondal	***Chemical :*** PM, NH_3 & TF
Analysis Started on	: 24.09.2025	
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : DAP - B
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	56
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	15.74
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	284382

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.4	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	58.2	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	3.40	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	122.27	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0963 | Issue Date: September 26, 2025 | Page 1 of 1

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0963	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)
Date & time of sampling	: 18.09.2025 (03:20 P.M. to 03:56 P.M.)	***Parameters Tested***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	***Physical & General :*** Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P. Mondal	***Chemical :*** PM, NH_3 & TF
Analysis Started on	: 24.09.2025	
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : DAP - C
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	64
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.74
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	300377

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.8	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	55	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.05	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	155.11	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0964 **Issue Date: September 26, 2025**

Issued to	: M/S. M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0964	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 18.09.2025 (04:30 P.M. to 05:06 P.M.)	***Physical & General :***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P. Mondal	***Chemical :***
Analysis Started on	: 24.09.2025	PM, NH_3 & TF
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Stack connected to : DAP - D
2. Emission due to : Process Emmision
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 50 m
3. Diameter of the stack at sampling point : 2.8 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34°C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	61
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	16.71
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	296883

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2	Not Specified
2.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2	Not Specified
3.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.6	Not Specified
4.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm3	53.8	150 max.
5.	Total Fluoride	IS 11255 (Part – 5) : 1990	mg/Nm^3	2.78	< 10
6.	Ammonia as NH_3	Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401	mg/Nm^3	109.85	300 max.

F. Pollution control device

Details of pollution control devices attached with the stack : Wet Scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

:- END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0965 **Issue Date: September 26, 2025**

Issued to	: **M/S. M/S. PARADEEP PHOSPHATE LTD.**		
Address	: Paradeep, Odisha.		
Your S.O. No.	: 5500008829, dtd. 29.07.2025		
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**	
Sample ID No.	: AP-FG/25-26/0965	Stack Monitoring Kit	
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LT Paradeep, Odisha.	ID No.: RVB/SMK/07(Cal. Validity: 04.05.26)	
Date & time of sampling	: 19.09.2025 (11:00 A.M. to 11:40 A.M	***Parameters Tested***	
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 &	***Physical & General*** : Temp., Velocity, Gas flow, O_2, CO_2 & CO	
Sampling Carried out by	: Mr.P.P. Mondal	***Chemical*** : SO_2, NO_2,HC & PM	
Analysis Started on	: 24.09.2025		
Analysis Completed on	: 26.09.2025		

A. General information about stack :

1. Stack connected to : Diesel Generator Set - 2
2. Emission due to : Burning of H.S.D
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes
6. Generator capacity : 1 MVA

B. Physical characteristics of stack :

1. Height of the stack from ground level : 30.0 m
2. Sampling Point : Chimney
3. Diameter of the stack at sampling point : 0.4 m
4. No. of Traverse point : 08 Nos.

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : H.S.D 2. Fuel consumption : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Finding of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	238
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	20.29
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	5160

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per Environment (Protection) Amendment Rules 2002, for > 800 kw
1	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	103.79	Not Specified
2	Nitrogen dioxide	IS 11255 : Part 7 : 2005	mg/Nm^3	148.46	
			gm/kw-hr	0.96	4.0
3	Total Hydrocarbon as HC	EPA Method 18	gm/kw-hr	0.01	
			mg/Nm^3	2.31	
4	Carbon monoxide	USEPA 10:2017	mg/Nm^3	146	
			gm/kw-hr	0.94	3.5
		IS 13270 : 1992 (By Orsat)	% v/v	<0.2	
5	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	7.2	Not Specified
6	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm^3	28	
			gm/kw-hr	0.18	0.2

G. Pollution control device

Details of pollution control devices attached with the stack : Nil.

Report Verified by

Reviewed & Authorised by

(S. Mondal)

Sr. Chemist

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0966 A **Issue Date: Septemer 26, 2025** **Page 1 of 1**

Issued to	**: M/S. M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha.
Your S.O. No.	: 5500008829, dtd. 29.07.2025

Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0966 A	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha.	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 10.09.2025 (02:30 P.M. to 03:14 P.M.)	***Physical & General :***
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P.Mondal	***Chemical :***
Analysis Started on	: 24.09.2025	SO_2 & Acid Mist
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Boiler connected to : SAP - B
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	68
2.	Velocity of gas in duct	IS 11255:Part 3:2008	m/sec	13.32
3.	Quantity of gas flow	IS 11255:Part 3:2008	NM^3/hr	232761

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	794.90
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4
5.	Acid Mist	SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018	mg/Nm^3	33.07

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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TC-12347

TEST REPORT

Certificate No. AP-FG/25-26/0967A **Issue Date: Septemer 26, 2025** **Page 1 of 1**

Issued to	: **M/S. M/S. PARADEEP PHOSPHATE LTD.**	
Address	: Paradeep, Odisha.	
Your S.O. No.	: 5500008829, dtd. 29.07.2025	
Sample Description	: Stack Gas / Flue Gas	**Equipment used:**
Sample ID No.	: AP-FG/25-26/0967A	Stack Monitoring Kit
Name of Industry / Site	: M/S. M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/SMK/07 (Cal. Validity: 04.05.26)
		Parameters Tested
Date & time of sampling	: 19.09.2025 (03:40 P.M. to 04:16 P.M.)	***Physical & General*** :
Sampling Plan & Method	: RVB/FM/45 & IS: 11255 (Part-1,2 & 3)	Temp., Velocity, Gas flow, O_2, CO_2 & CO
Sampling Carried out by	: Mr.P.P.Mondal	***Chemical :***
Analysis Started on	: 24.09.2025	SO_2 & Acid Mist
Analysis Completed on	: 26.09.2025	

A. General information about stack :

1. Boiler connected to : SAP - C
2. Emission due to : Process Emission
3. Material of construction of stack : M.S.
4. Shape of stack : Circular.
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack from ground level : 120 m
3. Diameter of the stack at sampling point : 2.7 m
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 35 m

C. Analysis / Characteristic of stack Gas / Flue Gas :

1. Fuel used : --- 2. Fuel consumption : --- 3.Load : ---

D. Environmental conditions :

1. Barometric pressure : 755 mmHg 2. Temperature : 34 °C

E. Results of Physical Parameters of Flue Gas :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	69
2.	Velocity of gas in duct	IS 11255 Part 3 2008	m/sec	6.63
3.	Quantity of gas flow	IS 11255 Part 3 2008	NM^3/hr	115250

F. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	487.84
2.	Carbon monoxide	IS 13270 : 1992 (By Orsat)	% v/v	<0.2
3.	Carbon dioxide	IS 13270 : 1992 (By Orsat)	% v/v	0.2
4.	Oxygen	IS 13270 : 1992 (By Orsat)	% v/v	19.4
5.	Acid Mist	SOP No. RVB/SOP/01/20, Issue No : 04, Issue Date: 10.01.2018	mg/Nm^3	31.12

G. Pollution control device

Details of pollution control devices attached with the stack : Alkaline scrubber

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

AMBIENT AIR

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0451 | Issue Date : September 25, 2025 |

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air
Sample ID No.	: AP-AAQ/25-26/0451
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha
Sampling Location	: Near AAQMS # 01
Date & Time of sampling	: 19.09.2025 (10:50 A.M.)-20.09.2025 (10:50 A.M.)
Duration of Sampling	: 24Hrs.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr. S. Roy
Method of Sampling	: As per CPCB guidelines (Volume-I)
Analysis Started on	: 22.09.2025
Analysis Completed on	: 25.09.2025

Equipment used:

Ambient Fine Dust Sampler
ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
Resperible Dust Sampler
ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26

Environmental conditions

Weather Condition: Clear
Temperature : Max: 34°C & Min: 27.0°C
Barometric Presure : 755 mmHg

Parameters Tested: $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	34.2	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	42.2	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.15	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	13.77	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	10.20	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	15.05	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.620	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.080	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(J. MUKHERJEE)
Quality Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0452 **Issue Date : September 25, 2025**

Issued to	: **M/S. PARADEEP PHOSPHATE LTD.**	
Address	: Paradeep, Odisha	
Your Ref. No.	: 5500007609, dtd. 16.08.2024	
Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/0452	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Resperible Dust Sampler
Sampling Location	: Near AAQMS # 02	ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26
Date & Time of sampling	: 18.09.2025 (10:40 A.M.)- 19.09.2025 (10:40 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs.	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 32°C & Min: 26.5°C
Sampling Carried out by	: Mr.S. Roy	Barometric Presure : 755 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 22.09.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 25.09.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m³	32.1	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	40.5	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	6.63	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	12.54	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	10.41	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	12.89	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.650	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.075	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(J. MUKHERJEE)
Quality Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0453 | Issue Date : September 25, 2025 |

Issued to	: **M/S. PARADEEP PHOSPHATE LTD.**
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/0453	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Respenble Dust Sampler
Sampling Location	: Near AAQMS # 03	ID No.: RVB/RDS/APM460NL/05, Cal. Valid upto: 26.06.26
Date & Time of sampling	: 16.09.2025 (10:00 A.M.)-17.09.2025 (10:00 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 34.0°C & Min: 26°C
Sampling Carried out by	: Mr. S. Roy	Barometric Presure : 755 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 22.09.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3, CO, Pb, Ni, As, C_6H_6, BaP
Analysis Completed on	: 25.09.2025	

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m³	35.8	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	44.0	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	5.18	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	13.03	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	12.81	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	11.12	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.770	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.520	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	1.20	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report verified by

Reviewed & Authorised by

(J. MUKHERJEE)
Quality Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-AAQ/25-26/0454 | Issue Date : September 25, 2025 |

Issued to	: M/S. PARADEEP PHOSPHATE LTD.
Address	: Paradeep, Odisha
Your Ref. No.	: 5500007609, dtd. 16.08.2024

Sample Description	: Ambient Air	**Equipment used:**
Sample ID No.	: AP-AAQ/25-26/04654	Ambient Fine Dust Sampler
Name of Industry / Site	: M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha	ID No.: RVB/AFDS/PM2.5/20, Cal. Valid upto: 20.01.26
		Respenible Dust Sampler
Sampling Location	: Near AAQMS # 04	ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 26.06.26
Date & Time of sampling	: 17.09.2025 (10:20 A.M.)-18.09.2025 (10:20 A.M.)	**Environmental conditions**
Duration of Sampling	: 24Hrs.	Weather Condition: Clear
Sampling Plan :	: RVB/FM/45	Temperature : Max: 34.0°C & Min: 27.5°C
Sampling Carried out by	: Mr.S. Roy	Barometric Presure : 755 mmHg
Method of Sampling	: As per CPCB guidelines (Volume-I)	
Analysis Started on	: 22.09.2025	**Parameters Tested:** $PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, NH_3,
Analysis Completed on	: 25.09.2025	CO, Pb, Ni, As, C_6H_6, BaP

TEST FINDINGS:-

Sl. No.	Parameters	Test Method	Unit	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16th November, 2009
1.	$PM_{2.5}$ (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L	µg/m³	31.3	60 (24 Hourly.)
2.	PM_{10} (Size ≤ 10µm)	IS 5182 (Part - 23): 2006	µg/m³	41.7	100 (24 Hourly.)
3.	Sulphur Dioxide as SO_2	IS 5182 (Part - 2): 2001	µg/m³	7.32	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO_2	IS 5182 (Part - 6): 2006	µg/m³	13.52	80 (24 Hourly.)
5.	Ozone as O_3	IS 5182 (Part - 9) : 1974	µg/m³	11.21	180 (1 Hourly.)
6.	Ammonia as NH_3	SOP No : RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018	µg/m³	10.54	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m³	0.790	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004	µg/m³	0.620	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04, Issue Date: 10.01.2018	ng/m³	<0.25	6.0
11.	Benzene as C_6H_6	IS 5182 (Part - 11): 2006,	µg/m³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004,	ng/m³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

Reviewed & Authorised by

(J. MUKHERJEE)
Quality Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/1115A **Issue Date: 25 September 2025** **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED.** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/1115A
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	Strom Drain - 2, At Near Time Office
Sample Drawn by us on	:	22.09.2025 at 12:20 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.09.2025 **Parameter Tested:**
Analysis completed on	:	25.09.2025 **pH, TSS, O & G, F, NH3-N, TKN, NH3, P, N**
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 27°C, Transported in Ice box, Cold chain maintained

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results
1	pH Value	APHA 24th edition-4500H+B	...	8.40
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	32
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.00
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	28
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	32
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	2.4
8	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	4.0
9	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	1.55
10	Chemical Oxygen Demand (COD)	APHA 24th edition 5220B	mg/l	15
11	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 2023	mg/l	3.9

Note: Minimum Detection Limit of O & G .. 2 mg/l.

Report Verified by

Reviewed & Authorised by

(J.Das)

Dy.Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/1115 **Issue Date: 26 September 2025** **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/1115
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	ETP Outlet
Sample Drawn by us on	:	20.09.2025 at 3:50 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.09.2025
Analysis completed on	:	25.09.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 31°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, O & G, F, NH_3-N, TKN, NH_3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.3	6.5 – 8.5
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	39	100 (Max.)
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2	10 (Max.)
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.15	10 (Max.)
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	23	50 (Max.)
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	45	75 (Max.)
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	1.5	4 (Max.)
8	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	1.6	5 (Max.)
9	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	4.9	20 (Max.)

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.1mg/l.

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(J.Das)

Dy.Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/1116A **Issue Date: 25 September 2025** **Page 1 of 1**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED.** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/1116A
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	Strom Drain - 1, At Zero Point
Sample Drawn by us on	:	22.09.2025 at 12:45 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.09.2025
Analysis completed on	:	25.09.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 28.5°C, Transported in Ice box, Cold chain maintained

Parameter Tested:

pH, TSS, O & G, F, NH3-N, TKN, NH3, P, N

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results
1	pH Value	APHA 24th edition-4500H+B	...	7.50
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	40
3	Oil & Grease (O & G)	APHA 24th edition 5520B	mg/l	< 2
4	Fluoride as F	APHA 24th edition 4500 F-C	mg/l	1.30
5	Ammoniacal Nitrogen as NH_3-N	APHA 24th edition 4500 NH3F	mg/l	26.7
6	Total Kjeldahl Nitrogen (TKN) as N	APHA 24th edition 4500-NorgA	mg/l	32
7	Free Ammonia as NH_3	APHA 24th edition 4500 NH3F	mg/l	2.0
8	Nitrate Nitrogen as NO_3-N	APHA 24th edition 4500-N03D	mg/l	3.5
9	Dissolved Phosphates as P	APHA 24th edition 4500-PD	mg/l	3.20
10	Chemical Oxygen Demand (COD)	APHA 24th edition 5220B	mg/l	17
11	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 2023	mg/l	5.4

Note: Minimum Detection Limit of O & G .. 2 mg/l.

Report Verified by

Reviewed & Authorised by

(J.Das)

Dy.Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No.E(D)/25-26/1116 **Issue Date: 26 September 2025**

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/1116
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	20.09.2025 at 3:25 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.09.2025
Analysis Completed on	:	25.09.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 30°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, BOD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	pH Value	APHA 24th edition-4500H+B	...	7.02	6.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 24th edition 2540D	mg/l	41	< 100
3	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 2023	mg/l	6.6	< 30

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(J.Das)

Dy.Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Issued to	:	**M/s. PARADEEP PHOSPHATE LIMITED** Paradeep, Odisha
Description of Sample	:	Effluent
Sample ID No	:	E(D)/25-26/1116
Name of Industries/Site	:	Paradeep Phosphate Limited Paradeep, Odisha
Collection Source	:	STP Outlet
Sample Drawn by us on	:	20.09.2025 at 3:25 P.M.
Sample Carried out by	:	Mr. S.Roy
Sampling Plan	:	RVB/FM/45
Analysis Started on	:	22.09.2025
Analysis completed on	:	26.09.2025
Sample collection Procedure	:	APHA 24th Edition 1060
Mode of Sampling	:	Grab
Environmental condition during sampling	:	Temperature : 30°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
Microbiological : Faecal Coliform

MICROBIOLOGICAL TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha
1	Faecal Coliform	APHA 24th edition 9221E	MPN/ 100 ml	63	< 1000

Remarks: The sample of effluent complies with the above Specification.

Report Verified by

Reviewed & Authorised by

(Pijush Kanti Dutta)
Sr. Microbiologist
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT:-

R. V. BRIGGS & CO. PRIVATE LTD.

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E-mail : rvbriggs.kolkata@gmail.com, info@rvbriggs.com

CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0952A/0955A/01 **Issue Date : September 24, 2025**

Issued to	**: M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your P.O. Ref. no.	: 5500008829, dtd. 29.07.2025

Description of Sample	: Sound Level Monitoring	**Equipment used:**
Sample ID No.	: AP-SL/25-26/0952A-0955A	Sound Level Meter
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED	ID No.: RVB/SLM/07
	: Paradeep, Odisha.	(Cal. Validity: 07.05.2026)
Sampling Plan :	: RVB/FM/45	**Parameters Tested** : L_{Min}, L_{Max} & L_{eq}
Sampling Carried out by	: Mr. P.P. Monal	**Test Method** : IS 4758 : 1968
Date of Monitoring	: 16.09.2025 - 19.09.2025	

A. SOUND LEVEL MONITORING /

Sl. No	Sample ID No.	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/0952	Near AAQMS - 3	54.9	58.2	56.3		45.9	49.3	47.7	
2	AP-SL/25-26/0953	Near AAQMS - 4	54.8	59.8	57.4	**75 dB(A)**	46.5	52.3	50.2	**70 dB(A)**
3	AP-SL/25-26/0954	Near AAQMS - 2	50.8	53.6	52.2		43.9	47.3	45.6	

B. SOUND LEVEL MONITORING AT AMBIENT LOCATION : RESIDENTIAL AREA

Sl. No	Date of Monitoring	Locations	Day Time (06.00 A.M to 10.00 P.M)				Night Time (10.00 P.M to 06.00 A.M)			
			Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area	Sound Level in dB(A)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Residential area
			L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/0955	Near AAQMS - 1	47.4	53.8	54.2	**55 dB(A)**	40.7	44.8	43.1	**45 dB(A)**

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)

Technical Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.

SR

-: END OF TEST REPORT :-

R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007

TC-12347

TEST REPORT

Certificate No. AP-SL/25-26/0956/0962/01 A Issue Date : September 24, 2025

Issued to	: **M/S. PARADEEP PHOSPHATES LIMITED**
Address	: Paradeep, Odisha.
Your W.O. Ref. no.	: 5500008829, dtd. 29.07.2025
Description of Sample	: Sound Level Monitoring
Sample ID No.	: AP-SL/25-26/00956-0962 A
Name of Industry / Site	: M/S. PARADEEP PHOSPHATES LIMITED Paradeep, Odisha.
Sampling Plan :	: RVB/FM/45
Sampling Carried out by	: Mr.P.P. Mondal
Date of Monitoring	: 16.09.2025-19.09.2025

Equipment used:
Sound Level Meter
ID No.: RVB/SLM/07
(Cal. Validity: 07.05.2026)

Parameters Tested : L_{Min}, L_{Max} & L_{eq}
Test Method : IS 4758 : 1968

SOUND LEVEL MONITORING :

Sl. No.	Sample ID No.	Locations	TIME	Noise Level in dB(A)			Permissible Noise Exposure for Industrial Workers as per The Noise Pollution (Regulation And Control) Rules, 2000
				L_{Min}	L_{Max}	L_{eq}	
1.	AP-SL/25-26/0956 A	Bagging Section	11:00 A.M. - 11:05 A.M.	65.4	66.7	66.0	90 dB(A)
2.	AP-SL/25-26/0957 A	SAP Plant	10:20 A.M. - 10:25 A.M.	53.9	56.0	55.0	
3.	AP-SL/25-26/0958 A	PAP Plant	10:40 A.M. - 10:45 A.M.	58.2	59.9	59.0	
4.	AP-SL/25-26/0959 A	DAP- AB Side	11:00 A.M. - 11:05 A.M.	60.8	62.8	62.0	
5.	AP-SL/25-26/0960 A	DAP - CD Side	11:10 A.M. - 11:15 A.M.	59.1	61.0	60.0	
6.	AP-SL/25-26/0961 A	Zypmite Plant	04:20 P.M. - 04:25 P.M.	67.4	68.7	68.0	
7.	AP-SL/25-26/0962 A	Off Side	10:30 A.M. - 10:35 A.M.	54.0	56.0	55.0	

Note : - L_{eq} - Equivalent sound energy.

Report Verified by

Reviewed & Authorised by

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V. BRIGGS & CO. (P) LTD.

-: END OF TEST REPORT :-

Annexure-1

SULPHUR MUCK (April 25 - Sept 2025)		
MONTH	**GENERATION (MT)**	**UTILISATION (MT)**
April	159	159
May	120	120
June	187	187
July	185	185
August	105	105
Sepember	186	186

PARADEEP PHOSPHATES LTD.

BIOASSAY TOXICITY STUDIES (Treated Effluent Stream and Storm Water Drains)

2025

Submitted By:-
SIMA LABS PVT.LTD.
A-3/7,Mayapuri Industrial Area, Phase-II, New Delhi-110064

FOREWORD

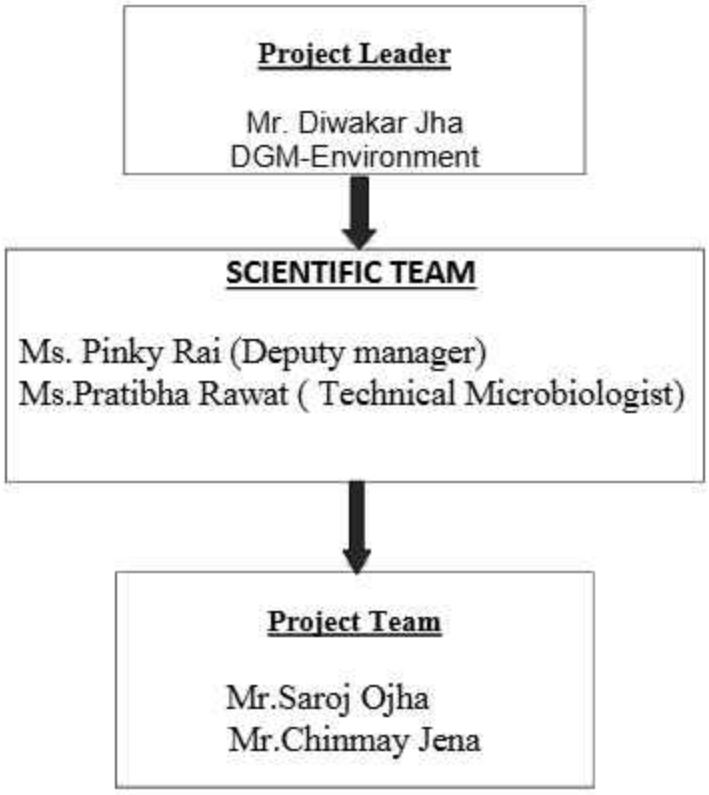
In the present scenario, due to Industrialization & Urbanization have mainly contributed to the economic growth of the develop in ignitions like India to cater the needs of the population. Production and productivity has been given importance for economic growth of the nation which has exerted tremendous pressure on the environment, on all its wings-air, water, and land. But the pressure should not be so high that it will break the resilience capacity of the environment. Water environment is the most affected and exploited among all the environments. While granting environmental clearance keeping above reasons in mind & to regulate the load keep the resilience capacity under control Union Government has framed some environmental Acts & Rules Ministry of Environment & Forests lays down certain conditions for compliance at the time of grant in the environmental clearances for the projects Ministry of Environment & Forest vide their environmental clearance no11011/17/86-IA-IIdt. 23.7.1990 for Phase–II expansion has directed PPL to comply to 22no'sofspecific conditions incorporated in the environmental Clearance and out of 22 no's .of specific conditions "**Routine toxic city bio-assay based on the effluent with fish and fish food organisms must be carried out at least once in a year".**

As a renowned & responsible corporate house M/s PPL know how to execute their responsibility towards the society & environment. In order to fulfill the commitment towards the conservation of environment & aquatic resources, M/s PPL have decided to carry out the Bio-Assay Toxicity Study. Accordingly M/s PPL entrusted **M/s SIMA LABS PVT.LTD.NEW DELHI** A NABL accredited lab an empanelled from MOEF to carry out the test .M/s SIMA Labs Pvt. Ltd. has deputed their technical& scientific team for conducting the study from 06th August to 08th August 2025. The study was carried out as per standard methods and practices and wear sure, the findings of the study in corporate in this report will undoubtedly help PPL in augmenting their planning for treatment of effluent, its monitoring, disposal and its management.

Diwakar Jha

DGM- Environment

PROJECT PERSONNEL



1. **Introduction:**

Paradeep Phosphates Limited an OHSAS:18001, ISO 14001:2004 andISO9001:2008 certified company, situated at Paradeep in Jagatsingpur District of Odisha and was established in1982 to manufacture 2400 TPDDi-ammonium Phosphate(DAP) consisting of four streams each of 600 TPD capacity under phase-I program me. The commercial production started in the year 1986.The fertilizer complex is using imported Sulphur and Rock phosphate to produce Phosphoric acid. The captive production of Phosphoric acid partly caters the requirement for production of DAP through 4 streams of DAP/NPK, Remaining requirement of Phosphoric acids met through imports. The requirement of Ammonia is through imports. Phase II plants comprising of a 750 TPD Phosphoric Acid Plant (PAP), 2x1000 MTPD Sulfuric Acid Plant (SAP) and a 2 x 16 MW Captive Power Plant (CPP) were commissioned in 1992. Subsequently in the year 2010 the capacity of DAP plant, SAP and PAP was enhanced to 5000TPD, 2400TPD and 1400TPD respectively after getting the environmental clearance from MoEF, New Delhi. In January, 2016 SAP-C stream of capacity 2000MTPD and byproduct power generation of 23 MW was commissioned.

PAP-2 is commissioned in 23rd August, 2023. Besides, M/s PPL has developed a product Zypmite which is admixture of Phospho gypsum and basic slag by product of steel industry.

The project was setup during the year 2010 with a capacity of 240TPD and commissioned in the year 2012.The basic raw materials are Rock Phosphates, Sulphur and Ammonia are imported and Phosphoric acid & Sulphuric Acid are manufactured indigenously.

Although, the entire DAP manufacturing plant along with SAP and PAP has been conceived on zero effluent concept; occasional over flows, leakages and floor washings come out of the plant battery limits as effluent that needs proper treatment before its final discharge. The plant to its credit has a well built modern Effluent Treatment Plant (ETP) in which the effluent is being treated and then recycled to BAL mill in PAP or released out in the event of stoppage of PAP and conforming to the prescribed norms of Odisha State Pollution Control Board. At the behest of PPL, **M/s SIMA Labs, New Delhi** carried out in-situ toxicity tests at various points of the water streams. The Bio-assay test was carried out in 06th August to 08th August2025 with fresh water fishes locally available and with fishes from the Atharbanki river and local pond. Range finding Bio-assay (RFB), Static Bio-assay and In-situ Bio-assay was carried out at storm drains 1. storm water drain near zero point.

1.2 Project Setting

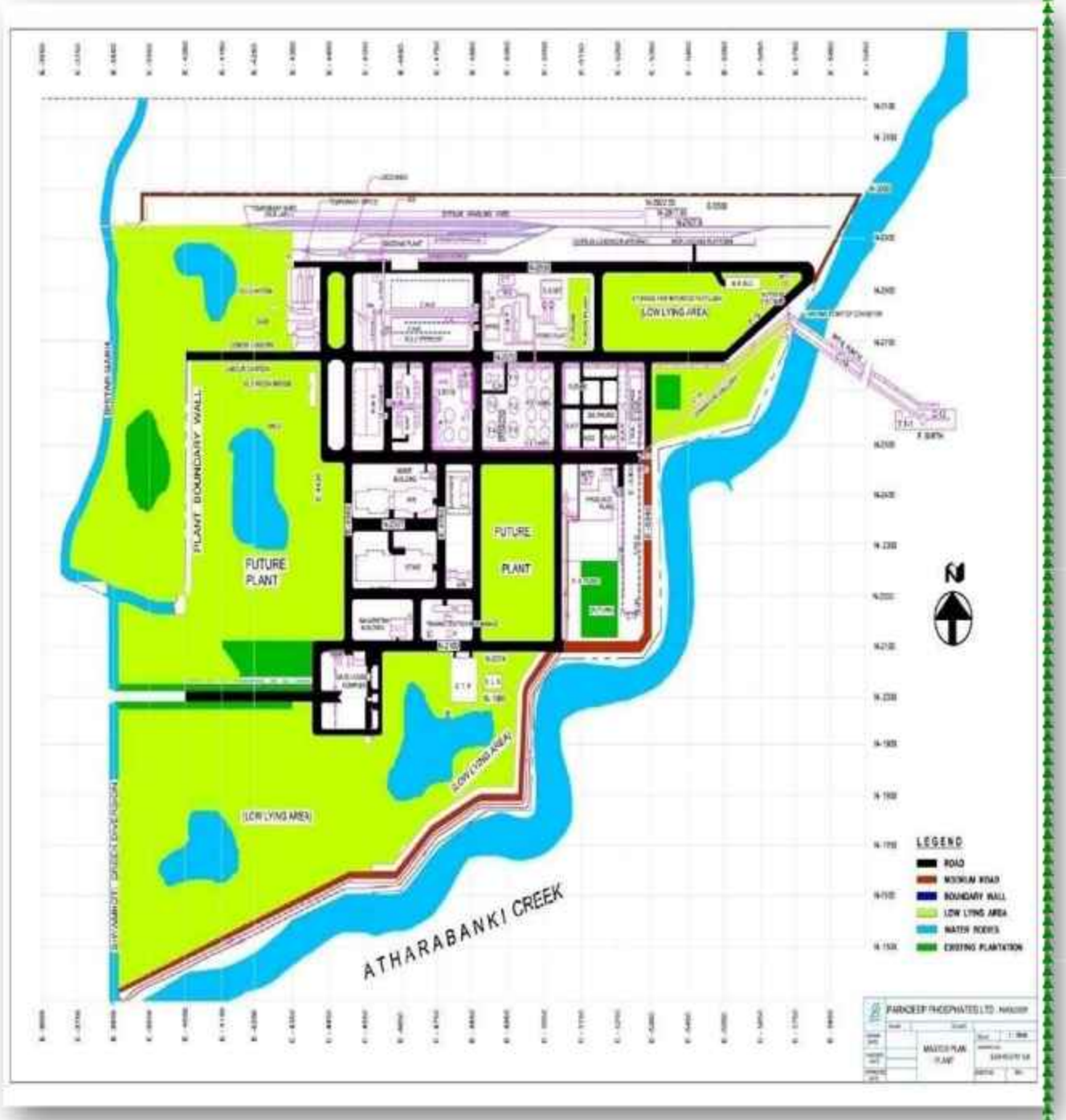
Paradeep Phosphates Limited is located in Kujang Tehsil of Jagatsinghpur District. The project site is situated at 20016'45.54" North latitude and 860 38' 43.7" East longitude and about 50 km from the Jagatsinghpur town. On the East ofPPL, Paradeep port is situated.

This site is situate dinar emote area on the coast of Bay of Bengal and is mainly low lying area with a few creeks, sand dunes subjected to submersion of high tides.Paradeep Phosphates Limited is spreade over on an area of about 2284 Acres with Phosphatic fertilizer complex, township and gypsum storage ponds. It is one of the largest complex fertilizer plants in the country and produces Di-Ammonium Phosphate, NPK fertilizers as its final product with intermediate products like Sulfuric acid and Phosphoric acid. Mahanadi River is flowing at a distance of about 5km from the project site and meets Bay of Bengal which is about 3km away from the site.Athar Banki River is flowing along the boundary wall of the site and is between Paradeep port and plant site. Study area of the project site is shown in **Fig.1.1**. The mean sea level of the site is 0.6m to 3 m. Paradeep area is very much pronet of request and severe cyclonic storms and very windy during most of the times of the year. The average annual rainfall is 1500 mm most of which falls during June to September. Paradeep weather is highly humid due to the influence of the sea. The mean relative humidity varies from 75%to85% and the average wind speed varies from 12 to 70 Kmph.

The maximum temperature goes up to 40^0C in summer while the minimum temperature is around 12^0C in winter season. Seismically Paradeep lies in Zone III with an expected seismic intensity of VII on the modified Mercalle scale 1931, corresponding to horizontal seismic ground acceleration range of 18-140 cm/sec depending upon the ground conditions.

ETP PLANT

Guard Pond



Study Area - Fig 1.1

Plant at Glance

1.3 Utilities

The other offsite and support facilities include 5 x 10,000 MT atmospheric Ammonia storage tanks,6x10,000 MT Phosphoric acid storage tank,4x10,000 and 6000MT Sulphuric acid storage tanks well as 2x1500MT fuel oil tanks, bagging facilities and silos. The imported Ammonia and Phosphoric acid are pumped through pipeline from fertilizer berth of Paradeep port to storage tank. The water requirement for entire plant and colony are met from Taldanda canal, which runs from the Mahanadi barrage from Jobra of Cuttack city. The canal is situated at a distance of 4km from PPL.

Demine realization plant of capacity 3 x 120 and 2X 150 MT/hr is installed to meet requirement of CPP and sulphuric acid plant. In case of total power failure, the backup HT power is supplied through 3 MVA DG set.

Plant inside view

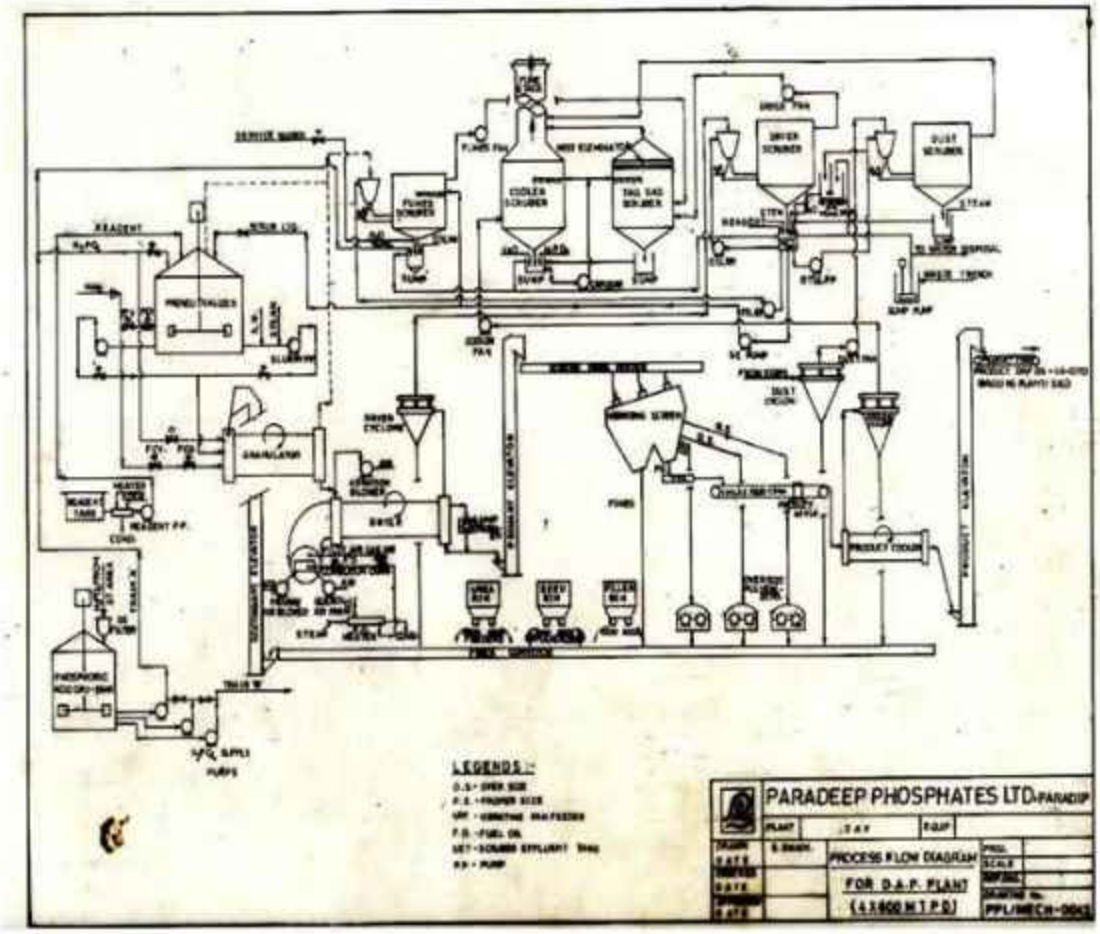
1.4 Brief Description of Manufacturing Process

1.4.1 Di-ammonium Phosphate Plant

The existing 1.9MM TPA DAP plant consist of our streams. The process is based on indigenous know how and M/s. Hindustan Dorr-Oliver Limited are the main engineering consultants for the DAP plant. The main raw materials used for production of DAP/NPK are Phosphoric acid, Ammonia, Sulphuric acid,MO Pand filler.

Phosphoric acid and Ammonia are pumped from storage tanks to pre neutralizer where they react with each other to a Amoleratioo f1.45 and a slurry of DAP and Mono ammonium Phosphate (MAP) are formed with about 80% solids. This slurry is again pumped to a rotary granulator where it is further ammoniated to convert MAP portion to DAP with amoleratioo f1.7to1.8.Wet DAP granules are then dried up by a counter current stream of hot air in arotarydryer.The dried up granules are screened for size separation in a double-deck vibrating screen. The fines and crushed oversize fraction of DAP is recycled back to granulator and the proper size material is coole dina product cooler. The cooled product is conveyed either to product silo(75000MTcapacity)for storage or to bagging plant for dispatch. The flow diagram of the process is shown in **Fig. 1.2**.

MANUFACTURING PROCESS FLOW DIAGRAM OFDAP PLANT

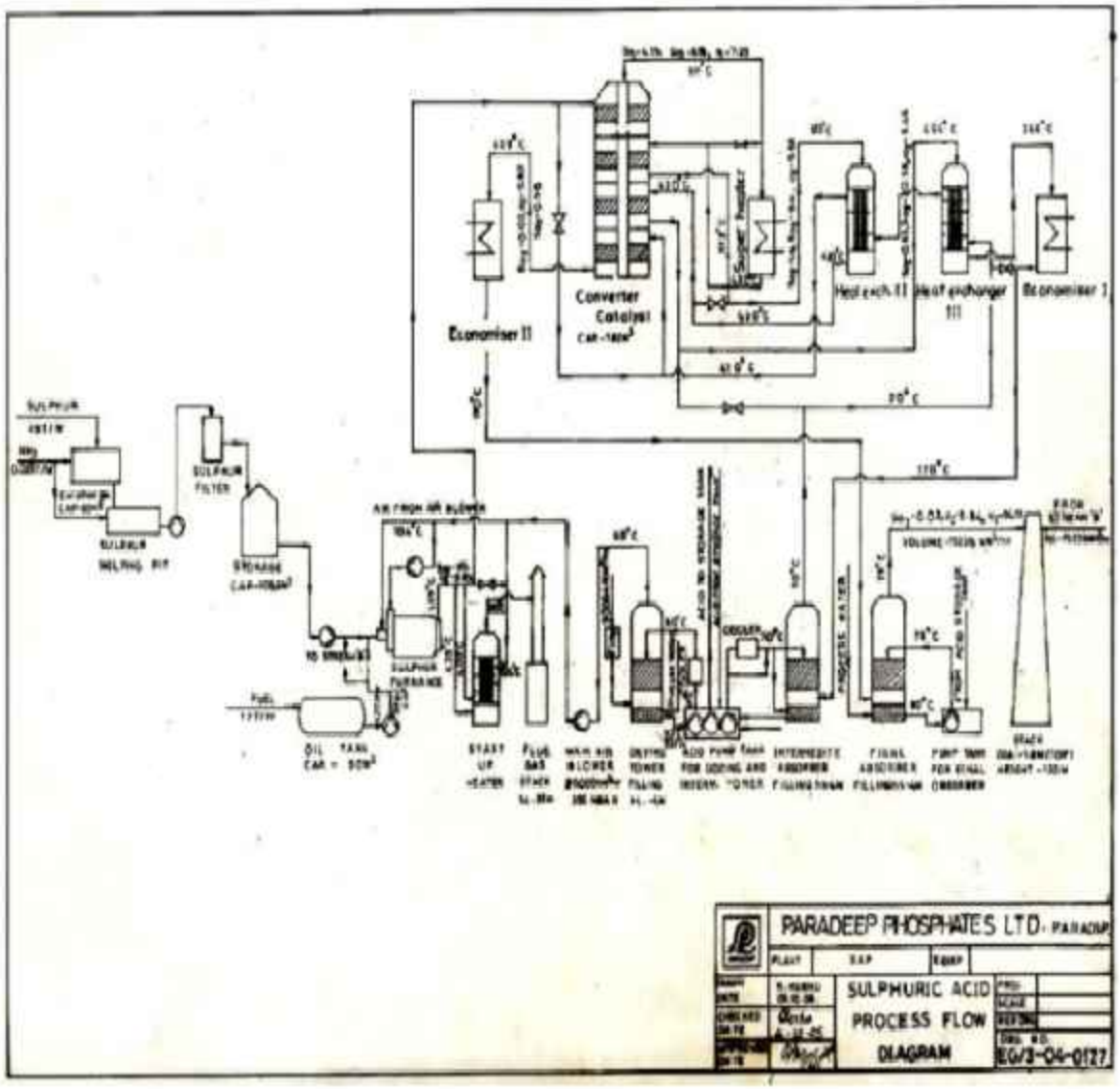


1.4.2 Sulphuric Acid Plant

Sulphuric acid plant consists of two streams, each of 1200 TPD capacity and one stream of 2000 MTPD .The plant is based on most modern Double Contact Double Absorption (DCDA) process. The engineering consultants were M/s. Lurgi Gmbh of Germany along with M/s. FACT Engineering and Design Organization (FEDO) as Indian Associate. The raw material for the Sulphuric acid plant is elemental sulphur which is imported and is transported to the Sulphur Silo.Sulphuris melted in a melting pit by means of heating coils fed with steam.The molten Sulphur is fed to the Sulphur burner where complete combustion of Sulphur takes place giving rise to SO2 The heat of combustion is withdrawn by means of a waste heat boiler where saturated steam of approximately 46 bar is generated. The gas, cooled to a temperature of 420^0C,is fed to a converter having 4 catalyst beds. The final gas of 4^{th}catalyst bed, after getting cooled to a temperature of 170^0 C in an economizer, enters the final absorber where the SO3 is absorbed by 98.5% sulphuric acid. The remaining gas from the absorber passes through high efficiency filters located in the upper section of the absorber to eliminate spray acid mist.

The acid concentration in both the intermediate and final absorber is maintained by the addition of process water. The flow diagram of sulphuric acid process is shown in **Fig. 1.3**.

MANUFACTTURING PROCESS FLOW DIAGRAM OF SULPHURIC ACID PLANT

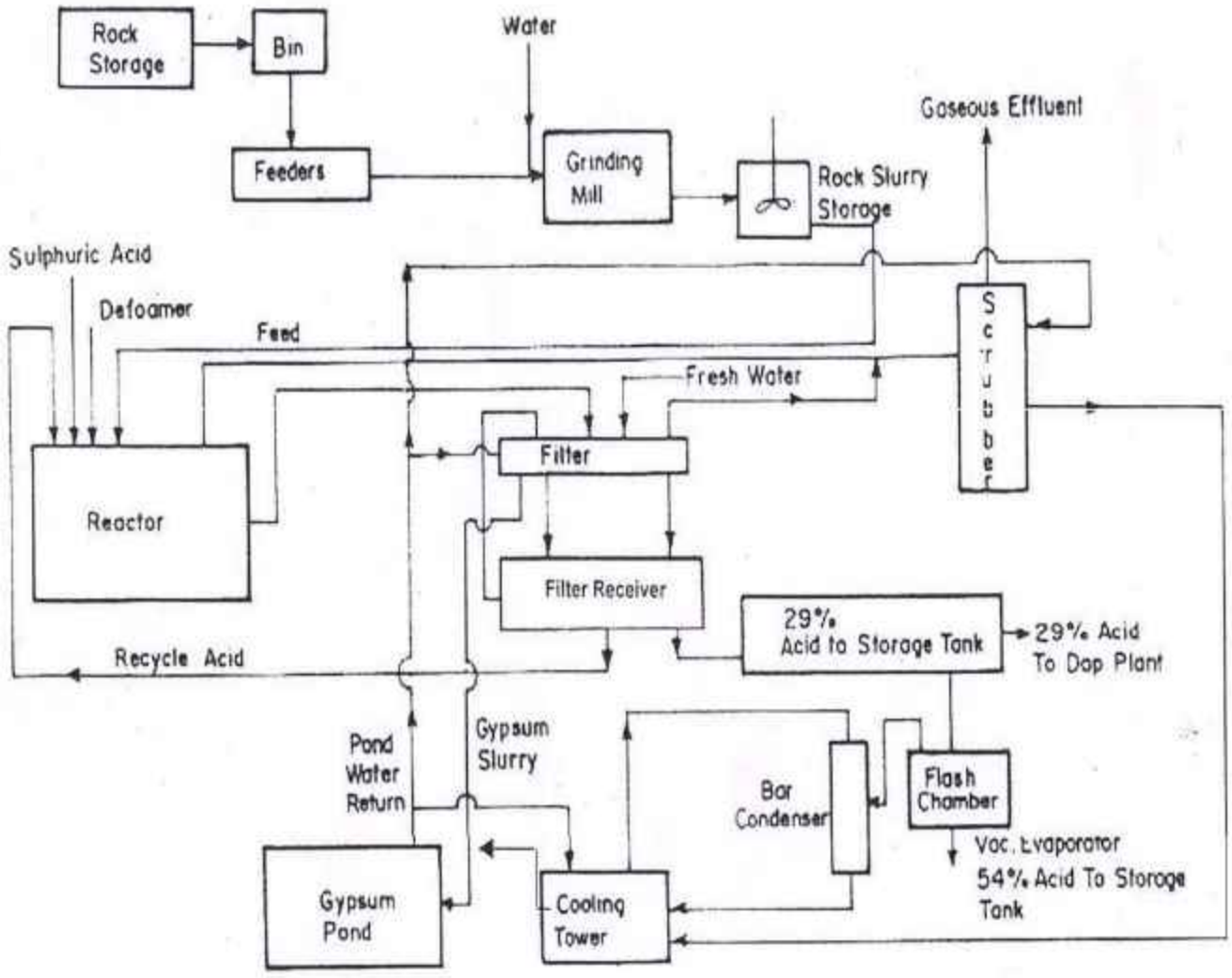


1.4.3 Phosphoric Acid Plant

The 1400 TPD single stream Phosphoric acid plant is based on foreign know how. The 600 TPD second stream Phosphoric acid plant is based on dry grinding principle. The engineering consultants are M/s. Jacobs International Inc. of Florida USA along with M/s. Hindustan Dorr- Oliver Ltd., Bombay as Indian counterpart. Rock phosphate is fed to a ball mill by an extractor weigher and wet grinding slurry of 65-75% solids is prepared. The slurry is fed to are actor where Sulphuric acid with70-80% concentration and recycle Phosphoric acid is added. The reactor slurry proceeds through the reactor sections and under flows in to the vacuum cooler feed compartment and from where the slurry is pumped to vacuum cooler where degassing takes place. Defoamer is added to the reactor to in hi bit the formation of froth/foam. The slurry from vacuum cooler is pumped to a filter where Phosphoric acid is separated from gypsum. The cake in the filter is given four successive washings by filtrates of 12%P2O5,5%P2O5,heated pond water and a final wash respectively. The dewatered cake is removed after final wash, then the cake is made slurry and pumped to the Gypsum pond. The Phosphoric acid plant has a provision of concentration unit of

capacity300MT/day for concentrating 29% dilute acid to52%with the use of evaporators. Normally 54% imported acid will be blended. With 29% acid for direct use in DAP plant. The flow diagram of Phosphoric acid process is shown inFig1.5.

FLOW DIAGRAM OF PHOSPHORIC ACID PLANT-I



The layout plan of the Phosphoric Fertilizer Complex is depicted in Fig.1.5.

2. SAMPLING POINTS

All the effluents from Sulphuric Acid Plant Port Operation & Off-sites are recycled to Phosphoric acid plant .Only surface runoff water is being collected at pond and pumped to ETP for treatment and after treatment the same treated effluent is being reused at PAP. There is no discharge from guard pond and through storm drain -2 .The only discharge point of the plant is "**Inside the Storm Water Drain at Near Zero Point (Location1, asL1)**"running at the eastern side of the plant near Zero Point. Sample is collected from the pre-determined point and analyzed for physic co – chemical parameters in **SIMA Labs Pvt.Ltd.** to monitor the water quality during observation Period. The analysis results are given in table – 2.

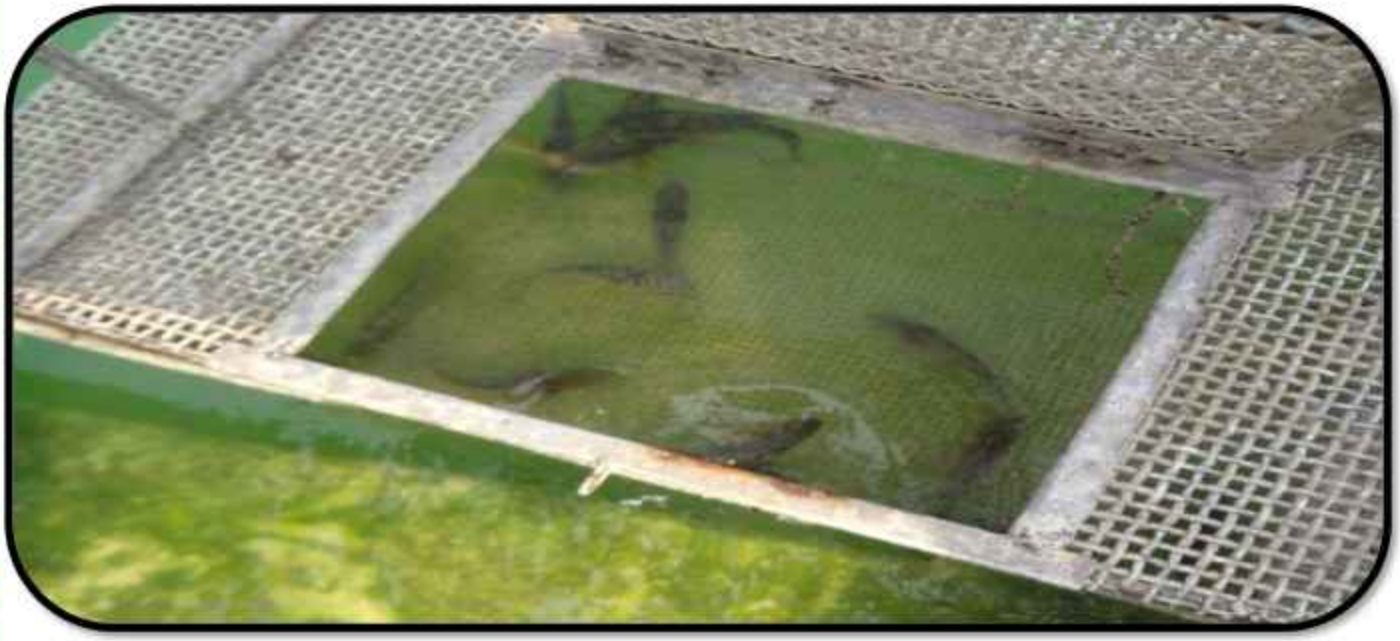
3. IMPACT OF STUDIES

Three types of investigations were made to evaluate the toxic conditions.

3.1 Range of Bioassay

To find out the concentration at which fish mortality occur, Range Finding Bio-assay (RFB) was carried out in the effluents sample collected by team from M/s SIMA Lab, Bhubaneswar on**06.08.2025** The Range finding Bioassay results are presented in **Table-I** for **Storm Drain-I& II (L1& L2)**using fresh water fishes and estuarine fishes available in Athar Banki creek.

Cage for Bio-assay study



Status during study period

Table 1

Bioassay Test Result forSample Location L1& L2

Time Period of Testing (Hrs)	Location Identification			
	L1		**L2**	
	Nos. OF Dead Fish	**%oF Dead Fish**	**Nos. OF Dead Fish**	**%oF Dead Fish**
6	-	-	-	-
12	-	-	-	-
24	-	-	-	-
48	-	-	-	-
72	-	-	-	-
96	3	3	3	3

Water Sampling from Storm Drain 1

(Location)-L-1

Water Sampling from Storm Drain 2

(Location)-L-2

Authorized Signatory

Anshul Gupta
Reviewed By

Diwakar Jha
G.M Technical Environment

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Email : reports@simalab.com
CIN No : U74899DL1988PTC031785
Website : www.simalab.net | www.simalab.com

TEST REPORT

Party Code	: P/ODH/043	REPORT NO.	: SN0814000325
*Issued to	Paradeep Phosphates Limited	*Customer Ref No.	: NS
	Plant-PPL Township, Paradeep-754175, Odisha . .	*Reference Date	: NS
		Date of Sampling	: 06/08/2025
		Date of Received	: 14/08/2025
		Date of Issue	: 22/08/2025
		Start Date of Analysis	: 14/08/2025
		Date of Completion	: 22/08/2025
*Sample Name	: Strom Drain Water (Near Zero Point)	Environmental Condition	: 25±2°C,RH 50±15%
		Sample Condition	: OK
		*Sample Qty.	: 1 Ltr.
		SOP/Sampling Plan	: SIMA/ENV/SOP/024
		Test Method Deviation	: NA
		Sample Collection	: Sample Collected By Us

RESULTS OF ANALYSIS

Reference : EP Act Standards

Sample Description : One Strom Drain Water sample was collected by us on 06/08/2025

S.No.	Test Parameters	Units	Results	Method	Detection Limit
	Chemical Parameter				
1.	pH	NA	7.33	IS:3025 (P-11)	NA
2.	Total Suspended Solids	mg/L	<2.0	IS:3025 (P-17)	NA
3.	Total Dissolved Solids	mg/L	132	IS:3025 (P-16)	NA
4.	Chemical Oxygen Demand	mg/L	8	IS:3025 (P-58)	NA
5.	Biochemical Oxygen Demand (3 days at 27°C)	mg/L	<2.0	IS:3025 (P-44)	NA
6.	Dissolved Phosphate (as PO4)	mg/L	0.53	IS:3025 (P-31)	NA
7.	Sulphate (as SO4)	mg/L	18.8	IS:3025 (P-24)	NA
8.	Chloride (as Cl)	mg/L	17.6	IS:3025 (P-32)	NA
9.	Fluoride (as F)	mg/L	BDL	APHA-4500 F-D	0.05
10.	Nitrate	mg/L	0.36	IS:3025 (P-34)	NA
11.	Total Hardness (as CaCO3)	mg/L	75.2	IS:3025 (P-21)	NA
12.	Total Alkalinity (as CaCO3)	mg/L	62.1	IS:3025 (P-23)	NA

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Ph-II, New
Phone : +(91)-(01
Email : reports@
CIN No : U74899D
Website : www.sima

TEST REPORT

Party Code : P/ODH/043 REPORT N

S.No.	Test Parameters	Units	Results
13.	Electrical Conductivity (as 25°C)	µS/cm	203
14.	Turbidity	NTU	<1.0
15.	Dissolved Oxygen (as DO)	mg/L	4.6
16.	Ammonical Nitrogen (as N)	mg/L	BDL
17.	Iron (as Fe)	mg/L	0.347
Toxic Substance			
18.	Total Chromium (as Cr)	mg/L	BLQ

NA- Not Applicable, BDL- Below Detection Limit, BLQ- Below Limit of Quantification, LOQ- Limit

Note :- Customer asked for the above tests only. The above tested parameters meets the require

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Ph-II, New
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Email : reports@s
CIN No : U74899DI
Website : www.sima

TEST REPORT

Party Code : P/ODH/043
*Issued to Paradeep Phosphates Limited

Plant-PPL Township, Paradeep-754175, Odisha . .

REPORT N
*Customer
*Reference
Date of San
Date of Rec
Date of Issu
Start Date c
Date of Cor
Environmer
Sample Cor
*Sample Qt
SOP/Sampl
Test Metho
Sample Col

*Sample Name : Strom Drain Water (Near Time Office)

RESULTS OF ANALYSIS

Reference : EP Act Standards

Sample Description : One Strom Drain Water was collected by us on 06/08/2025

S.No.	Test Parameters	Units	Results
Chemical Parameter			
1.	pH	NA	7.35
2.	Total Suspended Solids	mg/L	<2.0
3.	Total Dissolved Solids	mg/L	127
4.	Chemical Oxygen Demand	mg/L	<5
5.	Biochemical Oxygen Demand (3 days at 27°C)	mg/L	<2.0
6.	Dissolved Phosphate (as PO4)	mg/L	0.46
7.	Sulphate (as SO4)	mg/L	16.6

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TEST REPORT

Party Code : P/ODH/043 REPORT NO. : SN0814000425

S.No.	Test Parameters	Units	Results	Method	Detection Limit
13.	Electrical Conductivity (as 25°C)	µS/cm	195	IS:3025 (P-14)	NA
14.	Turbidity	NTU	<1.0	IS:3025 (P-10)	NA
15.	Dissolved Oxygen (as DO)	mg/L	4.0	IS:3025 (P-38)	NA
16.	Ammonical Nitrogen (as N)	mg/L	BDL	IS:3025 (P-34)	1.0
17.	Iron (as Fe)	mg/L	0.321	IS:3025 (P-2)	NA
Toxic Substance					
18.	Total Chromium (as Cr)	mg/L	BLQ	IS:3025 (P-2)	LOQ (0.02)

NA- Not Applicable, BDL- Below Detection Limit, BLQ- Below Limit of Quantification, LOQ- Limit of Quantification

Note :- Customer asked for the above tests only. The above tested parameters meets the requirement of EP Act Standard.

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Reviewed By

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3.2 In-situ Bio-assay Toxicity Test

In-situ toxi city tests were carried out in pre-fabricated stainless steel cages (70cmx40cmx40cm) provided with inside lining of 2mm nylon mesh. The cages were allowed to dip into the channel by suspending them from the sides with the help of two nylon ropes.Two points of observation,(L1&L2)Storm Drain-1& 2selected for detailed study from 06.08.2025 -08.08.2025.

Cage for Bio-assay study

The tests were carried out at the above points with test species collected from Atharbanki Creek & Shyamkoti Creek and fresh water ponds. After proper conditioning observation on fish mortality were recorded at six hourly intervals with fresh water fishes and common fishes. The observations on fish mortality are presented below 50 numbers of fresh water fish species and estuarine species were kept in the cages for observations on mortality. These tests were carried out on 4 species of fresh water fishes and 4 estuarine species and one prawn species. The test fishes were collected from local ponds (fresh water fish) and Atharbanki River (Estuarine fish). The following fish species were selected for the *in-situ* toxicity tests.

Table-3
Aquatic Species Distribution

Sl. No.	Species	L1	L2
1	**Gong Tengra(Kantia)**	08	08
2	**Gadisha**	10	10
3	**Catfish(Magur)**	05	05
4	**Prawn**	07	07
5	**Singhi**	06	06
6	**Bami fish(Todi)**	05	05
7	**Kau**	07	07
8	**Seula**	02	02
Total		**50**	**50**

Table-4
LT50 / LT100

Sl. No.	Fish Species	L1		L2	
		LT50	LT100	LT50	LT100
1	**Gadisha**	90 hr	96 hr	90 hr	96 hr
2	**GongTengra(Kantia)**	90 hr	96 hr	90 hr	96 hr
3	**Catfish(Magur)**	96 hr	96 hr	96 hr	96 hr
4	**Prawn**	90 hr	96 hr	90 hr	96 hr
5	**Singhi**	96 hr	96 hr	96 hr	96 hr
6	**Bami fish(Todi)**	96 hr	96 hr	96 hr	96 hr
7	**Kau**	96 hr	96 hr	96 hr	96 hr
8	**Seula**	90 hr	96 hr	90 hr	96 hr

Note: LT 50 & LT 100:- Time at which 50% and 100%mortality occurs.

The results suggest that the treated effluent in Guard pond and the water in storm water drains don't show any perceptible toxic effect on fish species mentioned above available in the creek.

OXYGEN BALANCE IN THE EFFLUENT

Table – 5

DISSOLVE OXYGEN CONTENT IN WASTE WATER

Date	L2		L1	
	Day	Night	Day	Night
06.08.2025	4.4	5.2	4.6	5.2
07.08.2025	5.3	5.9	5.3	5.9
08.08.2025	4.7	6.2	4.7	6.2

The variations in the concentration of dissolved oxygen in the storm water drains and the guard pond during morning hours and evening hours do not indicate any anoxic conditions. Three days observations on dissolved oxygen at point L1& L2is given above.

3.3 Static Bio-assay

Static Bio-assay tests were carried out with the water from the guard pond; storm water drains in three nos. of Aquarium of 20 liters capacity. Local fish species were taken for the test .Samples were collected from the three points L1& L2 mentioned above. The studies reveal that under static conditions the water does not have any effect on fresh water fishes as shown in the **Table – 6**

Table-6
LT50 / LT100

Sl.No.	Fish Species	L1		L2	
		LT50	LT100	LT50	LT100
1	**Gadisha**	90 hr	96 hr	90 hr	96 hr
2	**Gong Tengra(Kantia)**	96 hr	90 hr	96 hr	90 hr
3	**Catfish(Magur)**	96 hr	96 hr	96 hr	96 hr
4	**Prawn**	96 hr	90 hr	96 hr	90 hr
5	**Singhi**	96 hr	96 hr	96 hr	96 hr
6	**Bami fish(Todi)**	96 hr	96 hr	96 hr	96 hr
7	**Kau**	96 hr	96 hr	96 hr	96 hr
8	**Seula**	96 hr	96 hr	96 hr	96 hr

Cage for Bio-assay study

4.0 FISH FAUNA IN ATHARBANKI & SHYAMAKOTI CREEK

Fishing is generally carried out in the ad joining Atharbanki & Shyamkoti Creek during the morning and evening hours. The species encountered in the creek, as ascertained from the local fisherman are given in **Table – 8.**

Table-8
Mass Distribution amongst the Available Species
Estuarine Fish / Saline Fish

Local Name	Scientific Name	Approx.Size Of Catch
Gadisha	Channa punctata	50-100gm
Gong Tengra(Kantia)	Gogatasp	30-50gm
Catfish(Magur)	Clarias batrachus	100-200gm
Bagda Chingudi	Panaeusmonodon	05-20gm
Singhi	Heteropneustes Fossilis	20-50gm
Bami fish(Todi)	Anguilla bemgalensis	20-40gm
Kau	Anabas festitues	30-80gm
Seula	Channa striata	150-400gm

5.0 INFERENCE

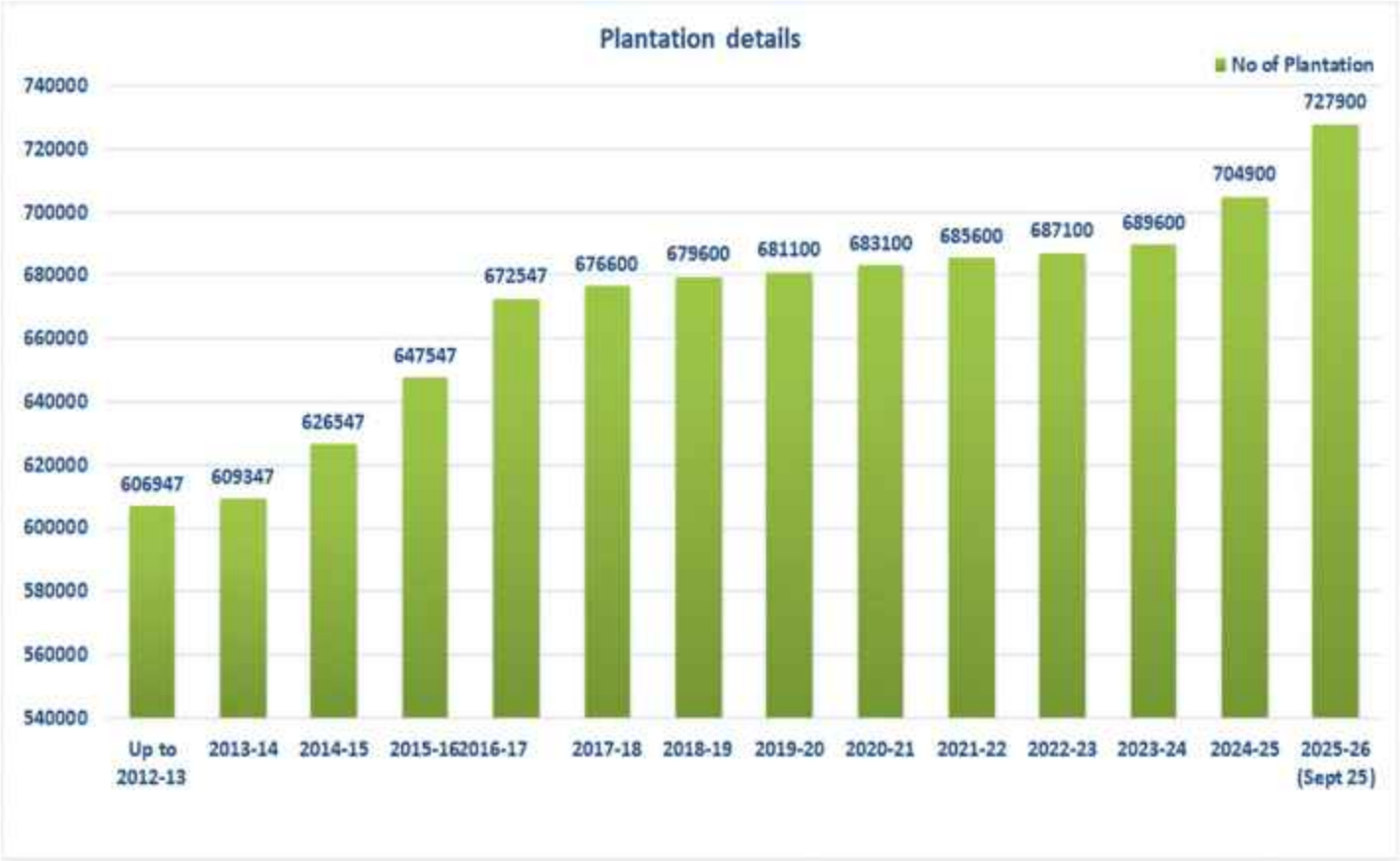
The Bio-assay study carried out in the storm water drain-1&2 are found to be very much within the prescribed limit and non-toxic to the fish and fish food organisms.

6.0

ACKNOWLEDGEMET

M/s SIMA Labs Pvt .Ltd. New Delhi express its deep gratitude to M/s. Paradeep Phosphates Limited for keeping faith onus &again entrusting the assignment for carrying out the Bio-Assay Toxi city Study.We thank Shri Palanisamy Vellusamy ,CMO& Unit Head, Mr. A K Tiwari ,GM (Projects) ,Mr. Anil Kumar Verma, GM(Production) ,Mr. Ambikesh Kumar Mishra ,Jt. GM(Env,Mgt) and Mr.Narayan Sahoo,Chief Manager(Env.Mgt) and Mr. Sambit Kumar Behera, Asst. Mgr (Env Mgt)for their whole hearted cooperation during the Study Period. The cooperation and hospitality extended by the other officials and staff of Paradeep Phosphates Limited is also gratefully acknowledged.

Annexure – III



Annexure-IV

Modern Test Center

Berhampur

CONSOLIDATED REPORT

Issued To: Paradeep Phosphates Limited PO: PPL Township, Paradeep Dist: Jagatsinghpur Odisha, India, Pin: 754145.	Date of initiation of Test : 17/06/2025 Date of Completion of Test: 07/07/2025	ULR NO: TC531225000001854F TO ULR NO: TC531225000001856F

Date of receipt: 16/06/2025

TEST METHOD USED: BARC/2008/E/023

Sample submitted by PARADEEP PHOSPHATES LIMITED, ODISHA.

SAMPLE NO.	Place of Sampling	Name of the Sample	Qty in gm/Kg	Test Certificate No.	Test Requirement	Result Bq/Kg
RP-19	Rock Phosphate from Rock Silo	ROCK PHOSPHATE	740gm	2113 36149	1-U-238 2– Ra-226	1 - (830.546 ± 90.675) 2 - (219.992 ± 11.428)
RP-26			770gm	2113 36150		1- (808.239 ± 96.900) 2- (384.656 ± 15.057)
RP-29			680gm	2113 36151		1- (828.276 ± 93.930) 2- (250.149 ± 12.911)

IMPRESSION: - The measured Value of U-238 & Ra-226 are below the clearance level of radionuclides of natural origin in bulk solid materials, as per AERB directive- 01/2010(table-3) dated 26/11/2010.

PART D: *REMARKS*

1) The results stated above relates to the sample tested only.
2) This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
3) The sample shall be kept for three months after the test and can be returned on request on payment of transport charges or shall be destroyed. Any customer complaint or by regulatory authority shall be entertained, if and only if the complaint is registered within one month from date of report.

Modern Test Center

Chief Executive

Signature of CE with Seal
Name: Rajendra Kumar Mishra
Designation: Chief Executive

..... End of Report.....

Original

ULR NO: TC531225000001854F

Modern Test Center

TC-5312 **Accredited To ISO/IEC 17025:2017 through NABL** Berhampur

Office Address:-	Lab Address: -
Gandhi Nagar 5th line Extn. East, Berhampur-760001, Dist-Ganjam (Odisha), Visit us: www.moderntestcenter.com	Neelanchal Nagar 3rd lane, Berhampur-760010, Dist-Ganjam (Odisha), Phone:-0680 2403321-22 Mail: - moderntestcenter@gmail.com

Ref: -47090/MTC/LF/7.8/15/2025 DATE: 07/07/2025

TEST CERTIFICATE

Issued to: PARADEEP PHOSPHATES LIMITED
PO: PPL TOWNSHIP, PARADEEP
DIST: JAGATSINGHPUR
ODISHA, INDIA, PIN: 754145.

SAMPLE NO: RP-19
Place of Sampling: Rock Phosphate from Rock Silo

Customer Reference No. Nil Date: 05/05/2025
Date of Receipt: 16/06/2025

Date of Initiation of Test : 17/06/2025
Date of Completion of Test: 07/07/2025

TEST CERTIFICATE NO: 2113 36149 **DATE: 07/07/2025**

TEST METHOD USED: BARC/2008/E/023

PART A: *PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER*

a) Name of the Sample : ROCK PHOSPHATE
b) Batch No./Lot No. and Date of manufacture/ Collection/Sampling (if any) : Batch No.: Not Specified
a) Quantity : 740 gm
b) Brand Name (if any) : Not available
c) Parameters of the test suggested : Estimation of ^{238}U & ^{226}Ra
d) Any other information : No Specific Observation

PART B: *SUPPLIMENTARY INFORMATIONS*

a) Reference to Sampling plan (By the lab/Submitted by the party) : Sample submitted by PARADEEP PHOSPHATES LIMITED, ODISHA.

By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------

b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ----------

c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation

d) Deviation from environmental condition, if any : No deviation

PART C: *TEST RESULTS*

Sl. No	Parameters testing	Limit as per AERB directive- 01/2010 (table-3) Dt. 26/11/2010	Result Obtained
1	U-238	1000 $Bq.kg^{-1}$	(830.546 ± 90.675) $Bq.kg^{-1}$
2	Ra-226	1000 $Bq.kg^{-1}$	(219.992 ± 11.428) $Bq.kg^{-1}$

IMPRESSION: - **The measured Value of U-238 & Ra-226 are below the clearance level of radionuclides of natural origin in bulk solid materials, as per AERB directive- 01/2010(table-3) dated 26/11/2010.**

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Modern Test Center
Chief Executive

Signature of CE with Seal
Name: Rajendra Kumar Mishra
Designation: Chief Executive

..... End of Report .....

Original

ULR NO: TC531225000001855F

Modern Test Center

TC-5312 **Accredited To ISO/IEC 17025:2017 through NABL** Berhampur

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Lab Address: -
Neelanchal Nagar 3rd lane,
Berhampur-760010, Dist-Ganjam (Odisha),
Phone:-0680 2403321-22
Mail: - moderntestcenter@gmail.com

Ref: -47091/MTC/LF/7.8/15/2025 DATE: 07/07/2025

TEST CERTIFICATE

Issued to: PARADEEP PHOSPHATES LIMITED
PO: PPL TOWNSHIP, PARADEEP
DIST: JAGATSINGHPUR
ODISHA, INDIA, PIN: 754145.

SAMPLE NO: RP-26
Place of Sampling: Rock Phosphate from Rock Silo

Customer Reference No. Nil Date: 05/05/2025
Date of Receipt: 16/06/2025

Date of Initiation of Test : 17/06/2025
Date of Completion of Test: 07/07/2025

TEST CERTIFICATE NO: 2113 36150 **DATE: 07/07/2025**

TEST METHOD USED: BARC/2008/E/023

PART A: *PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER*

a) Name of the Sample : ROCK PHOSPHATE
b) Batch No./Lot No. and Date of manufacture/ Collection/Sampling (if any) : Batch No.: Not Specified
a) Quantity : 770 gm
b) Brand Name (if any) : Not available
c) Parameters of the test suggested : Estimation of ^{238}U & ^{226}Ra
d) Any other information : No Specific Observation

PART B: *SUPPLIMENTARY INFORMATIONS*

a) Reference to Sampling plan (By the lab/Submitted by the party) : Sample submitted by PARADEEP PHOSPHATES LIMITED, ODISHA.

By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------

b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ----------
c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation
d) Deviation from environmental condition, if any : No deviation

PART C: *TEST RESULTS*

Sl. No	Parameters testing	Limit as per AERB directive- 01/2010 (table-3) Dt. 26/11/2010	Result Obtained
1	U-238	1000 $Bq.kg^{-1}$	(808.239 ± 96.900) $Bq.kg^{-1}$
2	Ra-226	1000 $Bq.kg^{-1}$	(384.656 ± 15.057) $Bq.kg^{-1}$

IMPRESSION: - **The measured Value of U-238 & Ra-226 are below the clearance level of radionuclides of natural origin in bulk solid materials, as per AERB directive- 01/2010(table-3) dated 26/11/2010.**

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Modern Test Center
Chief Executive
Signature of CE with Seal
Name: Rajendra Kumar Mishra
Designation: Chief Executive

End of Report

Original

ULR NO: TC531225000001856F

Modern Test Center

TC-5312 **Accredited To ISO/IEC 17025:2017 through NABL** Berhampur

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Phone:-0680 2403321-22
Mail: - moderntestcenter@gmail.com

Ref: -47092/MTC/LF/7.8/15/2025 DATE: 07/07/2025

TEST CERTIFICATE

Issued to: PARADEEP PHOSPHATES LIMITED
PO: PPL TOWNSHIP, PARADEEP
DIST: JAGATSINGHPUR
ODISHA, INDIA, PIN: 754145.

SAMPLE NO: RP-29
Place of Sampling: Rock Phosphate from Rock Silo

Customer Reference No. Nil Date: 05/05/2025
Date of Receipt: 16/06/2025

Date of Initiation of Test : 17/06/2025
Date of Completion of Test: 07/07/2025

TEST CERTIFICATE NO: 2113 36151 **DATE: 07/07/2025**

TEST METHOD USED: BARC/2008/E/023

PART A: PARTICULARS OF INFORMATION SUBMITTED BY THE CUSTOMER

a) Name of the Sample : ROCK PHOSPHATE
b) Batch No./Lot No. and Date of manufacture/ Collection/Sampling (if any) : Batch No.: Not Specified
a) Quantity : 680 gm
b) Brand Name (if any) : Not available
c) Parameters of the test suggested : Estimation of ^{238}U & ^{226}Ra
d) Any other information : No Specific Observation

PART B: SUPPLIMENTARY INFORMATIONS

a) Reference to Sampling plan (By the lab/Submitted by the party) : Sample submitted by PARADEEP PHOSPHATES LIMITED, ODISHA.

By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------

b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ----------

c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation

d) Deviation from environmental condition, if any : No deviation

PART C: TEST RESULTS

Sl. No	Parameters testing	Limit as per AERB directive- 01/2010 (table-3) Dt. 26/11/2010	Result Obtained
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IMPRESSION: - **The measured Value of U-238 & Ra-226 are below the clearance level of radionuclides of natural origin in bulk solid materials, as per AERB directive- 01/2010(table-3) dated 26/11/2010.**

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Modern Test Center
Chief Executive
Signature of CE with Seal
Name: Rajendra Kumar Mishra
Designation: Chief Executive

End of Report

Annexure-V

Quantitative Risk Assessment (QRA)

Paradeep Phosphates Limited

Sl. No	*Recommendations*	Compliance status
1	The emergency isolation valves and their actuating systems on the liquid inlet and outlet lines of the storage tanks should be of high reliability conforming to Safety Integrity Level SIL 3. These valves should be air failure-to-close type and provided with partial strike testing arrangement. A review may be conducted to ascertain the current position and take improvement action as necessary.	All liquid Ammonia storage tank outlet control valves are air fail to close except storage tank NO 4& 5. Storage tank NO- 4 & 5 liquid outlet Control valves have air receiver before them. In case of ammonia tank area air supply fails for any reason, these two tanks can supply the ammonia to DAP plants.
2	The following safety interlocks of the storage tanks should be reviewed for their reliability: **i**-Overfill protection system **ii**-High-High Level interlock **iii**-Overpressure protection system **iv**- High-High Pressure interlock **v**-Protection against excessive negative pressure in the tank **vi**-Low-Low Pressure interlock	All the following safety interlock control valve systems of storage tanks are reviewed for their reliability which are in working condition. The Record of the same is being maintained. **i**-Overfill protection system **ii**-High-High Level interlock **iii**-Overpressure protection system **iv**- High-High Pressure interlock **v**-Protection against excessive negative pressure in the tank **vi**-Low-Low Pressure interlock
3	Consider providing emergency switches for operating the ROVs additionally in the field at a suitable location for prompt operation of the valves without having to communicate with the Control Room in an emergency. The electric actuator of the MOV at the jetty will not operate in the event of power failure. Hence, it is important to ensure that the hand wheel arrangement is in good working condition.	One Emergency switch is available at local and one emergency switch is available in control room also for operating ROV. Hand wheel arrangement is in good working condition.
4	Increase the number of ammonia leak detectors (with alarm and hooter) for more effective surveillance. Presently one detector is installed at the jetty and at the transfer pump area. Locations like outlet liquid outlet valves, refrigeration compressor / ammonia pre-heater and ammonia tanker loading area may be considered for the additional detectors. These detectors should be connected to the Control Room.	Ammonia leak detectors (5 nos) are installed at the following places. 1) At conveyors Zero point. 2) NH3 transfer pump 1 area 3) NH3 transfer pump 4 and tanker loading area 4) Refrigeration Compressor house area 5) Ammonia storage Tank No 5 area DAP granulator area.

5	The full containment (cup-in-tank) design of the tanks has a high reliability and a catastrophic failure of the inner and outer tanks at the same time is not considered. Hence a dyke / bund wall may not be necessary from the point of view of such a failure. However, spillage due to failure of valves, fittings, instrument tapings etc. in the pipeline system connected to the tanks has a higher probability of occurring. Containment of liquid spills and minimizing the vapor escaping into adjoining areas will go a long way in mitigating the effect of toxic release. With this in view, the following recommendations are made: **i**-Provide bund / dyke for the storage tanks and the transfer pump areas. Making the bund/dyke from insulating concrete can also reduce the evaporation rate. **ii**-Provide water curtain at the periphery of the bund walls to be operated in case of a spillage, to restrict the escape of ammonia vapors to adjoining areas. Provide water curtains also around the valves/safety valves area on top of the storage tanks with isolation valves that can be operated from the ground level, preferably by remote operated valves. Water curtains may also be provided around the compressor area.	Bund/dyke wall for storage and transfer pump areas may obstruct the pathways and hence the same was not provided. However fire hydrant system is available inside the plant and Water spray nozzle system (Fire monitor) is available which can spray up to Ammonia tank top in case of emergency.
6	Emergency power from the DG Set and alternative cooling water supply arrangement should be available for running the refrigeration compressors during outage of normal supply.	Emergency power supply for cooling Tower pump is available through DG set.
7	A large number of Instruments and safety devices are provided for the safe operation of the storage system. Scheduled and effective maintenance of the instruments and safety devices should be ensured and properly documented.	We are regularly checking, maintaining and documenting the records of all instruments provided in Storage tank.
8	Service and test all PSVs and TSVs at regular intervals and properly tracked. Identification tags showing set pressures, last test date, date of next test due may be provided on each safety valve.	PSVs of storage tanks are being tested periodically. Set pressure of safety valve is already painted on the valve Body. Display of last test dates tags on safety valves provided.
9	The SOP for transfer of ammonia into the storage tank should elaborate the risk of overpressure and overfilling – the two most common causes for failure of storage tanks - and the actions / precautions to be taken to prevent them.	SOP for transfer of Ammonia in to storage tank is to prevent against risk of over pressure and over filling is available.

10	The flare stack and its ignition system should be tested periodically.	We are testing the Flare stack and its ignition system periodically and the record of the same is being maintained.
11	The isolation valves, especially the vent valve should be 'eased' periodically to make sure that these will operate freely in case of need.	The isolation valve especially the vent valve is being 'eased' periodically to operate freely in case of need
12	Monitor moisture content in liquid ammonia in each shipment. Presence of 0.2% water in liquid ammonia provides protection against stress corrosion cracking (SCC).	We are receiving Ammonia that contains around 0.2% moisture in liquid Ammonia.
13	The tank shell plates are susceptible to stress corrosion cracking (SCC) in presence of oxygen. During normal service no oxygen is present inside the tank. However, oxygen will enter the system during decommissioning, testing and maintenance. Under such circumstances great care is to be taken for removal of oxygen before taking the tank back in service	We are following SOP and taking extra care by doing Nitrogen purging, N2 gas exchanging and Ammonia gas exchanging for removal of oxygen before taking the tank back in service.
14	As a practice, the drains of pipelines, equipments, instruments etc. that are nor frequently used should be plugged or blinded in a consistent manner	All drains of pipe lines, equipments and instruments that are not being used frequently were blinded and the same practice is being followed strictly.
15	A scheme to monitor the settlement if any of the foundation of the Storage Tank may be put in place. An expert study of the condition of the foundation and piles may also be carried out.	Settlement checking of the foundation of all ammonia storage tanks are being carried out periodically by our Civil department. Condition of foundation and piles are being carried out on regular basis.
16	Carry out detailed periodic inspection of the tanks to ensure their integrity.	Periodic inspection of the tanks is being carried out to ensure their integrity.
17	Review the inventory management practice to determine if the maximum permitted storage in a tank can be lowered from the current level of ~80%.	We are keeping maximum inventory 40000MT or less against our maximum storage capacity of 50000 mt, which is 80%.
18	Ammonia Unloading During ammonia unloading from ship tanker, necessary patrolling and surveillance is to be ensured to prevent emergency due to major leak in the pipeline.	Our operation and maintenance team is taking care for zero leakage by preventive maintenance further during Ammonia unloading, our patrolling team is available to ensure for preventing emergency due to any major leak in pipe line.
19	**Tanker Loading** Use a detailed checklist to inspect the ammonia tanker before it is accepted for loading. Only tankers having valid test certificates and fulfilling other conditions should be accepted for loading.	Check list and SOP has been provided for Ammonia tanker loading .We are allowing those tankers only after verification of valid certificates and fulfilling other conditions.

20	The ammonia hoses should be hydraulically pressure tested periodically and a record should be maintained. An identification tag with the test details and the due date for next test should be attached to the hoses. There should also be a replacement schedule for the hoses.	This condition is not applicable to us since we are not using hoses for loading ammonia tankers.
21	Keep SCBAs handy at the tanker loading area while loading tankers. The loading operator alone, with PPE, shall have access to the tanker during loading activity. Others like the drivers may stay away.	We are keeping two no of SCBAs and 6 no of masks and other PPEs at site always /while loading tankers.
22	The tanker drivers shall be trained in ammonia tanker safety and a record shall be maintained.	Training to drivers is being given regularly. Record is being maintained.
23	The tanker should carry respiratory protection PPE for the drivers for use in emergencies.	Strict instructions have been given to Tanker owners to carry respiratory protection PPE for their drivers for use in emergencies and the same is being ensured.
24	**DAP Plant** Provide a ROV in the liquid ammonia line at the battery limit of DAP Plant to enable quick isolation of supply in case of a major leak in DAP Plant. This valve may be operable from the DAP Control Room as well as from the field.	ROVs in liquid ammonia line is available at battery limit of DAP Plant to enable quick isolation of supply in case of a major leak in DAP Plant and the same valve can be operated from the DAP Control Room as well as from the field.
25	**General** Breathing apparatus with encapsulated suits should be stocked in sufficient numbers to manage rescue works in case of major ammonia leak. As the number of breathing apparatus, spare cylinders, gas masks etc. required to tackle a major emergency will be large compared with presently stored numbers, it is suggested that a special storage facility may be provided at a suitable place for storing them and maintaining them properly for use in emergencies.	We have kept one suit in control room, one in jetty and two no in F&S department Total 29 Nos of breathing apparatus are available with F&S department to manage rescue works in case of major ammonia leak One compressor is also available in F&S Department for refilling of BA set.
26	Plant personnel should be trained to undertake emergency measures in case of ammonia disaster. At least 30% of the personnel employed should also be trained to carry out rescue work.	Mock drills, Onsite emergency plan training are being conducted regularly by F&S Department and our plant personnel are well trained to undertake emergency measures in case of ammonia disaster.
27	Review the number and location of wind socks installed in the plants and township areas.	Total 14 no of wind socks are installed at the following areas 1) WTP-2, Offsite-3, PAP/SAP area-4), Gate house near F&S depart. -2, DAP-1 PPL Township and Navaratna Building-2.
28	**Toxic Release - Chlorine**	Use of chlorine dioxide in place of chlorine is being used.

	Efforts should be concentrated on reducing the probability of release of Chlorine in the chlorine handling area - WTP - especially since this is in the high risk region of township.	
29	Only chlorine toners with assured integrity should be allowed. It is suggested that the management insist on a copy of the test certificate to accompany the toners when they are received.	Not Applicable as chlorine handling system has already replaced as above.
30	The Chlorine toner in use should be fitted with a leak extraction hood connected to a caustic scrubbing system. The caustic scrubbing system (blower, caustic circulation pump etc.) should always be kept in a ready-to-start condition. It is desirable to have the system to start automatically based on chlorine leak detector for added safety.	Not Applicable as chlorine handling system has already replaced as above.
31	The chlorine sensor installed in WTP should be fitted with a hooter to alert personnel about a leak. It should be serviced and calibration checked periodically.	Not Applicable as chlorine handling system has already replaced as above.
32	The toner leak arrestor kit inspected at regular intervals to ensure that all items are available in the kit. A list of items should be available in the kit.	Not Applicable as chlorine handling system has already replaced as above.
33	A programme for replacing the chlorine toner connecting tubes at fixed frequency is to be implemented.	Not Applicable as chlorine handling system has already replaced as above.
34	Ensure that gaskets of correct material is procured and used. As a safe practice, a fresh gasket should be used every time tubing is connected and the used gaskets should be destroyed to avoid accidental reuse.	Not Applicable as chlorine handling system has already replaced as above.
35	Respiratory protection in the area is self-contained breathing apparatus giving supply for 30-40 minutes, with audible alarm when the pressure falls below a stipulated figure. Sufficient number of these SCBA should be stocked at a convenient place nearby where these can be accessed without difficulty in an emergency.	Two numbers of SCBAs are available in WTP control room and 4 Nos available in F&S department in case of emergency.
36	Escape suits for use only for emergency evacuation, in adequate numbers, should also be available.	Two no of escape suits are available for emergency evacuation in control room. We have emergency stock available in F&S Department also.
37	More than having these self-contained breathing apparatus, it is very important that the users are imparted adequate training. The	Our operating staff are well trained and also adequate training is imparted periodically.

	upkeep of this safety equipment is equally important	
38	As a measure to remove the risk emanating from the use of chlorine toner on a long term basis, it is recommended to consider changing over from chlorine to chlorine dioxide for treating water.	Replacement of chlorine with chlorine dioxide is implemented.
39	Since the residents and the occupants of several establishments in the township are likely to get exposed to the chlorine leak, the following additional measures are suggested: **i**-Provide wind socks at several locations surrounding the WTP to guide the people in case of a gas leak. ii-Educate the residents and other members of the public on the actions to be taken in the event of a leak. **iii**-Develop gas shelters at a few places in the township to be identified for the purpose and equip these shelters with PPEs and communication equipment. Some of the rooms / halls in existing buildings can be nominated for this purpose.	1) Wind socks are provided in township and WTP area to guide the people in case of a gas leak. 2) We are Educating our residents and other members of the public on the actions to be taken in the event of a leak.
40	**Fire – FO and HSD Storage Tanks and Day Tanks** A detailed inspection of the storage and day tanks should be carried out at regular intervals to ensure the mechanical integrity of the tanks.	Inspection of storage and day tanks is being carried out periodically by our E&I Department to ensure the mechanical integrity of the tanks.
41	The monitoring instruments of the tanks for level and temperature should be maintained in good condition and the tank conditions monitored regularly.	Level and Temperature monitoring instruments are being maintained in good condition by our Instrumentation department. Records are maintained
42	The fire hydrants, monitors, foam trolleys and hose boxes near the storage tanks and day tanks should be identified for more focused maintenance and upkeep	Fire hydrants, foam trolleys and hose boxes Foam type and CO2 Fire Extinguishers and fire buckets are kept near the storage tanks.
43	Adequate quantity of foam to be stored in the premises. Additional inventory of foam should be maintained in the Fire Station / Fire-, Foam Tenders	Adequate quantity of foam is stored in premises and additional quantity is being maintained by F&S department
44	In the storage tank areas, the fire fighting procedure may be displayed for the information of the plant personnel who will be the first responders in the event of a fire.	Fire fighting procedure is already displayed near storage tank area.
45	In view of its importance as secondary containment in the case of a tank failure or other spillages, the integrity of the dykes of the tanks should be ensured at all times. Any drains or other outlets from the dyke should	The drains and other outlets from the dyke are normally kept closed. We open these drains only under supervision for draining water.

	remain closed except when opened under supervision for draining water or spillage.	
46	Clean the flame arrestors on the tank vents at regular intervals to ensure that they are clear of choking which could lead to pressure / vacuum condition in the tanks.	Not applicable.
47	Ensure that the storage tanks are covered by adequate lightning protection.	Lightening protection is available
48	The unloading hoses should be inspected periodically and maintained in good condition.	We do not use unloading hoses and hence not applicable.
49	Ensure that all hot works on or near the tanks are carried out under safe work permits.	SWP system is being followed strictly.
50	Install a system of Manual Fire Call Points in the factory, connected to a control panel in the Fire Station to reduce the response time to fires.	Already in place.

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R 458450

FORM K

AGREEMENT FOR SUPPLY OF WATER FOR THE PURPOSE OF INDUSTRIAL/COMMERCIAL USE

THIS AGREEMENT is made on **15TH November, 2024** effect from **1st December 2024** between **Sri Palanisamy Velusamy**, son of Sri Velusamy, resident of village; PPL Township, PS: Paradeep, District: Jagatsinghpur by profession "Chief Manufacturing Officer& Unit Head" Paradeep Phosphates Ltd. The authorized representative of Paradeep Phosphates Ltd, Paradeep (hereinafter called the "Applicant") of the First Part.

PALANISAMY VELUSAMY
Chief Manufacturing Officer and Unit Head
Paradeep Phosphates Limited
Paradeep-754145(Odisha)

AND

Sri Anil Kumar Verma, Son of Shri Mehetaru Ram Verma, resident of Village: PPL Township, PS: Paradeep, District – Jagatsinghpur by Profession General Manager (Production), Paradeep Phosphates Ltd, Paradeep and (2) Prachi Sourabh Panda, Son of Late Bijayananda Panda, resident of Village: PPL Township, PS: Paradeep, District-Jagatsinghpur by Profession Deputy General Manager (Production) (hereinafter referred to as the "Sureties") of the Second Part;

NOTARY
MANTA SAHAJEE
Regd. No. 44/09
Exp. Date 07.03.2029
GOVT. OF ODISHA

Debabrata Ghosh
Advocate Orissa High Court
Regd No. [illegible]/07

15/11/24
MANTA SAHAJEE
NOTARY, REGD. No- 44 / 09

Slre-2981

DC 1/11/2024

Palanisamy Velusamy

PDC

Pur. of

5800

BISWAJEET SAHOO
STAMP VENDER
Civil Court, Kujang

SUB-TREASURY OFFICE
KUJANG
05 NOV 2024
STO, KUJANG, STO KUJANG

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AND

The Government of Odisha which expression unless repugnant to the context, shall include his successors and assigns (hereinafter called "the Government") of the Third Part

WHEREAS, the applicant has made an application for the supply of water from Goverment water source/Irrigation works for the period as mentioned in the Schedule here to annexed;

And

WHEREAS, the sureties have agreed to stand surety for the payment of rates charged for such supply in the manner hereinafter appearing and the Government has agreed to supply water for the purpose specified in the schedule annexed hereto.

P. ANUSAMY VELUSAMY
Chief Manufacturing Officer and Unit Head
Paradeep Phosphates Limited
Paradeep-754145(Odisha)

NOTARY
MANTA SAHAJEE
Notary Court
Regd. No. 44/09
Exp. Date
02.03.2029
GOVT. OF ODISHA (INDIA)

Debabrata Sahoo
Advocate Odisha High Court
Regd No. [illegible]/07

MANTA SAHAJEE
NOTARY, REGD. No- 44/09

Sl no-2952 DL 01/11/2024 RS 100

Palaniswamy Velusamy

PPL

[illegible]

SAHOO
STAMP VENDOR
Civil Court, Kujang

SUB-TREASURY OFFICE
KUJANG
05 NOV 2024
STO KUJANG STO KUJANG

SCHEDULE

Purpose for which water will be supplied (1)	Volume of water, if any (2)	Period of supply (3)	The place at which it will be supplied (4)
Industrial purpose	5MGD (inclusive of Domestic use)	01.12.2024 To 30.11.2025	P.P.L Reservoir

NOW THIS AGREEMENT witness as follows:

1. In pursuance of the said agreement and in consideration of supply of water to be made to the applicant, the applicant and sureties hereby jointly and severally covenant with the Government as follows: -
   a) The applicant shall pay at the rate of Rs.10.08 (Rupees Ten and Eight Paisa) Per M3 within stipulated date mentioned on the demand notice.
   b) The applicant shall make suitable arrangement to take the water from the Government water source/Irrigation works at which it will be supplied.
   c) The applicant shall not use the water supplied to him for any purpose other than that which is specified in the said Schedule.
2. If the sum aforesaid or any part thereof, is not paid on or before the date specified in this agreement it shall become payable at once (unless the Government sanctions for special reason on extension of time) and the applicant and the sureties shall be liable jointly and severally to pay the same with compound interest at the rate of two percent per mensem from the date of default. All amount due to the Government under the terms of these presents shall if not paid in time, be recoverable as a public demand under the Orissa Public Demands Recovery Act 1962.
3. (i) The applicant shall be liable for criminal and civil action if by drawl of water, the rights of any third party are affected and shall indemnify the Government against all claims for damage preferred by person or persons affected by the permission granted.

   (ii) The applicant shall not without prior permission in writing from the Government lay pipe line on Government or communal lands. If the pipe lines have to pass through Government lands permission of the Government for this shall be taken separately which may be granted subject to the protection of rights of Government or community, as the case may be.

   (iii) The applicant shall not draw or lift water more than the quantity mentioned in the requisition or order and not exceeding the volume mentioned in the Schedule except with the prior approval of the Government. The Engineer concerned shall assess the fees to be charged as per Unit/quantity of water drawn or allocated whichever is higher. If drawl is more than the allocation, a penal rate at six times the rate specified in Schedule II and III shall be charged on the quantity of excess drawl, in addition to the normal bill on allocated quantity. The excess drawl is permissible for a maximum period of six months, within which the licensee shall have to apply for a higher

PALANISAMY VELUSAMY
Chief Manufacturing Officer and Unit Head
Paradeep Phosphates Limited
Paradeep-754145 (Odisha)

NOTARY MANTA SAHAJEE Kujang Court Regd. No. 13709 Expl. Date: 02.03.2029 GOVT. OF ODISHA (INDIA)

15/11/2024

Advocate Orissa High Court
Regd No. 321/07

15/11/2024
MANTA SAHAJEE
NOTARY

allocation of water with reasons and where the licensee fails to so apply for such higher allocation or where the licensee is refused for such higher allocation, the agreement shall be liable to cancellation and the water supplied shall be stopped thereafter.

(iv) The permission granted shall not be deemed to exempt the applicant from liability to payment of water charges lawfully assessable at the rate as may be prescribed by Government from time to time.

(v) Government reserves the right to suspend or cancel the permission in case of violation of any of the covenants.

4. The applicant at his own cost shall install a flow meter or a suitable measuring device for measurement of water drawn or lifted by him from the Government source/Irrigation works as per the procedure laid down in rule 23-A(b). The Superintending Engineer concerned shall visit location of drawl of lifting of water, verify the quantities of water drawn or lifted by the applicant and ensure such control as may be necessary for administering the drawing or lifting of water. Assessment of water rate shall be made as per the quantity of water drawn or allocated whichever is higher. In case of any defect or non-functioning of the Flow meter, the licensee shall bring the fact to the notice of the concerned Executive Engineer forthwith and take appropriate steps to remove the defects in the meter or replacement thereof within a period of two months and in such cases the fees shall be charged on quantity of water allocated for the said period of three months or till the defects in the Meter is removed or Meter is replaced as the case may be, whichever is earlier, and where the licensee fails to bring the defect or non-functioning of the Meter to the notice of the concerned Superintending Engineer or fails to remove the defects in the Meter or to replace the same, as the case may be, within the stipulated period the agreement shall be liable to cancellation and thereafter water supply shall be stopped.

5. The applicant shall construct full proof effluent discharge plant before commissioning of the project. For proper test of such effluent there shall be computerized testing system and the applicant shall give details of effluent discharged in the natural source (in river and nala)

6. For construction of head works and control mechanism i.e., intake well, Pump house and other related facilities, M/s. Paradeep Phosphates Ltd will get the land leased in their favor through IDCO as is done in respect of any other government land required by the industry, IDCO will make available land on long term lease to M/s. Paradeep Phosphates Ltd. The continuance of the lease agreement will be subject to the

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Chief Manufacturing Officer and Unit Head Paradeep Phosphates Limited Paradeep-754145 (Odisha)

Debabrata Sahoo

condition that the industry shall pay water charges as per prevailing water rate and all other dues of Government and IDCO from time to time.

7. M/s. Paradeep Phosphates Ltd., would require to pay three months advance water charges in favor of Superintending Engineer concerned in shape of Bank draft or F.D.R duly discharged by the company as non-interest bearing security deposit and for nine months Bank Guarantee duly pledged in favor of the concerned Superintending Engineer. Onus of maintain the Bank Guarantee lies with the company.
8. In case of water supply for M/s. Paradeep Phosphates Ltd, is to be met from a common source through a sharing mechanism, such common infrastructure for drawl of water will be constructed, maintained and operated either by IDCO or Special purpose Vehicle (SPV) after taking due clearance from IDCO. Water will be supplied to M/s. Paradeep Phosphates Ltd, by IDCO/SPV and they would also be liable for payment of water rate to the Government and will in turn have arrangements as similar therein as clauses (6) and (7) of this agreement.
9. M/s. Paradeep Phosphates Ltd., drawing or allocated water from reservoir for it uses, shall sign supplementary agreement with the Odisha Hydro Power Corporation Limited, to compensate the loss of energy generation due to its drawl and the Odisha Hydro Power Corporation Limited, shall raise demands for compensation of loss of energy generation within first week of every month against the quantity of water drawn or allocated, whichever is higher.
10. They will not disturb the normal flow of water so that riparian rights in the downstream will be affected and the company shall have no claim on the account.
11. The drawl mechanism for raw water and disposal system of effluent to be established by the industry without disturbing existing eco system and environmental set up.
12. The Rehabilitation and Resettlement Action Plan/Welfare Action plan, if so, required will be prepared in conformity with the current Orissa Rehabilitation and Resettlement policy and executed by the company at its own cost under the supervision of the Water Resources Department and the Collector of the District, Jagatsinghpur.
13. M/s. Paradeep Phosphates Ltd. Shall not claim as a matter of right to get the desired quantity of the water during non-monsoon and lean period to meet their full industrial

PALANISAMY VELUSAMY
Chief Manufacturing Officer and Unit Head
Paradeep Phosphates Limited
Paradeep-754145 (Odisha)

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Regd No. ...

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use and the company has to make adequate storage facility in their own land for supply of water to their plant during such period.

14. The safety design of all the structures lies fully on the company.
15. In case of any dispute/arising out of this agreement, the same shall be referred to Government and the decision of the Government in water Resources Department shall be final.
16. Any surplus power from the Captive Power Plant shall be sold my M/s Paradeep Phosphates Ltd., to GRIDCO or any other entity to be notified by the State Government under mutually acceptable terms & conditions.
17. The allocation of water will automatically lapse if the company does not use the water for the purpose applied for within three years of allotment.
18. This agreement shall be valid for a period of 1 year i.e., up to 30.11.2025 subject to renewal of the same by the concerned Superintending Engineer. For the renewal of agreement, the concerned drawee has to apply minimum three months before the expiry of agreement.
19. If the industry is found to be drawing water unauthorized before signing the agreement/installation of flow meter, the concerned Superintending Engineer will charge penal rate at six times the normal rate as provided Schedule II & III.
20. Government shall be at liberty to review the water allocation unilaterally in face of exigencies.
21. The concerned Superintending Engineer or his authorized representatives reserves the right to inspect all installations of drawl and disposal mechanism during land after construction including intake structure, flow meter and treatment plant.
22. M/s. Paradeep Phosphates Ltd., will have to show clearly in water management plan as to what storage facility the company will create for the lean season and to what extent and how the water is going to be recycled which shall be a part of the project report of the unit.
23. M/s. Paradeep Phosphates Ltd., may engage at their own cost consultant(s) experienced in the field to take up field investigations, prepare, design and drawing to set up the water supply scheme for drawing water from Government water Source/Irrigation works for their proposed plant. The actual work will start after approval of the scheme by the competent authority of water Resources Department who can inspect the work during the construction.

PALANISAMY
Chief Manufacturing Officer and Unit Head
Paradeep Phosphates Limited
Paradeep-754145 (Odisha)

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24. The exact place of lifting will be decided in consultation with the authority of water Resources Department.

25. The industry shall have to pay commitment charges which are equivalent to 5% of the cost of unutilized water (allocated quantity-quantity of water utilized) in addition to payment of usual water rate for quantity of water being utilized as per DoWR Notification No. 13233/WR/dated.04.6.2016

26. The license fees for drawl or allocation of water shall be enhanced @10% per annum.

27. Department of water Resources shall not be held responsible for non-availability of water due to dry season, disruption, repair and maintenance of canal/reservoir.

In witness whereof the Parties hereto have put their hands and seals the day and year first above written.

In the presence of Witnesses:

Prasanta Kumar Das.
1.Prasant Kumar Das

Bijoy Kumar Shaw
2.Bijoy Kumar Shaw

Signature of Applicant

Palanisamy Velusamy

PALANISAMY VELUSAMY
Chief Manufacturing Officer and Unit Head
Paradeep Phosphates Limited
Paradeep-754145 (Odisha)

Signature of Sureties

1. Anil Kumar Verma

Prachi Sourabh Panda
2. Prachi Sourabh Panda

NOTARY
GOVT. OF ODISHA (INDIA)

Superintending Engineer
Mahanadi South Division-1
Cuttack

SIGNATURE OF SUPERINTENDING ENGINEER

Attested

Debabrata Sahoo
Advocate Odisha High Court
Regd. No. [illegible]/07

Annexure-VII

NEERI Recommendations & PPL Compliance

NEERI Recommendations	Action taken by PPL
i) The "L" shaped area near ETP- needs remediation as per the measures suggested.	As per the measures suggested , The "L" shaped area near ETP has already been neutralized by using mixture of lime solution.
ii) The Sulphur muck disposal site near factory main gate - needs remediation .	As per the measures suggested Area near main gate has already been neutralized and plantation done.
iii) The Sulphur muck dump site near the scrap yard- can be taken care by natural attenuation	The Sulphur muck dump site near the scrap yard has already been cleaned and sulphur muck was used in DAP plant as filler. After that sulphur muck is being stored at earmarked place and being used in DAP as filler.
iv) The oil contaminated site near offsite area- The traces of oil remaining at this site may be taken care by natural attenuation.	The oil contaminated site near offsite area has already cleaned and developed.
v) The oil contaminated site near workshop area - The traces of oil remaining at this site may be taken care by natural attenuation.	The oil contaminated site near workshop area has already cleaned and developed.
vi) Old spent catalyst disposal site- it is recommended that PPL should continue to monitor so as to asses the possibility of contamination in terms of vanadium, if any.	Old spent catalyst disposal site has already closed and sold to authorized party M/s Re-sustainability, Sukinda (Odisha).
vii) Phosphogypsum contaminated site near railway yard - needs remediation as per the measures suggested. In order to prevent further contamination of soil and groundwater .It is recommended to provide a shed and an impervious platform for phosphogypsum stacked at railway siding.	Phosphogypsum contaminated site near railway yard has already neutralized and decontaminated. PPL has provided a shed & an impervious platform for phosphogypsum stacked at railway siding.
viii) Old Sulphur muck disposal area (north of Sulphur silo)- remedial measures as delineated need to be taken to decontaminate site.	Old Sulphur muck disposal area (north of Sulphur silo) has already decontaminated and developed.

Annexure -VIII

CREP guidelines for Fertilizer Industry

Waste water Management		
Sl. No	Action Points	Compliance Status
1	Efforts will be made for conservation of water, particularly with a target to have consumption less than 8.12 and 15 m3 tonne of urea produced for plant based on gas, naphtha and fuel oil, respectively. In case of plants using Naptha and Gas both as feed stocks, water consumption target of less than 10m3/ tonne will be achieved. An action plan for this will be submitted by June 2003 and targets be achieved by March 2004.	Not Applicable to us, as we are not making urea.
2	Use of arsenic for CO2 absorption in ammonia plants and chromate based chemicals for cooling system, which is still continuing in some industries, will be phased out and replaced with non- arsenic and non- chromate systems by December 2003. In this regard, action plan will be submitted by June 2003	Not Applicable to us, as we have not ammonia plant.
3	Adequate treatment for removal of oil, chromium (till non- chromate based cooling system is in place) and fluoride will be provided to meet the prescribed standards at the source (end respective process unit) itself. Action plan will be firmed up by June 2003 for compliance by March 2004.	Effluent Treatment Plant (ETP) is installed to remove fluoride.
4	Proper and complete nitrification and de-nitrification will be ensured wherever such process used for effluent treatment, by September 2003,	Not Applicable
5	Ground water monitoring around the storage facilities and beyond the factory premises will be carried out at regular intervals particularly for pH. Fluoride CPCB will finalize the guidelines for groundwater monitoring by December 2003.	Monitoring is being carried out by NABL accredited third party on regular intervals as per CPCB guideline.
6	No effluent arising from process plants and associated facilities will be discharged to the storm water drain. The quality of storm water will be regularly monitored by all the industries.	Separate effluent & storm drains are provided to avoid mixing of effluent. The quality of storm water is being monitored.
7	The industries, where waste water/ effluent flows through the storm water drains even during the dry season will install continuous systems for monitoring the storm water quality for pH, ammonia and fluoride. If required, storm water will be routed through effluent treatment plant before discharging. An action plan will be submitted by June 2003 and necessary action will be taken by June 2004.	Zero discharge is maintained in storm drain during non-monsoon.

Air Pollution Management		
1	All the upcoming urea plants will have urea prilling towers based on natural draft so at to minimize urea dust emissions.	Not Applicable for us, as we are not making urea.
2	The existing urea plants particularly, the plants having forced draft prilling towers will install appropriate systems (e.g. scrubber. etc.) for achieving existing norms of urea dust emissions. In this regard, industries will submit action plan by June 2003 and completion of necessary actions by June 2004.	Not Applicable for us, as we are not making urea.
3	The sulphuric acid plants having SCSA system will switch over to DCDA system by March 2004 to meet the emission standard for SO2 as 2kg/tonne of H2SO4 produced. An action plan for this will be submitted by June 2003.	Sulphuric acid plant in PPL is having DCDA system process. We are meeting the CPCB norms of SO2.
4	Sulphuric acid plants having DCDA system will improve the conversion and absorption efficiencies of the system as well as scrubbers to achieve SO2 emission of 2kg tonne of acid produced in case of plants having capacity above 300 tpd and 2.5 kg tonne in case of plants having capacity upto 300tpd. An action plan will be submitted by June 2003 and emission levels will be complied with by September 2004.	Already achieved SO2 emission of 1.5 & 1 kg per tonne of acid produced.
5	Stack height for sulphuric acid plants will be provided as per the guidelines and on the basis of normal plant operations (and not when the scrubbers are in use)by June 2003. The scrubbed gases are to be letout at the same height of the stock	Stack height for sulphuric acid plants is provided as per the CPCB guidelines.
6	An action plan for providing proper dust control systems rock phosphare grinding unit in phosphoric acid plants/ single super phosphate plants, so as to achieve particulate emission of 150 mg/Nm3 will be submitted by September 2003 and complied with by March 2004	We have wet & dry grinding system for rock phosphate grinding. Bag filters are provided at the transfer points to control the dust.
7	Particulate as well as gaseous fluoride will be monitored and adequate control systems will be installed by June 2004 to achieve the norms on total fluoride emissions (25 mg/Nm3).	Fluorine Recovery Unit (FRU) System is installed to recover fluorine and we have achieved the norm of total fluoride emissions within 20 mg/Nm3.
8	Continuous SO2 emission monitoring systems will be installed in sulphuric acid plants (having capacity 200 tpd and above) by March 2004. Action plan for this will be submitted by June 2003.	Continuous SO2 emission monitoring systems are installed in the sulphuric acid plants.
9	Regular monitoring of ambient air quality with regard to SO2 NOx, PM, SO3, fluoride and acid mist will be carried out.	Regular monitoring of ambient air quality is being done.

Solid Waste Management		
1	Gypsum will be effectively managed by providing proper lining, dykes with approach roads and monitoring of groundwater quality around storage facilities. Accumulated gypsum will be properly capped. In this regard, action plan will be submitted by June 2003 and for compliance by December 2003.	Gypsum stack management is being done as per the CPCB guideline.
2	An action plan for proper handling, storage and disposal of spent catalyst having toxic metals will be submitted by June 2003 and implemented by September 2003. The industry will also explore recovery/buy-back of spent catalyst by September 2003.	Spent Catalyst is being disposed to authorized party M/s Re-sustainability, Sukinda, Odisha.
3	Carbon slurry, sulphur muck and chalk will be properly managed and disposed of in properly designed landfill either within premises or in common facility. Action plan on this will be submitted by June 2003 and implemented by March 2004.	Sulphur muck is being reused as filler in DAP plant.
4	Existing stock of chromium and arsenic bearing sludge will be properly disposed by December 2003. industries will also explore recovery of chromium from the sludge. CPCB will provide guidelines for proper disposal of the sludge	Not Applicable