

25th Nov, 2023

PPL/Env.Mgt. /F-05/2023-24/44 The Deputy Director General of Forest (C), Ministry of Environment, Forest & Climate Change, Integrated Regional Office, A/3, Chandrasekharpur, <u>Bhubaneswar -751023</u>

Sub: Half Yearly EC compliance report for the period from April 2023 to September 2023.

- 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.

Dear Sir,

1

With Reference to the above subject & Environment Clearance, we are submitting herewith the half yearly compliance report for the period from April 2023 to September 2023 along with the relevant annexures for your kind perusal.

Thanking you

Yours faithfully,

For M/s Paradeep Phosphates Limited

Nilesh Dessai

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



HALF YEARLY EC COMPLIANCE REPORT

For the period from April to September' 2023



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 | We are strictly adhering to the |
| | made by the State Pollution Control Board and the State | stipulations made by the State Pollution |
| | Government of Odisha. | Control Board, Odisha and the State |
| | | Government of Odisha. |
| 1.DAPP | LANI: | |
| i | All stacks shall confirm to the prescribed norms of 150 | The stacks emissions (PM) are well |
| | mg/Nm ³ | within the prescribed limit. |
| | | Please refer <i>Appendix</i> – <i>A</i> |
| ii | In exigency when waste water cannot be recycled shall | DAP plant has four sumps with pumping |
| | discharge to effluent drain leading to the Effluent Treatment | system to recycle the all effluent |
| | Plant. | generated in the plant. However, there is |
| | | provision made for collecting effluent |
| | | from sumps to ETP through drain in case |
| 2 SUI P | HURIC ACID PLANT | of emergency. |
| <u>2.50L1</u> | Quantification of Sulphur muck generation its use in DAD | Quantity of Sulphur muck generation |
| 1 | plant shall be done and submitted to the Board. | 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 | SO ₂ emission through stack is well |
| | Kg/Ton of 100% concentrated acid produced. | within the prescribed limit. |
| | | Please refer <i>Appendix – A</i> . |
| <u>3. PHOS</u> | SPHORIC ACID PLANT : | |
| i | No effluent shall be discharged outside the premises of | PPL has maintained the closed loop |
| | Phosphoric acid plant except Gypsum pond. | system from PAP Plant to Gypsum pond |
| | | and vise versa. The plant is not |
| | | premises. |
| ii | The unit shall provide scrubbing arrangements for reduction | Scrubbing system has been provided for |
| | of fluoride from the gaseous emission. | reduction of fluoride from the gaseous |
| | | emission. |
| 4. <u>CAPT</u> | IVE POWER PLANT : | |
| 1 | DM plant waste water to be neutralized before discharge. | DM plant waste water is being |
| | | neutralized. |
| 2 | Any further expansion of the plant either with existing | Noted and Agreed. |
| | product or any new product can be taken up only with the | Č |
| 3 | The project authorities should come with a proposal for | Stack emissions level through all the |
| | bringing the stack emission levels within standards. An | plants are well within the prescribed |
| | action plan in this regard should be prepared and submitted | standards of CPCB/OSPCB. |
| | to this Ministry within a period of one year. | Please refer <i>Appendix – A</i> . |
| 4 | Adequate number (a minimum of 3 to 5) of air quality | The following online instruments have |
| | monitoring stations should be set up in the down- wind | been installed in PPL. Details are as |



| | 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. | under : Continuous Ambient Air Quality Monitoring Station -1 near Main gate (Time office). Continuous Ambient Air Quality Monitoring Station -2 near Guest House Continuous Ambient Air Quality Monitoring Station -3 near MOP Silo Continuous Ambient Air Quality Monitoring Station -4 near Rock Silo. Continuous stack emission monitoring instruments 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 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 Toxicity - bio assay study is conducted every year. Report for the year 2023-24 shall be submitted to the next six monthly compliance. However, report for the year 2022-23 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. | 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. | No supernatant liquid from the gypsum pond is allowed to escape into drain. |
| 13 | 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. | 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 6.86 lakhs trees within plant premises, colony area and road side. The Green Belt coverage area is more than 39% of the total area. Please refer Annexure – <i>III</i> . Treated effluent water quality monitoring report of STP is enclosed as <i>Appendix</i> – <i>A</i> . |
| 14 | 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. | 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 for last three years is as follows; 2021-22 1583125 MT 2022-23 1045925 MT 2023-24 502225 MT (Apr-Sept 23) Moreover, a Zypmite plant having capacity of 240 TPD is installed and commissioned for utilization of Gypsum. Also 500 meters Road is made by Gypsum in consultation with CPCB and CRRI as a pilot project. |
| 15 | A preliminary study on the radioactivity level in gypsum and its likely impact on the environment should be carried out within six months. | As per the MoEF&CC condition every shipment of rock phosphate samples along with its produced gypsum samples are being sent to the BRIT for analysis 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. |
|----|---|--|
| 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 <i>Annexure-V</i> . |
| 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 |
|---------|---|--|
| | The gaseous emissions from various process | Being Complied. |
| 1 | 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. | 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 <i>Appendix-A</i> . |
| 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 Toxicity - bio assay study is conducted every year. Report for the year 2023-24 shall be submitted to the next six monthly compliance. However, report for the year 2022-23 is enclosed as Annexure – II . |
| 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 <i>Appendix-A</i> . 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 of 25 mg/Nm ³ , Pl refer <i>Appendix</i> – <i>A</i> . |



| | | 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. | SO₂ emission level is being monitored through online continuous SO₂ 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. New Gypsum Pond has been constructed with HDPE lining at the bottom as well as side of the dykes as per guidelines of CPCB/EC conditions. PPL is selling gypsum to cement industries and gypsum board factories. In addition to this PPL has been installed and commissioned the 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 6.88 lakhs trees within plant premises, colony area and road side. The Green Belt coverage area is more than 39% of the total area. Please refer <i>Annexure-III</i>. |
|---------|---|---|
| 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. However, we have requested Regional Director, CGWB, Bhubaneswar for its feasibility. |
| 11 | Recommendations made in the Risk Assessment report for the risk mitigation should be strictly complied with. | Already Complied. Please refer <i>Annexure -V</i> . |
| B. Gen | eral Conditions: | |
| Sl. No. | CONDITIONS | COMPLIANCE STATUS |
| | The project authority shall strictly adhere to the | The plant is strictly adhering to all stipulations of |
| 1 | stipulations of the Orissa Pollution Control Board. | statutory bodies relevant to the plant. |
| 2 | stipulations of the Orissa Pollution Control Board. 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. | statutory bodies relevant to the plant. |
| 1 2 3 | stipulations of the Orissa Pollution Control Board. 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. 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. | statutory bodies relevant to the plant. Noted. 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. |



| | and disposal of Hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 2003.Authorisation from State Pollution Control Board must be obtained for collection/treatment/storage /disposal of hazardous wastes. | Hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 2003. Authorisation obtained from OSPCB, Odisha vide no - IND-IV-HW-02-5202, dated 31.03.2023 is valid up to 31-03-2025. |
|----|---|---|
| 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 <i>Appendix</i> – 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 2022-23 medical checkup has been done for 695 Nos. of Employees and 2515 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 is enclosed as <i>Annexure- VI</i> . |
| 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 <i>Annexure -V</i> . |
| 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 <u>http://envfor.nic.in</u> .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. |



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

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 23 rd July ,1990. | We are submitting herewith the separate compliance status of environmental clearance issued vide letter no. J -11011/17/86-IA-II dated 23 rd 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 16 th 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 being transmitting to OSPCB & CPCB server. |
| 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, | We are strictly monitoring the gaseous emissions from various units. It is observed that the emission levels are well within norms. Please refer <i>Appendix</i> – <i>A</i> . |
| | the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. | 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 SO₂ 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 <i>Appendix - A</i> . |
|----|--|--|
| 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 <i>Annexure-VII</i> . |
| 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 MTPD and received Consent to Operate. The plant is running successfully. |
| 17 | Spent Catalyst (V2O5) 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 6.88 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 more than 39% of the total area. Please refer <i>Annexure-III</i> . |
| 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 <i>Annexure-VIII</i> . |



| 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 <i>Annexure -V</i> . |
|----|---|--|
| 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 <i>Annexure -V</i> . |
| 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 2022-23 medical checkup has been done for 695 Nos. of Employees and 2515 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 <i>Annexure -IX</i> . |
| 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:

| 51. No. | CONDITIONS | COMPLIANCE STATUS | | |
|---------|---|---|--|--|
| 1. | The project authority shall strictly adhere to the | We are strictly adhering to all stipulations of the | | |
| | stipulations of the Orissa Pollution Control Board | statutory bodies relevant to our plant. | | |
| | body. | | | |
| | | | | |
| 2 | No further expansion or modifications in the plant | Noted and Agreed. | | |
| | 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 | | | |
| | protection measures required, if any. | | | |
| | | | | |
| 3 | The gaseous emissions (SO2, HCl, NOx, NH3, | We are strictly monitoring the gaseous | | |
| | fertilizer dust) and particulate matter from various | emissions ($PM_{2.5}$, PM_{10} , SO_2 , NO_x and NH_3 , fortilizer dust) from various units. Possilts of the | | |
| | process units shall conform to the standards prescribed by the concerned authorities from time | same are well within the prescribed standards. | | |
| | to time, Emission data shall be periodically | Half yearly reports are being submitted to the | | |
| | monitored and reports submitted to Ministry's | Ministry's Regional office at Bhubaneswar, | | |
| | Regional office at Bhubaneswar, CPCB and OPCB | CPCB and OPCB. | | |
| | | Monitoring of HCL is not applicable to us. | | |
| 4 | All the waste waters generated from the various | All the waste water generated from DAP plant is | | |
| | processes shall be recycled/reused in the plant | recycled to process itself. Further, adequate | | |
| | and zero discharge shall be maintained. The domestic waste water shall be treated in sentic | Effluent Treatment Plant has been provided to treat all the waste water from other processes | | |
| | tanks and treated waste shall be used for irrigation | and the treated water is being used in the plant. | | |
| | in the green belt. | STP has also been provided to treat the domestic | | |
| | | waste water and treated water is used for | | |
| | | greenben development. | | |
| 5 | At no time the emissions shall exceed the | It is being complied. | | |
| | prescribed limits. In the event of failure of any | | | |
| | unit shall be immediately put out of operation and | | | |
| | shall not be restarted until the desired efficiency | | | |
| | has been achieved. | | | |
| 6 | The leasting of embiant size of lite and it. | We have also do not to the set of | | |
| 0 | stations shall be reviewed in consultation with the | we nave already reviewed those existing locations in consultation with the SPCB Odisha | | |
| | OPCB and additional stations shall be installed, if | officials and four Nos. of online AAQMS | | |
| | required, in the down wind direction as well as | (Ambient air quality monitoring station) have | | |
| | where maximum ground level concentrations are | been installed. The real time data is being | | |
| | | | | |
| | | | | |



| 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 <i>Appendix – A</i>. | | | |



| 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. However, we have requested Regional Director, CGWB, Bhubaneswar for its feasibility. |
|----|--|--|
| 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 e mail) to the respective Regional Office of MoEF&CC, the respective zonal office of CPCB and the Orissa Pollution Control Board. | It is being complied. |
|----|--|--|
| 20 | The environmental Statement for each financial year ending 31 st 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 31 st 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. <u>REF: LETTER No - J-11011/370/2009-IA-II (I); DATED. 27th AUGUST 2020</u>

A. <u>Specific Conditions</u>:

| 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 and being complied. |
| 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 39% 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. | | |
|----------------|--|---|--|--|
| B. <u>Gene</u> | eral Conditions: | | | |
| 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. | Noted. | | |
| 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 <i>Appendix -A</i> | | |
| 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. | | |



| 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. |
|---|--|
| 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. |
| 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. |
| 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. | <text><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></text> |
| | 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. 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. 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. The project proponent shall inform the public that the project has been accorded Environmental 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. |



Half - Yearly Compliance Report (April – September' 2023)

| 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. | Noted. |
|-----|--|--------|
| 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. |



ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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

TC-7815

TAHER MANSION, 1ST FLOOR 9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| No. AP-AAQ/23-24/065 | | Date: May 06, 2023 Page 1 of 1 | | | | |
|----------------------------------|--|--------------------------------|--|-------------------|-------------------------|---------------------------|
| Issued to : M/S Address : Par | | : M/S. | PARADEEP PHOSPHATE LTD. | | | |
| | | : Para | aradeep, Odisha | | | |
| You | ar WO Ref. No. | : 5500 | 005451, dtd. 13.08.2022 | Equipment used: | | |
| Sar | nple Description | : Ambi | ent Air | ID No.: RVB | /AFDS/PM2.5/01, Cal. | Valid upto: 16.07.23 |
| Sar | mpling Location | : Near | AAQMS # 01 | ID No.: RVB | RDS/APM460/BL/06, | Cal. Valid upto: 03.11.23 |
| | | (N20° | 16'31.01, E86°37'27.24) | | Environmental of | conditions |
| Dat | e & Time of sampling | : 28.04 | 2023 (10:30 A.M.)-29.04.2023 (10:30 A.M.) | Temperatu | re : Max: 33.0°C & N | Min: 26.0°C |
| Sar | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 758 mmH | 9 |
| Dur | auon or Sampling | : 24Hr | 5. | CO Ph Ni | S lested: PM25 PN | 110, SO2, NO2, O3, NH3, |
| Ana | alysis Completed on | :06.05 | 5.2023 | CO, PD, NI, | AS, CER6, DAP | |
| SI | Parameters | _ | Test Method | Unit | Posulte | Norme as NAAO 2000 |
| No. | ratalitetera | | Test Mediou | Onit | (Time Weighted Avg.) | Nonins as NANG,2003 |
| 1. | PM _{2.5} (Size ≤ 2.5µm) |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 39.7 | 60 (24 Hourty.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 58.9 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as S | 02 | IS 5182 (Part - 2): 2001 | µg/m³ | 6.93 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as N | 102 | IS 5182 (Part - 6): 2006 | µg/m³ | 29.53 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m³ | 16.50 | 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 | 15.23 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as | со | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.92 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.050 | 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/01/15 (AAS Method) issue No. 04, Issue Date: 10.01.2018 | ng/m ³ | 0.363 | 6.0 |
| 11. | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | <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/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m² & Benzo(a)Pyrene: 0.5 ng/m³.

Report Verified by

S. Mondal

ate (Dr. R. KARIM) Technical Manager

Authorised Signatory For R.V. BRIGGS & CO. (P) 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, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007



TEST REPORT

| No. AP-AAQ/23-24/066 | | Date: May 06, 2023 Page 1 of 1 | | | | |
|-------------------------------|--|--------------------------------|---|-------------------|---|--|
| Issued to : M Address : Pa | | : M/S. | PARADEEP PHOSPHATE LTD. | | | |
| | | : Para | Paradeep, Odisha | | | |
| You | Ir WO Ref. No. | : 5500 | 005451, dtd. 13.08.2022 | Equipment used: | | |
| Sar | nple Description | : Ambie | ent Air | ID No.: RVB | /AFDS/PM2.5/01, Cal. | Valid upto: 16.07.23 |
| Sar | npling Location | : Near | AAQMS # 02 | ID No.: RVB | /RDS/APM460/BL/06, | Cal. Valid upto: 03.11.23 |
| | | (N20° | 16'30.06, E86°37'20.25) | | Environmental of | onditions |
| Dat | e & Time of sampling | : 27.04. | 2023 (10:15 A.M.)-28.04.2023 (10:15 A.M.) | Temperatu | re : Max: 36.0°C & M | /in: 26.0°C |
| Sar | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 758 mmH | g |
| Dur | ation of Sampling | : 24Hrs | l. | Parameter | s Tested: PM25, PM | I ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , |
| Ana | alysis Completed on | : 06.05 | .2023 | CO, PD, NI, | , As, C ₆ H ₆ , BaP | |
| TE | ST FINDINGS:- | | | | D | |
| SI. No. | Parameters | | Test Method | Unit | (Time Weighted Avg.) | Norms as NAAQ,2009 |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | 6 | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 43.2 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 68.9 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as S0 | D ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.99 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as N | 102 | IS 5182 (Part - 6): 2006 | µg/m ³ | 32.50 | 80 (24 Hourly.) |
| 5. | Ozone as O3 | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 18.70 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indoptienal Method) Issue No. 04, Issue Date: 10.01.2018 | hð/w ₃ | 19.31 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as (| со | IS : 5182 (Part - 10), 1999 Non Dispersive infra-Red (NDIR) spectroscopy | mg/m ³ | 0.80 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.060 | 1.0 (24 Hourly.) |
| 9. | Nickel as Ni | | SDP 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/01/15 (AAS Method) issue No. 04. Issue Date: 10.01.2018 | ng/m ³ | 0.726 | 6.0 |
| 11. | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | <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/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by S. Mondal

Nº1-(Dr. R. KARIM) **Technical Manager**

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

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TEST REPORT

| No. AP-AAQ/23-24/067 | | Date: May 06, 20 | 23 | | Page 1 of 1 |
|----------------------|--|---|----------------------|---|---------------------------|
| Iss | ued to | M/S. PARADEEP PHOSPHATE LTD. | | | |
| Ad | dress | : Paradeep, Odisha | | | |
| You | Ir WO Ref. No. | 5500005451, dtd. 13.08.2022 | | Equipment | used: |
| Sar | nple Description | : Ambient Air | ID No.: RVB | /AFDS/PM2.5/01, Cal. | Valid upto: 16.07.23 |
| Sar | mpling Location | Near AAQMS # 03 | ID No.: RVB | /RDS/APM460/BL/06, | Cal. Valid upto: 03.11.23 |
| | | (N20°17'11.74, E85°39'32.64) | | Environmental of | conditions |
| Dal | e & Time of sampling | 25.04.2023 (09:30 A.M.)-26.04.2023 (09:30 A.M.) | Temperatu | re : Max: 35.0°C & M | Min: 29.0°C |
| Sar | mpling Plan : | : RVB/FM/44 | Barometric | Presure : 759 mmH | g |
| Dur | ation of Sampling | : 24Hrs. | Parameter | s Tested: PM25, PN | 110, SO2, NO2, O3, NH3, |
| Ana | alysis Completed on | : 06.05.2023 | CU, PD, NI | , AS, C ₆ H ₆ , BaP | |
| TE | ST FINDINGS:- | | 1 | | |
| SI. No. | Parameters | Test Method | Unit | (Time Weighted Avg.) | Norms as NAAQ,2009 |
| 1, | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 39.4 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m³ | 62.0 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as SC | 0 ₂ IS 5182 (Part - 2): 2001 | µg/m³ | 5.68 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as N | D ₂ IS 5182 (Part - 6): 2006 | µg/m³ | 32.00 | 80 (24 Hourly.) |
| 5. | Ozone as O3 | IS 5182 (Part - 9) : 1974 | µg/m³ | 17.61 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indophenal Method) Issu No. 04, Issue Date: 10.01.2018 | e µg/m³ | 15.80 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as (| CO IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Rad (NDIR) spectroscopy | mg/m ³ | 0.89 | 04 (1 Hourly.) |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | hð/m3 | 0.050 | 1.0 (24 Hourly.) |
| 9. | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 0 Issue Date: 10.01.2018 | 4, ng/m ³ | <5.0 | 20 |
| 10 | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 0 Issue Date: 10.01.2018 | 4, ng/m ³ | 0.847 | 6.0 |
| 11. | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | <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/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

S. Mondal

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

are



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TEST REPORT

| No. AP-AAQ/23-24/068 | | Date: May 06, 202 | 23 | | Page 1 of 1 |
|----------------------|--|--|-------------------|-------------------------|---------------------------|
| Issued to : M/ | | M/S. PARADEEP PHOSPHATE LTD. | | | |
| Ad | dress | Paradeep, Odisha | | | |
| Yo | ur WO Ref. No. | 5500005451, dtd. 13.08.2022 | | Equipment | used: |
| Sar | mple Description : | Ambient Air | ID No .: RVB | /AFDS/PM2.5/01, Cal. | Valid upto: 16.07.23 |
| Sar | mpling Location : | Near AAQMS # 04 | ID No.: RVB | /RDS/APM460/BL/06, | Cal. Valid upto: 03.11.23 |
| - | | N20°16'10.70, E86°38'32.54) | | Environmental of | conditions |
| Dat | te & Time of sampling : | 26.04.2023 (09:45 A.M.)-27.04.2023 (09:45 A.M.) | Temperatu | re : Max: 32.0°C & I | Min: 22.0°C |
| Sar | mpling Plan : ; | RVB/FM/44 | Barometric | Presure : 759 mmH | g |
| Du | ration of Sampling : | 24Hrs. | Parameter | S Tested: PM25, PN | 110, SO2, NO2, O3, NH3, |
| | alysis Completed on : | 06.05.2023 | CO, PD, N | , AS, Ogfie, Bar | |
| SL | Parameters | Test Method | Unit | Peeulte | Norme as NAAO 2000 |
| No. | Furanteters | Test Method | Unit | (Time Weighted Avg.) | NOTING AS NANCI,2004 |
| 1. | $PM_{2.5}$ (Size $\leq 2.5 \mu m$) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 45.9 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10μm) | IS 5182 (Part - 23): 2006 | µg/m³ | 70.0 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as SO | IS 5182 (Part - 2): 2001 | µg/m³ | 6.98 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as NO | 02 IS 5182 (Part - 6): 2006 | µg/m³ | 31.40 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | IS 5182 (Part - 9) : 1974 | µg/m³ | 17.40 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indeptendi Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 14.90 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as C | O IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.95 | 04 (1 Hourly.) |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m³ | 0.031 | 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 | 0.484 | 6.0 |
| 11. | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | <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/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

S. Mondal

Kale (Dr. R. KARIM) **Technical Manager**

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TEST REPORT

| No. AP-WAQ/23-24/015 | | | Date: May 05, 2 | 2023 | | Page 1 of 1 |
|--------------------------|---------------------------------------|--------------------|---|-------------------|------------------------------------|--|
| Issued to : Address : | | : M/S. | PARADEEP PHOSPHATE LT | D. | | |
| | | : Parac | : Paradeep, Odisha | | | |
| You | ır Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| San | nple Description | : Fugitiv | ve Air | 1 | D No .: RVB/RDS/APM | M460/BL/03, |
| San | npling Location | : PAP S | Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 27.04 | .2023 (10:00 A.M 06:00 P.M.) | Temperatur | e : Max: 34.0°C & Mi | in: 29.0°C |
| San | npling Plan : | : RVB/F | FM/44 | Barometric | Presure : 760 mmHg | |
| Dur | ation of Sampling | : 08Hrs | i. | | Parameters Te | ested: |
| Ana | alysis Completed on | : 05.05 | .2023 | | SPM, SO2, NO2 | & NH ₃ |
| TES | ST FINDINGS:- | | 201 Co.M. | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 449 | 10000 |
| 2. | 2. Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.70 | 5000 |
| 3. | Nitrogen Dioxide a | IS NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 31.42 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 30.24 | Not Available |

-: END OF TEST REPORT :-

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(Dr. R. KARIM) **Technical Manager** Authorised Signatory

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

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 Results relate only to the parameters tested.



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TEST REPORT

| No. AP-WAQ/23-24/016 | | i. | Date: May 05, 2 | 2023 | | Page 1 of 1 |
|----------------------|-----------------------------|-------------------|---|-------------------|--|--|
| Issued to Address | | : M/S | PARADEEP PHOSPHATE LT | D. | | |
| | | : Para | deep, Odisha | | | |
| You | ır Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| San | nple Description | : Fugiti | ve Air | 1 | D No .: RVB/RDS/API | /460/BL/03, |
| San | npling Location | : SAP | Section | | Cal. Valid upto: 05 | .11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 25.04 | .2023 (10:30 A.M 06:30 P.M.) | Temperatu | re : Max: 35.0°C & M | in: 32.0°C |
| San | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 760 mmHg | |
| Dur | ation of Sampling | : 08Hrs | i. | | Parameters Te | ested: |
| Ana | lysis Completed on | : 05.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 437 | 10000 |
| 2. | Sulphur Dioxide as | SO2 | IS 5182 (Part - 2): 2001 | µg/m³ | 7.62 | 5000 |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 35.71 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 27.37 | Not Available |

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TEST REPORT

| No. AP-WAQ/23-24/017 | | | Date: May 05, | 2023 | | Page 1 of |
|------------------------|------------------------------------|-------------------|---|-------------------|--|--|
| Issued to : Address | | : M/S | PARADEEP PHOSPHATE LT | TD. | | |
| | | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| Sar | mple Description | : Fugiti | ve Air | | D No .: RVB/RDS/API | M460/BL/03, |
| Sar | mpling Location | : DAP, | A & B Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | te & Time of sampling | : 26.04 | .2023 (10:10 A.M 06:10 P.M.) | Temperatu | re : Max: 36.0°C & M | in: 31.0°C |
| Sar | mpling Plan : | : RVB/ | FM/44 | Barometric | Presure : 760 mmHg | · · · · · · · · · · · · · · · · · · · |
| Dur | ration of Sampling | : 08Hrs | i. | | Parameters Te | ested: |
| Ana | alysis Completed on | : 05.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 473 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 7.39 | 5000 |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 39.28 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 28.97 | Not Available |

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TEST REPORT

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|----------------------|------------------------------------|--------------------|---|-------------------|--|--|
| Issued to | | : M/S. | PARADEEP PHOSPHATE LT | D. | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| San | nple Description | : Fugiti | ve Air | 1 | D No.: RVB/RDS/API | M460/BL/09, |
| San | npling Location | : DAP, | C & D Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 26.04 | .2023 (10:20 A.M 06:20 P.M.) | Temperatu | re : Max: 36.0°C & M | in: 31.0°C |
| San | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 760 mmHg | |
| Dur | ation of Sampling | : 08Hrs | i, | | Parameters Te | ested: |
| Ana | alvsis Completed on | : 05.05 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 446 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.90 | 5000 |
| 3. | Nitrogen Dioxide a | IS NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 36.42 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 29.99 | Not Available |

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TEST REPORT

| No. AP-WAQ/23-24/019 | | (| Date: May 05, 2 | 2023 | | Page 1 of |
|----------------------|------------------------------------|-------------------|---|-------------------|--|--|
| Issued to | | : M/S | PARADEEP PHOSPHATE LT | D. | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| San | nple Description | : Fugiti | ve Air | 1 1 | D No .: RVB/RDS/API | M460/BL/03, |
| San | npling Location | : Zypm | ite Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 28.04 | .2023 (10:00 A.M 06:00 P.M.) | Temperatu | re : Max: 31.0°C & M | in: 28.0°C |
| San | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 760 mmHg | |
| Dur | ation of Sampling | : 08Hrs | i. | | Parameters Te | ested: |
| Ana | alysis Completed on | : 05.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | 8 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 480 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 7.16 | 5000 |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 32.85 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 31.83 | Not Available |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-WAQ/23-24/020 | | | Date: May 05, 3 | 2023 | | Page 1 of |
|----------------------|------------------------------------|-------------------|---|-------------------|--|--|
| Issued to | | : M/S | PARADEEP PHOSPHATE LT | D. | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | Ir Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| Sar | nple Description | : Fugiti | ve Air | 1 | D No .: RVB/RDS/API | M460/BL/09, |
| Sar | npling Location | : Off. S | ite Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 27.04 | .2023 (10:25 A.M 06:25 P.M.) | Temperatu | re : Max: 34.0°C & M | in: 29.0°C |
| San | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 760 mmHg | |
| Dur | ation of Sampling | : 08Hrs | i. | | Parameters Te | ested: |
| Ana | lysis Completed on | : 05.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | late | IS : 5182 (Part – 4),1999 | µg/m ³ | 432 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 7.82 | 5000 |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | hð\w ₃ | 34.99 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 23.67 | Not Available |

-: END OF TEST REPORT :-

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

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TEST REPORT

| No. AP-WAQ/23-24/021 | | | Date: May 05, 3 | 2023 | | Page 1 of 1 |
|--------------------------|-----------------------------|-------------------|---|-------------------|--|--|
| Issued to : Address : | | : M/S | PARADEEP PHOSPHATE LT | D. | | |
| | | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | | Equipment u | sed: |
| Sar | nple Description | : Fugiti | ve Air | 1 | D No.: RVB/RDS/API | M460/BL/09, |
| Sar | npling Location | : Packi | ng Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 28.04 | .2023 (10:20 A.M 06:20 P.M.) | Temperatu | re : Max: 35.0°C & M | in: 30.0°C |
| Sar | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 760 mmHg | · · · · · · · · · · · · · · · · · · · |
| Dur | ation of Sampling | : 08Hrs | i. | | Parameters Te | ested: |
| Ana | alysis Completed on | : 05.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | - 9.11 | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 440 | 10000 |
| 2. | Sulphur Dioxide as | SO2 | IS 5182 (Part - 2): 2001 | µg/m³ | 7.59 | 5000 |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 34.28 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 26.83 | Not Available |

-: END OF TEST REPORT :-

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



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R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

| No. AP-FG/23-24/069 | | Date: May 03, 2023 | | Page 1 d |
|---------------------|------------------------------|---|---------------------|--|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTI | D. | |
| Addres | 55 | : Paradeep, Odisha. | | |
| Sample | Description | : Stack Gas / Flue Gas | Equ | ipment used: |
| Date & | time of sampling | : 25.04.2023 (03:30 P.M. to 03:57 P.M.) | ID No.: RVB/SMK/ | 05 (Cal. Validity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| Analys | is Completed on | : 03.05.2023 | Physical : Temp | ., Velocity, Gas flow |
| ٨ | Conservation also | | Chemical : CO, | CO ₂ , SO ₂ & Acid Mis |
| A. | General information abo | UT STACK : | | |
| 2 | Emission due to | : SAP - A | | |
| 3 | Material of construction of | fetack : M S | | |
| 4 | Shape of stack | : Circular | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | |
| Β. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 120 M | | |
| 2. | Diameter of the stack at sa | mpling point : 2.7 M | | |
| 3. | No. of Traverse point | : 32 Nos. | | |
| 4. | Height of the sampling poi | int from GL : 35 M | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | |
| 1. | Fuel used : | 2. Fuel consumption : | 3.Lo | oad : |
| D. | Environmental condition | <u>s :</u> | | 14 |
| 1. | Barometric pressure : 759 | mmHg | 2. Temperature : | 34 °C |
| E. | Results of Physical Para | meters of Flue Gas : | | No. |
| SI 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 | 10.00 |
| 3. | Ouantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 167476 |
| F. | Results of gaseous emis | sion : | 11111 2111 | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1. | Sulphur dioxide | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 649 |
| 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. | Acid Mist | SOP No.: RVB/SOP/01/20, Issue No.: 04 Issue Date: 10.01.2018 | mg/Nm ³ | 41 |
| G | Pollution control device | · Issue (vo., ov, issue Date, 10.01.2018 | | |
| 0. | Details of pollution control | I devices attached with the stack - Nil | | |

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(Dr. R. KARIM)

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

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TEST REPORT

| No. AP-FG/23-24/070 | | Date: May 03, 2023 | | Page 1 o | | |
|---------------------|-----------------------------|---|-----------------------------------|--|--|--|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD. | | | | |
| Addres | S | : Paradeep, Odisha. | | | | |
| Sample | Description | : Stack Gas / Flue Gas | Equ | ipment used: | | |
| Date & | time of sampling | : 25.04.2023 (04:20 P.M. to 04:47 P.M.) | ID No.; RVB/SMK/ | 05 (Cal. Validity: 16/07/23) | | |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested | | |
| nalys | is Completed on | : 03.05.2023 | Physical : Temp Chemical : CO, | ., Velocity, Gas flow CO ₂ , SO ₂ & Acid Mist | | |
| Α. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | : SAP - B | | | | |
| 2. | Emission due to | : Process Emmision | | | | |
| 3. | Material of construction o | f stack : M.S. | | | | |
| 4. | Shape of stack | : Circular. | | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | | |
| В. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level : 120 M | | | | |
| 2. | Diameter of the stack at sa | mpling point : 2.7 M | | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | | | |
| C. | Analysis / Characteristic | | | | | |
| 1. | Fuel used : | 2. Fuel consumption : | 3.Lc | ad : | | |
| D. | Environmental condition | <u>s :</u> | | | | |
| 1. | Barometric pressure : 759 | mmHg | 2. Temperature : | 34 °C | | |
| E. | Results of Physical Para | meters of Flue Gas : | | | | |
| I No | Test Parameters | Test Method | Unit | Results | | |
| 1, | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 81 | | |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | 10.33 | | |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 168940 | | |
| F. | Results of gaseous emis | sion : | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | |
| 1. | Sulphur dioxide | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 654 | | |
| 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 | Acid Mist | SOP No.: RVB/SOP/01/20, | ma/Nm ³ | 31 | | |
| | 11010 (1110) | Issue No.: 04, Issue Date: 10.01.2018 | mgram | 51 | | |

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(Dr. R. KARIM)

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TEST REPORT

| Issued to : M/S. PARADEEP PHOSPHATE LTD. Address : Paradeep, Odisha. Sample Description : Stack Gas / Flue Gas Date & time of sampling : 26.04.2023 (03:45 P.M. to 04:21 P.M.) Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Analysis Completed on : 03.05.2023 Analysis Completed on : 03.05.2023 A. General information about stack : 1. Boiler connected to 2. Emission due to 3. Material of construction of stack 4. Shape of stack 5. Whether stack is provided with permanent platform & ladder : Yes. 8. Physical characteristics of stack ; 1. Height of the stack from ground level : 50 M 2. Diameter of the stack at sampling point : 32 Nos. 4. Height of the stack at sampling point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : <th>ied: dity: 16/07/23) ested /, Gas flow & TF</th> | ied: dity: 16/07/23) ested /, Gas flow & TF |
|--|---|
| Address : Paradeep, Odisha. Sample Description : Stack Gas / Flue Gas Equipment use Date & time of sampling : 26.04.2023 (03:45 P.M. to 04:21 P.M.) ID No.: RVB/SMK/05 (Cal. Validi Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Parameters Tes Analysis Completed on : 03.05.2023 Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & A. General information about stack : : 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 at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperature : 34 °C | ed: dity: 16/07/23) ested /, Gas flow & TF |
| Sample Description : Stack Gas / Flue Gas Equipment use Date & time of sampling : 26.04.2023 (03:45 P.M. to 04:21 P.M.) ID No:: RVB/SMK/05 (Cal. Validi Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Parameters Tes Analysis Completed on : 03.05.2023 Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & A. General information about stack : : 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 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperatur | sed: dity: 16/07/23) ested /, Gas flow & TF |
| Date & time of sampling : 26.04.2023 (03:45 P.M. to 04:21 P.M.) Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Analysis Completed on : 03.05.2023 Analysis Completed on : 03.05.2023 A. General information about stack : 1. Boiler 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. 1. Height of the stack from ground level : 50 M 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : <td>dity: 16/07/23) ested /, Gas flow & TF</td> | dity: 16/07/23) ested /, Gas flow & TF |
| Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Parameters Tes Analysis Completed on : 03.05.2023 Physical : Temp., Velocity, Chemical : CO, CO ₂ , PM & A. General information about stack : . . 1. Boiler 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 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperature : 34 °C E. E. Results of Physical Parameters of Flue Gas : : St M et h o d Uni | e <u>sted</u> v, Gas flow & TF |
| Analysis Completed on : 03.05.2023 Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & A. General information about stack : : DAP - A 2. Emission due 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 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : : : SI No Test Parameters Test M et h o d Unit Rest | y, Gas flow & TF |
| A. General information about stack : 1. Boiler 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 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : : 3 SI No Test Parameters Test M et h o d Unit Result | |
| 1. Boiler 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 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : : 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : : St No Test Parameters Test M et h o d Unit Result | |
| 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. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : | |
| 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. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : | |
| 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. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : | |
| 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. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : SI No Test Parameters Vol 1266 Der 2 - 2000 2000 | |
| B. Physical characteristics of stack : 1. Height of the stack from ground level : 50 M 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : SI No Test Parameters V Test Parameters | |
| 1. Height of the stack from ground level : 50 M 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : | |
| 2. Diameter of the stack at sampling point : 2.8 M 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : D. Environmental conditions : : 3. Load : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : : SI No Test Parameters T e s t M e t h o d Unit | |
| 3. No. of Traverse point : 32 Nos. 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : D. Environmental conditions : : : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : : SI No Test Parameters T e st M ethod Unit No Test parameters 15.11256 (Dec 2) 2000 2000 | |
| 4. Height of the sampling point from GL : 35 M C. Analysis / Characteristic of stack Gas / Flue Gas : . 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : . . . 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : . SI No Test Parameters T est M ethod Unit 1. Transition . . . | |
| C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : D. Environmental conditions : 3.Load : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : 51 No SI No Test Parameters T e st M ethod Unit | |
| 1. Fuel used : Die Ammonium Phosphate 2. Fuel consumption : 3.Load : D. Environmental conditions : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : 2. Temperature : 34 °C 3.Load : SI No Test Parameters Test Method Unit Results | |
| D. Environmental conditions : 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : SI No Test Parameters Test Parameters Test Method Unit Results of Physical Parameters | |
| 1. Barometric pressure : 758 mmHg 2. Temperature : 34 °C E. Results of Physical Parameters of Flue Gas : 31 No SI No Test Parameters Test Method Unit Results | |
| E. Results of Physical Parameters of Flue Gas : SI No Test Parameters Test Method Unit Results ISI No Test Parameters (15.11266 Para) 2000 | |
| SINo Test Parameters Test Method Unit Resu | |
| 1 T | sults |
| 1. Temperature of emission IS 11255: Part 3: 2008 °C 62 | 62 |
| 2. Velocity of gas in duct IS 11255:Part 3:2008 m/sec 15.4 | 5.43 |
| 3. Quantity of gas flow IS 11255:Part 3:2008 NM ³ /hr 282 | 2183 |
| E. Results of gaseous emission : | |
| SI No Test Parameters Test Method Unit Results | Norms |
| 20 | as per CPCB |
| 1. Carbon monoxide IS 11255 : Part 1 : 1985 By Orsat % v/v <0.2 7 | Not Available |
| 2. Carbon dioxide 1S 11255 : Part 1 : 1985 By Orsat % v/v 0.2 | Not Available |
| 3. Particulate Matters 1S 11255 : Part 1 : 1985 mg/Nm3 51 | 150 max. |
| 4. Total Fluoride IS 11255 (Part - 5) : 1990 mg/Nm ³ 1.49 | Not Available |
| F. Pollution control device | |
| Details of pollution control devices attached with the stack : Wet Scrubber | |

mar Report Verified by S. Mondal

(Dr. R. K.

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

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TEST REPORT

| No. A | P-FG/23-24/071 | Date: May 03, 2023 | | | Page 2 of |
|-----------------|-------------------------------------|--|--------------------|-----------------------------|--------------------------------|
| Issued to | | : M/S. PARADEEP PHOSPHATE LTI | D. | | 1 490 2 01 |
| Addre | SS | : Paradeep, Odisha, | | | |
| Sampl Date & | e Description t time of sampling | : Stack Gas / Flue Gas : 26.04.2023 (03:45 P.M. to 04:21 P.M.) | ID No.: RVB | Equipment SMK/05 (Cal.) | t used: Validity: 16/07/23) |
| Analys | sis Completed on | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) : 03.05.2023 | | Parameters Chemical | <u>Tested</u> : NH3 |
| Α. | General information ab | out stack : | _ | | |
| 1. | Boiler 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 provide | d with permanent platform & ladder : Yes | | | |
| Β. | Physical characteristics | s of stack : | | | |
| 1. | Height of the stack from | ground level ± 50 M | | | |
| 2. | Diameter of the stack at s | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos | | | |
| 4. | Height of the sampling pe | oint from GL : 35 M | | | |
| C. | Analysis / Characteristi | c of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : Die Ammo | nium Phosphate 2. Fuel consumption : | | 3 Lond : | |
| D. | Results of gaseous emi | ssion : | | J.Lodu | |
| SI No | Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | mg/Nm ³ | 194 | Not Available |
| E. | Pollution control device | | | | |
| | Details of pollution control | ol devices attached with the stack - Wet Scrubber | | | |

-: END OF TEST REPORT :-

Report Verified by S. Mondal

(Dr. R.)

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

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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, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007



TEST REPORT

| No. AP-FG/23-24/072 | | | Date: May 03, 2023 | | | Page 1 of |
|---------------------|--|-----------------|--|---------------------|--------------------------|--------------------|
| Issued | l to | : M/S. PA | RADEEP PHOSPHATE LT | D. | | |
| Addre | SS | : Paradeep, | Odisha. | | | |
| Sample | e Description | : Stack Gas | / Flue Gas | | Equipment | used: |
| Date & | time of sampling | : 26.04.2023 | 3 (04:45 P.M. to 05:24 P.M.) | ID No.: RVB/S | MK/05 (Cal. V | alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/4 | 44 & IS: 11255 (Part-1,2 & 3) |] | Parameters | Tested |
| Analys | is Completed on | : 03.05.2023 | 3 | Physical : T | emp., Veloc | ity, Gas flow |
| | | | | Chemical : | CO, CO ₂ , PN | 4 & TF |
| Α. | General information abo | out stack : | | | | |
| 1. | Boiler connected to | | : DAP - B | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction o | of stack | : M.S. | | | |
| 4. | Shape of stack | | : Circular. | | | |
| <u>р</u> | Whether stack is provided | with permane | nt platform & ladder : Yes. | | | |
| B. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | |
| 2. | Diameter of the stack at sa | impling point | : 2.8 M | | | |
| 3. | No. of 1 raverse point | int from CI | : 32 Nos. | | | |
| ¢. | Analysis / Characteristic | of stack Gas | : 35 M | | | |
| 1 | Fuel used Die Ammon | ium Phosphate | 2 Fuel consumption : | | 2 Load | |
| D. | Environmental condition | 15 ' | 2. i dei consumption | | 5.1.0au ; •••• | |
| 1 | Barometric pressure : 758 | mmHa | | | | |
| E. | Posulte of Physical Para | matars of Elu | - Gas I | 2. Temperat | are: 32 C | |
| E. | Test Parameters | T | Test Mathed | I that I | | |
| 1 | Temperature of emission | | 1 CST Method | Unit | 1 | Cesuits |
| 1. | Temperature of emission | | 15 11255 : Part 5 : 2008 | -C | | 63 |
| 2. | Velocity of gas in duct | 1 | IS 11255:Part 3:2008 | m/sec | | 14.90 |
| 3. | Quantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 271660 |
| E. | Results of gaseous emis | ssion : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms |
| | | | | | | as per CPCB |
| 1. | Carbon monoxide | IS 1 | 1255 : Part 1 : 1985 By Orsat | % v/v | < 0.2 | Not Available |
| 2. | Carbon dioxide | IS 1 | 1255 : Part 1 : 1985 By Orsat | % v/v | 0.4 | Not Available |
| 3. | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 59 | 150 max. |
| 4. | Total Fluoride | 1 | IS 11255 (Part - 5) : 1990 | mg/Nm ³ | 1.25 | Not Available |
| F. | Pollution control device | 1 | anan mananan mananan narifu yanasa ata | | In Sec. P. | |
| ¥. F. | Pollution control device Details of pollution control | l devices attac | hed with the stack : Wet Scrubbe | mg/Nm ⁻ | 1.25 | Not Avai |
| | | | - END OF TEST REPORT - | | 1.1 | |

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TEST REPORT

| No. AP-FG/23-24/072 | | | Date: May 03, 2023 | | | Page 2 of 2 |
|---------------------|--------------------------|-----------------|---|--------------------|-------------------------------|----------------------------|
| ssued | to | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Addres | e | : Paradeep | Odisha. | | | |
| Sample | Description | : Stack Gas | s / Flue Gas | ID No.: RVB/SM | Equipment u MK/05 (Cal. Va | ised: lidity: 16/07/23) |
| Date & | time of sampling | : 20.04.202 | (44 & 15, 11255 (Dart 1.2 & 3) | P | arameters 7 | ested |
| Samplin | ng Plan & Method | : KVB/FW/ | 44 & 15. 11255 (ran-1,2 & 5) | - | an anneters 1 | <u>contra</u> |
| Analysi | s Completed on | : 03.03.202 | 3 | | Chemical : | NH3 |
| Α. | General information at | out stack : | | | | |
| 1. | Boiler 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 provid | ed with perman | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | cs of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling | point from GL | : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Ga | s / Flue Gas : | | STAR PLAN BROW | |
| 1. | Fuel used : Die Amm | onium Phospha | te 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | | |
| SI No. | Test Parameters | | Test Method | Unit | Results | Norms |
| 51110 | Test Turuneters | | | 1 1 | | CDCD |
| _ | | | | | | as per CPCB |
| 1. | Ammonia as NH3 | Methods (In | s of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 219 | Not Available |

-: END OF TEST REPORT :-

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S. Mondal

(Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. AP-FG/23-24/073 | | | Date: May 03, 2023 | | | Page 1 of |
|---------------------|------------------------------|------------------|--------------------------------------|---------------------|----------------|---------------------|
| Issue | d to | : M/S. PAR | ADEEP PHOSPHATE LT | D. | | |
| Addre | SS | : Paradeep, O | disha. | | | |
| Sampl | e Description | : Stack Gas / | Flue Gas | | Equipment | used: |
| Date & | time of sampling | : 26.04.2023 (| 11:50 A.M. to 12:26 P.M.) | ID No.: RVB/S | SMK/05 (Cal. V | /alidity: 16/07/23) |
| Sampl | ing Plan & Method | : RVB/FM/44 | & IS: 11255 (Part-1,2 & 3) | | Parameters | Tested |
| Analys | sis Completed on | : 03.05.2023 | | Physical : 1 | emp., Veloc | ity, Gas flow |
| | | | | Chemical : | CO, CO2, PI | M & TF |
| A. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : DAP - C | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction o | f stack | : M.S. | | | |
| 4. | Shape of stack | 3922 | : Circular. | | | |
| 5. | Whether stack is provided | with permanent | platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | |
| 2. | Diameter of the stack at sa | mpling point | : 2.8 M | | | |
| 5. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL | : 35 M | | | |
| C, | Analysis / Characteristic | of stack Gas / | Flue Gas : | | | |
| 1. | Fuel used : Die Ammon | ium Phosphate | Fuel consumption : | | 3.Load : | |
| D. | Environmental condition | <u>s:</u> | | | | |
| L | Barometric pressure : 758 | mmHg | | 2. Temperat | ure: 32 °C | |
| E. | Results of Physical Para | meters of Flue (| Gas : | | | |
| SI No | Test Parameters | | Test Method | Unit | 1 | Results |
| 1. | Temperature of emission | IS | 11255 : Part 3 : 2008 | °C | | 55 |
| 2. | Velocity of gas in duct | 1 | S 11255:Part 3:2008 | m/sec | | 15.32 |
| 3. | Quantity of gas flow | 1 | S 11255:Part 3:2008 | NM ³ /br | | 86243 |
| E. | Results of gaseous emis | sion : | | 1 | | 00210 |
| SI No | Test Parameters | | Test Method | Unit | Doculto | Norma |
| | | | eet method | Cint | Results | Norms |
| 1. | Carbon monoxide | IS 112 | 55 : Part I : 1985 By Orsat | 9/2 m/m | <0.2 | as per CPCB |
| 2. | Carbon dioxide | IS 1124 | S - Part 1 - 1085 By Orsat | 20 V/V | ~0.2 | Not Available |
| 3 | Particulate Matters | 10 112 | 11255 . D 1 . 1005 | 70 V/V | 0.4 | Not Available |
| 4 | Total Elucid | 15 | 11255 : Part 1 : 1985 | mg/Nm3 | 61 | 150 max. |
| 4. | Total Fluoride | IS | 11255 (Part - 5) : 1990 | mg/Nm ³ | 1.11 | Not Available |
| F. | Pollution control device | 27 28 21 | | | | |
| | Details of pollution control | devices attached | d with the stack : Wet Scrubber | | | |
| | | | : END OF TEST REPORT :- | | | |

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TEST REPORT

| No. A | P-FG/23-24/073 | | Date: May 03, 2023 | | | Page 2 of |
|------------------|--|-----------------------------|--|--------------------|-----------------------------|-----------------------------|
| Issued | to | : M/S. PA | RADEEP PHOSPHATE LTI | D. | | |
| Addre | SS | : Paradeep, | Odisha. | 70 | | |
| Sample Date & | e Description time of sampling | : Stack Gas : 26.04.2023 | / Flue Gas 6 (11:50 A.M. to 12:26 P.M.) | ID No.: RVB/ | Equipment SMK/05 (Cal. V | used: alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/4 | 14 & IS: 11255 (Part-1,2 & 3) | | Parameters | Tested |
| Analys | is Completed on | : 03.05.2023 | | | Chemical : | NH3 |
| A. | General Information ab | out stack : | | | | |
| 1. | Boiler 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 provide | d with permaner | nt platform & ladder : Yes. | | | |
| В. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Gas | / Flue Gas : | | | |
| 1. | Fuel used : Die Ammo | nium Phosphate | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous em | ission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods o (Indo | f Air Sampling & Analysis, 3rd Ed. phenol Method), Method 401 | mg/Nm ³ | 140 | Not Available |
| E. | Pollution control device Details of pollution control | 2 ol devices attacl | ned with the stack : Wet Scrubber | | | 1 |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-FG/23-24/074 | | | Date: May 03, 2023 | | | Page 1 of |
|---------------------|---------------------------------|-----------------------|------------------------------|---------------------|----------------|--|
| Issued | to | : M/S. PAR | RADEEP PHOSPHATE L1 | D. | | |
| Addres | 55 | : Paradeep, (| Odisha. | | | |
| Sample | Description | : Stack Gas | / Flue Gas | COURS SUBJECT | Equipment | used: |
| Date & | time of sampling | : 26.04.2023 | (12:40 P.M. to 01:19 P.M.) | ID No.: RVB/S | MK/05 (Cal. V | alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/4 | 4 & IS: 11255 (Part-1,2 & 3) | 1 | Parameters | Tested |
| Analys | is Completed on | : 03.05.2023 | | Physical : T | emp., Veloc | ity, Gas flow |
| | 0 | | | Cnemical: | CO, CO_2, PN | 1& 1F |
| A. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : DAP - D | | | |
| 4. | Emission due to | C | : Process Emmission | | | |
| 3. | Material of construction of | I STACK | : M.S. | | | |
| 4. E | Shape of stack | and the second second | : Circular. | | | |
| D. | Physical characteristics | of stack : | a platform & ladder : Yes. | | | |
| 1 | Height of the stack from a | round level | - 50 M | | | |
| 2 | Diameter of the stack at sa | maling point | - 2 8 M | | | |
| 3 | No. of Traverse point | mpring point | : 220 M | | | |
| 4. | Height of the sampling po | int from GL | : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas | / Flue Gas : | | | |
| 1. | Fuel used : Die Ammon | ium Phosphate | 2. Fuel consumption : | | 3.Load : | |
| D. | Environmental condition | s : | | | | |
| 1. | Barometric pressure : 758 | mmHg | | 2. Temperat | ure : 34 °C | |
| E. | Results of Physical Para | meters of Flue | Gas : | | | |
| SI No | Test Parameters | T | Test Method | Unit | F | Results |
| 1. | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | | 59 |
| 2. | Velocity of gas in duct | | IS 11255:Part 3:2008 | m/sec | | 15.13 |
| 3. | Ouantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /br | | 83321 |
| E. | Results of gaseous emis | sion : | | 1 NIVI /III | | |
| SI No | Test Parameters | 1 | Test Method | Unit | Results | Norms |
| | novice provincian account | | | | | as per CPCB |
| 1. | Carbon monoxide | IS 11 | 255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 2, | Carbon dioxide | IS 11 | 255 : Part 1 : 1985 By Orsat | % v/v | 0.2 | Not Available |
| 3. | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 54 | 150 max. |
| 4. | Total Fluoride | 1 | S 11255 (Part - 5) : 1990 | mg/Nm ³ | 1.98 | Not Available |
| F. | Pollution control device | | | | | A REAL PROPERTY AND A REAL |

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TEST REPORT

| No. A | P-FG/23-24/074 | | Date: May 03, 2023 | | | Page 2 of 2 |
|------------------|--|-----------------------------|--|--------------------|-----------------------------|-----------------------------|
| Issued to | | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Addre | 55 | : Paradeep, | Odisha. | | | |
| Sample Date & | e Description time of sampling | : Stack Gas : 26.04.2023 | / Flue Gas (12:40 P.M. to 01:19 P.M.) | ID No.: RVB/ | Equipment SMK/05 (Cal. V | used: alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/4 | 4 & IS: 11255 (Part-1,2 & 3) | | Parameters | Tested |
| Analys | is Completed on | : 03.05.2023 | | 2 | Chemical : | NH3 |
| A. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | ed with permaner | it platform & ladder : Yes. | | | |
| В. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Gas | Flue Gas : | | | |
| 1. | Fuel used : Die Ammo | nium Phosphate | 2. Fuel consumption : | | 3.Load : | |
| D, | Results of gaseous em | ission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods of (Indo | Air Sampling & Analysis, 3rd Ed. phenol Method), Method 401 | mg/Nm ³ | 160 | Not Available |
| E. | Pollution control device Details of pollution control | 2 rol devices attach | ed with the stack : Wet Scrubber | 1 | | |

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TEST REPORT

| No. AP-FG/23-24/075 | | Date: May 03, 2023 | | | | Page 1 of | |
|---------------------|-----------------------------|-----------------------------------|--------------------------------------|----------------------------|---------------------------------------|-------------------------|--|
| ssued | Ito | : M/S. P/ | ARADEEP PHOSPHATE LT | D. | | | |
| Addres | SS | : Paradeep | , Odisha. | | | | |
| Sample | e Description | : Stack Ga | s / Flue Gas | | Equipment | used: | |
| Date & | time of sampling | : 28.04.202 | 23 (12:15 P.M. to 12:57 P.M.) | ID No.: RVB/S | MK/05 (Cal. V | alidity: 16/07/23) | |
| Sampli | ng Plan & Method | : RVB/FM | /44 & IS: 11255 (Part-1,2 & 3) | 1 | Parameters | Tested | |
| Analys | is Completed on | : 03.05.202 | 23 | Physical : 7 Chemical : | emp., Veloc CO, CO ₂ PN | ity, Gas flow 4 & TF | |
| Α. | General information abo | ut stack : | | | | | |
| 1. | Boiler connected to | | : PAP | | | | |
| 2. | Emission due to | | : Process Emmision | | | | |
| 3. | Material of construction of | f stack | : M.S. | | | | |
| 4. | Shape of stack | | : Circular. | | | | |
| 5. | Whether stack is provided | with perman | ent platform & ladder : Yes. | | | | |
| В. | Physical characteristics | of stack : | | | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | | |
| 2. | Diameter of the stack at sa | mpling point | : 2.7 M | | | | |
| 3. | No. of Traverse point | : 32 Nos. point from GL : 35 M | | | | | |
| 4. | Height of the sampling poi | | | | | | |
| C. | Analysis / Characteristic | of stack Ga | s / Flue Gas : | | | | |
| 1. | Fuel used : | | Fuel consumption : | | 3.Load : | | |
| D. | Environmental condition | <u>s:</u> | | | | | |
| 1. | Barometric pressure : 758 | mmHg | | Temperat | ure : 30 °C | | |
| E. | Results of Physical Para | meters of Fl | ue Gas : | | | | |
| SI No | Test Parameters | | Test Method | Unit | 1 | Results | |
| 1. | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | | 42 | |
| 2. | Velocity of gas in duct | | 1S 11255:Part 3:2008 | m/sec | | 5.60 | |
| 3. | Quantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /hr | 1 | 06267 | |
| F. | Results of gaseous emis | sion : | | 1.1.1.1 | | 00207 | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB | |
| 1. | Carbon monoxide | 15 | 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available | |
| 2. | Carbon dioxide | IS | 11255 : Part 1 : 1985 By Orsat | % v/v | 0.4 | Not Available | |
| 3. | Particulate Matters | 0.004 | IS 11255 : Part 1 : 1985 | mo/Nm3 | 43 | 150 mar | |
| 4 | Total Fluoride | | IS 11255 (Part 5) - 1000 | ing/Mil3 | 45 | 150 max. | |
| | i otali i tuoritae | | 19 11702 (Lut - 2): 1230 | mg/Nm | 3.96 | Not Available | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-FG/23-24/076 | | Date: May 03, 2023 | | | |
|---------------------|-----------------------------|---|---------------------|--|--|
| Issued | lto | : M/S. PARADEEP PHOSPHATE LTI |) . | | |
| Addres | \$\$ | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | Eq | uipment used: | |
| Date & | time of sampling | : 27.04.2023 (11:00 A.M. to 11:33 A.M.) | ID No.; RVB/SMK | /05 (Cal. Validity: 16/07/23) | |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Par | ameters Tested | |
| Analys | is Completed on | : 03.05.2023 | Chemical : CO | p., Velocity, Gas flow , CO ₂ , & PM | |
| Α. | General information abo | ut stack : | | | |
| 1. | Boiler connected to | ; Zypmite - 1 | | | |
| 2. | Emission due to | : Process Emmision | | | |
| 3. | Material of construction of | f stack : M.S. | | | |
| 4. | Shape of stack | : Circular. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | | | |
| 1. | Height of the stack from g | round level : 30 M | | | |
| 2. | Diameter of the stack at sa | mpling point : 1.03 M | | | |
| 3. | No. of Traverse point | : 12 Nos. | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | | |
| <u>I.</u> | Fuel used : | 2. Fuel consumption : | 3.L | oad : | |
| D. | Environmental condition | <u>s :</u> | | | |
| 1. | Barometric pressure : 758 | mmHg | 2. Temperature | : 34 °C | |
| E. | Results of Physical Para | meters of Flue Gas : | | | |
| SI 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 | 16.54 | |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 43925 | |
| F. | Results of gaseous emis | sion : | | | |
| SI 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. | Particulate Matters | 15 11255 : Part 1 : 1985 | mg/Nm3 | 59 | |
| G. | Pollution control device | daview etterhad with the start of the new | | | |

S. mondon Report Verified by

S. Mondal

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TEST REPORT

| No. Al | P-FG/23-24/077 | Date: May 03, 2023 | | Page 1 c |
|--------|-----------------------------|---|---------------------|------------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTI | D. | |
| Addres | S | : Paradeep, Odisha. | | |
| Sample | Description | : Stack Gas / Flue Gas | Equ | ipment used: |
| Date & | time of sampling | : 27.04.2023 (12:00 P.M. to 12:30 P.M.) | ID NO.: KVB/SMK/ | 05 (Cal. Validity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | ameters Tested |
| Analys | is Completed on | : 03.05.2023 | Physical : Temp | b., Velocity, Gas flow |
| ۸ | Constal information abo | ut stack - | Chemical : CO | , CO ₂ , & PM |
| 1 | Boiler connected to | I Tummita 2 | | |
| 2 | Emission due to | : Zyphine - 2 | | |
| 3 | Material of construction of | f 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 g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 0.85 M | | |
| 3. | No. of Traverse point | : 12 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | |
| 1. | Fuel used : | 2. Fuel consumption : | 3.L | oad : |
| D. | Environmental condition | <u>s :</u> | | |
| 1. | Barometric pressure : 758 | mmHg | 2. Temperature | : 34 °C |
| E. | Results of Physical Para | meters of Flue Gas : | | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 75 |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 18.42 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 31359 |
| F. | Results of gaseous emis | sion : | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 63 |
| G. | Pollution control device | | A CONTRACTOR | |

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S. Mondal

(Dr. R. KARIM) Technical Manager Authorised Signatory

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

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TEST REPORT

| No. AP-FG/23-24/078 | | Date: May 03, 2023 | | Page 1 o | | | | |
|---------------------|-----------------------------|---|---------------------|-----------------------------|--|--|--|--|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD. | | | | | | |
| Addres | S | : Paradeep, Odisha. | | | | | | |
| Sample | Description | : Stack Gas / Flue Gas | Equipment used: | | | | | |
| Jate & | time of sampling | : 27.04.2023 (01:00 P.M. to 01:34 P.M.) | ID NO.: RVB/SMK/ | 5 (Cal. Validity: 16/07/23) | | | | |
| amplu | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested | | | | |
| nalys | is Completed on | : 03.05.2023 | Chemical : CO, | CO ₂ , & PM | | | | |
| A. | General information about | ut stack : | | | | | | |
| 1. | Boiler connected to | : Zypmite - 3 | | | | | | |
| 2. | Emission due to | : Process Emmision | | | | | | |
| 3. | Material of construction of | f stack : M.S. | | | | | | |
| 4. | Shape of stack | : Circular. | | | | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | | | | |
| В. | Physical characteristics | of stack : | | | | | | |
| 1. | Height of the stack from g | round level : 30 M | | | | | | |
| 2. | Diameter of the stack at sa | mpling point : 0.5 M | | | | | | |
| 3. | No. of Traverse point | : 8 Nos. | | | | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | 50 8 00 ()) (| | | | |
| 1. | Fuel used : | 2. Fuel consumption : | 3.L0 |)ad ; | | | | |
| U. | Environmental condition | <u>s :</u> | | | | | | |
| 1. | Barometric pressure : 758 | mmHg | 2. Temperature : | 34 °C | | | | |
| E. | Results of Physical Para | meters of Flue Gas : | | | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | | | |
| L | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 49 | | | | |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 16.27 | | | | |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 10412 | | | | |
| F. | Results of gaseous emis | sion : | | | | | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 52 | | | | |
| G. | Pollution control device | | | | | | | |

S. monder Report Verified by

S. Mondal

(Dr. R. KARIM)

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

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TEST REPORT No. AP-FG/23-24/079 Date: May 03, 2023 Page 1 of 1 Issued to : M/S. PARADEEP PHOSPHATE LTD. Address : Paradeep, Odisha. Sample Description : Stack Gas / Flue Gas Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 16/07/23) Date & time of sampling : 25.04.2023 (03:30 P.M. to 03:57 P.M.) Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) **Parameters** Tested Analysis Completed on : 03.05.2023 Physical : Temp., Velocity, Gas flow Chemical : SO2, NO2, CO, CO2, & PM General information about stack : A. Stack connected to : Diesel Generator Set - 2 1. 2. Emission due to : Burning of H.S.D 3. Material of construction of stack : M.S. 4. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes 5. 6. Generator capacity : 1 MVA Physical characteristics of stack : B. Height of the stack from ground level : 20 M 1. Diameter of the stack at sampling point 2. :0.4 M 3. No. of Traverse point : 8 Nos. Analysis / Characteristic of stack Gas / Flue Gas : C. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. 1. D. Environmental conditions : Barometric pressure : 758 mmHg 2. Temperature : 35 °C 1. Finding of Physical Parameters of Flue Gas : E. SI No Test Parameters Test Method Results Unit 1. Temperature of emission IS 11255 : Part 3 : 2008 °C 201 IS 11255 : Part 3 : 2008 16.23 Velocity of gas in duct m/sec 2. Quantity of gas flow IS 11255 : Part 3 : 2008 NM³/hr 4614 3. Results of gaseous emission : F. SI No Test Parameters Test Method Unit Results Norms as per Environment (Protection) Third Amendment Rules 2013, for 75 kw - ± 800 kw Sulphur dioxide IS 11255 : Part 2 : 1985 57 Not Available mg/Nm3 1. 2. Nitrogen dioxide IS 11255 : Part 7 : 2005 mg/Nm³ 119 Carbon monoxide USEPA 10:2017 146 3. mg/Nm³ gm/kw-hr 0.84 3.5 IS 13270 (By Orsat): 1992 < 0.2 % v/v Carbon dioxide IS 13270 (By Orsat): 1992 7.2 Not Available % v/v 4. 5. Particulate Matters IS 11255 : Part 1 : 1985 mg/Nm³ 34 0.20 0.2 gm/kw-hr G. Pollution control device Details of pollution control devices attached with the stack : Nil. -: END OF TEST REPORT :g.m das/ (Dr. R. KARIM) Report Verifieb by S. Mondal Technical Manager Authorised Signatory For R.V.BRIGGS & CO. (P) LTD.

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TEST REPORT

| No. AP-FG/23-24/079 | | Date: N | May 03, 202 | | Page 2 of 2 | | | |
|---------------------|-------------------------------------|-------------------------|--|---|---|-------------------|--|--|
| ssued Addres | to s | : M/S. P. : Paradeer | ARADEEP PHOS o, Odisha. | PHATE LT | D. | | | |
| Sample Date & | Description time of sampling | : Stack Ga | us / Flue Gas 23 (03:30 P.M. to 03: | 57 P.M.) | Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 16/07/23) | | | |
| Samplin Analysi | ng Plan & Method is Completed on | : RVB/FM : 03.05.20 | /44 & IS: 11255 (Par 23 | -1,2 & 3) | | Parame Hydroca | ters Tested rbon as HC | |
| A. | General informatio | n about sta | ick : | Marca Marca Anna Anna Anna Anna Anna Anna Anna An | | | | |
| 1. | Stack connected to | 11-011-110-04 | : Dies | el Generator | Set - 2 | | | |
| 2. | Emission due to | | : Bun | ting of H.S.E |) | | | |
| 3. | Material of construct | ction of stac | k : M.S | | | | | |
| 4. | Shape of stack | | : Circ | ular. | | | | |
| 5. | Whether stack is pr | ovided with | permanent platform & | ladder : Ye | 8 | | | |
| 6. | Generator capacity | | :1 M | VA | | | | |
| Β. | Physical character | ristics of st | ack: | | | | | |
| 1. | Height of the stack | from ground | i level : 20 M | л | | | | |
| 2. | Diameter of the sta | ck at sampli | ng point : 0.4 | м | | | | |
| 3. | No. of Traverse pol | int | : 8 N | os. | | | | |
| C. | Analysis / Charact | teristic of s | tack Gas / Flue Gas | | 100 (100 (100 (100 (100 (100 (100 (100 | | | |
| 1. | Fuel used | : H.S.D | | | Fuel consult | imption : 22 | Lt/hr. | |
| D. | Results of gaseou | s emission | | | | | | |
| SI No | Test Parameter | 5 | Test Met | hod | Unit | Results | Norms as per Environment (Protection) Third Amendment Rules 2013, for 75 kw - \$ 800 kw | |
| 6. | Total Hydrocarbon | as HC | : 5182 (Part - 22), 2004 R | A 2009, By AA | mg/Nm ³ | 19.45 | | |
| 1.00 | 10.5 Hills 0700510 | | | | om/kw.hr | 0.11 | 4.0 | |
| 7. | Nitrogen dioxide | | IS 11255 : Part 7 | : 2005 | gm/kw-hr | 0.69 | 4.0 | |
| Ε. | Pollution control | device a control dev | vices attached with the | stack : Nil. | | | | |
| | | | - END OF | TECT DEDO | DT . | | | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. A | AP-SL/23-24/040-043 | | | Date: M | ay 02, 2023 | | | | Page 1 of 1 | | |
|-------|---------------------|------------------------------------|------------------|-----------------|--|------------------|------------------|-----------------|--|--|--|
| Issue | ed to | : M/S. PARADEEP PHOSPHATES LIMITED | | | | | | | | | |
| Addr | ress | : Paradeep, Odisha. | | | | | | | | | |
| Your | P.O. Ref. no. | : 55000 | 05451, 0 | dtd. 13.0 | 08.2022 | | | | | | |
| Desc | cription of Sample | : Sound | Level N | Ionitorin | Ig | | Parameter | s Tested : I | Mins L Mas & Leq | | |
| Date | of Monitoring | : 28.04. | 2023 | | | | Test Meth | od : IS 475 | 8 : 1968 | | |
| SOU | ND LEVEL MONITORIN | G AT AME | BIENT LO | CATION | : | | | | | | |
| SI. | Locations | Day Ti | me (06.0 | 0 A.M to | 10.00 P.M) | Night T | ime (10. | 00 P.M t | o 06.00 A.M) | | |
| No | | Sound | Level in | n dB(A) | Norms as per | Sound | Level i | n dB(A) | Norms as per | | |
| | | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | | |
| 1. | Near AAQMS - 1 | 51.9 | 54.6 | 53.2 | | 43.9 | 46.2 | 45.0 | | | |
| 2. | Near AAQMS - 2 | 53.9 | 60.1 | 58.0 |] | 42.7 | 45.4 | 44.0 | 70 40(4) | | |
| 3. | Near AAQMS - 3 | 52.8 | 59.4 | 56.5 | 75 dB(A) | 48.2 | 51.3 | 49.8 | | | |
| 4. | Near AAQMS - 4 | 52.4 | 54.3 | 53.3 | 1 | 47.7 | 53.1 | 51.5 |] | | |

Note : - L eq - Equivalent sound energy.

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TEST REPORT

| No. A | P-SL/23-24/044-050 | Date: | May 02, | 2023 | | Page 1 of 1 |
|----------------|------------------------------------|--|------------------|------------------|------------------------|---|
| Issue Addre | d to ess PO Ref no | : M/S. PARADEEP PHOSPE : Paradeep, Odisha. : 5500005451, dtd, 13,08,20 | IATE LT | D. | | |
| Desci Date | ription of Sample of Monitoring | : Sound Level Monitoring : 28.04.2023 | | | Parameter Test Meth | <u>s Tested</u> : L _{Min} , L _{Max} & L _{eq} <u>od</u> : IS 4758 : 1968 |
| SOU SI. | ND LEVEL MON Locations | ITORING : TIME | Noise | Level in | n dB(A) | Permissible Noise |
| No. | | | L _{Min} | L _{Max} | L _{eq} | Workers as per The Noise Pollution (Regulation And Control) Rules, 2000 |
| 1. | PAP Plant | 10:40 A.M 10:45 A.M. | 65.3 | 68.2 | 66.9 | |
| 2. | SAP Plant | 11:00 A.M 11:05 A.M. | 50.7 | 53.9 | 52.2 | |
| 3. | Zypmite Plant | 03:00 P.M 03:05 P.M. | 80.8 | 83.4 | 82.0 |] |
| 4. | AB Side - DAP | 10:20 A.M 10:25 A.M. | 66.9 | 69.1 | 68.2 | 90 dB(A) |
| 5. | CD Side - DAP | 03:50 P.M 03:55 P.M. | 61.7 | 64.8 | 63.5 | |
| 6. | Off side | 10:40 A.M 10:45 A.M. | 70.8 | 73.2 | 72.1 | |
| 7. | Packing Section | 03:10 P.M 03:15 P.M. | 66.6 | 69.4 | 67.8 | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

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Results relate only to the parameters tested.



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TEST REPORT

| No. E(D)/23-24/122 | _ | Date: 04 May 2023 | Page 1 of 1 |
|---|----|---|-------------------------------|
| Issued to | ** | M/s. PARADEEP PHOSPHA Paradeep, Odisha | TE LIMITED |
| Description of Sample | ; | Effluent | Parameter Tested: |
| Collection Source | : | ETP Outlet | pH, TSS, O & G. F. |
| Sample Drawn by us on | : | 27.04.2023 at 5.30 P.M. | NH3-N, TKN, NH3-P, N |
| Sample Carried out by | : | Mr. P.P. Mondal and Mr. G. Mon | dal |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | : | 03.05.2023 | |
| Sample collection Procedure | : | IS: 3025 (Part -1) - 1987 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | 3 | Temperature : 27°C, Transported in I | ce box, Cold chain maintained |

TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|------------------------------------|--|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.02 | 6.5 - 8.5 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 55 | 100 (Max.) |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | 2.1 | 10 (Max.) |
| 4 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 1.09 | 10 (Max.) |
| 5 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 32.4 | 50 (Max.) |
| 6 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 45.5 | 75 (Max.) |
| 7 | Free Ammonia as NH ₃ | APHA 23rd edition 4500 NH3F | mg/l | 2.7 | 4 (Max.) |
| 8 | Dissolved Phosphates as P | APHA 23rd edition 4500-PD | mg/l | 3.1 | 5 (Max.) |
| 9 | Nitrate Nitrogen as NO3-N | APHA 23rd edition 4500-N03D | mg/l | 10.17 | 20 (Max.) |

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

Report Verified by (J. Das)

-: END OF TEST REPORT:-

2 Cari (Dr. R. KARIM) Technical Manager Authorised Signatory



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TEST REPORT

| No. E(D)/23-24/123 | _ | Date: 04 May 2023 | Page 1 of 2 |
|---|---|---------------------------------------|-------------------------------|
| Issued to | : | M/s. PARADEEP PHOSPHAT | TE LIMITED |
| | | Paradeep, Odisha | |
| Description of Sample | : | Effluent | Parameter Tested: |
| Collection Source | : | STP Outlet | pH, TSS, BOD |
| Sample Drawn by us on | : | 27.04.2023 at 3.00 P.M. | |
| Sample Carried out by | 4 | Mr. P.P. Mondal and Mr. G. Mon | dal |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | : | 03.05.2023 | |
| Sample collection Procedure | : | IS: 3025 (Part -1) - 1987 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | : | Temperature : 27°C, Transported in Id | ce box, Cold chain maintained |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|---|------------------------------|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 6.92 | 6.5 - 9.0 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 16 | < 100 |
| 3 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 6.6 | < 30 |

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

-: END OF TEST REPORT:-

Report Verified by (J. Das)

War: (Dr. R. KARIM) Technical Manager Authorised Signatory



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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| No. E(D)/23-24/123 | | Date: 04 May 2023 | Page 2 of 2 |
|---|---|---|-----------------------------------|
| Issued to | : | M/s. PARADEEP PHOSPHA Paradeep, Odisha | TE LIMITED |
| Description of Sample | 1 | Effluent | Parameter Tested: |
| Collection Source | : | STP Outlet | Microbiological : Faecal Coliform |
| Sample Drawn by us on | : | 27.04.2023 at 3.00 P.M. | |
| Sample Carried out by | : | Mr. P.P. Mondal and Mr. G. Mor | ndal |
| Sampling Plan | ; | RVB/FM/44 | |
| Analysis completed on | : | 02.05.2023 | |
| Sample collection Procedure | ţ | IS: 3025 (Part -1) - 1987 | |
| Mode of Sampling | ż | Grab | |
| Environmental condition during sampling | : | Temperature : 27ºC, Transported in I | ce box, Cold chain maintained |

MICROBIOLOGICAL TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|-----------------|-------------------------|----------------|---------|---|
| 1 | Faecal Coliform | APHA 23rd Edition 9221E | MPN/ 100 ml | 49 | < 1000 |

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

-: END OF TEST REPORT:-

Report Verified by

(Pijush Kanti Dutta) Sr. Microbiologist Authorized Signatory



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TEST REPORT

| No | AP-AAQ/23-24/103 | Date: May 25, 20 | 23 | | Page 1 of 1 | | | |
|------------|--|---|----------------------------------|---|---------------------------|--|--|--|
| Iss | ued to | M/S. PARADEEP PHOSPHATE LTD. | | | | | | |
| Ad | dress | aradeep, Odisha | | | | | | |
| You | r WO Ref. No. | : 5500005451, dtd. 13.08.2022 | | Equipment used: | | | | |
| San | nple Description | : Ambient Air | ID No.: RVB | /AFDS/PM2.5/09, Cal. | Valid upto: 16.07.23 | | | |
| San | npling Location | Near AAQMS # 01 | ID No.: RVB | /RDS/APM460/NL/04, | Cal. Valid upto: 16.07.23 | | | |
| | | (N20°16'31.01, E86°37'27.24) | | Environmental c | onditions | | | |
| Dat | e & Time of sampling | : 19.05.2023 (09:40 A.M.)-20.05.2023 (09:40 A.M.) | Temperatu | re : Max: 38.0°C & M | /lin: 27.0°C | | | |
| San | npling Plan : | : RVB/FM/44 | Barometric | Presure : 756 mmH | g | | | |
| Dur | ation of Sampling | : 24Hrs. | Parameter | s Tested: PM _{2.5} , PM | 110, SO2, NO2, O3, NH3, | | | |
| Ana | lysis Completed on | 25.05.2023 | CO, Pb, Ni | , As, C ₆ H ₆ , BaP | | | | |
| TES | ST FINDINGS:- | | | | | | | |
| SI. No. | Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | | | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L | µg/m ³ | 38.3 | 60 (24 Hourly.) | | | |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m ³ | 61.0 | 100 (24 Hourly.) | | | |
| 3. | Sulphur Dioxide as SC | 0 ₂ IS 5182 (Part - 2): 2001 | µg/m³ | 5.79 | 80 (24 Hourly.) | | | |
| 4. | Nitrogen Dioxide as N | O2 IS 5182 (Part - 6): 2006 | µg/m ³ | 31.60 | 80 (24 Hourly.) | | | |
| 5. | Ozone as O ₃ | IS-5182 (Part - 9): 1974 | µg/m ³ | 15.83 | 180 (1 Hourly.) | | | |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issu No. 04, Issue Date: 10.01.2018 | ie µg/m³ | 17.98 | 400 (24 Hourly.) | | | |
| 7. | Carbon Monoxide as (| CO IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Re (NDIR) spectroscopy | ^t mg/m ³ | 0.86 | 04 (1 Hourly.) | | | |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.086 | 1.0 (24 Hourly.) | | | |
| 9. | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. (Issue Date: 10.01.2018 | ^{34,} ng/m ³ | 8.5 | 20 | | | |
| 10. | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. (Issue Date: 10.01.2018 | ^{94.} ng/m ³ | 0.376 | 6.0 | | | |
| 11. | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 0.95 | 5.0 | | | |
| 12. | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | | | |

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m², Benzene: 1 µg/m² & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by S. Mondal

(Dr. R. KARIM) Technical Manager Authorised Signatory

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

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TEST REPORT

| No. AP-AAQ/23-24/104 | | | Date: May 25, 202 | 3 | | Page 1 of 1 | | | |
|----------------------|--|--------------------------------|---|-------------------|-------------------------|---------------------------|--|--|--|
| Issued to | | : M/S. PARADEEP PHOSPHATE LTD. | | | | | | | |
| Address : Par | | | Paradeep, Odisha | | | | | | |
| Yo | ir WO Ref. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment | used: | | | |
| Sar | nple Description | : Ambi | ent Air | ID No.: RVB | AFDS/PM2.5/09, Cal. | Valid upto: 16.07.23 | | | |
| Sar | npling Location | : Near | AAQMS # 02 | ID No .: RVB | /RDS/APM460/NL/04, | Cal. Valid upto: 16.07.23 | | | |
| | | (N20° | 16'30.06, E86''37'20.25) | | Environmental of | conditions | | | |
| Dal | e & Time of sampling | : 18.05. | 2023 (09:30 A.M.)-19.05.2023 (09:30 A.M.) | Temperatu | re : Max: 36.0°C & M | /lin: 27.0°C | | | |
| Sar | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 756 mmH | 9 | | | |
| An | auon or sampling | 2470 | 3. | CO Ph Ni | S Lested; PM25, PN | 110, SO2, NO2, O3, NH3, | | | |
| TE | T EINDINGS: | . 20.00 | .2023 | 00,10,10 | AS, Ugi içi Dar | | | | |
| SI. | Parameters | | Test Method | Unit | Results | Norms as NAAO 2009 | | | |
| No. | | | | | (Time Weighted Avg.) | 101110 05 11014,2005 | | | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 42.1 | 60 (24 Hourly.) | | | |
| 2 | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 65.9 | 100 (24 Hourly.) | | | |
| 3. | Sulphur Dioxide as S | 02 | IS 5182 (Part - 2): 2001 | µg/m³ | 6.17 | 80 (24 Houriy.) | | | |
| 4. | Nitrogen Dioxide as N | 10 ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 34.41 | 80 (24 Hourly.) | | | |
| 5. | Ozone as O ₃ | 2 | IS 5182 (Part - 9) : 1974 | µg/m ³ | 17.61 | 180 (1 Hourly.) | | | |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indoptience Method) issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 18.45 | 400 (24 Hourly.) | | | |
| 7. | Carbon Monoxide as | со | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NOIR) spectroscopy | mg/m ³ | 0.78 | 04 (1 Hourly.) | | | |
| 8, | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.061 | 1.0 (24 Hourly.) | | | |
| 9. | I. Nickel as Ni | | tel as Ni SOP No.: RVB/SOP/01/15 (AAS Method) issue No. 04, Issue Date: 10.01.2018 | | 7.5 | 20 | | | |
| 10. | 10. Arsenic as As | | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04, Issue Date: 10.01.2018 | ng/m ³ | 0.379 | 6.0 | | | |
| 11. | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m ³ | 2.39 | 5.0 | | | |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <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

S Manual Report Verified by

S. Mondal

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

C-7815





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TEST REPORT

| No. AP-AAQ/23-24/105 | | Date: May 25, 20 | 23 | | Page 1 of 1 |
|----------------------|--|--|----------------------------------|---|---------------------------|
| lss | ued to | M/S. PARADEEP PHOSPHATE LTD. | | | |
| Ad | dress | Paradeep, Odisha | | | |
| You | Ir WO Ref. No. | 5500005451, dtd. 13.08.2022 | | Equipment | used: |
| San | nple Description | Ambient Air | ID No.: RVB | /AFDS/PM2.5/09, Cal. | Valid upto: 16.07.23 |
| San | npling Location : | Near AAQMS # 03 | ID No.: RVB | /RDS/APM460/NL/04, | Cal. Valid upto: 16.07.23 |
| | | (N20°17'11.74, E85°39'32.64) | | Environmental of | onditions |
| Dat | e & Time of sampling : | 16.05.2023 (09:00 A.M.)-17.05.2023 (09:00 A.M.) | Temperatu | re : Max: 35.0°C & M | /in: 26.0°C |
| San | npling Plan : | RVB/FM/44 | Barometric | Presure : 756 mmH | g |
| Dur | ation of Sampling | 24Hrs. | Parameter | s Tested: PM2.5, PM | 110, SO2, NO2, O3, NH3, |
| Ana | lysis Completed on | 25.05.2023 | CO, Pb, Ni | , As, C ₆ H ₆ , BaP | |
| TES | ST FINDINGS:- | · · · · · · · · · · · · · · · · · · · | | | |
| SI. | Parameters | Test Method | Unit | Results | Norms as NAAQ,2009 |
| | | | | (Time Weighted Avg.) | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 41.2 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m³ | 62.6 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as SO | 2 IS 5182 (Part - 2): 2001 | µg/m ³ | 5.72 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as N | D ₂ IS 5182 (Part - 6): 2006 | µg/m³ | 34.17 | 80 (24 Hourly.) |
| 5, | Ozone as O ₃ | IS 5182 (Part - 9) : 1974 | µg/m³ | 17.16 | 180 (1 Houriy.) |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indephenol Method) Iss No. 04, Issue Date: 10.01.2018 | μg/m ³ | 19.44 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as C | O IS: 5182 (Part - 10), 1999 Non Dispersive Infra-Re (NDIR) spectroscopy | d mg/m ³ | 0.89 | 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. issue Date: 10.01.2018 | ^{04,} ng/m ³ | 5.8 | 20 |
| 10. | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. Issue Date: 10.01.2018 | ^{04,} ng/m ³ | 0.632 | 6.0 |
| 11. | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m ³ | 1.50 | 5.0 |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <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

S. mondo Report Verified by S. Mondal

Rinti (Dr. R. KARIM) Technical Manager Authorised Signatory

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

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TEST REPORT

| No. AP-AAQ/23-24/106 | | | Date: May 25, 2023 | 3 | | Page 1 of 1 | |
|---|--|--|---|--|--|--------------------|--|
| Add | led to Iress | : M/S. F : Parad | PARADEEP PHOSPHATE LTD. eep, Odisha | | | | |
| You Sarr Sarr | r WO Ref. No. pple Description ppling Location | : 55000 : Ambiei : Near A | 05451, dtd. 13.08.2022 nt Air AQMS # 04 | Equipment used: ID No.: RVB/AFDS/PM2.5/09, Cal. Valid upto: 16.07.23 ID No.: RVB/RDS/APM460/NL/04. Cal. Valid upto: 16.07.23 | | | |
| (N20° Date & Time of sampling : 17.05. Sampling Plan : : : RVB/ Duration of Sampling : 24Hrs | | (N20°1 : 17.05.2 : RVB/F : 24Hrs. | V20°16'10.70, E86°38'32.54) 7.05.2023 (09:15 A.M.)18.05.2023 (09:15 A.M.) RVB/FM/44 24Hrs. | | Environmental conditions Temperature : Max: 38.0°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 Ph Ni As C.H. BaP | | |
| TES | T FINDINGS- | . 20.00. | 2020 | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 37.5 | 60 (24 Hourly.) | |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 55.1 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as S | 02 | IS 5182 (Part - 2): 2001 | µg/m³ | 6.32 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as N | 102 | IS 5182 (Part - 6): 2006 | µg/m³ | 32.53 | 80 (24 Hourly.) | |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m³ | 15.79 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indephenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 20.57 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as | со | IS : 5182 (Part - 10), 1999 Non Dispersive Inita-Red (NDIR) spectroscopy | mg/m ³ | 0.90 | 04 (1 Hourly.) | |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.082 | 1.0 (24 Houriy.) | |
| 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/01/15 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | ng/m ³ | 0.626 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | 2.06 | 5.0 | |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <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

S monte Report Verified by

S. Mondal

(Dr. R. KARIM) Technical Manager Authorised Signatory

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

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TEST REPORT

| No. AP-AAQ/23-24/171 | | | Date: June 28, 202 | 3 | | Page 1 of 1 |
|----------------------|--|----------------|--|-------------------|-------------------------|---------------------------|
| Iss | ued to | : M/S. | PARADEEP PHOSPHATE LTD. | | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | Ir WO Ref. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment | used: |
| Sar | nple Description | : Ambie | ent Air | ID No.: RVB | /AFDS/PM2.5/01, Cal. | Valid upto: 16.07.23 |
| Sar | npling Location | : Near | AAQMS # 01 | ID No.: RVB | RDS/APM460/BL/05, | Cal. Valid upto: 03.11.23 |
| | | (N20** | 16'31.01, E86''37'27.24) | | Environmental of | conditions |
| Dat | e & Time of sampling | : 15.06. | 2023 (09:30 A.M.)-16.06.2023 (09:30 A.M.) | Temperatu | re : Max: 38.0°C & M | /lin: 27.0°C |
| Dur | npling Fian ; ation of Sampling | - DALlee | -10140 | Barometric | Presure : 750 mmH | g |
| Ans | autori or Sampling | 29/113 | 2023 | CO Pb Ni | As C.H. BaP | 110, SU2, NU2, U3, NH3, |
| TE | ST FINDINGS:- | . 20.00 | .2025 | | 1.10, 00, 0, 00. | |
| SI. | Parameters | _ | Test Method | Unit | Results | Norms as NAAQ,2009 |
| No. | | | | | (Time Weighted Avg.) | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 37.9 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m ³ | 68.0 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as SO | D ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 5.30 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as N | 02 | IS 5182 (Part - 6): 2006 | µg/m ³ | 30.05 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 18.36 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | | SCP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 21.08 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as (| со | IS : 5182 (Part - 10), 1999 Non Dispersive Intra-Red (NDIR) spectroscopy | mg/m ³ | 0.88 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.057 | 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 | 12.7 | 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 ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | 1.65 | 5.0 |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <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

S. Mondal

ate (Dr. R. KARIM) **Technical Manager** Authorised Signatory

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

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TEST REPORT

| No. | AP-AAQ/23-24/172 | Date: June | 28, 2023 | 3 | | Page 1 of 1 |
|------------|--|--|---|-------------------|---|---------------------------|
| Issi | ued to | M/S. PARADEEP PHOSPHATE L | TD. | | | |
| You | r WO Ref. No. | 5500005451, dtd. 13.08.2022 | adeep, Odisha 2005451, dtd, 13.08.2022 Equipment used: | | | |
| San | ple Description | Ambient Air | j. | ID No.: RVB/ | AFDS/PM2.5/03, Cal. | Valid upto: 16.07.23 |
| San | pling Location | Near AAQMS # 02 | | D No.: RVB | RDS/APM460/BL/05, | Cal. Valid upto: 03.11.23 |
| | | (N20°16'30.06, E86°37'20.25) | [| | Environmental c | onditions |
| Date | e & Time of sampling | 16.06.2023 (10:00 A.M.)-17.06 2023 (10:0 | (.M.A 0 | Temperatur | e : Max: 36.0°C & N | /lin: 27.0°C |
| San | pling Plan : | RVB/FM/45 | | Barometric | Presure : 750 mmH | 9 |
| Dun | ation of Sampling | 24Hrs. | | Parameter | s Tested: PM _{2.5} , PM | 110, SO2, NO2, O3, NH3, |
| Ana | lysis Completed on | 28.06.2023 | | CO, Pb, Ni, | As, C ₆ H ₆ , BaP | |
| TES | T FINDINGS: | 4 | | | - | |
| SI. No. | Parameters | Test Method | | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, App | pendix L. | µg/m³ | 42.1 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 200 | 6 | µg/m³ | 58.3 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as S | D ₂ IS 5182 (Part - 2): 2001 | | µg/m³ | 5.64 | 80 (24 Hourly.) |
| 4, | Nitrogen Dioxide as N | O ₂ IS 5182 (Part - 6): 2006 | 3 | µg/m³ | 29.05 | 80 (24 Hourly.) |
| 5. | Ozone as O3 | IS 5182 (Part - 9) : 1974 | 4 | µg/m³ | 17.50 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indophenol M No. 04, Issue Date: 10 01 2010 | ethod) Issue 8 | µg/m³ | 25.08 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as | CO IS : 5182 (Part - 10), 1999 Non Dispersiv (NDIR) spectroscopy | e infra-Red | mg/m ³ | 0.78 | 04 (1 Hourly.) |
| 8. | Lead as Pb | IS 5182 (Part - 22): 200 | 4 | µg/m³ | 0.040 | 1.0 (24 Hourly.) |
| 9. | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) Issue Date: 10.01.2018 | Issue No. 04, | ng/m ³ | 10.9 | 20 |
| 10 | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) Issue Date: 10.01.2018 | Issue No. 04, | ng/m ³ | <0.25 | 6.0 |
| 11 | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2008 | 3, | µg/m ³ | 1.04 | 5.0 |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 200 | 4, | ng/m ³ | <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

C. mondal Report Verified by

S. Mondal

Kax: (Dr. R. KARIM) Technical Manager Authorised Signatory

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

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TEST REPORT

| No. AP-AAQ/23-24/173 | | Date: June 28, 202 | 13 | | Page 1 of 1 |
|--|---|---|--|---|------------------------|
| lssu Add | ress : | M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha | | | |
| Your WO Ref. No. : 55000 Sample Description : Ambie | | 5500005451, dtd. 13.08.2022 Ambient Air Near AAQMS # 03 | Equipment used: ID No.: RVB/AFDS/PM2.5/04, Cal. Valid upto: 16.07.23 ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 03.11.23 | | |
| (N20 ⁶ 1) Date & Time of sampling : 17.06.3 Sampling Plan : : RVB/F | | N20°17'11.74, E85°39'32.64) 17.06.2023 (10:20 A.M.)-18.06.2023 (10:20 A.M.) RVB/FM/45 | Environmental conditions Temperature : Max: 35.0°C & Min: 26.0°C Barometric Presure : 750 mmHg | | |
| Dura Ana | ation of Sampling : lysis Completed on : | 24Hrs. 28.06.2023 | CO, Pb, Ni, | As, C ₆ H ₆ , BaP | 10, 502, NO2, O3, NH3, |
| SI. No. | T FINDINGS:- Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 43.7 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m³ | 56.7 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as SO | 2 IS 5182 (Part - 2): 2001 | µg/m³ | 5.23 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as NO | D ₂ IS 5182 (Part - 6): 2006 | µg/m³ | 26.80 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | IS 5182 (Part - 9) : 1974 | µg/m³ | 17.86 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indephenol Method) Issue No. 04, Issue Date: 10.01.2018 | μg/m ³ | 20.57 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as C | O IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.89 | 04 (1 Hourly.) |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m³ | 0.046 | 1.0 (24 Hourly.) |
| 9. | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. D Issue Date: 10.01 2018 | 4, ng/m ³ | 11.3 | 20 |
| 10. Arsenic as As | | SOP No.: RVB/SOP/01/16 (AAS Method) issue No. 0 Issue Date: 10.01.2018 | 4, ng/m ³ | 0.506 | 6.0 |
| 11 | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 1.19 | 5.0 |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <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

S. Mondal

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

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TEST REPORT

| No. AP-AAQ/23-24/174 | | Date: May 25, 2023 | 3 | | Page 1 of 1 |
|----------------------|--|--|---------------------------|---|---|
| Issu | ied to : M/S | PARADEEP PHOSPHATE LTD. | | | |
| You | WO Ref. No. : 550 | adeep, Odisha 0005451, dtd. 13.08.2022 | | Equipment of | used: Valid unto: 02.08.23 |
| Sam | pling Location : Nea | r AAQMS # 04 | ID No.: RVB/ | RDS/APM460/BL/05, 0 | Cal. Valid upto: 03.11.23 |
| | (N20 | °16'10.70, E86°38'32.54) | | Environmental c | onditions |
| Date | & Time of sampling : 18.0 | 6.2023 (09:45 A.M.)-19.06.2023 (09:45 A.M.) | Temperatur | e : Max: 38.0°C & M Bresure : 750 mmH | /in: 27.0°C |
| Dura | ation of Sampling : 24H | /FM/40 rs. 6 2023 | Parameters CO, Pb, Ni, | a Tested: PM _{2.5} , PM As, C ₆ H ₅ , BaP | 9 I ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , |
| TES | T FINDINGS:- | V.2020 | | | |
| SI. No. | Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,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 | 54.1 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 5.78 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 25.79 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | IS 5182 (Part - 9) : 1974 | µg/m³ | 17.37 | 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 | 21.30 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as CO | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.90 | 04 (1 Hourly.) |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.042 | 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 | 5.7 | 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 ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 1.41 | 5.0 |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 |

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

S. mont. Report Verified by

S. Mondal

¥., (Dr. R. KARIM) Technical Manager

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TEST REPORT

| No | No. AP-WAQ/23-24/051 | | Date: May 22, | 2023 | | Page 1 of 1 |
|------------------------------|---------------------------------------|-------------------|---|-------------------------------|--|--|
| Iss | ued to | : M/S | PARADEEP PHOSPHATE LT | rD. | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | : 550 | 0005451, dtd. 13.08.2022 | Equipment used: | | |
| Sar | mple Description | : Fugit | ve Air | 1 1 | D No.: RVB/RDS/AP | M460/BL/06, |
| Sar | mpling Location | : SAP | Section | | Cal. Valid upto: 03 | 3.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | te & Time of sampling | : 19.05 | .2023 (10:10 A.M 06:10 P.M.) | Temperatu | re : Max: 34.0°C & M | in: 29.0°C |
| Sar | mpling Plan : | : RVB/ | FM/44 | Barometric Presure : 756 mmHg | | |
| Dur | ration of Sampling | : 08Hrs | 5. | | Parameters Te | ested: |
| Analysis Completed on : 22.0 | | : 22.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 403 | 10000 |
| 2. | 2. Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.15 | 5000 |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 32.44 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 31.45 | Not Available |

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alar (Dr. R. KARIM) Technical Manager Authorised Signatory

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

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CIN: U51109WB1931PTC007007



TEST REPORT

| No | No. AP-WAQ/23-24/052 | | Date: May 22, | 2023 | | Page 1 of 1 | |
|------------------------------|------------------------------------|-------------------|---|-------------------------------|--|--|--|
| Iss | ued to | : M/S | PARADEEP PHOSPHATE LT | ſD. | | | |
| Ad | dress | : Para | deep, Odisha | | | | |
| You | ur Ref. WO. No. | : 550 | : 5500005451, dtd. 13.08.2022 | | Equipment used: | | |
| Sar | mple Description | : Fugit | ive Air | | D No .: RVB/RDS/API | M460/BL/06, | |
| Sar | mpling Location | : PAP | Section | | Cal. Valid upto: 03 | 3.11.2023 | |
| | | | | | Environmental co | onditions | |
| Dat | e & Time of sampling | : 17.05 | .2023 (10:10 A.M 06:10 P.M.) | Temperatu | re : Max: 39.0°C & M | in: 35.0°C | |
| Sar | mpling Plan : | : RVB/ | FM/44 | Barometric Presure : 756 mmHg | | | |
| Dur | Duration of Sampling : 08H | | 3. | Parameters Tested: | | | |
| Analysis Completed on : 22.0 | | : 22.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TE | ST FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | late | IS : 5182 (Part - 4),1999 | µg/m³ | 374 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 6.83 | 5000 | |
| 3. | Nitrogen Dioxide as | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 33.85 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 38.21 | Not Available | |

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TEST REPORT

| No | . AP-WAQ/23-24/053 | 82 | Date: May 22, 2 | 2023 | | Page 1 of |
|------------------------------|------------------------------------|---------------------------------------|---|-----------------|--|--|
| lss | ued to | : M/S | PARADEEP PHOSPHATE LT | D. | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | WO. No. : 5500005451, dtd. 13.08.2022 | | Equipment used: | | |
| Sar | mple Description | : Fugiti | ive Air | | D No.: RVB/RDS/API | M460/BL/03, |
| Sar | mpling Location | : DAP, | A & B Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | te & Time of sampling | : 17.05 | .2023 (10:00 A.M 06:00 P.M.) | Temperatu | re : Max: 39.0°C & M | in: 35.0°C |
| Sar | mpling Plan : | : RVB/ | FM/44 | Barometric | Presure : 756 mmHg | |
| Duration of Sampling : 08H | | : 08Hrs | 5. | | Parameters Te | ested: |
| Analysis Completed on : 22.0 | | : 22.05 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | w | | |
| SI. No. | Parameters | 8 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 441 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 7.97 | 5000 |
| 3, | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 37.14 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 31.11 | Not Available |

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TEST REPORT

| No | AP-WAQ/23-24/054 | | Date: May 22, 3 | 2023 | | Page 1 of | |
|------------------------------|------------------------------------|-------------------|---|-------------------|------------------------------------|--|--|
| Iss | ued to | : M/S | PARADEEP PHOSPHATE LT | D. | | | |
| Ad | dress | : Para | deep, Odisha | | | | |
| You | ur Ref. WO. No. | : 550 | : 5500005451, dtd. 13.08.2022 | | Equipment used: | | |
| Sar | mple Description | : Fugiti | ive Air | 1 1 | D No .: RVB/RDS/API | M460/BL/03, | |
| Sar | mpling Location | : DAP, | C & D Section | | Cal. Valid upto: 05 | 5.11.2023 | |
| | | | | | Environmental co | onditions | |
| Dat | te & Time of sampling | : 18.05 | .2023 (10:00 A.M 06:00 P.M.) | Temperatu | re : Max: 40.0°C & M | in: 35.0°C | |
| Sar | mpling Plan : | : RVB/ | FM/44 | Barometric | Presure : 756 mmHg | | |
| Duration of Sampling : 08H | | : 08Hrs | 5. | | Parameters Te | ested: | |
| Analysis Completed on : 22.0 | | : 22.05 | .2023 | | SPM, SO2, NO2 | & NH ₃ | |
| TES | ST FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 482 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 8.20 | 5000 | |
| з. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 39.99 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 29.76 | Not Available | |

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TEST REPORT

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|------------|--------------------------------------|-----------------------------------|---|-------------------------------|--|--|--|
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| Ad | dress | : Para | deep, Odisha | | | | |
| You | ur Ref. WO. No. | No. : 5500005451, dtd. 13.08.2022 | | Equipment used: | | | |
| Sar | mple Description | : Fugiti | ve Air | 1 | D No.: RVB/RDS/API | M460/BL/03, | |
| Sar | mpling Location | : Off. S | ite Section | | Cal. Valid upto: 05 | 5.11.2023 | |
| | | | | | Environmental co | onditions | |
| Dat | te & Time of sampling | : 19.05 | .2023 (10:00 A.M 06:00 P.M.) | Temperatu | re : Max: 34.0°C & M | in: 29.0°C | |
| Sar | mpling Plan : | : RVB/ | FM/44 | Barometric Presure : 756 mmHg | | | |
| Dur | Duration of Sampling : 08Hr | | i. | Parameters Tested: | | | |
| Ana | Analysis Completed on : 22.05 | | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES | ST FINDINGS:- | | | 1.07 | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 620 | 10000 | |
| 2, | . Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 7.74 | 5000 | |
| 3. | Nitrogen Dioxide a | s NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 33.56 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 34.49 | Not Available | |

-: END OF TEST REPORT :-

S. morder

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TEST REPORT

| No | . AP-WAQ/23-24/056 | | Date: May 22, 2 | 2023 | | Page 1 of |
|-------------------------------|------------------------------------|---------------------------------------|---|-------------------|--|--|
| Iss | ued to | : M/S | PARADEEP PHOSPHATE LT | D. | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | ur Ref. WO. No. | WO. No. : 5500005451, dtd. 13.08.2022 | | | Equipment u | sed: |
| Sar | nple Description | : Fugiti | ve Air | 1 | D No.: RVB/RDS/API | M460/BL/03, |
| Sar | npling Location | : Baggi | ng Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | e & Time of sampling | : 16.05 | .2023 (10:00 A.M 06:00 P.M.) | Temperatu | re : Max: 35.0°C & M | in: 32.0°C |
| San | npling Plan : | : RVB/ | FM/44 | Barometric | Presure : 756 mmHg | |
| Duration of Sampling : 08H | | : 08Hrs | | | Parameters Te | ested: |
| Analysis Completed on : 22.05 | | : 22.05 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | E. | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 414 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 6.60 | 5000 |
| 3. | Nitrogen Dioxide a | IS NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 29.28 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 32.13 | Not Available |

-: END OF TEST REPORT :-

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S. Mondal

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



ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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

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CIN: U51109WB1931PTC007007



TEST REPORT

| No. AP-WAQ/23-24/057 | | 1 | Date: May 22, 2023 | | | Page 1 of 1 | | |
|--------------------------------|------------------------------------|--------------------------------|---|---|------------------------------------|--|--|--|
| Issued to Address | | : M/S. PARADEEP PHOSPHATE LTD. | | | | | | |
| | | : Parad | : Paradeep, Odisha | | | | | |
| Your Ref. WO. No. : 550 | | : 5500 | 005451, dtd. 13.08.2022 | Equipment used: | | | | |
| Sample Description : Fugi | | : Fugitiv | e Air | ID No.: RVB/RDS/APM460/BL/06, | | | | |
| Sampling Location : Z | | : Zypmit | : Zypmite Section | | Cal. Valid upto: 03.11.2023 | | | |
| | 24 A-276 | | | | Environmental co | onditions | | |
| Date & Time of sampling : 18.0 | | : 18.05. | 2023 (10:10 A.M 06:10 P.M.) | Temperature : Max: 40.0°C & Min: 35.0°C | | n: 35.0°C | | |
| Sampling Plan : | | : RVB/FM/44 | | Barometric Presure : 756 mmHg | | | | |
| Duration of Sampling : (| | : 08Hrs. | 08Hrs. | | Parameters Tested: | | | |
| Analysis Completed on | | : 22.05 | 22 05 2023 | | SPM, SO2, NO2 & NH3 | | | |
| TES | T EINDINGS- | | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 470 | 10000 | | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.15 | 5000 | | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 35.26 | 6000 | | |
| 4. | Ammonia as NH ₃ | 5 | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 29.08 | Not Available | | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-WAQ/23-24/082 Issued to : M/S | | | Date: June 22, 2023 | | | Page 1 of 1 | |
|---|-------------------------------------|--------------------------------|---|--|------------------------------------|--|--|
| | | : M/S. PARADEEP PHOSPHATE LTD. | | | | | |
| Aac | iress | : Parad | eep, Odisha | | _ | | |
| Your Ref. WO. No. : 5 | | : 5500 | : 5500005451, dtd. 13.08.2022 | | Equipment used: | | |
| Sample Description : Fug | | : Fugitiv | Fugitive Air | | ID No.: RVB/RDS/APM460/BL/03, | | |
| Sampling Location : SAP | | : SAP S | : SAP Section | | Cal. Valid upto: 05.11.2023 | | |
| | | | | | Environmental co | nditions | |
| Date & Time of sampling : 16.06 | | : 16.06.2 | 2023 (09:45 A.M 05:45 P.M.) | Temperature : Max: 34.0°C & Min: 29.0°C | | | |
| Sampling Plan : | | : RVB/FM/45 | | Barometric Presure : 750 mmHg | | | |
| Duration of Sampling 08H | | : 08Hrs. | | Parameters Tested: | | sted: | |
| Analysis Completed on 1920 | | 22.06 | 2023 | SPM, SO ₂ , NO ₂ & NH ₃ | | & NH3 | |
| Alla | Tribleco on | . 22.00. | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particulate Matter | | IS: 5182 (Part - 4),1999 | µg/m ³ | 490 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.29 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 32.78 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 35.14 | Not Available | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. | lo. AP-WAQ/23-24/083 | | Date: June 22, 2 | 023 | | Page 1 of | |
|------------------------------|------------------------------------|--------------------|---|---|--|--|--|
| ssu | ed to | : M/S. F | PARADEEP PHOSPHATE LTD |) . | | | |
| Add | ress | : Parade | eep, Odisha | | | | |
| Your | Ref. WO. No. | : 55000 | 05451, dtd. 13.08.2022 | | Equipment us | ed: | |
| Sam | ple Description | : Fugitive | e Air | ID | No.: RVB/RDS/APM | 1460/BL/03, | |
| Sam | pling Location | : PAP Se | ection | | Cal. Valid upto: 05. | 11.2023 | |
| | | | | | Environmental co | nditions | |
| Date | & Time of sampling | : 17.06.2 | 023 (10:10 A.M 06:10 P.M.) | Temperature : Max: 39.0°C & Min: 35.0°C | | n: 35.0°C | |
| Sam | pling Plan : | : RVB/FM | M/45 | Barometric Presure : 750 mmHg | | | |
| Dura | ation of Sampling | : 08Hrs. | | | Parameters Te | sted: | |
| Analysis Completed on 22.06. | | | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES | T FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 479 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.90 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 29.80 | 6000 | |
| 4 | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 31.75 | Not Available | |

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TEST REPORT

| No. AP-WAQ/23-24/084 | | | Date: June 22, 2 | 023 | | Page 1 of | |
|--|------------------------------------|--|---|--|---|--|--|
| ssue | ed to ess | : M/S. P. | ARADEEP PHOSPHATE LTD ep. Odisha |). | | | |
| Your Ref. WO. No. : 55000 Sample Description : Fugitive Sampling Location : DAP, A | | D5451, dtd. 13.08.2022 Air & B Section | iection Equipment used: Equipment used: ID No.: RVB/RDS/APM460/B Cal. Valid upto: 03.11.20 Environmental conditio | | <u>ed:</u> 460/BL/06, 11.2023 nditions | | |
| Date & Time of sampling : 16.06. | | : 16.06.20 : RVB/FM | 023 (10:00 A.M 06:00 P.M.) 1/45 | Temperature : Max: 39.0°C & Min: 35.0°C Barometric Presure : 750 mmHg | | | |
| Duration of Sampling : 08Hrs. Analysis Completed on : 22.06.2 | | 023 | | Parameters Te SPM, SO ₂ , NO ₂ | sted: & NH ₃ | | |
| SI. No. | FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 413 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 5.72 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 33.83 | 6000 | |
| 4. | Ammonia as NH | 3 | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No 04, Issue Date: 10.01.2018 | ο. μg/m ³ | 29.72 | Not Available | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. | AP-WAQ/23-24/085 | í | Date: June 22, 2 | 023 | | Page 1 of 1 | |
|---------------------------------|------------------------------------|--------------------|---|-------------------------------|--|--|--|
| ssu | ed to | : M/S. F | PARADEEP PHOSPHATE LT | D. | | | |
| Add | ress | : Parade | eep, Odisha | | | | |
| Your | Ref. WO. No. | : 55000 | 05451, dtd. 13.08.2022 | Equipment used: | | | |
| Sam | ple Description | : Fugitive | Air | | ID No .: RVB/RDS/AP | PM460/01. | |
| Sam | pling Location | : DAP, C | & D Section | | Cal. Valid upto: 25 | .11.2023 | |
| | | | | | Environmental co | nditions | |
| Date | & Time of sampling | : 17.06.2 | 023 (10:00 A.M 06:00 P.M.) | Temperature | : Max: 40.0°C & Mir | n: 35.0°C | |
| Sam | pling Plan : | : RVB/FM | <i>N</i> /45 | Barometric Presure : 750 mmHg | | | |
| Dura | ation of Sampling | : 08Hrs. | | | Parameters Te | sted: | |
| Analysis Completed on : 22.06.2 | | | 023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES | T FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 349 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.08 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 36.78 | 6000 | |
| 4 | Ammonia as NH ₃ | ł | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 33.44 | Not Available | |

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

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TEST REPORT

| No. | AP-WAQ/23-24/086 | | Date: June 22, 2 | 2023 | | Page 1 of | |
|--------------------------------|------------------------------------|--------------------|---|---|--|--|--|
| ssu | ied to | : M/S. I | PARADEEP PHOSPHATE LTI | D. | | | |
| Add | ress | : Parade | eep, Odisha | | | | |
| four | Ref. WO. No. | : 55000 | 005451, dtd. 13.08.2022 | | Equipment us | sed: | |
| Sam | ple Description | : Fugitive | e Air | IC | No .: RVB/RDS/APM | 1460/BL/06, | |
| Sam | pling Location | : Off Site | | | Cal. Valid upto: 03 | .11.2023 | |
| | | | | | Environmental co | nditions | |
| Date | & Time of sampling | : 17.06.2 | 2023 (10:30 A.M 06:30 P.M.) | Temperature : Max: 40.0°C & Min: 35.0°C | | | |
| Sam | olino Plan : | : RVB/F | W/45 | Barometric Presure : 750 mmHg | | | |
| Dura | ation of Sampling | : 08Hrs. | | | Parameters Te | sted: | |
| Apply and a completed on 22.06 | | | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TEC | T FINDINGS | , 22.00. | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particulate Matter | | IS : 5182 (Part – 4),1999 | µg/m ³ | 395 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 5.31 | 5000 | |
| з. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 32.36 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 38.18 | Not Available | |

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TEST REPORT

| No. | AP-WAQ/23-24/087 | | Date: June 22, 2 | 023 | | Page 1 of |
|--|------------------------------------|----------------------|---|----------------------------|--|--|
| SSU | ied to | : M/S. | PARADEEP PHOSPHATE LT | D. | | |
| Add | ress | : Parade | eep, Odisha | and. | | |
| You | Ref. WO. No. | : 55000 | 005451, dtd. 13.08.2022 | | Equipment us | sed: |
| Sam | ple Description | : Fugitive | e Air | | ID No.: RVB/RDS/AF | M460/01, |
| Sam | pling Location | : Baggin | g Section | | Cal, Valid upto: 25 | .11.2023 |
| Date & Time of sampling : 16.06 Sampling Plan : : : : : : : : : : : : : : : : : : : | | : 16.06.2 : RVB/F | 2023 (09:30 A.M 05:30 P.M.) M/45 | Temperatur Barometric I | Environmental co e : Max: 34.0°C & Mi Presure : 750 mmHg | n: 29.0°C |
| Duration of Sampling : 08Hrs. Analysis Completed on : 22.06.2023 | | | 2023 | | Parameters Te SPM, SO ₂ , NO ₂ | sted: & NH ₃ |
| TES | T FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 459 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.49 | 5000 |
| 3. | Nitrogen Dioxide a | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 28.68 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 29.05 | Not Available |

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TEST REPORT

| No. | lo. AP-WAQ/23-24/088 | | Date: June 22, | 2023 | | Page 1 of | |
|-------------------------------|-------------------------------------|---------|---|-------------------------------|------------------------------------|--|--|
| lss | ued to | : M/S. | PARADEEP PHOSPHATE LT | D. | | | |
| Ad | dress | : Parac | deep, Odisha | | | | |
| You | Ir Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment u | sed: | |
| San | Sample Description : Fugi | | ve Air | 1 | D No .: RVB/RDS/API | /460/BL/03, | |
| San | npling Location | : Zypmi | ite Section | | Cal. Valid upto: 05 | .11.2023 | |
| | | | | | Environmental co | onditions | |
| Dat | e & Time of sampling | : 18.06 | 2023 (10:00 A.M 06:00 P.M.) | Temperatur | e : Max: 35.0°C & Mi | in: 32.0°C | |
| San | npling Plan : | : RVB/F | FM/45 | Barometric Presure : 750 mmHg | | | |
| Dur | ation of Sampling | : 08Hrs | | | Parameters Te | ested: | |
| Analysis Completed on : 22.06 | | | 2023 | | SPM, SO2, NO2 | & NH ₃ | |
| TES | ST FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 405 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.70 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m ³ | 33.52 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 32.77 | Not Available | |

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CIN: U51109WB1931PTC007007

TEST REPORT

| No. AP-FG/23-24/168 | | Dat | e: May 26, 2023 | | Page 1 o | |
|---------------------|--|--|------------------------------|---------------------|--|--|
| ssued | l to | : M/S. PARADEEP P | HOSPHATE LTD | D. | | |
| Addres | 55 | : Paradeep, Odisha. | | | | |
| Sample | e Description | : Stack Gas / Flue Gas | Competition | Equipment used: | | |
| Date & | time of sampling | : 16.05.2023 (03:30 P.M. | to 04:03 P.M.) | ID No .: RVB/SMK/ | 03 (Cal. Validity: 16/07/23) | |
| Sampli | ling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Parameters | | meters Tested | | | |
| Analys | is Completed on | : 26.05.2023 | | Physical : Temp | ., Velocity, Gas flow | |
| | | | | Chemical : CO, | CO ₂ , SO ₂ & Acid Mis | |
| Α. | General information abo | it stack : | | | | |
| 1. | Boiler connected to | : SAP - 0 | | | | |
| 2. | Emission due to | : Process | Emmision | | | |
| 3. | Material of construction of | stack : M.S. | | | | |
| 4. | Whather stack is provided | Circuia : Circuia | r. Inddae : Vae | | | |
| B | Physical characteristics | of stack : | lauder . Tes. | | | |
| 1. | Height of the stack from g | ound level : 120 M | | | | |
| 2. | Diameter of the stack at sa | npling point : 2.7 M | | | | |
| 3. | No. of Traverse point | : 30 Nos | 2 | | | |
| 4. | Height of the sampling poi | nt from GL : 35 M | | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | | | |
| 1. | Fuel used : | 2. Fuel | consumption : | 3.Lo | ad : | |
| D. | Environmental condition | <u>s:</u> | | | | |
| 1. | Barometric pressure : 756 | nmHg | | 2. Temperature : | 35 °C | |
| E. | Results of Physical & Ge | neral Parameters of stack | Gas / Flue Gas : | | | |
| SI No | Test Parameters | Test M | ethod | Unit | Results | |
| 1. | Temperature of emission | IS 11255 : Par | : 3 : 2008 | °C | 78 | |
| 2. | Velocity of gas in duct | IS 11255:Par | 3:2008 | m/sec | 7.98 | |
| 3. | Quantity of gas flow | IS 11255:Par | t 3:2008 | NM ³ /hr | 133190 | |
| 4. | Sulphur dioxide | IS 11255 : Par | t 2 : 1985 | mg/Nm ³ | 573 | |
| 5. | Carbon monoxide | IS 13270 (By O | rsat): 1992 | % v/v | <0.2 | |
| 6. | Carbon dioxide | IS 13270 (By O | rsat): 1992 | % v/v | 0.2 | |
| 7. | Acid Mist | SOP No.: RVB/S Issue No.: 04, Issue D | OP/01/20, ate: 10.01.2018 | mg/Nm ³ | 33 | |
| F. | Pollution control device | | | | | |
| | Details of pollution contro | devices attached with the s | tack : Nil | | | |

Report Verified by S. Mondal (Dr. R. KARIM) <u>Technical Manager</u> Authorised Signatory For R.V.BRIGGS & CO. (P) LTD.

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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007



TEST REPORT

| NO. AF | P-FG/23-24/169 | Date: May 26, 2023 | | | Page 1 of 1 |
|---------|------------------------------|--|-------------------------------|--|----------------------|
| Issued | to | : M/S. PARADEEP PHOSPHATE LTI | D. | | |
| Addres | s | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | | Equipment (| ised: |
| Date & | time of sampling | : 17.05.2023 (12:20 P.M. to 01:06 P.M.) | ID No.: RVB/SI | MK/03 (Cal. Va | lidity: 16/07/23) |
| Samplin | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | P | arameters] | fested |
| Analysi | s Completed on | : 26.05.2023 | Physical : To Chemical : (| emp., Veloci CO, CO ₂ PM | ty, Gas flow & TF |
| Α. | General information abo | ut stack : | | | |
| 1. | Boiler connected to | : DAP - A | | | |
| 2. | Emission due to | : Process Emmision | | | |
| 3. | Material of construction of | f stack : M.S. | | | |
| 4. | Shape of stack | : Circular. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | | | |
| 1. | Height of the stack from g | round level : 50 M | | | |
| 2. | Diameter of the stack at sa | mpling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | 2. Fuel consumption : | | 5.Load : | |
| D. | Environmental condition | <u>s:</u> | | | |
| 1. | Barometric pressure : 756 | mmHg | 2. Temperate | ure : 34 °C | |
| E. | Results of Physical Para | meters of Flue Gas : | | | |
| SI No | Test Parameters | Test Method | Unit | F | lesults |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | | 60 |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | | 15,47 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 88107 |
| E. | Results of gaseous emis | sion : | | | |
| SI 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 Available |
| 2 | Carbon dioxide | IS 11255 : Part 1 : 1985 By Orsat | % v/v | 0.2 | Not Available |
| 2 | Particulate Matters | IS 11255 + Part 1 + 1985 | mg/Nm3 | 64 | 150 max |
| 3. | Tatel Flooride | IS 11255 (Part 5) - 1000 | | 2 00 | Not Available |
| 4. | Total Fluoride | 15 11233 (Fait = 5) : 1590 | mg/Nm | 3.99 | INOT AVAIIABIE |
| ۴. | Pollution control device | | 27 | | |
| | Details of pollution control | of devices attached with the stack : Wet Scrubbe | r | | |

mar Report Verified by S. Mondal

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

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ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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TEST REPORT

| No. Al | P-FG/23-24/169 | | Date: May 26, 2023 | | | Page 2 of 2 |
|--------|---|------------------------|---|--------------------|------------|----------------------|
| Issued | to | : M/S. PA | RADEEP PHOSPHATE LTD | D. | | |
| Addres | 55 | : Paradeep | . Odisha. | | | |
| Sample | Description | : Stack Ga | s / Flue Gas 3 (12:20 P.M. to 01:06 P.M.) | Equipment used: | | |
| Sampli | no Plan & Method | · RVB/FM | 44 & IS: 11255 (Part-1 2 & 3) | | Parameters | Tested |
| Analys | is Completed on | : 26.05.202 | 3 | Chemical : NH3 | | NH3 |
| Α. | General information at | out stack : | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| B, | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | point from GL | : 35 M | | | |
| C. | Analysis / Characterist | tic of stack Ga | s / Flue Gas : | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods (Inc | of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 196 | Not Available |
| E. | Pollution control device Details of pollution cont | e trol devices atta | ched with the stack : Wet Scrubber | | | |

-: END OF TEST REPORT :-

Report Verified by

S. Mondal

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

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TEST REPORT

| No. Al | P-FG/23-24/170 | | Date: May 26, 2023 | | | Page 1 of 1 |
|--|---------------------------------|---------------|--------------------------------------|-------------------------------|----------------|-------------------|
| Issued | Ito | : M/S. PA | RADEEP PHOSPHATE LT | D. | | |
| Addres | ss | : Paradeep, | Odisha. | | | |
| Sample | Description | : Stack Gas | / Flue Gas | 1 | Equipment | used: |
| Date & | time of sampling | : 17.05.2023 | (01:20 P.M. to 01:56 P.M.) | ID No.: RVB/S | MK/03 (Cal. Va | lidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/4 | 4 & IS: 11255 (Part-1,2 & 3) | F | arameters | Fested |
| Analys | is Completed on | : 26.05.2023 | | Physical : To | emp., Veloci | ty, Gas flow |
| 1. | C. C. W. 1990 (Science Science) | | · | Chemical : (| CO, CO2 PM | 1 & TF |
| Α. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : DAP - B | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction of | fstack | : M.S. | | | |
| 4. | Shape of stack | | : Circular. | | | |
| 5. | Whether stack is provided | with permaner | it platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | |
| 2, | Diameter of the stack at sa | mpling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling poi | int from GL | : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas | / Flue Gas : | | | |
| 1. | Fuel used : | - | Fuel consumption : | | 3.Load : | |
| D. | Environmental condition | <u>s :</u> | | | 0.000 | |
| 1. | Barometric pressure : 756 | mmHg | | Temperation | are : 36 °C | |
| E. | Results of Physical Para | meters of Flu | e Gas : | | | |
| SI No | Test Parameters | | Test Method | Unit | F | lesults |
| 1. | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | | 64 |
| 2. | Velocity of gas in duct | 1 | IS 11255:Part 3:2008 | m/sec | | 15.22 |
| 3. | Quantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 78627 |
| F | Results of gaseous emis | sion : | | | | |
| SING | Test Parameters | 1 | Test Mathod | Unit | Results | Norms |
| 51140 | rest rarameters | | Test Method | Ont | Results | as per CPCR |
| 1 | Carbon monovida | 15.1 | 1255 · Part 1 · 1985 By Orsat | 9/4 x/x | <0.2 | Not Available |
| 1. | Carbon monoxide | 10 1 | 1255 . Part 1 . 1095 D. Oran | 04 414 | 0.4 | Not Ausilable |
| 2. | Carbon dioxide | 15 1 | 1255 : Part 1 : 1985 By Orsat | 70 V/V | 0.4 | Not Available |
| 3. | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 16.9 | 150 max. |
| 4. | Total Fluoride | 1 | S 11255 (Part - 5) : 1990 | mg/Nm ³ | 3.54 | Not Available |
| F. | Pollution control device | | | | | |
| | Details of pollution control | devices attac | hed with the stack : Wet Scrubbe | r | | |
| | . 1 | | -: END OF TEST REPORT :- | | NON | |
| | c. mordan | | | | KKar | |
| R | eport Verified by | | | (| Dr. R. KARI | M) |
| | S. Mondal | | | Te | chnical Mana | ager |
| | | | | Aut | horised Sign | atory |

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TEST REPORT

| No. AP | -FG/23-24/170 | Date: May 26, 2023 | | | Page 2 of 2 |
|------------|--------------------------|---|----------------|-------------------------------|----------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD | | | |
| Addres | \$ | : Paradeep. Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | ID No.: RVB/SM | Equipment u /K/03 (Cal. Va | ised: lidity: 16/07/23) |
| Date & | time of sampling | . DVD/EM/44 & IS: 11255 (Part-1 2 & 3) | P | arameters 7 | Tested |
| Sampin | ig Plan & Method | · 26 05 2023 | - | | |
| Analysi | s Completed on | . 20.05.2025 | | Chemical : | NH3 |
| A. | General information at | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling J | point from GL : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | Fuel consumption : | | 3.Load : | |
| D, | Results of gaseous en | nission : | | | |
| SI No | Test Parameters | Test Method | Unit | Results | Norms |
| 01110 | | | | | as nor CPCB |
| | | | | | as per creb |
| 1 | | Methods of Air Sampling & Analysis, 3rd Ed. | | 218 | Not Available |
| 1. | Ammonia as NH3 | (Indophenol Method), Method 401 | mg/Nm | #1.0 | |
| F | Pollution control device | ce | | | |
| L . | Datails of pollution con | trol devices attached with the stack : Wet Scrubber | | | |

-: END OF TEST REPORT :-

S. mondarl

Report Verified by S. Mondal

(Dr. R. KARIM) Technical Manager

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

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TEST REPORT

| No. Al | P-FG/23-24/171 | | Date: May 26, 2023 | | | Page 1 of 1 |
|--------|------------------------------|-------------------|--|---------------------|------------------------|--------------------|
| Issued | to | : M/S. PAR | ADEEP PHOSPHATE LT | D. | | |
| Addres | 55 | : Paradeep, C | Odisha. | | | |
| Sample | Description | : Stack Gas / | Flue Gas | | Equipment | used: |
| Date & | time of sampling | : 17.05.2023 | (03:55 P.M. to 04:34 P.M.) | ID No.: RVB/S | MK/03 (Cal. Va | alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 | 4 & IS: 11255 (Part-1,2 & 3) | E | 'arameters' | Tested |
| Analys | is Completed on | : 26.05.2023 | | Physical : T | emp., Veloci | ty, Gas flow |
| | | | | Chemical : | CO, CO ₂ PN | 1 & TF |
| A. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : DAP - C | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction o | fstack | : M.S. | | | |
| 4. | Shape of stack | 685 | : Circular. | | | |
| 5. | Whether stack is provided | with permanen | t platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | |
| 2. | Diameter of the stack at sa | mpling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL | : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas / | Flue Gas : | | 112000100 | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Environmental condition | I <u>S :</u> | | | 22 | |
| 1. | Barometric pressure : 756 | mmHg | | 2. Temperat | ure : 36 °C | |
| E. | Results of Physical Para | meters of Flue | Gas : | | | |
| SI No | Test Parameters | | Test Method | Unit | F | Results |
| 1. | Temperature of emission | 1 | IS 11255 ; Part 3 : 2008 | °C | | 63 |
| 2. | Velocity of gas in duct | | IS 11255:Part 3:2008 | m/sec | | 15.70 |
| 3. | Quantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 84574 |
| E. | Results of gaseous emis | sion : | | | | |
| SI No | Test Parameters | T | Test Method | Unit | Results | Norms |
| | | 1 | | | | as per CPCB |
| 1 | Carbon monoxide | IS 11 | 255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 2 | Carbon dioxide | 15.11 | 255 - Part 1 - 1985 By Oreat | 0% v/v | 0.2 | Not Available |
| 4. | Carbon dioxide | 1511 | 10 11255 - Dear 1 - 1085 | 70 474 | 50.2 | 150 man |
| 3. | Particulate Matters | | 13 11233 . Part 1 . 1985 | mg/Nm3 | 39.2 | 150 max. |
| 4. | Total Fluoride | E | S 11255 (Part – 5) : 1990 | mg/Nm [°] | 2.90 | Not Available |
| F. | Pollution control device | 1 m | 12 12 12 12 12 12 12 12 12 12 12 12 12 1 | | | |
| | Details of pollution control | ol devices attach | ned with the stack : Wet Scrubbe | r | | |
| | 1.1 | | -: END OF TEST REPORT :- | | nn | |
| | S. mondar | | | | xkar | Le.1 |
| Re | eport Verified by | | | (| Dr. R. KARI | M) |
| | S. Mondal | | | Te | chnical Mana | ager |

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TEST REPORT

| No. AP-FG/23-24/171 | | | Date: May 26, 2023 | | | Page 2 of 2 |
|---------------------|--|---------------------------|---|--------------------|-----------------------------|-----------------------------|
| Issued | to | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Addres | 55 | : Paradeep | . Odisha. | | | |
| Sample Date & | Description | : Stack Ga : 17.05.202 | s / Flue Gas 3 (03:55 P.M. to 04:34 P.M.) | ID No.: RVB/S | Equipment MK/03 (Cal. Vi | used: alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/ | 44 & IS: 11255 (Part-1.2 & 3) | 1 | Parameters | Tested |
| Analys | is Completed on | : 26.05.202 | 3 | | Chemical : | NH3 |
| Α. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| В. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Ga | s / Flue Gas : | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous em | ission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods (Inc | of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 138 | Not Available |
| E. | Pollution control device Details of pollution control | e rol devices atta | sched with the stack : Wet Scrubber | | | |

-: END OF TEST REPORT :-

2. monder Report Verified by

S. Mondal

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

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TEST REPORT

| No. Al | P-FG/23-24/172 | | Date: May 26, 2023 | | | Page 1 of 1 |
|---------|------------------------------|---|----------------------------------|---------------------|------------------------|---------------|
| Issued | to | : M/S. PAP | RADEEP PHOSPHATE LT | ſD. | | |
| Addres | ss | : Paradeep, (| Odisha. | | | |
| Sample | Description | : Stack Gas | Flue Gas | | Equipment | used: |
| Date & | time of sampling | mpling : 17.05.2023 (04:40 P.M. to 05:19 P.M.) ID No.: RVB/SMK/03 (Cal. Validity: 16/ | | | | |
| Sampli | ng Plan & Method | : RVB/FM/4 | 4 & IS: 11255 (Part-1,2 & 3) | I | Parameters' | Tested |
| Analys | is Completed on | : 26.05.2023 | | Physical : T | emp., Veloc | ity, Gas flow |
| | | | | Chemical : | CO, CO ₂ PN | 1 & TF |
| Α. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : DAP - D | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction o | f stack | : M.S. | | | |
| 4. | Shape of stack | 14 | : Circular. | | | |
| 3. D | Whether stack is provided | with permaner | it platform & ladder : Yes. | | | |
| D. 1 | Physical characteristics | OF STACK : | - 50 M | | | |
| 2 | Diamater of the stack from g | round level | : 30 M | | | |
| 3 | No. of Traverse point | unping pour | : 2.0 M | | | |
| 4 | Height of the sampling po | int from GI | - 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas | / Flue Gas : | | | |
| 1. | Fuel used : | or otaon ous | 2. Fuel consumption : | | 3.Load : | |
| D. | Environmental condition | IS : | and the concentration of | | | |
| 1. | Barometric pressure : 756 | mmHg | | 2 Temperate | ITE : 35 °C | |
| F | Results of Physical Para | meters of Flue | Gas: | a. rumpana | | |
| SINO | Test Parameters | 1 | Test Method | Unit | F | Results |
| 1. | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | | 61 |
| 2 | Velocity of eas in duct | | IS 11255 Part 3:2008 | m/eac | | 15.82 |
| 2 | Quantity of gas flow | 1 | IS 11255-Part 3-2008 | NIM ³ Ar | 2 | 80102 |
| 5. | Quality of gas now | slon : | 15 11255.1 art 5.2006 | NM /fir | - | 07174 |
| E. | Results of gaseous enils | | | 1 11 10 1 | | |
| SINO | Test Parameters | | lest Method | Unit | Results | as per CPCB |
| 1. | Carbon monoxide | IS 11 | 255 : Part I : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 2. | Carbon dioxide | 1S 11 | 255 : Part 1 : 1985 By Orsat | % v/v | 0.4 | Not Available |
| 3. | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 58.5 | 150 max. |
| 4. | Total Fluoride | 1 | S 11255 (Part - 5) : 1990 | me/Nm ³ | 2.05 | Not Available |
| F. | Pollution control device | 0 ¹ | | 1.1.8.1.1.1 | | |
| 0.5 | Details of pollution control | ol devices attach | ned with the stack : Wet Scrubbe | er | | |
| | | | -: END OF TEST REPORT :- | | 000 | |
| | 0 mondor | | | | Kla | E. |
| Re | eport Verified by | | | (| Dr. R. KARI | (M |
| | S. Mondal | | | Te | chnical Mana | ager |
| | | | | Aut | horised Sign | atory |
| 65 | | | | For R V R | RIGGS & C | O (P) I TD |
| - | | | | I UI N.V.D | 1000 00 | U. T. LID. |

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TEST REPORT

| No. AP-FG/23-24/172 | | | Date: May 26, 2023 | | | Page 2 of 2 | |
|---------------------|---------------------------------|---------------------------|---|--------------------|----------------------------|-----------------------------|--|
| ssued | to | : M/S. PA | RADEEP PHOSPHATE LT | D. | | | |
| Addres | is | : Paradeep | : Paradeep, Odisha | | | | |
| Sample Date & | Description time of sampling | : Stack Ga : 17.05.202 | s / Flue Gas 3 (04:40 P.M. to 05:19 P.M.) | ID No.: RVB/S | Equipment MK/03 (Cal. V | used: alidity: 16/07/23) | |
| Sampli | ng Plan & Method | : RVB/FM/ | (44 & IS: 11255 (Part-1,2 & 3) | | Parameters | Tested | |
| Analysi | is Completed on | : 26.05.202 | 3 | | Chemical : | NH3 | |
| A. | General information ab | out stack : | | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | | |
| В. | Physical characteristic | s of stack : | | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | | |
| C. | Analysis / Characterist | ic of stack Ga | s / Flue Gas : | | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | 3 | 3.Load : | | |
| D. | Results of gaseous em | nission : | | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB | |
| 1. | Ammonia as NH3 | Methods (Inc | of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 159 | Not Available | |

-: END OF TEST REPORT :-

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Report Verified by S. Mondal

(Dr. R. KARIM)

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

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- * Results relate only to the parameters tested.

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CIN: U51109WB1931PTC007007

TEST REPORT

| No. AP-FG/23-24/173 | | | Date: May 26, 2023 | | Page 1 of |
|---------------------|---------------------------------|---------------|--------------------------------------|---------------------|-----------------------------|
| ssued | to | : M/S. PA | RADEEP PHOSPHATE LT | D. | |
| Addres | s | : Paradeep, | Odisha. | | |
| Sample | Description | : Stack Gas | / Flue Gas | Equi | pment used: |
| Date & | time of sampling | : 18.05.202 | 3 (11:20 A.M. to 11:51 A.M.) | ID No.: RVB/SMK/0 | 3 (Cal. Validity: 16/07/23) |
| Sampli | ng Pian & Method | ; RVB/FM/4 | 44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| Analys | s Completed on | : 26.05.202 | 3 | Physical : Temp. | ., Velocity, Gas flow |
| | | | | Chemical : CO, | CO ₂ , & PM |
| Α. | General information abou | ut stack : | | | |
| 1. | Boiler connected to | | : Zypmite - 1 | | |
| 2. | Emission due to | Tata ala | : Process Emmision | | |
| 3. | Material of construction of | Stack | : MLS. | | |
| 4. | Whather stack is provided | with nermane | nt platform & ladder · Ves | | |
| B | Physical characteristics | of stack : | in platoin de laddel : 103. | | |
| 1. | Height of the stack from g | round level | : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point | : 1.03 M | | |
| 3. | No. of Traverse point | | : 12 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas | / Flue Gas : | | |
| 1. | Fuel used : | | Fuel consumption : | 3.Lo | ad : |
| D. | Environmental condition | <u>s:</u> | | | |
| 1. | Barometric pressure : 756 | mmHg | | 2. Temperature : | 36 °C |
| E. | Results of Physical Para | meters of Flu | ie Gas : | | |
| SI 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 | 16.92 |
| 3. | Quantity of gas flow | | IS 11255 : Part 3 : 2008 | NM ³ /hr | 44515 |
| F. | Results of gaseous emis | sion : | | | |
| SI 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. | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 46 |
| G. | Pollution control device | | | | |
| | Details of pollution control | devices atta | ched with the stack : Zypnite Plan | t Cooler. | |

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S. Mondal

-: END OF TEST REPORT :-

(Dr. R. KA Technical Manager

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

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TEST REPORT

| No. AP-FG/23-24/174 | | Date: May 26, 2023 | | Page 1 o |
|--|-----------------------------|--|---------------------|-----------------------------|
| sued | to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| ddres | is | : Paradeep, Odisha. | | |
| ample Description : Stack Gas / Flue Gas | | : Stack Gas / Flue Gas | Equ | ipment used: |
| ate & | time of sampling | : 18.05.2023 (12:15 P.M. to 12:46 P.M.) | ID NO.: KYB/SMK/C | 5 (Cal. Validity: 16/07/25) |
| ampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| nalys | is Completed on | : 26.03.2023 | Chemical : CO, | CO ₂ , & PM |
| Α. | General information abo | ut stack : | | |
| 1. | Boiler connected to | : Zypmite - 2 | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. | Material of construction of | fstack : M.S. | | |
| 4. | Shape of stack | : Circular. | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | |
| В. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 0.85 M | | |
| 5. | No. of Traverse point | of stack Case / Flue Gase : | | |
| 1 | Fuel weed | 2 Fuel consumption : | 310 | and these |
| D. | Environmental condition | e · | 5.10 | 1444 |
| 1 | Baramatria praceura : 756 | mmUa | 2 Temperature : | 26 °C |
| F. | Results of Physical Para | meters of Flue Gas : | 2. Temperature . | 50 0 |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 30 |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 18.77 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 31426 |
| F. | Results of gaseous emis | sion : | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 47 |
| G. | Pollution control device | devices attached with the stack · Zunnite Plat | nt Drver | |
| | beans of ponution contro | - END OF TEST REPORT '- | in prijer | 11 |

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(Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. AP-FG/23-24/175 | | Date: May 26, 2023 | | Page 1 o |
|---------------------|---|--|-----------------------------------|--|
| ssued | to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| Addres | iS | : Paradeep, Odisha. | | |
| Sample Date & | ample Description : Stack Gas / Flue Gas hate & time of sampling : 18 05 2023 (01:05 P.M. to 01:37 P.M.) | | Equ ID No.: RVB/SMK/0 | ipment used: 03 (Cal. Validity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1.2 & 3) | Para | meters Tested |
| Analys | is Completed on | : 26.05.2023 | Physical : Temp Chemical : CO, | ., Velocity, Gas flow CO2, & PM |
| Α. | General information about | ut stack : | | |
| 1. | Boiler 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. | | |
| В. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 0.5 M | | |
| 3. | No. of Traverse point | ; 8 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | 21. | ad . |
| 1. D | Fuel used : | 2. Fuel consumption : | 3.10 | au |
| U. | Environmental condition | <u>a.</u> | 2 Trensenture | 26 % |
| 1. | Barometric pressure : 750 | mining | 2. Temperature : | 30 C |
| E. | Results of Physical Pala | lifeters of Flue Gas . | | Decelle |
| SINO | 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 | 16.45 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 10419 |
| F. | Results of gaseous emis | sion : | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 60 |
| G. | Pollution control device Details of pollution contro | I devices attached with the stack : Zypnite Plan | t Granulator | |

Report Verified by

S. Mondal

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

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TEST REPORT

| No. AF | P-FG/23-24/176 | Date: May 26, 2023 | | | | | | |
|---------|----------------------|-----------------------------|----------------------|---------------------|--------------|---|--|--|
| ssued | to | : M/S. PARADEEP | PHOSPHATE L | .TD. | | | | |
| Addres | s | : Paradeep, Odisha. | | | | | | |
| Sample | Description | : Stack Gas / Flue Gas | | | Equipn | nent used: | | |
| Date & | time of sampling | : 19.05.2023 (10:40 A.N | A. to 11:24 A.M.) | ID No. | RVB/SMK/03 | 3 (Cal. Validity: 16/07/23) | | |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 112 | 255 (Part-1,2 & 3) | | Parame | ters Tested | | |
| Analysi | is Completed on | : 26.05.2023 | | Physical : To | emp., Veloci | ity, Gas flow | | |
| | | | | Chemical : S | 502, NO2, C | O, CO2, & PM | | |
| A. | General information | on about stack : | | | | | | |
| 1. | Stack connected to | | : Diesel Generate | or Set - 2 | | | | |
| 2. | Emission due to | | : Burning of H.S | .D | | | | |
| 3. | Material of constru | ction of stack | : M.S. | | | | | |
| 4. | Shape of stack | | : Circular. | | | | | |
| 5. | Whether stack is pr | ovided with permanent pla | atform & ladder : Y | es | | | | |
| 6. | Generator capacity | 8 44 . | : 1 MVA | | | | | |
| В. | Physical characte | ristics of stack : | | | | | | |
| 1. | Height of the stack | from ground level | : 20 M | | | | | |
| 2. | Diameter of the sta | ck at sampling point | : 0.4 M | | | | | |
| 3. | No. of Traverse po | int | : 8 Nos. | | | | | |
| C. | Analysis / Charact | teristic of stack Gas / Flu | ie Gas : | | | | | |
| 1. | Fuel used | : H.S.D | | 2. Fuel consu | imption : 22 | Lt/hr. | | |
| D. | Environmental co | nditions : | | | | | | |
| 1. | Barometric pressur | e : 756 mmHg | | 2. Temperati | ire: 35 °C | | | |
| E | Finding of Physic | al Parameters of Flue Ga | s ' | a. remperat | | | | |
| SI No. | Test Parameter | | Method | Unit | | Results | | |
| 1 | Temperature of en | nission IS 11255 | : Part 3 : 2008 | °C | | 208 | | |
| 2 | Velocity of gas in | duct IS 11255 | : Part 3 : 2008 | m/sec | | 17.10 | | |
| 3 | Quantity of gas flo | IS 11255 | : Part 3 : 2008 | NM ³ /hr | 4778 | | | |
| F | Results of gaseou | s emission : | | 1.1.1.1 | | | | |
| SI No. | Test Parameter | rs Test | Method | Unit | Results | Norms as per | | |
| 31110 | rest Tarameter | | . nethod | Can | Results | Environment (Protection) Thir Amendment Rules 2013, for 75 kw - \$ 800 kw | | |
| 1. | Sulphur dioxide | IS 11255 | 5 : Part 2 : 1985 | mg/Nm ³ | 49 | Not Available | | |
| 2 | Nitrogen dioxide | 18 11255 | 5 : Part 7 : 2005 | mg/Nm3 | 135 | Internation Concession Andrease Pre- | | |
| 3 | Carbon monovide | USE | PA 10:2017 | mg/Nm ³ | 138.75 | | | |
| | Carbon monoviac | | | am/au hr | 0.83 | 3.5 | | |
| | | 16 12270 | (Pro Orenthe 1002 | gill/kw-iii | <0.05 | 2.2 | | |
| 1 | a 1 1 11 | 15 15270 | (By Orsai), 1992 | % V/V | -0.2 | Mar Ann Dakita | | |
| 4 - | Carbon dioxide | 15 13270 | (By Orsit): 1992 | % V/V | 7.0 | Not Available | | |
| 5. | Particulate Matters | s IS 11255 | 5 : Part 1 : 1985 | mg/Nm* | 37 | 120120-11 | | |
| | | | | gm/kw-hr | 0.22 | 0.2 | | |
| G. | Pollution control | device | | | | 6.269 | | |
| | Details of pollution | control devices attached | with the stack : Nil | ODT | | 0M2 | | |
| | g. mo | | ND OF TEST REP | URI :- | 100 | Maare | | |
| | Report Verifieb I | by | | | (Dr. R | . KARIM) | | |
| | S. Mondal | | | | Technic | al Manager | | |
| | | | | | Authoris | ed Signatory | | |
| | | | | | Autiona | | | |



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TEST REPORT

| No. AP-FG/23-24/176 | | | Date: May 26, 202 | 3 | | Page 2 of 2 |
|---------------------|---|---------------------------|--|--------------------|---------------------|--|
| Issued Addres | to is | : M/S. P/ | ARADEEP PHOSPHATE LT b. Odisha. | D. | | |
| Sample Date & | Description time of sampling | : Stack Ga : 19.05.202 | us / Flue Gas 23 (10:40 A.M. to 11:24 A.M.) | ID No. | Equips RVB/SMK/0 | nent used: 3 (Cal. Validity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM | /44 & IS: 11255 (Part-1,2 & 3) | | Parame | ters Tested |
| Analys | is Completed on | : 26.05.202 | 23 | | Hydroca | arbon as HC |
| A. | General informatio | n about sta | ck : | | | |
| 1. | Stack connected to | | : Diesel Generator | Set - 2 | | |
| 2. | Emission due to | | : Burning of H.S.D |) | | |
| 3. | Material of construc | tion of stack | : M.S. | | | |
| 4. | Shape of stack | | : Circular. | | | |
| 5. | Whether stack is pro | wided with | permanent platform & ladder : Yes | 5 | | |
| 6. | Generator capacity | | : 1 MVA | | | |
| Β, | Physical character | istics of sta | ack : | | | |
| 1. | Height of the stack f | from ground | level : 20 M | | | |
| 2. | Diameter of the stac | k at samplin | ig point : 0.4 M | | | |
| 3. | No. of Traverse point | nt | : 8 Nos. | | | |
| C. | Analysis / Characte | eristic of st | ack Gas / Flue Gas : | | | |
| 1. | Fuel used | : H.S.D | | 2. Fuel consi | imption : 22 | 2 Lt/hr. |
| D. | Results of gaseous | s emission | : | | | |
| SI No | Test Parameters | s | Test Method | Unit | Results | Norms as per Environment (Protection) Third Amendment Rules 2013, for 75 kw - \$ 800 kw |
| 6. | Total Hydrocarbon | as HC | : 5182 (Part - 22), 2004 RA 2009, By AA | mg/Nm ³ | 30.01 | |
| 1.5557 | 1997-1996 (MTCA DA CADALANI) | | | om/kw-hr | 0.18 | 10 |
| 7. | Nitrogen dioxide | | IS 11255 : Part 7 : 2005 | gm/kw-hr | 0.81 | 4.0 |
| Ε. | Pollution control d Details of pollution | levice control dev | ices attached with the stack : Nil. | | | |

-: END OF TEST REPORT :-

Report Verified by

S. Mondal

(Dr. R. KARIM)

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

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TEST REPORT

| No. AP-FG/23-24/349 | | Date: June 21, 2023 | | | Page 1 of 1 |
|---------------------|---------------------------------|---|---------------------|----------------|--------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD |) . | | 10 |
| Addres | s | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | | Equipment | used: |
| Date & | time of sampling | : 16.06.2023 (04:10 P.M. to 04:46 P.M.) | ID No.: RVB/SI | MK/03 (Cal. Vi | alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | E | 'arameters | Tested |
| Analys | is Completed on | : 21.06.2023 | Physical : T | emp., Veloc | ity, Gas flow |
| | | | Chemical : (| CO, CO_2, PN | 1 & TF |
| Α. | General information abo | ut stack : | | | |
| 1. | Boiler connected to | : DAP - A | | | |
| 2. | Emission due to | : Process Emmision | | | |
| 5. | Material of construction o | f stack : M.S. | | | |
| 4. | Shape of stack | with permanent platform & ladder : Vec | | | |
| B. | Physical characteristics | of stack . | | | |
| 1 | Height of the stack from a | round level : 50 M | | | |
| 2. | Diameter of the stack at sa | ampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | 2. Fuel consumption : | 3 | 3.Load : | |
| D. | Environmental condition | 15 : | | | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperati | ure : 42 °C | |
| E. | Results of Physical Para | meters of Flue Gas : | | | |
| SI No | Test Parameters | Test Method | Unit | I | 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 | | 16.06 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 99102 |
| F | Results of gaseous emis | ssion : | | | |
| SINO | Test Parameters | Test Method | Unit | Results | Norms |
| 51110 | rest rarameters | i cat method | | ittouris | as per CPCB |
| 1 | Carbon monoxide | IS 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 2 | Carbon dioxide | IS 11255 - Part 1 - 1985 By Orsat | % v/v | 0.4 | Not Available |
| 2 | Darticulate Mattern | IS 11255 · Part 1 · 1085 | ma/Nm3 | 13 | 150 max |
| 3. | Particulate Matters | 13 11255 . Fait 1 . 1965 | ing/Nin5 | 45 | Not Available |
| 4. | Total Fluoride | 15 11255 (Part - 5) : 1990 | mg/Nm* | 2,80 | Not Available |
| F. | Pollution control device | | | | |
| | Details of pollution control | of devices attached with the stack : Wet Scrubber | | 11000000 | |

S. Mondal

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TEST REPORT

| FG/23-24/349 | Date: June 21, 2023 | | | Fage 2 01 2 |
|--------------------------|---|---|--|--|
| 0 | : M/S. PARADEEP PHOSPHATE LTD. | 65 | | |
| | : Paradeep, Odisha. | | | |
| Description | : Stack Gas / Flue Gas | E | quipment us | sed: |
| ime of sampling | : 16.06.2023 (04:10 P.M. to 04:46 P.M.) | ID No.: RVB/SM | K/03 (Cal. Vali | dity: 16/07/25) |
| Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | <u><u>Pi</u></u> | trameters 16 | ested |
| Completed on | : 21.06.2023 | | Chemical : N | NH3 |
| General information ab | out stack : | | | |
| Boiler connected to | : DAP - A | | | |
| Emission due to | : Process Emmision | | | |
| Material of construction | of stack : M.S. | | | |
| Shape of stack | : Circular. | | | |
| Whether stack is provid- | ed with permanent platform & ladder : 1 es. | | | |
| Physical characteristic | s of stack : | | | |
| Height of the stack from | ground level : 50 M | | | |
| Diameter of the stack at | sampling point : 2.8 M | | | |
| No. of Traverse point | : 32 Nos. | | | |
| Height of the sampling | point from GL : 35 M | | | |
| Analysis / Characteris | tic of stack Gas / Flue Gas : | | 3.Load : | |
| Fuel used : | 2. Fuel consumption . | | | |
| Results of gaseous en | nission : | T | D | Norms |
| Test Parameters | Test Method | Unit | Results | Norms |
| Test Tarameters | | | | as per CPCB |
| Ammonia as NH. | Methods of Air Sampling & Analysis, 3rd Ed. | mg/Nm ³ | 173 | Not Available |
| | Pescription me of sampling Plan & Method Completed on Beneral information ab Boiler connected to Emission due to Material of construction Shape of stack Whether stack is provide Physical characteristic Height of the stack from Diameter of the stack at No. of Traverse point Height of the sampling J Analysis / Characteris Fuel used : Results of gaseous er Test Parameters | FG/23-24/349 Date: June 21, 2023 image: Stack Gas / Flue Gas : Paradeep, Odisha. Description : Stack Gas / Flue Gas me of sampling : 16.06.2023 (04:10 P.M. to 04:46 P.M.) ; Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Completed on : 21.06.2023 Seneral information about stack : Boiler connected to Boiler connected to : DAP - A Emission due to : Process Emmission Atterial of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : Height of the stack from ground level : 50 M Diameter of the stack at sampling point : 2.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : Puel consumption : Fuel used : 2. Fuel consumption : Results of gaseous emission : Test Method Methods of Air Sampling & Analysis, 3rd Ed. Methods of Air Sampling & Analysis, 3rd Ed. | FG/23-24/349 Date: June 21, 2023 image: i | FG/23-24/349 Date: June 21, 2023 image: i |

-: END OF TEST REPORT :-

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(Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. AP-FG/23-24/350 | | | Date: June 21, 2023 | | | Page 1 of 1 | | |
|---------------------|--|---|--|-------------------------------|--|------------------------|--|--|
| Issued | to | : M/S. PA | RADEEP PHOSPHATE LT | rD. | | | | |
| Addres | 55 | : Paradeep, | Odisha. | | | | | |
| Sample | Description | : Stack Gas | / Flue Gas | 1 | Equipment used: | | | |
| Date & | time of sampling | : 16.06.2023 | 3 (05:00 P.M. to 05:36 P.M.) | ID No.; RVB/S! | MK/03 (Cal. Va | lidity: 16/07/23) | | |
| Sampli | ampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | | | P | arameters 7 | Fested | | |
| Analys | analysis Completed on : 21.06.2023 | | | Physical : To Chemical : (| emp., Veloci CO, CO ₂ PM | ty, Gas flow I & TF | | |
| Α. | General information abo | | | | | | | |
| 1. | Boiler connected to | | : DAP - B | | | | | |
| 2. | Emission due to | | : Process Emmision | | | | | |
| 3. | Material of construction o | fstack | : M.S. | | | | | |
| 4. | Shape of stack | | : Circular. | | | | | |
| 5. | Whether stack is provided | with permane | ent platform & ladder : Yes. | | | | | |
| В. | Physical characteristics | of stack : | | | | | | |
| 1. | Height of the stack from g | | | | | | | |
| 2. | Diameter of the stack at sa | impling point | : 2.8 M | | | | | |
| 3. | No. of Traverse point | 24119-12-12-12-12-12-12-12-12-12-12-12-12-12- | : 32 Nos. | | | | | |
| 4. | Height of the sampling po | int from GL | : 35 M | | | | | |
| C. | Analysis / Characteristic | of stack Gas | s / Flue Gas : | | | | | |
| 1. | Fuel used : | | Fuel consumption : | 3.L0ad : | | | | |
| D. | Environmental condition | 15 : | | | | | | |
| 1. | Barometric pressure : 752 | mmHg | | 2. Temperature : 40 °C | | | | |
| E. | Results of Physical Para | imeters of Flu | ue Gas : | | | | | |
| SI No | Test Parameters | | Test Method | Unit | F | 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 | | 15.32 | | |
| 3. | Ouantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 78443 | | |
| E. | Results of gaseous emit | ssion : | | | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB | | |
| 1. | Carbon monoxide | 1S : | 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available | | |
| 2 | Carbon dioxide | IS | 11255 : Part 1 : 1985 By Orsat | % v/v | 0.3 | Not Available | | |
| 3 | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 46 | 150 max. | | |
| 4 | Total Fluoride | | IS 11255 (Part - 5) : 1990 | mg/Nm ³ | 2.38 | Not Available | | |
| F | Pollution control device | | | | | | | |
| | Details of pollution control | al devices atta | ched with the stack : Wet Scrubb | er | | | | |
| - 19.97 | Details of pollution contro | ol devices atta | ched with the stack : Wet Scrubb -: END OF TEST REPORT :- | er | DM | | | |

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S. Mondal

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

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TEST REPORT

| No. AP-FG/23-24/350 | | Date: June 21, 2023 | | | Page 2 of 2 |
|---------------------|--------------------------|---|---------------------|-------------------------------|--------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD. | | | |
| Addres | s | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | E ID No.: RVB/SN | quipment u 4K/03 (Cal. Val | sed: idity: 16/07/23) |
| Date & | time of sampling | DVD/EM/44 & IS: 11255 (Part-1 2 & 3) | P | arameters T | ested |
| Sampli | ng Plan & Method | : RVB/FW/44 & 15. 11255 (Fate1,2 & 5) | - | | |
| Analysi | s Completed on | : 21.06.2025 | | Chemical : | NH3 |
| A. | General information ab | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| В. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling | point from GL : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | - |
| SLNo | Test Parameters | Test Method | Unit | Results | Norms |
| 51.10 | | | 1 1 | | as per CPCB |
| | | | | | and per on the |
| | | Methods of Air Sampling & Analysis, 3rd Ed. | 21.3 | 151 | Not Available |
| 1. | Ammonia as NH3 | (Indophenol Method), Method 401 | mg/Nm* | 151 | Not Available |
| E | Pollution control davi | ne | | | |
| E. | Datails of pollution con | trol devices attached with the stack : Wet Scrubber | | | |

-: END OF TEST REPORT :-

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S. Mondal

(Dr. R. KARIM) Technical Manager

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

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TEST REPORT

| No. AP | -FG/23-24/351 | Date: June 21, 2023 | | | Page 1 of 1 |
|---------|-----------------------------|---|-------------------------------|--|----------------------|
| Issued | to | : M/S. PARADEEP PHOSPHATE LTD | D. | | |
| Addres | s | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | 1 | quipment u | ised: |
| Date & | time of sampling | : 17.05.2023 (03:55 P.M. to 04:34 P.M.) | ID No.: RVB/S | MK/03 (Cal. Va | lidity: 16/07/23) |
| Samplin | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | P | arameters 7 | Tested |
| Analysi | s Completed on | : 21.06.2023 | Physical : To Chemical : (| emp., Veloci CO, CO ₂ PM | ty, Gas flow & TF |
| Α. | General information abo | ut stack : | | | |
| 1. | Boiler connected to | : DAP - C | | | |
| 2. | Emission due to | : Process Emmision | | | |
| 3. | Material of construction of | fstack : M.S. | | | |
| 4. | Shape of stack | : Circular. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | |
| в. | Physical characteristics | of stack : | | | |
| 1. | Height of the stack from g | round level : 50 M | | | |
| 2. | Diameter of the stack at sa | mpling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | _ | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | land | |
| 1. | Fuel used : | Z. Fuel consumption : | | 5.Load : | |
| D. | Environmental condition | <u>5:</u> | | 12.90 | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperan | ire:42 C | |
| E. | Results of Physical Para | meters of Flue Gas : | 1 11 11 | | |
| SI No | Test Parameters | Test Method | Unit | ŀ | esults |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | | 53 |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | | 15.62 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 90726 |
| E. | Results of gaseous emis | ision : | | | |
| SI 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 Available |
| 2. | Carbon dioxide | IS 11255 : Part 1 : 1985 By Orsat | % v/v | 0.2 | Not Available |
| 3 | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 58 | 150 max. |
| 4. | Total Fluoride | IS 11255 (Part - 5): 1990 | mg/Nm ³ | 1.92 | Not Available |
| F. | Pollution control device | I devices attached with the stack · Wet Scrubbe | | | |

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(Dr. R. KARIM)

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

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TEST REPORT

| -FG/23-24/351 | Date: June 21, 2023 | | | Page 2 of 2 |
|--------------------------|---|---|---|--|
| to | : M/S. PARADEEP PHOSPHATE LTD | | | |
| s Description | ; Stack Gas / Flue Gas | E | quipment u | sed: |
| time of sampling | : 17.05.2023 (03:55 P.M. to 04:34 P.M.) | ID No.: KVB/SN | 1K/05 (Cal. va | anty. Toron201 |
| ig Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | <u>P</u> | arameters 1 | estea |
| s Completed on | : 21.06.2023 | | Chemical :] | NH3 |
| General information ab | out stack : | | | |
| Boiler connected to | : DAP - C | | | |
| Emission due to | : Process Emmision | | | |
| Material of construction | of stack : M.S. | | | |
| Shape of stack | : Circular. | | | |
| Whether stack is provide | ed with permanent platform & ladder : Yes. | | | |
| Physical characteristic | s of stack : | | | |
| Height of the stack from | ground level : 50 M | | | |
| Diameter of the stack at | sampling point : 2.8 M | | | |
| No. of Traverse point | : 32 Nos. | | | |
| Height of the sampling p | point from GL : 35 M | | | |
| Analysis / Characterist | ic of stack Gas / Flue Gas : | | 21 and 4 | |
| Fuel used : | 2. Fuel consumption : | | 5.Load | |
| Results of gaseous en | hission : | | | 1 |
| Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| Ammonia as NH3 | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | mg/Nm ³ | 129 | Not Available |
| | FG/23-24/351 Description ime of sampling g Plan & Method s Completed on General information ab Boiler connected to Emission due to Material of construction Shape of stack Whether stack is provide Physical characteristic Height of the stack from Diameter of the stack at No. of Traverse point Height of the sampling p Analysis / Characteristic Fuel used : Results of gaseous em Test Parameters Ammonia as NH ₃ | FG/23-24/351 Date: June 21, 2023 0 : M/S. PARADEEP PHOSPHATE LTD ime of sampling : Paradeep, Odisha. Description : Stack Gas / Flue Gas time of sampling : 17.05.2023 (03:55 P.M. to 04:34 P.M.) g Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) s Completed on : 21.06.2023 General information about stack : Boiler connected to : DAP - C Emission due to : Process Emmision Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : Height of the stack from ground level : 50 M Diameter of the stack at sampling point : 22.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : Fuel used : 2. Fuel consumption : Results of gaseous emission : Test M eth o d Anamonia as NH ₃ Methods of Air Sampling & Analysis, 3rd Ed. | FG/23-24/351 Date: June 21, 2023 0 : M/S. PARADEEP PHOSPHATE LTD. : : Paradeep, Odisha. Description : Stack Gas / Flue Gas time of sampling : 17.05.2023 (03:55 P.M. to 04:34 P.M.) g Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) s Completed on : 21.06.2023 General information about stack : Boiler connected to Boiler connected to : DAP - C Emission due to : Process Emmision Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : Height of the stack from ground level : 50 M Diameter of the stack at sampling point : 2.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : Fuel used : 2. Fuel consumption : Results of gaseous emission : Test Method Unit Ammonia as NHa Methods of Air Sampling & Analysis, 3rd Ed. mg/Nm ³ | FG/23-24/351 Date: June 21, 2023 0 : M/S. PARADEEP PHOSPHATE LTD. : Paradeep, Odisha. : Description : Stack Gas / Flue Gas ime of sampling : 17.05.2023 (03:55 P.M. to 04:34 P.M.) g Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) is Completed on : 21.06.2023 General information about stack : : Boiler connected to : DAP - C Emission due to : Process Emmision Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : Height of the stack from ground level : 50 M Diameter of the stack as sampling point : 2.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : Fuel used : 2. Fuel consumption : Results of gaseous emission : Test Parameters Test M et h o d Methods of Air Sampling & Analysis, 3rd Ed. mg/Nm ³ (Indenbered Method) Method 401 |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-FG/23-24/352 | | Date: June 21, 2023 | | | Page 1 of 1 |
|---------------------|---------------------------------|--|-------------------------------|--|------------------------|
| Issued to | | : M/S. PARADEEP PHOSPHATE LTD |). | | |
| Addres | s | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Gas / Flue Gas | 1 | Equipment | ised: |
| Date & | time of sampling | : 16.06.2023 (03:20 P.M. to 03:56 P.M.) | ID No.: RVB/SM | MK/03 (Cal. Va | lidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | P | 'arameters | fested |
| Analysi | is Completed on | : 21.06.2023 | Physical : To Chemical : (| emp., Veloci CO, CO ₂ PM | ty, Gas flow I & TF |
| Α. | General information abo | ut stack : | | | |
| 1. | Boiler connected to | : DAP - D | | | |
| 2. | Emission due to | : Process Emmision | | | |
| 3. | Material of construction o | f stack : M.S. | | | |
| 4. | Shape of stack | : Circular. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | | | |
| 1. | Height of the stack from g | round level : 50 M | | | |
| 2. | Diameter of the stack at sa | impling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | Fuel consumption : | | 3.Load : | |
| D. | Environmental condition | <u>IS :</u> | | | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperati | ure : 42 °C | |
| E. | Results of Physical Para | meters of Flue Gas : | | | |
| SI No | Test Parameters | Test Method | Unit | F | 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 | | 15.85 |
| 2 | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 84312 |
| 5. E | Results of paseous emin | is the transferred state | - ANA AM | | |
| SI No. | Test Parameters | Test Method | Unit | Results | Norms |
| 31110 | Test Parameters | rest steraou | | | as per CPCB |
| 1. | Carbon monoxide | IS 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 2. | Carbon dioxide | IS 11255 : Part 1 : 1985 By Orsat | % v/v | 0.2 | Not Available |
| 3. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 59 | 150 max. |
| 4 | Total Fluoride | IS 11255 (Part - 5) : 1990 | mg/Nm ³ | 2.17 | Not Available |
| F. | Pollution control device | | | Kanta | |
| | - changer control action | 1. J. J. Market and the stands of Was Complete | <i></i> | | |

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

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TEST REPORT

| | M/S PARADEEP PHOSPHATE LTD. | | | |
|------------------|--|--|--|---|
| | | | | |
| | Paradeep, Odisha. | | | |
| : | Stack Gas / Flue Gas | E | quipment u | sed: |
| ing | : 16.06.2023 (03:20 P.M. to 03:56 P.M.) | ID No.: RVB/SN | 1K/05 (Cal. Va | indity: 16/07/23) |
| thod | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | <u><u>P</u></u> | arameters 1 | ested |
| on a | : 21.06.2023 | | Chemical : 1 | NH3 |
| rmation about | stack : | | | |
| ted to | : DAP - D | | | |
| e to | : Process Emmision | | | |
| onstruction of s | itack : M.S. | | | |
| k | : Circular. | | | |
| k is provided w | rith permanent platform & ladder : Yes. | | | |
| racteristics of | f stack : | | | |
| stack from gro | und level : 50 M | | | |
| he stack at sam | pling point : 2.8 M | | | |
| rse point | : 32 Nos. | | | |
| sampling poin | t from GL : 35 M | | | |
| haracteristic c | of stack Gas / Flue Gas : | | | |
| : | Fuel consumption : | | 5.Load : | |
| aseous emiss | ion : | | | 1 |
| ameters | Test Method | Unit | Results | Norms |
| | | | | as per CPCB |
| s NH3 | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | mg/Nm ³ | 117 | Not Available |
| s N | NH3 NH3 trol device ution control | Test Methods NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 trol device ution control devices attached with the stack : Wet Scrubber | neters Test Method Unit NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 mg/Nm ³ trol device mg/Nm ³ | neters Test Method Unit Results NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 mg/Nm ³ 117 trol device aution control devices attached with the stack : Wet Scrubber |

-: END OF TEST REPORT :-

S. mondal

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

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TEST REPORT

| No. AP-FG/23-24/353 | | Date: June 21, 2023 | | Page 1 of |
|---------------------|--|--|-----------------------------------|--|
| Issued | to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| Addres | 55 | : Paradeep, Odisha. | | |
| Sample | e Description | : Stack Gas / Flue Gas | Equ | ipment used: |
| Date & | time of sampling | : 17.06.2023 (11:30 A.M. to 11:57 A.M.) | ID No .: RVB/SMK/ | 03 (Cal. Validity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| Analys | is Completed on | : 21.06.2023 | Physical : Temp Chemical : CO, | ., Velocity, Gas flow CO ₂ , SO ₂ & Acid Mist |
| Α. | General information abo | ut stack : | | |
| 1, | Boiler connected to | : SAP - A | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. | Material of construction o | f stack : M.S. | | |
| 4. | Shape of stack | : Circular. | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | |
| В. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 120 M | | |
| 2. | Diameter of the stack at sa | impling point : 2.7 M | | |
| 3. | No. of Traverse point | : 32 Nos. | | |
| 4. | Height of the sampling po | int from GL : 35 M | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | 2013 | 4 |
| 1. | Fuel used : | 2. Fuel consumption : | 3.Lc | oad : |
| D. | Environmental condition | <u>IS :</u> | | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperature : | 39 °C |
| E. | Results of Physical Para | meters of Flue Gas : | | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 78 |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | 10.13 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 168670 |
| F. | Results of gaseous emis | sion : | | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1. | Sulphur dioxide | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 632 |
| 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. | Acid Mist | SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018 | mg/Nm ³ | 40 |
| G. | Pollution control device Details of pollution control | I devices attached with the stack : Nil | | 0/10 |

S. mendal

Report Verified by S. Mondal

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



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TEST REPORT

| No. AP-FG/23-24/354 | | Date: June 21, 2023 | | Page 1 of |
|---------------------|-----------------------------|---|---------------------|---|
| issued to | | : M/S. PARADEEP PHOSPHATE LT | D. | |
| Addres | S | : Paradeep, Odisha. | | |
| ample | Description | : Stack Gas / Flue Gas | Equi | ipment used: |
| ate & | time of sampling | : 17.06.2023 (12:10 P.M. to 12:31 P.M.) | ID No.: RVB/SMK/0 | 3 (Cal. Validity; 16/07/23) |
| ampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| nalys | is Completed on | : 21.06.2023 | Physical : Temp | , Velocity, Gas flow |
| | | | Chemical : CO, | CO ₂ , SO ₂ & Acid Mist |
| Α. | General information about | ut stack : | | |
| 1. | Boiler connected to | : SAP - B | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. A | Shape of eteck | : Circular | | |
| 5 | Whether stack is provided | with permanent platform & ladder : Yes. | | |
| B. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 120 M | | |
| 2. | Diameter of the stack at sa | mpling point : 2.7 M | | |
| 3. | No. of Traverse point | : 32 Nos. | | |
| 4. | Height of the sampling poi | int from GL : 35 M | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | |
| 1. | Fuel used : | Fuel consumption : | 3.Lo | ad : |
| D. | Environmental condition | <u>s:</u> | | 10.020 |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperature : | 40 °C |
| E. | Results of Physical Para | meters of Flue Gas : | | |
| I No | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 84 |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | 12.22 |
| 3. | Ouantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 198231 |
| F. | Results of gaseous emis | sion : | | |
| I No | Test Parameters | Test Method | Unit | Results |
| 1. | Sulphur dioxide | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 623 |
| 2 | Carbon monoxide | IS 13270 (By Orsat): 1992 | % v/v | <0.2 |
| 3 | Carbon dioxide | IS 13270 (By Orsat): 1992 | % v/v | 0.4 |
| | 1.1116.4 | SOP No.: RVB/SOP/01/20, | ma/Nm ³ | 44 |
| 4. | Acid Mist | Issue No.: 04, Issue Date: 10.01.2018 | mg/14a | 1.2.5. |
| G. | Pollution control device | Later the standard state stands with | | |
| | Details of pollution contro | devices attached with the stack : Nil | | 110 |
| | Inder | -: END OF TEST REPORT :- | | akan |
| | Sme | | (Dr | P KAPIMA |
| Re | eport verified by | | (Dr.) | col Manager |
| | S. Mondal | | Techni | cal Manager |
| | | | Authon | sed Signatory |
| 55 | | | For R.V.BRIG | GS & CO. (P) LID. |

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TEST REPORT

| No. AP-FG/23-24/355 | | | Date: June 21, 2023 | | Page 1 of |
|---------------------|-----------------------------|--------------|--|---------------------|---|
| ssued | to | : M/S. PA | RADEEP PHOSPHATE LT | rD. | |
| ddres | s | : Paradeep | , Odisha. | | |
| ample | Description | : Stack Ga | s / Flue Gas | <u>Equi</u> | pment used: |
| Date & | time of sampling | : 17.06.202 | 3 (04:20 P.M. to 04:53 P.M.) | ID No.: RVB/SMK/0. | 3 (Cal. Validity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM/ | 44 & IS: 11255 (Part-1,2 & 3) | Parar | neters Tested |
| Analysi | s Completed on | : 21.06.202 | 3 | Chemical : CO, 0 | CO ₂ , SO ₂ & Acid Mist |
| Α. | General information abo | ut stack : | | | |
| 1. | Boiler connected to | | : SAP - C | | |
| 2. | Emission due to | | : Process Emmision | | |
| 3. | Material of construction o | fstack | : M.S. | | |
| 4. | Shape of stack | - 22 | : Circular. | | |
| 5. | Whether stack is provided | with perman | ent platform & ladder : Yes. | | |
| В. | Physical characteristics | of stack : | 120.14 | | |
| 1. | Height of the stack from g | round level | : 120 M | | |
| 2. | Diameter of the stack at sa | | | | |
| 3. | No. of Traverse point | | | | |
| 4. | Analysis / Characteristic | of stack Ga | s / Flue Gas : | | |
| 1 | Fuel used : | of Stuck Ou | 2. Fuel consumption : | - 3.Lo | ad : |
| D. | Environmental condition | 15 : | | | |
| 1 | Barometric pressure : 752 | mmHg | | 2. Temperature : | 38 °C |
| E. | Results of Physical & G | eneral Param | neters of stack Gas / Flue Gas : | | |
| SI No | Test Parameters | | Test Method | Unit | Results |
| 1. | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | 81 |
| 2. | Velocity of gas in duct | | IS 11255:Part 3:2008 | m/sec | 8.11 |
| 3 | Quantity of gas flow | 1 | IS 11255:Part 3:2008 | NM ³ /hr | 134919 |
| 4 | Sulphur dioxide | | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 595 |
| 5 | Carbon monoxide | | IS 13270 (By Orsat): 1992 | % v/v | <0.2 |
| 6 | Carbon dioxide | | IS 13270 (By Orsat): 1992 | % v/v | 0.4 |
| 7. | Acid Mist | ls | SOP No.: RVB/SOP/01/20, sue No.: 04, Issue Date: 10.01.2018 | mg/Nm ³ | 44.8 |
| F. | Pollution control device | | | | |

Report Verified by S. Mondal (Dr. R. KARIM) <u>Technical Manager</u> Authorised Signatory For R.V.BRIGGS & CO. (P) LTD.

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TEST REPORT

| No. AP-FG/23-24/356 | | | Date: June 21, 2023 | | | Page 1 of 1 |
|---------------------|------------------------------|---------------|------------------------------------|------------------------------|--|------------------------|
| Issued to | | : M/S. P/ | RADEEP PHOSPHATE LT | D. | | |
| Addres | S | : Paradeep | , Odisha. | | | |
| Sample | Description | : Stack Ga | s / Flue Gas | 1 | Equipment | used: |
| Date & | time of sampling | : 18.06.202 | 23 (10:10 A.M. to 10:37 A.M.) | ID No.; RVB/SI | MK/03 (Cal. Va | alidity: 16/07/23) |
| Sampli | ng Plan & Method | : RVB/FM | 44 & IS: 11255 (Part-1,2 & 3) | E | 'arameters | Tested |
| Analys | is Completed on | : 21.06.202 | 3 | Physical : T Chemical : 0 | emp., Veloci CO, CO ₂ PM | ty, Gas flow 1 & TF |
| Α. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : PAP | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction of | fstack | : M.S. | | | |
| 4. | Shape of stack | 8201 | : Circular. | | | |
| 5. | Whether stack is provided | with perman | ent platform & ladder : Yes. | | | |
| В. | Physical characteristics | of stack : | 2233 | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | |
| 2. | Diameter of the stack at sa | impling point | : 2.7 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling poi | int from GL | : 35 M | | | |
| C. | Analysis / Characteristic | of stack Ga | s/Flue Gas : | 9 | 2 Londs | |
| <u> </u> | Fuel used : | | 2. Fuel consumption : | | 5.Load : | |
| D. | Environmental condition | 5. | | | 20.80 | |
| 1. | Barometric pressure : 752 | mmrig | ~ | 2. Temperati | ure : 38 °C | |
| E. | Results of Physical Para | meters of FI | ue Gas : | 1 | | |
| SI No | Test Parameters | | Test Method | Unit | ŀ | lesults |
| 1. | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | | 41 |
| 2. | Velocity of gas in duct | | IS 11255:Part 3:2008 | m/sec | | 5.06 |
| 3. | Quantity of gas flow | | IS 11255:Part 3:2008 | NM ³ /hr | | 95582 |
| F. | Results of gaseous emis | sion : | | | | |
| SI 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 Available |
| 2. | Carbon dioxide | IS | 11255 : Part 1 : 1985 By Orsat | % v/v | 0.2 | Not Available |
| 3. | Particulate Matters | | IS 11255 : Part 1 : 1985 | mg/Nm3 | 41 | 150 max. |
| 4 | Total Fluoride | | 1S 11255 (Part - 5) : 1990 | mg/Nm ³ | 3.65 | Not Available |
| G. | Pollution control device | | | | | |
| | Details of pollution control | devices atta | sched with the stack : Wet Scrubbe | r | | |

-: END OF TEST REPORT :-

g. mor do Report Verified by S. Mondal

(Dr. R. F

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

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TEST REPORT

| Io. AP | -FG/23-24/357 | Date: June 21, 2023 | | Page 1 o |
|--------|------------------------------|---|-----------------------------------|---|
| sued | to | : M/S. PARADEEP PHOSPHATE LTD |) . | |
| ddres | S | : Paradeep, Odisha. | | |
| ample | Description | : Stack Gas / Flue Gas | Equ | ipment used: |
| ate & | time of sampling | : 18.06.2023 (11:00 A.M. to 11:32 A.M.) | ID No.: RVB/SMK/0 | 3 (Cal. Validity: 16/07/23) |
| amplir | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| nalysi | s Completed on | : 21.06.2023 | Physical : Temp Chemical : CO, | ., Velocity, Gas flow CO ₂ , & PM |
| Α. | General information abo | ut stack : | | |
| 1. | Boiler 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. | | |
| В. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 1.03 M | | |
| 3. | No. of Traverse point | : 12 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | 21. | and a |
| 1. | Fuel used : | 2. Fuel consumption : | 5.00 | ad ; |
| D. | Environmental condition | <u>s :</u> | 0 T | 20.90 |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperature : | 39 C |
| E. | Results of Physical Para | meters of Flue Gas : | 1 | D |
| SI 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 | 16.97 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 44374 |
| F. | Results of gaseous emis | sion : | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 56 |
| G. | Pollution control device | | | |
| | Details of pollution control | ol devices attached with the stack : Zypnite Plan | t Cooler. | constant see |

e. mer Report Verified by

S. Mondal

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TEST REPORT

| No. AP-FG/23-24/358 | | Date: June 21, 2023 | | Page 1 o |
|---------------------|-----------------------------|---|---------------------|------------------------------|
| ssued | i to | : M/S. PARADEEP PHOSPHATE LTI | D. | |
| Addres | SS | : Paradeep, Odisha. | | |
| Sample | e Description | : Stack Gas / Flue Gas | Equ | ipment used: |
| Jate & | time of sampling | : 18.06.2023 (11:50 A.M. to 12:20 P.M.) | ID No.: RVB/SMK/ | 03 (Cal. Validity: 16/07/23) |
| ampli | ing Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | imeters Tested |
| anaiys | is Completed on | : 21.06.2023 | Chemical : CO, | CO ₂ , & PM |
| Α. | General information about | ut stack : | | |
| 1. | Boiler connected to | : Zypmite - 2 | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. | Material of construction of | fstack : M.S. | | |
| 4. | Shape of stack | : Circular. | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | |
| В. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 0.85 M | | |
| 3. | No. of Traverse point | : 12 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | 2020 |
| 1. D | Fuel used : | 2. Fuel consumption : | 3.Lc | oad ; |
| D. | Environmental condition | <u>s :</u> | | 622 |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperature : | 40 °C |
| E, | Results of Physical Para | meters of Flue Gas : | | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 79 |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 18.61 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 30584 |
| F. | Results of gaseous emis | sion : | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 66 |
| G. | Pollution control device | devices attached with the stack · Zymnite Plant | Dover | |

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(Dr. R. KARIM)

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TEST REPORT

| No. AP-FG/23-24/359 | | Date: June 21, 2023 | | Page 1 of |
|---------------------|-----------------------------|---|---------------------|------------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTI | D. | |
| Addres | S | : Paradeep, Odisha. | | |
| Sample | Description | : Stack Gas / Flue Gas | Equ | ipment used: |
| Date & | time of sampling | : 18.06.2023 (12:40 P.M. to 01:12 P.M.) | ID No.: RVB/SMK/0 | 03 (Cal. Validity: 16/07/23) |
| ampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested |
| Inalysi | s Completed on | : 21.06.2023 | Physical : Temp | , Velocity, Gas flow |
| | O | | Chemical : CO, | CO ₂ , & PM |
| A. | General Information about | JI STACK : | | |
| 1. | Emission due to | : Zypinite - 3 | | |
| 3 | Material of construction of | stack MS | | |
| 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 g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | | | |
| 3. | No. of Traverse point | : 8 Nos. | | |
| C. | Analysis / Characteristic | | | |
| 1. | Fuel used : | Fuel consumption : | 3.Lo | oad : |
| D, | Environmental condition | <u>s :</u> | | Sanager S |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperature : | 40 °C |
| E. | Results of Physical Para | meters of Flue Gas : | | |
| SI 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 | 15.99 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 10134 |
| F. | Results of gaseous emis | sion : | | |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 51 |
| G. | Pollution control device | | | |
| | Details of pollution contro | l devices attached with the stack : Zypnite Plant | Granulator. | |

9. mondal

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(Dr. R. K

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

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CIN: U51109WB1931PTC007007

TEST REPORT

| Io. AP | -FG/23-24/360 | | Date: June 21, 2 | 023 | | Page 1 of |
|--|------------------------|---|---------------------|--------------------|---------------|-------------------------------|
| ssued | to | : M/S. PARADEEP | PHOSPHATE L | TD. | | |
| ddres | s | : Paradeep, Odisha. | | | | |
| ample | Description | : Stack Gas / Flue Gas | | | Equips | nent used: |
| Date & | time of sampling | : 18.06.2023 (02:30 P.M | 4. to 03:14 P.M.) | ID No | .: RVB/SMK/0. | 3 (Cal. Validity: 16/07/23) |
| ampli | ng Plan & Method | : RVB/FM/44 & IS: 112 | 255 (Part-1,2 & 3) | | Parame | ters Tested |
| Analysi | is Completed on | : 21.06.2023 | | Physical : T | emp., Veloc | ity, Gas flow |
| in the second se | | | | Chemical : | SO2, NO2, C | O, CO ₂ , & PM |
| Α. | General informatio | on about stack : | | | | |
| <u>.</u> | Stack connected to | 11. ST. L.B.A.S. Michaeles | : Diesel General | tor Set - 2 | | |
| 2 | Emission due to | | : Burning of H.S | S.D | | |
| 3. | Material of construe | ction of stack | : M.S. | | | |
| 4 | Shape of stack | | : Circular. | | | |
| 5. | Whether stack is pr | ovided with permanent pl | atform & ladder : ' | Yes | | |
| 6. | Generator capacity | | : 1 MVA | 10.811 | | |
| B. | Physical characte | ristics of stack : | | | | |
| 1. | Height of the stack | from ground level | : 20 M | | | |
| 2. | Diameter of the stat | ck at sampling point | : 0.4 M | | | |
| 3. | No. of Traverse poi | int | : 8 Nos. | | | |
| C. | Analysis / Charact | teristic of stack Gas / FI | ue Gas : | | | |
| 1. | Fuel used | : H.S.D | | 2. Fuel cons | sumption : 22 | 2 Lt/hr. |
| D. | Environmental co | nditions : | | | | |
| 1. | Barometric pressur | e : 752 mmHg | | 2 Tampara | 0C | |
| E. | Finding of Physic | al Parameters of Flue G | 20 1 | 2. Tempera | une.41 C | |
| SI No | Test Parameter | an ratameters of Flue G | ds. | | | |
| 1. | Temperature of em | a les | t Method | Unit | | Results |
| 2. | Velocity of gas in | duct 15 1125 | 5 : Part 3 : 2008 | °C | | 201 |
| 3. | Quantity of gas flo | W 10 1125 | 5 : Part 3 : 2008 | m/sec | | 17.07 |
| F. | Results of gaseou | s emission : | 5 : Part 3 : 2008 | NM'/hr | | 4813 |
| SI No | Test Parameter | | | | | |
| | | s Tes | t Method | Unit | Results | Norms as per |
| | | | | | | Environment (Protection) Thir |
| | | | | 1 | 6 8 | Amendment Rules 2013, for |
| 1, | Sulphur dioxide | 10.110.0 | | | | 75 kw - ≤ 800 kw |
| 2. | Nitrogen dioxide | 18 11255 | : Part 2 : 1985 | mg/Nm ³ | 66 | No. 4 |
| 3. | Carbon monovide | IS 11255 | : Part 7 : 2005 | mg/Nm3 | 127 | Not Available |
| | and monovide | USEF | A 10:2017 | ma/Nm ³ | 127 | |
| | | | | ing/iviti | 124 | |
| 4 | Carbon dia sa | IS 13270 (| By Orsat): 1992 | gm/kw-hr | 0.75 | 3.5 |
| 5 | Particului di Oxide | IS 13270 (1 | By Orsath: 1002 | % v/v | <0.2 | |
| ~ P | articulate Matters | IS 11255 | Part 1 . 1005 | % v/v | 7.4 | Not Assett to |
| G P | Collection | | Fart 1 : 1985 | mg/Nm ³ | 32 | Not Available |
| - <u>p</u> | onution control de | vice | | gm/kw-hr | 0.10 | |
| - | ctails of pollution co | ontrol devices attached | | 1.1.1 | 0.19 | 0.2 |
| | S. me | and and is EN | th the stack : Nil. | | | 110 |
| r | report Verifieb by | - ENL | OF TEST REPOR | RT :- | | 100 |
| | S. Mondal | | | | X | Kor |
| | | | | | (Dr. R. K | ARIMI |
| | Th | | | | Technical I | lan |
| - | Pe lest report at | - | | 1 | ind IV | dhanar |
| * | TREPARE PROFILER | | | | | |
| * | results relate only | to the reprod | | Al | (The state | |
| * | Results relate only | to the parameter | | r AU | monsper o: | ×. |
| * | results relate only | all not be reproduced, ex to the parameters testor | cept in full | Far Du | monsed Sin | al. |


ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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TAHER MANSION, 1ST FLOOR

9. BENTINCK STREET, KOLKATA - 700 001

Phone : (033) 4044-3380/3381/3382 / 3383. Fax : 33 2248-0447

E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN: U51109WB1931PTC007007

TEST REPORT

| No. AP- | FG/23-24/360 | | Page 2 of 2 | | | | | |
|----------|-----------------------|---|---|-----------------------|--------------|--|--|--|
| ssued to | 0 | : M/S. PARADEEP PHOSPHATE LTD. : Paradeep, Odisha. | | | | | | |
| Sample I | Description | : Stack G | as / Flue Gas | e Gas Equipment used: | | | | |
| Date & t | time of sampling | : 18.06.20 | 023 (02:30 P.M. to 03:14 P.M.) | ID No.: I | RVB/SMK/03 | (Cal. Validity: 10/0//23) | | |
| Samplin | g Plan & Method | : RVB/FM | M/44 & IS: 11255 (Part-1,2 & 3) | | Paramet | ers Tested | | |
| Analysis | Completed on | : 21.06.20 | 023 | | Hydrocar | bon as HC | | |
| A. (| General informatio | n about st | tack : | | | | | |
| 1. 5 | Stack connected to | | : Diesel Generator | Set - 2 | | | | |
| 2. 1 | Emission due to | | : Burning of H.S.D | | | | | |
| 3. 1 | Material of construct | ction of sta | ck : M.S. | | | | | |
| 4. 5 | Shape of stack | | : Circular. | | | | | |
| 5. | Whether stack is pr | ovided with | h permanent platform & ladder : Yes | | | | | |
| 6. | Generator capacity | | : 1 MVA | | | | | |
| В. | Physical characte | ristics of s | stack : | | | | | |
| 1. | Height of the stack | from groun | nd level : 20 M | | | | | |
| 2. | Diameter of the sta | ck at samp | ling point : 0.4 M | | | | | |
| 3. | No. of Traverse po | int | : 8 Nos. | | | | | |
| C. | Analysis / Charac | teristic of | stack Gas / Flue Gas : | . Fuel conce | mation · 22 | I t/br | | |
| 1. | Fuel used | : H.S.D | - | 2. Fuel consu | imption . 22 | Lom. | | |
| D. | Results of gaseou | us emissio | on : | 11.14 | Desulte | Norms as per | | |
| SI No | Test Paramete | rs | Test Method | Unit | Results | Environment (Protection) Third Amendment Rules 2013, for 75 kw - \$ 800 kw | | |
| 6 | Total Hydrocarbor | as HC | 5 : 5182 (Part - 22), 2004 RA 2009, By AA | mg/Nm ³ | 9.20 | | | |
| 0. | Total Hydrocarbon | | | am/kw-hr | 0.06 | 4.0 | | |
| 7 | Nitrogen diovide | | IS 11255 : Part 7 : 2005 | gm/kw-hr | 0.76 | 4.0 | | |
| F | Pollution control | device | | 1000 10 million 1003 | | | | |
| E. | Details of pollutio | n control d | levices attached with the stack : Nil. | | | | | |
| | Details of pertails | | .: END OF TEST REPO | RT :- | | | | |

S. moreo Report Verified by S. Mondal

(Dr. R. KA

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

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TEST REPORT

| No. A | AP-SL/23-24/131-134 | | | Date: M | ay 25, 2023 | | | | Page 1 of 1 | |
|-------|---------------------|---------------------|---|-----------------|--|------------------|------------------|-----------------|--|--|
| Issue | ed to | : M/S. F | ARADE | EP PH | OSPHATES | LIMITE | D | | | |
| Addr | ess | : Paradeep, Odisha. | | | | | | | | |
| Your | P.O. Ref. no. | : 55000 | 05451, 0 | dtd. 13.0 | 08.2022 | | | | | |
| Desc | cription of Sample | : Sound | Level N | Aonitorin | ng | | Parameter | s Tested : I | Mins LMax & Luq | |
| Date | of Monitoring | : 16.05. | 2023 to | 19.05.2 | 023 | | Test Metho | od : IS 475 | 8 : 1968 | |
| SOUN | ND LEVEL MONITORIN | G AT AME | BIENT LO | CATION | : | | | | | |
| SI. | Locations | Day Ti | me (06.0 | 0 A.M to | 10.00 P.M) | Night 1 | ime (10. | 00 P.M t | o 06.00 A.M) | |
| No | | Sound | d Level in dB(A) Norms as per Sound Lev | | Level in | n dB(A) | Norms as per | | | |
| | | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | |
| 1. | Near AAQMS - 1 | 50.4 | 53.8 | 52.5 | | 49.9 | 52.3 | 51.2 | | |
| 2. | Near AAQMS - 2 | 54.6 | 58.2 | 56.5 | | 52.8 | 55.5 | 54.1 | 70 48(A) | |
| 3. | Near AAQMS - 3 | 51.5 | 57.5 | 55.1 | - 75 dB(A) | 50.6 | 53.1 | 51.8 | 70 dB(A) | |
| 4. | Near AAQMS - 4 | 51.8 | 55.2 | 53.6 | 1 | 50.2 | 52.2 | 51.3 |] | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

S. mender Report Verified by

S. Mondal

(Dr. R. KARIM)

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

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TEST REPORT

| No. A | P-SL/23-24/135-141 | Date: | May 25, 2 | 2023 | | Page 1 of 1 | |
|----------------|-----------------------------------|--|------------------|------------------|-------------------------|--|--|
| Issue Addre | d to ess P.O. Ref. no. | : M/S. PARADEEP PHOSPE : Paradeep, Odisha. : 5500005451, dtd, 13,08,20 | IATE LTI | D. | | | |
| Desci Date | iption of Sample of Monitoring | : Sound Level Monitoring : 16.05.2023 to 19.05.2023 | | | Parameter Test Metho | <u>s Tested</u> : L _{Min} , L _{Max} & L _{eq} od : IS 4758 : 1968 | |
| SOU SL | ND LEVEL MON Locations | TIME | Noise | Level ir | n dB(A) | Permissible Noise | |
| No. | | | L _{Min} | L _{Max} | L _{eq} | Workers as per The Noise Pollution (Regulation And Control) Rules, 2000 | |
| 1. | PAP Plant | 02:20 P.M 02:25 P.M. | 65.2 | 69.4 | 67.6 | | |
| 2. | SAP Plant | 03:00 P.M 03:05 P.M. | 51.3 | 53.7 | 52.5 | | |
| 3. | Zypmite Plant | 03:10 P.M 03:15 P.M. | 79.8 | 84.6 | 82.2 | | |
| 4. | AB Side - DAP | 10:30 A.M 10:35 A.M. | 66.5 | 70.2 | 68.6 | 90 dB(A) | |
| 5. | CD Side - DAP | 10:40 A.M 10:45 A.M. | 60.9 | 65.1 | 63.7 | | |
| 6. | Off side | 10:00 A.M 10:05 A.M. | 69.2 | 73.8 | 72.0 |] | |
| 7. | Bagging Section | 11:10 A.M 11:15 A.M. | 70.8 | 73.8 | 72.7 | | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

S. morte Report Verified by S. Mondal

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TEST REPORT

| No. A | P-SL/23-24/219-222 | | | Date: Ju | une 25, 2023 | | | | Page 1 of 1 | |
|-------|--------------------|---------------------|------------------|-----------------|--|------------------|------------------|-----------------|---|--|
| Issue | ed to | : M/S. P | ARADE | EP PH | OSPHATES | LIMITE | D | | | |
| Addr | ess | : Paradeep, Odisha. | | | | | | | | |
| Your | P.O. Ref. no. | : 55000 | 05451, 0 | ttd. 13.0 | 08.2022 | | | | | |
| Desc | ription of Sample | : Sound | Level N | Ionitorin | ng | | Parameter | s Tested : I | Mins LMax & Leq | |
| Date | of Monitoring | : 15.06. | 2023 to | 18.06.2 | 023 | | Test Metho | od : IS 475 | 8 : 1968 | |
| SOUN | D LEVEL MONITORIN | G AT AME | BIENT LO | CATION | : | | | | | |
| SI. | Locations | Day Ti | me (06.0 | 0 A.M to | 10.00 P.M) | Night T | ime (10. | 00 P.M t | o 06.00 A.M) | |
| No | | Sound | Level in | dB(A) | A) Norms as per Sound Le | | Level in | n dB(A) | Norms as per | |
| | | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{Min} | L _{Max} | L _{eq} | Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | |
| 1. | Near AAQMS - 1 | 50.2 | 54.8 | 52.8 | | 45.7 | 47.2 | 46.5 | | |
| 2. | Near AAQMS - 2 | 54.6 | 57.2 | 56.1 |] | 48.5 | 50.8 | 49.8 | 70 dB(A) | |
| 3. | Near AAQMS - 3 | 52.6 | 55.2 | 54.1 | - 75 dB(A) | 46.2 | 49.4 | 47.8 | | |
| 4. | Near AAQMS - 4 | 52.7 | 55.5 | 54.3 | | 44.6 | 47.2 | 46.0 |] | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

Report Verified by

S. Mondal

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(Dr. R. KARIM)

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



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TEST REPORT

| No. A | P-SL/23-24/223-229 | Date: | June 25, | 2023 | | Page 1 of 1 | |
|-----------------------|------------------------------------|--|------------------|------------------|-------------------------|--|--|
| Issue Addr Your | ed to ess P.O. Ref. no. | : M/S. PARADEEP PHOSPH : Paradeep, Odisha. : 5500005451, dtd, 13.08.20 | IATE LT | D. | | | |
| Desci Date | ription of Sample of Monitoring | : Sound Level Monitoring : 15.06.2023 to 18.06.2023 | | | Parameter Test Metho | <u>s Tested</u> : L _{Min} , L _{Max} & L _{eq} o <u>d</u> : IS 4758 : 1968 | |
| SOU SI. | ND LEVEL MON Locations | ITORING : TIME | Noise | Level ir | dB(A) | Permissible Noise Exposure for Industrial | |
| No. | | | L _{Min} | L _{Max} | L _{eq} | Workers as per The Noise Pollution (Regulation And Control) Rules, 2000 | |
| 1. | PAP Plant | 10:40 P.M 10:45 A.M. | 62.4 | 68.6 | 66.1 | | |
| 2. | SAP Plant | 11:00 P.M 11:05 A.M. | 53.0 | 56.1 | 54.6 | | |
| 3. | Zypmite Plant | 10:00 P.M 10:05 A.M. | 75.3 | 79.5 | 77.9 | | |
| 4. | AB Side - DAP | 11:50 P.M 11:55 A.M. | 61.3 | 70.5 | 67.3 | 90 dB(A) | |
| 5. | CD Side - DAP | 10:10 P.M 10:15 A.M. | 58.3 | 64.5 | 62.6 | | |
| 6. | Off side | 11:20 P.M 11:25 A.M. | 68.7 | 73.5 | 71.2 | | |
| 7. | Bagging Section | 10:40 P.M 10:45 A.M. | 68.6 | 73.5 | 71.7 | | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

S. morder

Report Verified by S. Mondal

abara

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

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TEST REPORT

| No. E(D)/23-24/231 | | Date: 25 May 2023 | Page 1 of 1 |
|---|---|--|------------------------------|
| Issued to | ; | M/s. PARADEEP PHOSPHAT Paradeen, Odisha | E LIMITED |
| Description of Sample | : | Effluent | Parameter Testad |
| Collection Source | - | ETP Outlet | all TSS O & C F |
| Sample Drawn by us on | : | 19.05.2023 at 3.30 P.M. | NH-N TKN NH, P N |
| Sample Carried out by | : | Mr. P.P. Mondal and Mr. A. Manr | 18 |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | 1 | 24.05.2023 | |
| Sample collection Procedure | 1 | IS: 3025 (Part -1) - 1987 | |
| Mode of Sampling | ÷ | Grab | |
| Environmental condition during sampling | 4 | Temperature : 27°C, Transported in Ic | e box. Cold chain maintained |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|------------------------------------|--|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.32 | 6.5 - 8.5 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 59 | 100 (Max.) |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | BDL | 10 (Max.) |
| 4 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 1.12 | 10 (Max.) |
| 5 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 35 | 50 (Max.) |
| 6 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 43 | 75 (Max.) |
| 7 | Free Ammonia as NH ₃ | APHA 23rd edition 4500 NH ₃ F | mg/l | 2.62 | 4 (Max.) |
| 8 | Dissolved Phosphates as P | APHA 23rd edition 4500-PD | mg/l | 3.25 | 5 (Max.) |
| 9 | Nitrate Nitrogen as NO3-N | APHA 23rd edition 4500-N03D | mg/l | 8.3 | 20 (Max.) |

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

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2 mg/l.

-: END OF TEST REPORT:-

Report Verified by (J. Das)

KARIM) (Dr. R. **Technical Manager** Authorised Signatory

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TEST REPORT

| No. E(D)/23-24/232 | | Date: 25 May 2023 | Page 1 of 2 |
|---|------|--------------------------------------|---|
| Issued to | : | M/s. PARADEEP PHOSPHAT | TE LIMITED |
| | | Paradeep, Odisha | |
| Description of Sample | : | Effluent | Parameter Tested: |
| Collection Source | : | STP Outlet | pH, TSS, BOD |
| Sample Drawn by us on | 1 | 19.05.2023 at 3.55 P.M. | da de composition de |
| Sample Carried out by | | Mr. P.P. Mondal and Mr. A. Man | na |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | 3 | 24.05.2023 | |
| Sample collection Procedure | : | IS: 3025 (Part -1) - 1987 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | ıg : | Temperature : 26°C, Transported in I | ce box, Cold chain maintained |

TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|---|------------------------------|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.85 | 6.5 - 9.0 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 18 | < 100 |
| 3 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 4.5 | < 30 |

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

-: END OF TEST REPORT:-

Report Verified by (J. Das)

abri (Dr. R. KARIM) Technical Manager Authorised Signatory

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TEST REPORT

| No. E(D)/23-24/232 | | Date: 25 May 2023 | Page 2 of 2 |
|---|---|---|---|
| Issued to | ; | M/s. PARADEEP PHOSPHAT | E LIMITED |
| Description of Sample Collection Source Sample Drawn by us on Sample Carried out by Sampling Plan | | Paradeep, Odisha Effluent STP Outlet 19.05.2023 at 3.55 P.M. Mr. P.P. Mondal and Mr. A. Mann RVB/FM/44 | Parameter Tested: Microbiological : Faecal Coliform a |
| Analysis completed on | : | 24.05.2023 | |
| Sample collection Procedure | : | IS: 3025 (Part -1) - 1987 | |
| Mode of Sampling | 2 | Grab | |
| Environmental condition during sampling | : | Temperature : 26°C, Transported in Ice | box. Cold chain maintained |

MICROBIOLOGICAL TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|-----------------|-------------------------|----------------|---------|---|
| 1 | Faecal Coliform | APHA 23rd Edition 9221E | MPN/ 100 ml | 49 | < 1000 |

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

-: END OF TEST REPORT:-

(Pijush Kanti Dutta)

Sr. Microbiologist Authorised Signatory

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* Results relate only to the parameters tested.

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TEST REPORT

| No. | AP-AAQ/23-24/171 | | Date: June 28, 202 | 3 | | Page 1 of 1 | | | |
|------------|--|-------------------|--|---------------------------------|-------------------------|---------------------------|--|--|--|
| ISSL | ied to | : M/S. PAR | ADEEP PHOSPHATE LTD. | | | | | | |
| Add | Iress | : Paradeep | Odisha | _ | | | | | |
| You | r WO Ref. No. | : 550000545 | 51, dtd. 13.08.2022 | Equipment used: | | | | | |
| Sam | ple Description | : Ambient Ai | | ID No.: RVB/ | AFDS/PM2.5/01, Cal. | Valid upto: 16.07.23 | | | |
| San | pling Location | : Near AAQMS # 01 | | | RDS/APM460/BL/05, | Cal. Valid upto: U3.11.23 | | | |
| | | (N20°16'31 | 01, E86"37'27.24) | | Environmental c | onditions | | | |
| Date | e & Time of sampling | : 15.06.2023 (| 09:30 A.M.)-16.06.2023 (09:30 A.M.) | Temperatur | e : Max: 38.0°C & N | lin: 27.0°C | | | |
| San | pling Plan : | : RVB/FM/4 | 5 | Barometric | Presure : 750 mmH | SO NO O NH | | | |
| Dur | ation of Sampling | : 24Hrs. | | Parameters | Ac CH Pop | 16, 002, 102, 03, 1113, | | | |
| Ana | lysis Completed on | : 28.06.2023 | } | CO, PD, M, | As, Cens, Dar | | | | |
| TES | T FINDINGS:- | | | Unit | Populie | Norme as NAAO 2009 | | | |
| SI. No. | Parameters | | Test Method | Unit | (Time Weighted Avg.) | Norms as NYON2,2005 | | | |
| 1. | PM _{2.6} (Size ≤ 2.5µm) | US | EPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 37.9 | 60 (24 Hourly.) | | | |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m ³ | 68.0 | 100 (24 Hourly.) | | | |
| 3. | Sulphur Dioxide as S | D ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.30 | 80 (24 Hourly.) | | | |
| 4. | Nitrogen Dioxide as N | 102 | IS 5182 (Part - 6): 2006 | µg/m³ | 30.05 | 80 (24 Hourly.) | | | |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 18.36 | 180 (1 Hourly.) | | | |
| 6. | Ammonia as NH ₃ | SOF | No.: RVB/SOP/01/10 (Indephenol Method) issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 21.08 | 400 (24 Hourly.) | | | |
| 7. | Carbon Monoxide as | CO ^{IS} | 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.88 | 04 (1 Hourly.) | | | |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | hð\w ₃ | 0.057 | 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 | 12.7 | 20 | | | |
| 10 | Arsenic as As | SOP | No.: RVB/SOP/01/15 (AAS Mathod) Issue No. 04 Issue Date: 10.01.2018 | ^{l,} ng/m ³ | <0.25 | 6.0 | | | |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | 1.65 | 5.0 | | | |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | | | |

Minimum dejection_Limit_Nickel: 5 ng/m³, Arsenic: 0 25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)/Pyrene: 0.5 ng/m³

by

(Dr. R. KARIM) Technical Manager

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

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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007



TEST REPORT

| No. | AP-AAQ/23-24/172 | Date: June 28, 202 | 3 | | Page 1 of 1 | |
|--|--|---|----------------------|--|------------------------|--|
| Issued to : M/S. | | M/S. PARADEEP PHOSPHATE LTD. | | | | |
| Address : Parad Your WO Ref. No. : 55000 Sample Description : Ambie Sampling Location : Near A (N20°1 Date & Time of sampling : 16.06.3 Samoling Plan : : RVB/F | | : Paradeep, Odisha : 5500005451, dtd. 13.08.2022 : Ambient Air : Near AAQMS # 02 (N20°16'30.06, E86°37'20.25) : 16.06.2023 (10:00 A.M.)-17.06.2023 (10:00 A.M.) : RVB/FM/45 | | Equipment used; ID No.: RVB/AFDS/PM2.5/03, Cal. Valid upto: 16.07.23 ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 03.11.23 Environmental conditions Temperature : Max: 36.0°C & Min: 27.0°C Barometric Presure : 750 mmHg | | |
| Dur | ation of Sampling : | 24Hrs. | Parameters | s Tested: PM ₂₅ , PM As C-H- BaP | 10, SO2, NO2, O3, NH3, | |
| Ana | lysis Completed on | 28.06.2023 | 00, 10, 14, | No, 0615, 001 | | |
| SI. No. | Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 42.1 | 60 (24 Hourly.) | |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m ³ | 58.3 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as SO | 2 IS 5182 (Part - 2): 2001 | µg/m³ | 5.64 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as NO | 0 ₂ IS 5182 (Part - 6): 2006 | µg/m³ | 29.05 | 80 (24 Hourly.) | |
| 5. | Ozone as O ₃ | IS 5182 (Part - 9) : 1974 | µg/m ³ | 17.50 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOPI01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | pg/m ³ | 25.08 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as C | CO IS 5182 (Part - 10), 1999 Non Dispersive Intra-Red (NDIR) spectroscopy | mg/m ³ | 0.78 | 04 (1 Hourly.) | |
| 8 | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.040 | 1.0 (24 Hourly.) | |
| 9. | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) issue No. 0 Issue Date: 10.01.2018 | 4. ng/m ³ | 10.9 | 20 | |
| 10 | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 0 Issue Date: 10.01 2016 | 4, ng/m ³ | <0.25 | 6.0 | |
| 11 | , Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 1.04 | 5.0 | |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

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

by

(Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. AP-AAQ/23-24/173 | | | Date: June 28, 2023 | 3 | | Page 1 of 1 | |
|----------------------|--|-----------------|--|-------------------|---|---------------------------|--|
| Issued to : M/S. | | : M/S. | PARADEEP PHOSPHATE LTD. | | | | |
| Address : Parao | | : Parac | aradeep, Odisha | | | | |
| You | WO Ref. No. | : 55000 | 005451, dtd. 13.08.2022 | | Equipment (| used: | |
| San | ple Description | : Ambie | ent Air | ID No.: RVB/ | AFDS/PM2.5/04, Cal. | Valid upto: 16.07.23 | |
| San | pling Location | : Near | AAQMS # 03 | ID No.: RVB/ | RDS/APM460/BL/05, | Cal. Valid upto: U3.11.23 | |
| | | (N20 | 1711.74, E65 3932.04) | Tomporatur | Environmental c | din: 26.0°C | |
| Date | a & Time of sampling | : 17.06. | 2023 (10.20 A.M.)-18.06.2023 (10.20 A.M.) | Barometric | Presure : 750 mmH | 0 | |
| Dur | ipling Flan . ation of Samoling | · 24Hrs | 10040 | Parameters | Tested: PM25, PM | 110, SO2, NO2, O3, NH3, | |
| Ana | lvsis Comoleted on | 28.06 | 2023 | CO, Pb, Ni, | As, C ₆ H ₆ , BaP | | |
| TES | T FINDINGS:- | | | | | | |
| SI. | Parameters | | Test Method | Unit | Results | Norms as NAAQ,2009 | |
| No. | | | | | (Time Weighted Avg.) | | |
| 1. | PM _{2.5} (Size ≤ 2.5µm |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 43.7 | 60 (24 Hourly.) | |
| 2. | PM ₁₀ (Size ≤ 10µm |) | IS 5182 (Part - 23): 2005 | µg/m³ | 56.7 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as \$ | SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.23 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 26.80 | 80 (24 Hourly.) | |
| 5. | Ozone as O3 | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 17.86 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) issue No. 04, Issue Date: 10.01.2018 | hð/w ₃ | 20.57 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as | s CO | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.89 | 04 (1 Hourly.) | |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.046 | 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 | 11.3 | 20 | |
| 10 | Arsenic as As | | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | ng/m ³ | 0.506 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m ³ | 1.19 | 5.0 | |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

Minimum detection Livoit: Nickel: 5 ng/m², Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³& Benzo(a)Pyrene: 0.5 ng/m³

Varified by ort S Mondal

(Dr. R. KARIM Technical Manager

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TC-7815

TEST REPORT

| No. | AP-AAQ/23-24/174 | Date: May 25, 202 | 3 | | Page 1 of 1 | |
|--------------------|--|--|---|--|---|--|
| lssu Add | ed to : ress : | M/S. PARADEEP PHOSPHATE LTD. Paradeep, Odisha | | | | |
| Your Sam | WO Ref. No. | 5500005451, dtd. 13.08.2022 Ambient Air Near AAQMS # 04 | Equipment used: ID No.: RVB/AFDS/PM2.5/06, Cal. Valid upto: 02.08.23 | | | |
| Date | R Time of complian | N20°16'10.70, E86°38'32.54) | Temperatur | Environmental c | onditions Ain: 27.0°C | |
| Sam Dura Ana | pling Plan : : ation of Sampling : | RVB/FM/45 24Hrs. 28.06.2023 | Barometric Parameters CO, Pb, Ni, | Presure : 750 mmH s Tested: PM _{2.5} , PM As, C ₆ H ₅ , BaP | g I ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , | |
| TES | T FINDINGS:- | | | | | |
| SI. No. | Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,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/m ³ | 54.1 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as SO | 2 IS 5182 (Part - 2): 2001 | µg/m ³ | 5.78 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as NO | D2 IS 5182 (Part - 6): 2006 | µg/m ³ | 25.79 | 80 (24 Hourly.) | |
| 5. | Ozone as O3 | IS 5182 (Part - 9) : 1974 | µg/m ³ | 17.37 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indephenol Method) issue No. 04, issue Date: 10.01.2018 | µg/m³ | 21.30 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as C | O IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.90 | 04 (1 Hourly.) | |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.042 | 1.0 (24 Hourly.) | |
| 9. | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) issue No. 0 issue Date: 10.01.2018 | ^{4.} ng/m ³ | 5.7 | 20 | |
| 10 | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) issue No. 0 Issue Date: 10.01.2018 | 4. ng/m ³ | <0.25 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 1,41 | 5.0 | |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

Minimum dejection kimit: Wickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

etified by S. Mondai

(Dr. R. KARIM) Technical Manager

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





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TEST REPORT

| No. AP-WAQ/23-24/083 | | | Date: June 22, 2 | 023 | | Page 1 of 1 | |
|--|-----------------------------|--|---|--|---|--|--|
| ssu | ed to ress | : M/S. F | PARADEEP PHOSPHATE LTC eep. Odisha | D. | | | |
| Your Ref. WO. No. : 5500 Sample Description : Fugitive Sampling Location : PAP S | | : 55000 : Fugitive : PAP Se | 5500005451, dtd. 13.08.2022 Fugitive Air PAP Section | | Equipment used: ID No.: RVB/RDS/APM460/BL/03, Cal. Valid upto: 05.11.2023 | | |
| Date & Time of sampling : 1 Sampling Plan : : F | | : 17.06.2023 (10:10 A.M 06:10 P.M.) : RVB/FM/45 | | Temperature : Max: 39.0°C & Min: 35.0°C Barometric Presure : 750 mmHg | | | |
| Duration of Sampling : 08Hrs Analysis Completed on : 22.06 | | : 08Hrs. : 22.06.2 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 479 | 10000 | |
| 2. | Sulphur Dioxide a | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 4.90 | 5000 | |
| 3. | Nitrogen Dioxide a | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 29.80 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 31.75 | Not Available | |

-: END OF TEST REPORT :-

ed by S. Mondal

(Dr. R. KARIM)

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



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TEST REPORT

| No. | AP-WAQ/23-24/084 | | Date: June 22, 2 | 023 | | Page 1 of |
|------------------------------------|-----------------------------------|---|---|-------------------|--|--|
| ssued to : M/S. Address : Parad | | : M/S. P | ARADEEP PHOSPHATE LTD |) . | | |
| | | : Parade | ep, Odisha | | | |
| Your | Ref. WO. No. | f WO, No. : 5500005451, dtd. 13.08.2022 | | | Equipment us | ed: |
| Sam | ole Description | : Fugitive | Air | ID | No.: RVB/RDS/APM | 460/BL/06, |
| Sam | oling Location | : DAP, A | & B Section | | Cal. Valid upto: 03. | 11.2023 |
| Jam | pinig Loodien | | | | Environmental co | nditions |
| Data | 8 Time of sampling | · 16 06 2 | 023 (10:00 A.M 06:00 P.M.) | Temperature | : Max: 39.0°C & Mir | n: 35.0°C |
| Date | a Time or sampling | - RV/B/EM | A/45 | Barometric F | Presure : 750 mmHg | |
| Sam | pling Plan . | · 08Hre | 1040 | | Parameters Te | sted: |
| Dura | ition of Sampling | . 001115. | 1000 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| Anal | ysis Completed on | : 22.00.2 | 023 | | | |
| TES SI. No. | <u>T FINDINGS:-</u> Parameters | i | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 413 | 10000 |
| 2. | Sulphur Dioxide a | is SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 5.72 | 5000 |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 33.83 | 6000 |
| 4. | Ammonia as NH | 3 | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | . µg/m³ | 29.72 | Not Available |

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derified by Report S. Mondal

(Dr. R. KARIM) Technical Manager Authorised Signatory

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

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TEST REPORT

| No. | AP-WAQ/23-24/085 | | Date: June 22, 2 | 023 | | Page 1 of | |
|---|----------------------------|--|---|---|------------------------------------|--|--|
| ssued to : M/S. I | | : M/S. P | PARADEEP PHOSPHATE LTC pen_Odisha |). | | | |
| Address : Parad Your Ref. WO. No. : 5500 Sample Description : Fugitiv Sampling Location : DAP, (Date & Time of sampling : 17.06. | | If WO. No. : 5500005451, dtd. 13.08.2022 Description : Fugitive Air Ing Location : DAP, C & D Section Time of sampling : 17.06.2023 (10:00 A.M 06:00 P.M.) | | Equipment used: ID No.: RVB/RDS/APM460/01, Cal. Valid upto: 25.11.2023 Environmental conditions Temperature : Max: 40.0°C & Min: 35.0°C | | | |
| Sampling Plan : : RVB/F Duration of Sampling : 08Hrs Analysis Completed on : 22.06 | | : RVB/FM : 08Hrs. : 22.06.2 | M/45 2023 | Barometric Presure : 750 mm Parameter SPM, SO ₂ , | | <u>g</u> <u>Fested:</u> D ₂ & NH ₃ | |
| TES SI. No. | T FINDINGS:- Parameters | • | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 349 | 10000 | |
| 2. | Sulphur Dioxide a | is SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.08 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 36.78 | 6000 | |
| 4. | Ammonia as NH | 3 | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 33.44 | Not Available | |

-: END OF TEST REPORT :-

d by S. Mondal

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TEST REPORT

| No. A | P-WAQ/23-24/086 | | Date: June 22, 20 | 023 | | Page 1 of | |
|---|------------------------------------|--|---|-----------------------------|---|--|--|
| Issued to : M/S. P | | : M/S. P. | ARADEEP PHOSPHATE LTD ep. Odisha |). | | | |
| Your Ref. WO. No. : 5500 Sample Description : Fugit Sampling Location : Off S | | : 55000 : Fugitive : Off Site | : 5500005451, dtd. 13.08.2022 : Fugitive Air : Off Site | | Equipment used: ID No.: RVB/RDS/APM460/BL/06, Cal. Valid upto: 03.11.2023 Environmental conditions | | |
| Date Sam | & Time of sampling pling Plan : | me of sampling : 17.06.2023 (10:30 A.M 06:30 P.M.) Plan : : RVB/FM/45 | | Temperature Barometric P | : Max: 40.0°C & Mir resure : 750 mmHg Parameters Te | n: 35.0°C | |
| Duration of Sampling : 08Hrs Analysis Completed on : 22.06 | | : 22.06.2 | 023 | | SPM, SO2, NO2 | & NH ₃ | |
| TES SI. No. | T FINDINGS:- Parameters | 8 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 395 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.31 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 32.36 | 6000 | |
| 4 | Ammonia as NH | 3 | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | . µg/m ³ | 38.18 | Not Available | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-WAQ/23-24/087 | | | Date: June 22, 2 | 023 | | Page 1 of 1 |
|----------------------|----------------------------|--------------------|---|-------------------|--|--|
| ssued to : M/ | | : M/S. F | PARADEEP PHOSPHATE LTD |) . | | |
| Add | ress | : Parade | ep, Odisha | | | |
| our | Ref. WO. No. | : 55000 | 05451, dtd. 13.08.2022 | | Equipment us | ed: |
| Sam | ple Description | : Fugitive | e Air | | D No .: RVB/RDS/AP | M460/01, |
| Sam | pling Location | : Bagging | g Section | | Cal. Valid upto: 25. | 11.2023 |
| | F | | | | Environmental co | nditions |
| Date | & Time of sampling | : 16.06.2 | 023 (09:30 A.M 05:30 P.M.) | Temperature | e : Max: 34.0°C & Mir | n: 29.0°C |
| Sam | nling Plan : | RVB/FI | W/45 | Barometric F | Presure : 750 mmHg | |
| Durs | tion of Sampling | 08Hrs | | | Parameters Te | sted: |
| Duration of Sampling | | - 22.06.2 | 0023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| Ana | ysis Completed on | . 22.00.2 | .023 | | | |
| SI. No. | T FINDINGS:- Parameters | 6 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 459 | 10000 |
| 2. | Sulphur Dioxide a | is SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.49 | 5000 |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 28.68 | 6000 |
| 4. | Ammonia as NH | 1 | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 29.05 | Not Available |

-: END OF TEST REPORT :-

ied by S. Mondal

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TEST REPORT

| No. AP-WAQ/23-24/088 | | | Date: June 22, 2 | 2023 | | Page 1 of | |
|-----------------------------------|-----------------------------|--------------------|---|-------------------|--|--|--|
| Issued to : M/S Address : Para | | : M/S. | PARADEEP PHOSPHATE LT | D. | | | |
| | | : Parad | radeep, Odisha | | | | |
| You | r Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment us | sed: | |
| Sam | Sample Description : Fugiti | | e Air | 10 | No .: RVB/RDS/APN | /460/BL/03, | |
| Sam | pling Location | : Zypmit | e Section | | Cal. Valid upto: 05 | .11.2023 | |
| 5512 | Samping Loodion | | | | Environmental co | nditions | |
| Date | & Time of sampling | 18.06. | 2023 (10:00 A.M 06:00 P.M.) | Temperatur | e : Max: 35.0°C & Mi | n: 32.0°C | |
| Sampling Plan : RVF | | RVB/F | M/45 | Barometric | Presure : 750 mmHg | | |
| Dur | ation of Sampling | · 08Hrs | | | Parameters Te | sted: | |
| Duration of Sampling . 00118 | | 22.06 | 2023 | | SPM, SO ₂ , NO ₂ | & NH3 | |
| Ana | lysis Completed on | . 22.00. | 2023 | 1 | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 405 | 10000 | |
| 2. | Sulphur Dioxide as | s SO2 | IS 5182 (Part - 2): 2001 | µg/m³ | 4.70 | 5000 | |
| 3. | Nitrogen Dioxide a | is NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 33.52 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 32.77 | Not Available | |

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TEST REPORT

| No. AP-FG/23-24/349 | Date: June 21, 2023 | | | Page 1 of 1 |
|---|--|--|-----------------|-----------------|
| issued to | : M/S. PARADEEP PHOSPHATE LTD |). | | |
| Address | : Paradeep, Odisha. | | | |
| Sample Description | : Stack Gas / Flue Gas | ID No PVR/SM | K/03 (Cal. Vali | dity: 16/07/23) |
| Date & time of sampling | : 16.06.2023 (04:10 P.M. to 04:46 P.M.) | Pa | rameters To | ested |
| Sampling Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Physical - Ter | no. Velocity | . Gas flow |
| Analysis Completed on | : 21.06.2023 | Chemical : CO, CO ₂ PM & TF | | |
| A. General informatio | n about stack : | | | |
| 1. Boiler connected to | : DAP - A | | | |
| 2. Emission due to | : Process Emmision | | | |
| Material of construct | tion of stack : M.S. | | | |
| Shape of stack | : Circular. | | | |
| Whether stack is pro | ovided with permanent platform & ladder : Yes. | | | |
| B. Physical character | ristics of stack : | | | |
| 1. Height of the stack | from ground level : 50 M | | | |
| Diameter of the state | ck at sampling point : 2.8 M | | | |
| No. of Traverse poi | nt : 32 Nos. | | | |
| Height of the sample | ling point from GL : 35 M | | | |
| C. Analysis / Charact | teristic of stack Gas / Flue Gas : | | Lond ! | |
| Fuel used : | 2. Fuel consumption : | 5 | LUdu | |
| D. Environmental co | nditions : | 1941999999 | 17.00 | |
| 1. Barometric pressur | e : 752 mmHg | 2. Temperatu | ire:42 C | |
| F. Results of Physica | al Parameters of Flue Gas : | | | 1 |
| SI No Test Parameter | rs Test Method | Unit | К | esults |
| 1 Temperature of en | nission IS 11255 : Part 3 : 2008 | °C | | 61 |
| 2 Velocity of eas in | duct IS 11255:Part 3:2008 | m/sec | | 16.06 |
| 2. Velocity of gas in | IS 11255:Part 3:2008 | NM ³ /hr | 2 | 99102 |
| 3. Quantity of gas no | us omlesion : | | | |
| E. Results of gaseou | Test Method | Unit | Results | Norms |
| Si No lest raramete | 13 | _ | | as per CPCB |
| 1 C. I | IS 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 1. Carbon monoxide | 15 11255 - Part 1 - 1985 By Orsat | % v/v | 0.4 | Not Available |
| 2. Carbon dioxide | 10 11202 - Part 1 - 1005 Dy origin | me/Nm3 | 43 | 150 max. |
| 3. Particulate Matter | 15 11255 : Part 1 : 1965 | ingrand | 2 90 | Not Available |
| 4. Total Fluoride | IS 11255 (Part - 5) : 1990 | mg/Nm" | 2.00 | 1101 A Vallable |
| F. Pollution control | device | | | |
| Details of pollutio | n control devices attached with the stack : Wet Scrubb | er | | |
| | -: END OF TEST REPORT :- | | nn | |

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TEST REPORT

| No. AF | P-FG/23-24/349 | | Date: June 21, 2023 | | | Page 2 of 2 |
|-----------------------------|--------------------------|-------------------------------|---|--------------------|-------------------------------|----------------------------|
| Issued | to | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Address : Paradeep, Odisha. | | | | | | |
| Sample | Description | : Stack Ga | s / Flue Gas 3 (04:10 P.M. to 04:46 P.M.) | ID No.: RVB/S | Equipment (MK/03 (Cal. Va | ised: lidity: 16/07/23) |
| Date & | an Dan & Method | : RVB/FM/ | 44 & IS: 11255 (Part-1 2 & 3) | I | Parameters 1 | rested |
| Analys | is Completed on | : 21.06.202 | 3 | Chemical : NH3 | | NH3 |
| A. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| Β. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | ack at sampling point : 2.8 M | | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | | |
| 4. | Height of the sampling p | point from GL | : 35 M | | | |
| C. | Analysis / Characterist | tic of stack Ga | s / Flue Gas : | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | | - |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms |
| | | | | | | as per CPCB |
| | | | | | | |
| 1. | Ammonia as NH3 | Methods (In | of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 173 | Not Available |
| E. | Pollution control device | <u>e</u> | | | | |

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TEST REPORT

| - | 122 24/350 | Date: June 21, 2023 | | | Page 1 of 1 | |
|---|---|--|--|---|---|--|
| IO. AP-FG | 123-24/550 | : M/S. PARADEEP PHOSPHATE LTD. | | | | |
| ddress ample Description | | cription : Stack Gas / Flue Gas : 16.06.2023 (05:00 P.M. to 05:36 P.M.) | | Equipment used: ID No.: RVB/SMK/03 (Cal. Validity: 16/07/23) | | |
| Sampling P Analysis Co | lan & Method ompleted on | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) : 21.06.2023 | Physical : Tem Chemical : CO | p., Velocity, , CO ₂ PM & | Gas flow TF | |
| A. General information about st 1. Boiler connected to 2. Emission due to 3. Material of construction of state 4. Shape of stack 5. Whether stack is provided with B. Physical characteristics of s 1. Height of the stack from groun 2. Diameter of the stack at sample 3. No. of Traverse point 4. Height of the sampling point f | | tt stack : : DAP - B : Process Emmision : M.S. : Circular. with permanent platform & ladder : Yes. of stack : | | | | |
| | | ampling point : 2.8 M : 32 Nos. : 35 M : of stack Gas / Flue Gas : | | | | |
| 1. Fu D. Er | iel used : ivironmental condition arometric pressure : 752 | 2. Fuel consumption : ns : 2 mmHg | 2. Temperatui | re : 40 °C | | |
| F. R | esults of Physical Par | ameters of Flue Gas : | Unit | R | esults | |
| SI No 1. T 2. V 3. C | Test Parameters remperature of emission /elocity of gas in duct Quantity of gas flow | Test Method IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | °C m/sec NM ³ /hr | 2 | 65 15.32 78443 | |
| E. R | Results of gaseous em Test Parameters | ission: Test Method | Unit | Results | Norms as per CPCB | |
| 1. 2. 3. 4. | Carbon monoxide Carbon dioxide Particulate Matters Total Fluoride | IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 IS 11255 (Part – 5) : 1990 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.3 46 2.38 | Not Available Not Available 150 max. Not Available | |
| 4. F. | Total Fluoride Pollution control device Details of pollution con | CE trol devices attached with the stack : Wet Scrubb -: END OF TEST REPORT :- | ber | nn. | | |

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TEST REPORT

| No. AF | P-FG/23-24/350 | | Date: June 21, 2023 | | | Page 2 of 2 |
|--------|--|---------------------------|---|--------------------|-------------------------------|----------------------|
| Issued | to | : M/S. PA | ARADEEP PHOSPHATE LTD | D. | | |
| Addres | s | : Paradeep | . Odisha. | | | |
| Sample | Description | : Stack Ga : 16.06.202 | s / Flue Gas 3 (05:00 P.M. to 05:36 P.M.) | ID No.: RVB/S | Equipment (MK/03 (Cal. Va | used: |
| Sampli | ng Plan & Method | : RVB/FM/ | (44 & IS: 11255 (Part-1.2 & 3) | 1 | Parameters 1 | Tested |
| Analys | is Completed on | : 21.06.202 | 23 | | Chemical : | NH3 |
| A. | General information at | out stack : | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | 8-00 NT - CANTAD - CAN | : 32 Nos. | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Ga | s / Flue Gas : | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods (In | of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 151 | Not Available |
| E. | Pollution control device Details of pollution con | trol devices atta | ached with the stack : Wet Scrubber | | | |

-: END OF TEST REPORT :-

S. Mondal

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TEST REPORT

| AP-FG/23-24/351 | Date: June 21, 2023 | | | Page 1 of 1 |
|--|--|--|---|---|
| sued to | : M/S. PARADEEP PHOSPHATE LTD. | -8 | | |
| ddress | : Paradeep, Odisha. : Stack Gas / Flue Gas | Eq | uipment use | ed: ity: 16/07/23) |
| Date & time of sampling sampling Plan & Method Analysis Completed on | : 17.05.2023 (03:55 P.M. to 04:34 P.M.) : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) : 21.06.2023 | Physical : Tem Chemical : CC | maneters Te np., Velocity), CO ₂ PM & | sted , Gas flow & TF |
| A. General information a Boiler connected to Emission due to Material of construction Material of stack Whether stack is provided B. Physical characterist Height of the stack from Diameter of the stack No. of Traverse point Height of the sampling C. Analysis / Character Fuel used 1 | about stack : : DAP - C : Process Emmision on of stack : M.S. : Circular. ided with permanent platform & ladder : Yes. tics of stack : om ground level : 50 M at sampling point : 2.8 M : 32 Nos. g point from GL : 35 M istic of stack Gas / Flue Gas : 2. Fuel consumption : | 3 2. Temperatu | .Load : re : 42 °C | |
| 1. Barometric pressure : | 752 mmHg Perameters of Flue Gas : | | | |
| E. Results of Physical SI No Test Parameters 1. Temperature of emis 2. Velocity of gas in du 3. Ouantity of gas flow | Test Method ision 1S 11255 : Part 3 : 2008 ict 1S 11255:Part 3:2008 IS 11255:Part 3:2008 1S 11255:Part 3:2008 | Unit °C m/sec NM ³ /hr | R 2 | esults 53 15.62 90726 |
| E. Results of gaseous SI No Test Parameters | emission: Test Method | Unit | Results | Norms as per CPCB |
| Carbon monoxide Carbon dioxide A. Particulate Matters A. Total Fluoride | 1S 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 IS 11255 (Part – 5) : 1990 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.2 58 1.92 | Not Available Not Available 150 max. Not Available |
| F . Pollution control d Details of pollution | evice control devices attached with the stack : Wet Scrubb -: END OF TEST REPORT :- | oer | 010 | |

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TEST REPORT

| IO. AP | -FG/23-24/351 | | Date: June 21, 2023 | | | Page 2 of 2 |
|----------|--------------------------|-----------------|--|--------------------|-----------------|-------------------|
| ssued t | to | : M/S. PA | RADEEP PHOSPHATE LTI |) . | | |
| ample | s Description | : Stack Ga | s / Flue Gas | I | quipment u | sed: |
| Date & | time of sampling | : 17.05.202 | 3 (03:55 P.M. to 04:34 P.M.) | ID No.: RVB/SM | /IK/03 (Cal. Va | lidity: 16/07/23) |
| Samplin | ig Plan & Method | : RVB/FM/ | (44 & IS: 11255 (Part-1,2 & 3) | <u>P</u> | arameters 1 | ested |
| Analysis | s Completed on | : 21.06.202 | 3 | | Chemical : | NH3 |
| A. 1 | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | t : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | point from GL | : 35 M | | | |
| C. | Analysis / Characterist | tic of stack Ga | is / Flue Gas : | | | |
| 1. | Fuel used : | | Fuel consumption : | | 3.Load : | |
| D, | Results of gaseous en | nission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms |
| 51110 | | | | | | as ner CPCB |
| | | | | | | as per ci co |
| 1. | Ammonia as NH3 | Methods (In | s of Air Sampling & Analysis, 3rd Ed. adophenol Method), Method 401 | mg/Nm ³ | 129 | Not Available |

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TEST REPORT

| ssued to Address | 0 | M/S PARADEEP PHOSPHATE LTD | | | |
|---------------------|-----------------------------|---|---------------------|-----------------------|-----------------|
| Address | | | | | |
| | | : Paradeep, Odisha. | | | ada . |
| Sample I | Description | : Stack Gas / Flue Gas | ID NA PVB/SM | K/03 (Cal. Vali | tity: 16/07/23) |
| Date & t | ime of sampling | : 16.06.2023 (03:20 P.M. to 03:56 P.M.) | D NO. R V D/SM | ramatars Te | sted |
| Samplin | g Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Physical : Ter | nn Velocity | Gas flow |
| Analysis | s Completed on | : 21.06.2023 | Chemical : Co | O, CO ₂ PM | & TF |
| A. (| General information abou | it stack : | | | |
| 1. I | Boiler connected to | : DAP - D | | | |
| 2. I | Emission due to | : Process Emmision | | | |
| 3. 1 | Material of construction of | stack : M.S. | | | |
| 4. 5 | Shape of stack | : Circular. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | |
| B. | Physical characteristics | of stack : | | | |
| 1. 1 | Height of the stack from g | round level : 50 M | | | |
| 2. | Diameter of the stack at sa | mpling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas . | 3 | .Load : | |
| 1. | Fuel used : | 2. Fuer consumption : | | | |
| D. | Environmental condition | <u>15 :</u> | 2 Temperatu | re: 42 °C | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperate | | |
| E. | Results of Physical Para | meters of Flue Gas . | Unit | R | esults |
| SI No | Test Parameters | Test Method | 00 | | 63 |
| 1. | Temperature of emission | IS 11255 : Part 5 : 2008 | | | 5.85 |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | - | 94210 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM [°] /hr | 4 | 04312 |
| E. | Results of gaseous emi | ssion : | | - | T |
| SI No | Test Parameters | Test Method | Unit | Results | as per CPCB |
| - | Cashan manavida | IS 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| 1. | Carbon monoxide | 15 11255 - Part 1 : 1985 By Orsat | % v/v | 0.2 | Not Available |
| 2. | Carbon dioxide | IS 11255 - Part 1 - 1985 | mg/Nm3 | 59 | 150 max. |
| 3. | Particulate Matters | 13 11255 (Det - 5) - 1000 | ma/Nm ³ | 2.17 | Not Available |
| 4. | Total Fluoride | IS 11255 (Part - 5) : 1990 | ing/isin | 2.17 | |

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Khoti (Dr. R. KARIM) **Technical Manager**

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E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| No. Al | P-FG/23-24/352 | Date: June 21, 2023 | | | Page 2 of 2 |
|------------------|--|--|--------------------|-------------------------------|----------------------|
| Issued | to | : M/S. PARADEEP PHOSPHATE LTD |). | | |
| Addres | ss | : Paradeep, Odisha. | | | |
| Sample Date & | Description time of sampling | : Stack Gas / Flue Gas : 16.06.2023 (03:20 P.M. to 03:56 P.M.) | ID No.: RVB/S | Equipment (MK/03 (Cal. Vi | used: |
| Sampli | ng Plan & Method | : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | | Parameters 1 | Tested |
| Analys | is Completed on | : 21.06.2023 | | Chemical : | NH3 |
| A. | General information ab | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling p | ooint from GL : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous em | ission : | | | |
| SI No | Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | mg/Nm ³ | 117 | Not Available |
| E. | Pollution control devic Details of pollution cont | e rol devices attached with the stack : Wet Scrubber | | | |

-: END OF TEST REPORT :-

S. Mondal

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

The test report shall not be reproduced, except in full, without written approval of the Company, Results relate only to the parameters tested.



ANALYTICAL CONSULTING & TECHNICAL CHEMISTS (AN ISO 9001:2015 & ISO 45001: 2018 CERTIFIED COMPANY)

TC-7815

TAHER MANSION, 1ST FLOOR 9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN : U51109WB1931PTC007007

TEST REPORT

| | TEST REPORT | | Page 1 of 1 |
|---|---|--|---|
| | Date: June 21, 2023 | | |
| AB-EG/23-24/353 | MIS PARADEEP PHOSPHATE LTD | | sed: |
| o. AP-PG/20 | Paradeep, Odisha. | Equipment of Ito No: RVB/SMK/03 (Cal. Va | lidity: 16/07/23) |
| Address Sample Description Date & time of sampling Sampling Plan & Method Analysis Completed on | : Stack Gas / Flue Gas : 17.06.2023 (11:30 A.M. to 11:57 A.M.) : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) : 21.06.2023 | Parameters Physical : Temp., Veloc Chemical : CO, CO ₂ , So | ity, Gas flow 0 ₂ & Acid Mist |
| A. <u>General information ab</u> 1. Boiler connected to 2. Emission due to 3. Material of construction 4. Shape of stack 5. Whether stack is providing B. <u>Physical characterist</u> 1. Height of the stack from 2. Diameter of the stack | out stack : : SAP - A : Process Emmision : M.S. : Circular. : Circular. ded with permanent platform & ladder : Yes. : 120 M ics of stack : : 120 M at sampling point : 32 Nos. : 35 M | | |
| No. of Traverse point Height of the samplir C. Analysis / Characte | ristic of stack Gas / Flue Gas : 2. Fuel consumption | 2. Temperature : 39 |)°C |
| 1. Fuel used | ditions: | | Results |
| Barometric pressure E. Results of Physica SI No Test Parameter 1. Temperature of er | Image: Second state Test Method rs IS 11255 : Part 3 : 2008 nission IS 11255: Part 3: 2008 | Unit °C m/sec NM ³ /hr | 78 10.13 168670 |
| 2. Velocity of gas in | 1S 11255:Part 3:2008 | | Results |
| 3. Quantity of gas in F. Results of gased SI No Test Parametric 1. Sulphur dioxide 2. Carbon monoxide 3. Carbon dioxide | Test Method ters IS 11255 : Part 2 : 1985 de IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2 | Unit mg/Nm ³ % v/v % v/v % v/v mg/Nm ³ | 632 <0.2 0.2 40 |

S. Mondal

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

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| | | | TEST REPORT | | Page 1 of 1 |
|------------|--|--|--|--|--|
| | | | Date: June 21, 2023 | | |
| | | | DATE: DATE LTD. | ant US | ed; |
| O. AP-FG | 3/23-24 | 354 : M/S. PAR | AUELI | Equipment en | dity: 16/07/23) |
| ssued to | | : Paradeep, C | (Flue Gas | D No.: RVB/SMIC | ested |
| Address | i dia | : Stack Gas | (12:10 P.M. to 12:51 1.2 & 3) | physical : Temp., Veloci | & Acid Mist |
| Sample De | escriptio | mpling RVB/FM/ | 44 & IS: 11255 (Fait 1) | Chemical : CO, CO2, SC | <u>1</u> <u>u</u> . |
| Date & tin | plan & | Method :21.06.202 | 3 | | 1 |
| Sampling | Comple | ted on | | | 1 |
| Anaiyan | | formation about stack : | : SAP - B | | 1 |
| A. | General | Information | : Process Eministen | | |
| 1. | Boiler o | in due to | ; M.S. | | |
| 2. | Emissie | al of construction of stack | : Circular: | | |
| 3. | Shape | of stack | nament platform | | |
| 5. | Wheth | er stack is provides of stack | : 120 M | | |
| B. | Phys | cal characterities ground lev | ei : 2.7 M | | |
| 1. | Heigh | at of the stack at sampling p | : 32 Nos. | | |
| 2. | No | of Traverse point | GL : 35 M | 3 Load | : |
| 3. | Hei | the of the sampling point near | k Gas / Flue Gas : | | |
| to | | lucie / Characteristic of the | 7 FUELCONTRACT | | |
| | C. And | 117513 / 0/12 | 2.1 | a marature : 4 | 0°C |
| | 1. Fue | l used : | day 2 m | 2. Temperature : 4 | 0°C |
| H | D. En | Vironmental conditions : | | 2. Temperature : 4 | 0 °C Results |
| | D. En 1. Ba | vironmental conditions : rometric pressure : 752 mmHs sults of Physical Parameter | s of Flue Gas : | 2. Temperature : 4 Unit | 0 °C Results 84 |
| | 1. Fue 1. Fue 1. En 1. Ba E. Re | Vironmental conditions : rometric pressure : 752 mmHg sults of Physical Parameter | s of Flue Gas: Test Method | 2. Temperature : 4 | 0 °C Results 84 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No | i used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 | 2. Temperature : 4 | 0 °C Results 84 12.22 |
| | C. And I. Fue D. En I. Ba E. Re SI No I. T | Vironmental conditions : rometric pressure : 752 mmHs esults of Physical Parameter Test Parameters remperature of emission remperature of emission | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 | 2. Temperature : 4 | 0 °C Results 84 12.22 198231 |
| IS | C. And 1. Fue 1. Ba E. Re 51 No 1. 1 2. 1 | I used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | 2. Temperature : 4 Unit °C m/sec NM ³ /hr | 0 °C Results 84 12.22 198231 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. T 2. N 3. 0 | A used : | s of Flue Gas : <u>T est Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | 2. Temperature : 4 Unit °C m/sec NM ³ /hr | 0 °C Results 84 12.22 198231 Results |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F. | I used : vironmental conditions : : rometric pressure : 752 mmHg : esults of Physical Parameter : Test Parameters : emperature of emission : /elocity of gas in duct : Quantity of gas flow : Results of gaseous emission : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | 2. Temperature : 4 ^o C m/sec NM ³ /hr Unit | 0 °C Results 84 12.22 198231 Results 623 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. T 2. T 3. C F. F. | I used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | 2. Temperature : 4 Unit °C m/sec NM ³ /hr Unit mg/Nm ³ | 0 °C Results 84 12.22 198231 Results 623 623 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 7. T 3. C F. F SI No 1. | A used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 | 2. Temperature : 4 ^o C m/sec NM ³ /hr Unit mg/Nm ³ % v/v | 0 °C Results 84 12.22 198231 Results 623 <0.2 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 2 3. 0 F. 2. SI No 1. 2. 3. 0 F. 2. SI No 1. 2. 51 No 1. 2. 51 No 1. 51 No 51 | I used : vironmental conditions : rometric pressure : 752 mmHs isults of Physical Parameter Test Parameters remperature of emission /elocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Carbon monoxide | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 | 2. Temperature : 4 ^o C m/sec NM ³ /hr Unit mg/Nm ³ % v/v % v/v | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 1. 3. | A used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SODNA : BVD/SOD/01/20 | 2. Temperature : 4 ^o C m/sec NM ³ /hr Unit mg/Nm ³ % v/v % v/v v/v % v/v % v/v v/v v/v v/v v/v v/v v/v v/v | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 1. 3. 0 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | I used : vironmental conditions : rometric pressure : 752 mmHg esults of Physical Parameters remperature of emission /elocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Carbon monoxide Carbon dioxide Acid Mist | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2013 | 2. Temperature : 4 Unit °C m/sec NM³/hr Unit mg/Nm³ % v/v % v/v % v/v % v/v % v/v % v/v mg/Nm³ | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 4. 3. | A used : vironmental conditions : rometric pressure : 752 mmHg results of Physical Parameters remperature of emission /elocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Carbon monoxide Carbon dioxide Acid Mist | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2013 | 2. Temperature : 4 Unit °C m/sec NM³/hr Unit mg/Nm³ % v/v % v/v % v/v % v/v % v/v % v/v mg/Nm³ | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 F. F SI No 1. 2. 3. 0 G. | A used : | s of Flue Gas : <u>T est Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No:: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil | 2. Temperature : 4 ^o C m/sec NM ³ /hr <u>Unit</u> mg/Nm ³ % v/v % v/v % v/v % v/v % mg/Nm ³ | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 3 51 No 1. 2 3. 4 4. G. | I used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 ^o C m/sec NM ³ /hr Unit mg/Nm ³ % v/v % v/v % v/v % v/v % v/v % mg/Nm ³ % v/v % tr:- | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 |
| | C. And 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 F. G. G. | A used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 : <u>Test Method</u> IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 Mat. |
| | C. Alle 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 F. F SI No 1. 2. 5. 6 SI No 1. 2. 5. 7 5. 7 5 | A used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 I: <u>Test Method</u> IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | <u>Results</u> <u>84</u> 12.22 198231 <u>Results</u> 623 <0.2 0.4 44 <i>A</i> <i>A</i> <i>A</i> <i>A</i> <i>A</i> <i>A</i> <i>A</i> <i>A</i> |
| | C. Alle 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 4. G. | I used : i used : rometric pressure : 752 mmHs rsults of Physical Parameters remperature of emission /elocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Carbon monoxide Carbon dioxide Acid Mist Pollution control device Details of pollution control device S. Mordial | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 Mat. R. KARIM) nical Manager |
| | C. Alle 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 F. F SI No 1. 2. 3. 0 F. F | A used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | 0 °C Results 84 12.22 198231 Results 623 <0.2 0.4 44 Mathematical Manager rised Signatory |
| | C. Alls 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 1 3. 0 F. F SI No 1. 2. 3. 0 F. F SI No 1. 2. 3. 0 F. F SI No 1. 2. 3. 0 F. F | A used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 I: <u>Test Method</u> IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | Results 84 12.22 198231 Results 623 <0.2 |
| | C. Alls 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 3 4. G. 50 | I used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | Results 84 12.22 198231 Results 623 <0.2 |
| | C. Alls 1. Fue D. En 1. Ba E. Re SI No 1. 1 2. 3 51 No 1. 2 3. 4 4. G. | I used : | s of Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2011 evices attached with the stack : Nil -: END OF TEST REPOR | 2. Temperature : 4 | Results 84 12.22 198231 Results 623 <0.2 |

| (AN ISO S Phone E-mail : | 2001:2015 & ISO 45001 TAHER MANSION, 1ST FLOOR 9, BENTINCK STREET, KOLKATA - 70 1033) 4044-3380/3381/3382 / 3383, F rvbriggs.kolkata@gmail.com, Website CIN : U51109WB1931PTC0070 | 00 001 ax : 33 2248-0447 www.rvbriggs.co 007 | 2 m |
|--|--|---|-------------------------------------|
| | TEST REPORT | | P 101 |
| | Date: June 21, 2020 |). | |
| No. AP-FG/23-24/355 | : M/S. PARADEEP PHOSPHATE | Fauip | ment used |
| ssued to | : Paradeep, Odisha. | IN NO - RVB/SMK/03 | (Cal. Validit |
| Address | : Stack Gas / Flue Gas | Param | eters Test |
| Sample Description | : 17.06.2023 (04.20 1 11255 (Part-1,2 & 3) | Physical : Temp., | Velocity, As now |
| Sampling Plan & Method | : RVB/FM/44 & 10: 10 | Chemical : CO, C | CO2, SO2 |
| Analysis Completed on | 121.00.2020 | Circuite | |
| 4. Shape of stack 5. Whether stack is provide B. Physical characteristic 1. Height of the stack from 2. Diameter of the stack at 3. No. of Traverse point 4. Height of the sampling f C. Analysis / Characterist 1. Fuel used from | s of stack : ground level : 120 M sampling point : 2.7 M : 30 Nos. point from GL : 35 M tic of stack Gas / Flue Gas : | | |
| D. Environmental condition | 2. Fuel consumption : - | 3.L | oad : |
| 1. Barometric pressure : 75 | 2015 : 52 mmHg | | |
| E. Results of Physical & C | General Parameters of stack Gas / Flue Gas | 2. Temperature | : 38 °C |
| SI No Test Parameters | Test Method | Unit | Deculte |
| 1. Temperature of emissio | n IS 11255 : Part 3 : 2008 | °C | 81 |
| 2. Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | 8.11 |
| Quantity of gas flow | IS 11255:Part 3:2008 | NIX (³ a | 0.11 |
| 4. Sulphur dioxide | IS 11255 : Part 2 : 1985 | INIMI /INF | 134919 |
| 5. Carbon monoxide | IS 13270 (By Orsar)- 1992 | mg/Nm ⁻ | 595 |
| 6. Carbon dioxide | IS 13270 (By Oreat): 1002 | % V/V | <0.2 |
| 7. Acid Mist | SOP No.: RVB/SOP/01/20 | % v/v | 0.4 |
| F. Pollution control device | Issue No.: 04, Issue Date: 10.01.2018 | mg/Nm ³ | 44.8 |
| Details of pollution control | ol devices attached | | 110 |
| Report Verified by S. Mondal | -: END OF TEST REPORT :- | (Dr. R. <u>Technica</u> Authorise | KARIM) al Manager d Signatory |
| The test report shall i Results relate only to the second se | not be reproducer | | να CO, (Ρ) LTD, |

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| p V.B | RIGGS & CO. PRIVAL CHI | EMISTS IED COMPANY | 1 Aller | TC-7815 |
|---|---|--|-------------------|--|
| K. V. | LYTICAL & ISO 45001 IST FLOOK | 101 | | |
| All and All | 01:2015 & MANSION, UKATA - 700 | 33 2248-04 | m | - |
| AN ISO SO | TAHER STREET, KOLIN 3383, FO | ww.rvbriggs.co | | |
| | 9, BENING 3381/3302 Website : W | 7 | | |
| | (033) 4044-550 amail.com | 1 | | / |
| phone | vbriggs.kolkdicus1109WB1951 | | | 1 of 1 |
| E-Man. | CINTON DEPORT | | P | agenoi |
| | TEST REI O | | | |
| | lune 21, 2023 | | | 1 |
| | Date: June | | | |
| 5 5 6/23-24/356 | INS PARADEEP PHOSPHATE | 1 | inment used | <u>:</u> |
| D-FG123 2 | : M/S. PAId | Equ | 03 (Cal. Validit | y: 16/07/23) |
| to | : Paradeep, Color | ID NO.: RVB/SMIN | maters Tes | ted |
| 155 | : Stack Gas (10:10 A.M. to 10:37 A.M.) | Para | ameters | Gas flow |
| & time of sampling | : 18.06.2029 (14.4. 15: 11255 (Part-1,2 & 5) | Physical : Tem | p., Velocity, | TE |
| aling Plan & Method | - 21.06.2023 | Chemical : CC |), CO2, PM & | elr |
| vsis Completed on | ; 21.00.2020 | City | | |
| • | out stack : | | | |
| General information ac | : PAP | | | |
| . Boiler connected to | : Process Emmision | | | |
| Emission due to | of stack : M.S. | | | |
| Material of construction | : Circular. | | | |
| Snape of stack Whether stack is provid | ied with permanent platform & ladder : Yes. | | | |
| B Physical characteristi | cs of stack : | | | |
| 1. Height of the stack from | m ground level : 50 M | | | |
| 2. Diameter of the stack a | at sampling point : 2.7 M | | | |
| 3. No. of Traverse point | : 32 Nos. | | | |
| Height of the sampling | point from GL : 35 M | | | |
| C. Analysis / Characterin | stic of stack Gas / Flue Gas : | | beo 1 6 | |
| 1. Fuel used : | 2. Fuel consumption | | r.L.Ouu + | |
| D. Environmental condi | tions : | 2 Townsont | - 20 °C | |
| 1. Barometric pressure : | 752 mmHg | 2. Temperati | life: 30 C | |
| E DAALURA AL LING | arameters of Flue Gas : | 1 10-14 | | |
| E. Results of Physical P | lest Method | Unit | P | Cesuits |
| E. Results of Physical P No Test Parameters | ion 15 11255 : Part 3 : 2008 | °C | | 41 |
| Results of Physical P No Test Parameters Temperature of emiss | | m/sec | | 5.06 |
| E. Results of Physical Ph | IS 11255:Part 3:2008 | | | 95582 |
| Results of Physical P No Test Parameters I. Temperature of emiss Velocity of gas in due Quantity of gas flow | t IS 11255:Part 3:2008 IS 11255:Part 3:2008 | NM ³ /hr | | |
| E. Results of Physical P Test Parameters Temperature of emiss Velocity of gas in duc Quantity of gas flow F. Results of gaseous e | t IS 11255:Part 3:2008 IS 11255:Part 3:2008 mission : | NM ³ /hr | | |
| E. Results of Physical P No Test Parameters Velocity of gas in due Quantity of gas flow F. Results of gaseous e No Test Parameters | t IS 11255:Part 3:2008 IS 11255:Part 3:2008 mission : Test Method | NM ³ /hr Unit | Results | Norms as per CPCE |
| E. Results of Physical P Test Parameters Temperature of emiss Velocity of gas in due Quantity of gas flow F. Results of gaseous e No Test Parameters Carbon monoxide | et IS 11255:Part 3:2008 IS 11255:Part 3:2008 emission : Test Method IS 11255 : Part 1 : 1985 By Orsat | NM ³ /hr Unit % v/v | Results | Norms as per CPCE Not Availab |
| E. Results of Physical P No Test Parameters Velocity of gas in duc Quantity of gas flow F. Results of gaseous e No Test Parameters Carbon monoxide Carbon dioxide | t IS 11255:Part 3:2008 IS 11255:Part 3:2008 mission : IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat | NM ³ /hr Unit % v/v % v/v | <0.2 0.2 | Norms as per CPCE Not Availab |
| E. Results of Physical P No Test Parameters . Temperature of emiss . Velocity of gas in due . Quantity of gas flow F. Results of gaseous e No Test Parameters . Carbon monoxide . Carbon dioxide . Particulate Matters | t IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 | NM ³ /hr Unit % v/v % v/v % v/v | <0.2 0.2 | Norms as per CPCE Not Availab Not Availab |
| E. Results of Physical P No Test Parameters 1. Temperature of emiss 2. Velocity of gas in due 3. Quantity of gas flow F. Results of gaseous e 1 No Test Parameters 1. Carbon monoxide 2. Carbon dioxide 3. Particulate Matters 4. Total Fluoride | t IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 (Part - 5) : 1990 | NM ³ /hr Unit % v/v % v/v mg/Nm3 | <0.2 0.2 41 | Norms as per CPCE Not Availab Not Availab 150 max. |

erified by S. Mondal

-: END OF TEST REPORT :-

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

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The test report shall not be reproduced, except in full, without written approval of the Company.
 Results relate only to the parameters tested.

R. V. BRIGGS & CO. PRIVATE LTD. ANALYTICAL CONSULTING & TECHNICAL CHEMISTS (AN ISO 9001:2015 & ISO 45001: 2018 CERTIFIED COMPANY) Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 9, BENTINCK STREET, KOLKATA - 700 001 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com Page 1 of 1 TEST REPORT Date: June 21, 2023 : M/S. PARADEEP PHOSPHATE LTD. Equipment used: No. AP-FG/23-24/357 ID No.: RVB/SMK/03 (Cal. Validity: 16/07/23) Paradeep, Odisha. Issued to Parameters Tested : Stack Gas / Flue Gas : 18.06.2023 (11:00 A.M. to 11:32 A.M.) Physical : Temp., Velocity, Gas flow Address Sample Description : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Date & time of sampling Chemical : CO, CO2, & PM Sampling Plan & Method : 21.06.2023 Analysis Completed on General information about stack : : Zypmite - 1 Α. Boiler connected to : Process Emmision 1. Emission due to 2. : M.S. Material of construction of stack 3. : Circular. Shape of stack 4 Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : B. : 30 M Height of the stack from ground level 1. Diameter of the stack at sampling point : 1.03 M 2. : 12 Nos No. of Traverse point Analysis / Characteristic of stack Gas / Flue Gas : C. 3.Load : ---2. Fuel consumption : ---Fuel used Environmental conditions : D. Barometric pressure : 752 mmHg 2. Temperature : 39 °C 1. Results of Physical Parameters of Flue Gas : E. SI No **Test Parameters** Test Method Unit Results Temperature of emission IS 11255 : Part 3 : 2008 Ε., °C 57 2. Velocity of gas in duct IS 11255 : Part 3 : 2008 m/sec 16.97 3 Quantity of gas flow IS 11255 : Part 3 : 2008 NM³/hr 44374 F. Results of gaseous emission : SI 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. Particulate Matters IS 11255 : Part 1 : 1985 mg/Nm3 G Pollution control device 56 Details of pollution control devices attached with the stack : Zypnite Plant Cooler. -: END OF TEST REPORT :-Veit iedlby Mondal (Dr. R. KARIM) Technical Manager 55 Authorised Signatory For R.V.BRIGGS & CO. (P) LTD. The test report shall not h * Results and to the parameters tested.

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| | - | CIN: USITE REPORT | | Page 1 of 1 |
|---------------------|---|--|--|-------------------------------------|
| | | TLOT to: June 21, 2023 | | |
| | 0.4/269 | Date: SUM |) . | |
| o. AP-F | G/23-24/358 | M/S. PARADEEP PHOD | Equip | ment used: |
| ssued to | | Paradeep, Odisha. | ID No.: RVB/SMK/03 | Cal. Validity: 16/0//237 |
| Address Sample I | Description | Stack Gas / Fut OA.M. to 12:20 P.M.) | Param | eters Tested |
| Date & t | ime of sampling | - RVB/FM/44 & IS: 11255 (Part-1,2 & 3) | Physical : Temp., | Velocity, Gas now |
| Samplin | g Plan & Method | : 21.06.2023 | Chemical : CO, C | :0 ₂ , & PM |
| Analysis | s Completed on | | | |
| A. | General information abou | it stack : | | |
| 1. | Boiler connected to | · Process Emmision | | |
| 2. | Emission due to | Fetack : M.S. | | |
| 3. | Material of construction of Shape of stack | : Circular. | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | inter and |
| В. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 30 M | | |
| 2. | Diameter of the stack at si | impling point : 0.85 M | | |
| <u>S.</u> | Analysis / Characteristic | : 12 Nos. | | |
| 1. | Fuel used : | 2. Fuel consumption : | 31.0 | bec |
| D. | Environmental condition | 15 : | 5.54 | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperature : | 40 °C |
| E. | Results of Physical Para | meters of Flue Gas : | | |
| SINO | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 79 |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 18.61 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NIM ³ Ar | 20504 |
| F. | Results of gaseous emis | sion : | NM /nr | 30584 |
| SI No | Test Parameters | Test Method | Unit | D . 1/ |
| - | | | Can | Results |
| 1. | Carbon monoxide | IS 13270 (By Orsat): 1992 | 0/2 ×/2 | -0.0 |
| 2. | Carbon dioxide | IS 13270 (By Orsat): 1992 | 0.00 | <0.2 |
| 3. | Particulate Matters | IS 11255 - Part 1 - 1095 | % v/v | 0.4 |
| G. | Pollution control device | 1 | mg/Nm3 | 66 |
| | Details of pollution control | devices attached with the stack : Zumpite DL | | |
| | 1001 | -: END OF TEST REPORT | int Dryer. | |
| | | | 6 | 210 |
| Red | ort aritiged by | | | |
| Ref | ort denified by S. Mondal | | | aac |
| Rec | ort ferified by S. Mondal | | (Dr. R. | KARIM) |
| Ref | ort senified by S. Mondal | | (Dr. R. <u>Technica</u> | KARIM) al Manager |
| Ree | ort verified by S. Mondal | | (Dr. R. <u>Technica</u> Authorise | KARIM) al Manager d Signatory |
| Rea | ort verified by S. Mondal | | (Dr. R. <u>Technica</u> | KARIM) al Manager |

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|-----------------------------------|---|--|--|-------------------------------|
| | E-mail : rvbrigg | CIN: USI 109WB170 | | Page 1 of 1 |
| | | Date: June 21, 2023 | | |
| | 22 24/359 | PARADEEP PHOSPHATE LTD | Fauinme | nt used: |
| -FG | : MIS | leep, Odisha. | No - RVB/SMK/03 (Ca | I. Validity: 16/0/(23) |
| time le Der & time pling | scription : Stack te of sampling : RVU Plan & Method : 21.0 | & Gas / Flue Gas 6.2023 (12:40 P.M. to 01:12 P.M.) B/FM/44 & IS: 11255 (Part-1,2 & 3) 06:2023 | Physical : Temp., V Chemical : CO, CO | elocity, Gas flow by, & PM |
| ysis (| Completed on | ak : | | |
| G | eneral information about sta | : Zypmite - 3 | | |
| E | mission due to | : Process Emmission | | |
| 5, N | Aaterial of construction of stac | circular. | | |
| 4. 5 | Shape of stack | permanent platform & ladder : Yes. | | |
| B. | Physical characteristics of st | ack: | | |
| 1. | Height of the stack from groun | d level : 30 M | | |
| 2. | Diameter of the stack at samp: No. of Traverse point | : 8 Nos. | The state of the s | |
| C. | Analysis / Characteristic of s | tack Gas / Flue Gas : | 3.Lo | ad : |
| 1. | Fuel used : | 2. Fuel consumption . | | |
| D. | Environmental conditions . Barometric pressure : 752 mm | He | 2. Temperature : | 40 °C |
| F. | Results of Physical Paramet | ters of Flue Gas : | | |
| I No | Test Parameters | Test Method | Unit | Results |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 40 |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 15.99 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 10134 |
| F. | Results of gaseous emissio | n : | 1.11.14 | Deculie |
| SI 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. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 51 |
| G. | Pollution control device | | 1.0 | |
| | Details of pollution control de | evices attached with the stack : Zypnite | Plant Granulator. | Part and a second |
| | 6 00 1 | -: END OF TEST REPORT : | • | pm. |
| R | port Venified by | | 10-1 | Mab |
| | S. Mondal | | (Dr. 1 Techni | C. NARIM) |
| | | | Authoris | an Manager |
| 55 | | | For R V BRIG | GS & CO (D) I TO |
| | | | FOR R.V.BRIG | 55 & CO. (P) LTD |
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| An | ANALYI | 2015 & ISO 4500 N. 1ST F | LOOK 200 001 | | 1 |
| ATT A | A (AN ISO 9001. | TAHER MANSIE KOLKA | TA - TOTA : 3 | 3 2248-04 | om |
| | H | 9. BENTINCK STREET 3382/ | 3385, WWW | rvbriggs. | - |
| Section | at ano - (03) | 3) 4044-3380/ 550 | ebsile.007007 | | |
| | E-mail : rvbrig | ggs.kolkdidagi CIN: U51109WB1931P | 1000.0 | | -11 |
| | L III | CINTER DEPOR | T | - | Page II |
| | | TEST REPOR | 23 | | |
| | | Date: June 21, 20 | TD | | |
| No. AP | -FG/23-24/360 | RADEEP PHOSPHATE L | 10. | | |
| ssued | to Baradeer | Odisha. | | Equipme | ent used: |
| Addres | Stack G | as / Flue Gas | ID No.: | RVB/SMK/03 | (Cal. Validity. Idional) |
| Sample | Description : 18.06.20 | 23 (02:30 P.M. to 03:14 P.M.) | | Paramet | ters Tested |
| Date & | ing Plan & Method : RVB/FM | 4/44 & IS: 11255 (Part-1,2 & 5) | Physical : To | emp., Veloci | ty, Gas now |
| Analys | sis Completed on : 21.06.20 |)23 | Chemical : S | SO_2 , NO_2 , C | 0, CO ₂ , & FM |
| | a still to making about a | tack : | | | |
| A. | General information about s | : Diesel Genera | tor Set - 2 | | |
| 2 | Emission due to | : Burning of H | .S.D | | |
| 3. | Material of construction of sta | ick : M.S. | | | |
| 4. | Shape of stack | : Circular. | New | | |
| 5. | Whether stack is provided wit | h permanent platform & ladder : | 105 | | |
| B. | Physical characteristics of s | stack : | | 1 1 1 1 1 1 1 | |
| 1. | Height of the stack from grou | nd level : 20 M | | | |
| 2. | Diameter of the stack at samp | ling point : 0.4 M | | | |
| 3. | No. of Traverse point | : 8 Nos. | | | all in the second |
| | | | | | |
| C. | Analysis / Characteristic of Fuel used HSD | stack Gas / Flue Gas : | 2 Eval con | munition . 2 | 21.00- |
| C. 1. D. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : | stack Gas / Flue Gas : | 2. Fuel cons | sumption : 2 | 2 Lt/hr. |
| C. 1. D. 1. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm | stack Gas / Flue Gas : 1Hg | 2. Fuel cons | sumption : 2: ture : 41° C | 2 Lt/hr. |
| C. 1. D. 1. E. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameter | hHg ters of Flue Gas : | 2. Fuel cons 2. Tempera | sumption : 2 ture : 41 ⁰ C | 2 Lt/hr. |
| C. 1. D. 1. E. SI N | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method | 2. Fuel cons 2. Tempera Unit | sumption : 2. ture : 41 ^o C | 2 Lt/hr. Results |
| C. 1. D. 1. E. SIN 1. 2 | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in dust | hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Tempera Unit °C | sumption : 2 ture : 41 ⁰ C | 2 Lt/hr. Results 201 |
| C. 1. D. 1. E. SI N 1. 2. 3. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow | ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Temperat Unit °C m/sec | sumption : 2 ture : 41 ^o C | 2 Lt/hr. Results 201 17.07 |
| C. 1. D. 1. E. SIN 1. 2. 3. F. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Tempera Unit °C m/sec NM ³ /hr | sumption : 2 ture : 41 ⁰ C | 2 Lt/hr. Results 201 17.07 4813 |
| C. 1. D. 1. SIN 2. 3. SIN | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission D Test Parameters | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Temperat Unit °C m/sec NM ³ /hr | sumption : 2 ture : 41 °C | 2 Lt/hr. Results 201 17.07 4813 |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Tempera Unit °C m/sec NM ³ /hr | sumption : 2 ture : 41 ⁰ C Results | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protocio |
| C. 1. D. 1. SIN 1. 2. 3. F. SIN | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio D Test Parameters | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Temperat Unit °C m/sec NM ³ /hr Unit | sumption : 2 ture : 41 ^o C Results | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201 |
| C. 1. D. 1. SIN 1. 2. 3. F. SIN 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Test Parameters Sulphur dioxide | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Fuel cons 2. Tempera Unit °C m/sec NM ³ /hr | sumption : 2 ture : 41 ⁰ C Results | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201. 75 kw - ≤ 800 kw |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 1. 2. 3. 2. 3. 51 No | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : Test Method IS 11255 : Part 2 : 1985 IS 11255 : Part 2 : 1985 | 2. Fuel cons 2. Temperal ^o C m/sec NM ³ /hr Unit mg/Nm ³ | ture : 41 ⁰ C Results | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201. 75 kw - ≤ 800 kw |
| C. 1. D. 1. SIN 1. 2. 3. F. SIN 1. 2. 3. SIN 0 1. 3. SIN | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : Test Method IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10 2015 | 2. Fuel cons 2. Tempera °C m/sec NM ³ /hr Unit mg/Nm ³ mg/Nm ³ | sumption : 2 ture : 41 ⁰ C Results 66 127 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201. 75 kw - ≤ 800 kw Not Available |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 1. 2. 3. 3. SIN | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : Test Method IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 | 2. Fuel cons 2. Temperal 2. Temperal ^o C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ | sumption : 2 ture : 41 ⁰ C Results 66 127 124 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201, 75 kw - ≤ 800 kw Not Available |
| C. 1. D. 1. SIN 1. 2. 3. F. SIN 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 1. 2. 3. SIN 0 1. 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 2. 3. SIN 0 1. 3. SIN 1. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3 | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : Test Method IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Openin 1995 | 2. Fuel cons 2. Tempera 2. Tempera °C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ mg/Nm ³ | Results 66 127 124 0.75 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201. 75 kw - ≤ 800 kw Not Available 3.5 |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 4. 4. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide | stack Gas / Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 7 : 2008 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 | 2. Fuel cons 2. Temperat 2. Temperat °C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201, 75 kw - ≤ 800 kw Not Available 3.5 |
| C. 1. D. 1. 2. 3. F. SIN 1. 2. 3. SIN 4. 5. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters | stack Gas / Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 | 2. Fuel cons 2. Tempera 2. Tempera °C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v | Results 66 127 124 0.75 <0.2 7.4 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201 75 kw - 5 800 kw Not Available 3.5 Not Available |
| C. 1. D. 1. 2. 3. F. SIN 1. 2. 3. SIN 0 1. 2. 3. SIN 0 0 0 0 0 0 0 0 0 0 0 0 0 | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution content of the | stack Gas / Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 | 2. Fuel cons 2. Temperat 2. Temperat °C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ | sumption : 2: ture : 41 °C Results 66 127 124 0.75 <0.2 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201, 75 kw - 5 800 kw Not Available 3.5 Not Available |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 4. 5. G. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution control device Details of pollution | stack Gas / Flue Gas : hHg ters of Flue Gas : T est Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : T est Method IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 | 2. Fuel cons 2. Temperal ^o C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ gm/kw-hr | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201. 75 kw - ≤ 800 kw Not Available 3.5 Not Available 0.2 |
| C. 1. D. 1. 2. 3. F. SIN 1. 2. 3. F. SIN 6. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution control device Details of pollution control devi | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : Test Method IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 ces attached with the stack : Nill | 2. Fuel cons 2. Tempera ^o C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v % v/v mg/Nm ³ gm/kw-hr | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment estes 201, 75 kw - 5 800 kw Not Available 3.5 Not Available 0.2 |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 1. 2. 3. SIN G. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution control device Details of pollution control devi | stack Gas / Flue Gas : hHg ters of Flue Gas : T est Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : T est Method IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 is 11255 : Part 1 : 1985 is 11255 : Part 1 : 1985 | 2. Fuel cons 2. Temperal Unit °C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ gm/kw-hr | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 7.4 32 0.19 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201, 75 kw - ≤ 800 kw Not Available 3.5 Not Available 0.2 |
| C. 1. D. 1. 2. 3. F. SIN 1. 2. 3. F. SIN G. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Velocity of gas nduct Quantity of gas flow Results of gaseous emission Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution control device Details of pollution control devi Report Verified by S. Mondal | stack Gas / Flue Gas : hHg ters of Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 n : Test Method IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 ces attached with the stack : Nil. -: END OF TEST REPO | 2. Fuel cons 2. Tempera ^o C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ gm/kw-hr | Results 66 127 124 0.75 <0.2 7.4 32 0.19 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201 75 kw - 5 800 kw Not Available 3.5 Not Available 0.2 |
| C. 1. D. 1. 2. 3. F. SIN 1. 2. 3. SIN G. G. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution control device Details of pollution control devi Report Verified by S. Mondal | stack Gas / Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 | 2. Fuel cons 2. Temperal ^o C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ gm/kw-hr % v/v mg/Nm ³ gm/kw-hr | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 7.4 32 0.19 (Dr. R. I | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201, 75 kw - ≤ 800 kw Not Available 3.5 Not Available 0.2 Mature KARIM) |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 4. 5. G. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emission Velocity of gas emission Velocity of | stack Gas / Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 icces attached with the stack : NII. -: END OF TEST REPORT | 2. Fuel cons 2. Temperal ^o C m/sec NM ³ /hr Unit Unit mg/Nm ³ mg/Nm ³ mg/Nm ³ gm/kw-hr % v/v % v/v mg/Nm ³ gm/kw-hr % v/v | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201 75 kw - 5 800 kw Not Available 3.5 Not Available 0.2 Manager Singer |
| C. 1. D. 1. E. SIN 1. 2. 3. F. SIN 4. 5. G. | Analysis / Characteristic of Fuel used : H.S.D Environmental conditions : Barometric pressure : 752 mm Finding of Physical Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emissio Test Parameters Sulphur dioxide Nitrogen dioxide Carbon monoxide Carbon dioxide Particulate Matters Pollution control device Details of pollution control devi Report Verified by S. Mondal The test report shall not be | stack Gas / Flue Gas : Test Method IS 11255 : Part 3 : 2008 IS 11255 : Part 2 : 1985 IS 11255 : Part 7 : 2005 USEPA 10:2017 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 | 2. Fuel cons 2. Temperal 2. Temperal Constant Consta | sumption : 2 ture : 41 °C Results 66 127 124 0.75 <0.2 | 2 Lt/hr. Results 201 17.07 4813 Norms as per Environment (Protection Amendment Rules 201, 75 kw - 5 800 kw Not Available 3.5 Not Available 0.2 KARIM) Manager Signatory |



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TEST REPORT

| No. AP-SL/23-24/219-222 | | Date: June 25, 2023 Page 1 of | | | | | | | | | | |
|-------------------------|-------------------|---|------------------|-----------------|--|----------------------|-------------------------------|-----------------|--|--|--|--|
| Issue | ed to | : M/S. P | ARADE | EP PH | OSPHATES | LIMITE | D | | | | | |
| Address | | : Paradeep, Odisha. | | | | | | | | | | |
| Your | P.O. Ref. no. | : 55000 | 05451, 0 | td. 13.0 | 08.2022 | | | | | | | |
| Description of Sample | | : Sound | Level N | Ionitorin | Parameters Tested : LMin, LMick & Log | | | | | | | |
| Date of Monitoring | | : 15.06. | 2023 to | 18.06.2 | Test Method : IS 4758 : 1968 | | | | | | | |
| SOUN | D LEVEL MONITORIN | G AT AME | BIENT LO | CATION | : | | | | | | | |
| SI. | Locations | Day Time (06.00 A.M to 10.00 P.M) Night | | | | | Time (10.00 P.M to 06.00 A.M) | | | | | |
| No | | Sound Level in dB(A) | | | Norms as per | Sound Level in dB(A) | | | Norms as per | | | |
| | | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | | | |
| 1. | Near AAQMS - 1 | 50.2 | 54.8 | 52.8 | - 75 dB(A) | 45.7 | 47.2 | 46.5 | - 70 dB(A) | | | |
| 2. | Near AAQMS - 2 | 54.6 | 57.2 | 56.1 | | 48.5 | 50.8 | 49.8 | | | | |
| 3. | Near AAQMS - 3 | 52.6 | 55.2 | 54.1 | | 46.2 | 49.4 | 47.8 | | | | |
| 4. | Near AAQMS - 4 | 52.7 | 55.5 | 54.3 | | 44.6 | 47.2 | 46.0 | | | | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

d by

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RIM) (Dr. R. K.

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

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TEST REPORT

| No. AP-SL/23-24/223-229 | | Date: June 25, 2023 | | | | | | | | |
|---|-------------------------------|--|---|------------------|-----------------|---|--|--|--|--|
| Issue Addr Your | ed to ess P.O. Ref. no. | : M/S. PARADEEP PHOSPH : Paradeep, Odisha. : 5500005451, dtd. 13.08.20 | ATE LT | D. | | | | | | |
| Description of Sample Date of Monitoring | | : Sound Level Monitoring : 15.06.2023 to 18.06.2023 | Parameters Tested : L _{Min} , L _{Max} & L _{eq} Test Method : IS 4758 : 1968 | | | | | | | |
| SOUND LEVEL MO Sl. Locations | | ITORING : TIME | Noise Level in dB(A) | | | Permissible Noise | | | | |
| No. | | | L _{Min} | L _{Max} | L _{eq} | Workers as per The Nois Pollution (Regulation Ar Control) Rules, 2000 | | | | |
| 1. | PAP Plant | 10:40 P.M 10:45 A.M. | 62.4 | 68.6 | 66.1 | | | | | |
| 2. | SAP Plant | 11:00 P.M 11:05 A.M. | 53.0 | 56.1 | 54.6 | | | | | |
| 3. | Zypmite Plant | 10:00 P.M 10:05 A.M. | 75.3 | 79.5 | 77.9 | | | | | |
| 4. | AB Side - DAP | 11:50 P.M 11:55 A.M. | 61.3 | 70.5 | 67.3 | 90 dB(A) | | | | |
| 5. | CD Side - DAP | 10:10 P.M 10:15 A.M. | 58.3 | 64.5 | 62.6 | | | | | |
| 6. | Off side | 11:20 P.M 11:25 A.M. | 68.7 | 73.5 | 71.2 | | | | | |
| 7. | Bagging Section | 10:40 P.M 10:45 A.M. | 68.6 | 73.5 | 71.7 | | | | | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

Mondal

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

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TEST REPORT

| No. AP-WAQ/23-24/082 | | | Date: June 22, 2 | 023 | | Page 1 of 1 | | |
|---|------------------------------------|-----------------------------------|--|-------------------|---|--|--|--|
| Issued to : M/S. | | | PARADEEP PHOSPHATE LTD eep. Odisha |). | | | | |
| Your Ref. WO. No. : 55000 Sample Description : Fugitiv Sampling Location : SAP S Date & Time of sampling : 16.06. Sampling Plan : : RVB/F | | : 55000 : Fugitive : SAP Se | : 5500005451, dtd. 13.08.2022 : Fugitive Air : SAP Section : 16.06.2023 (09:45 A.M 05:45 P.M.) : RVB/FM/45 | | Equipment used: ID No.: RVB/RDS/APM460/BL/03, Cal. Valid upto: 05.11.2023 Environmental conditions Temperature : Max: 34.0°C & Min: 29.0°C Barometric Presure : 750 mmHg | | | |
| | | : 16.06.2 : RVB/FM | | | | | | |
| Duration of Sampling : 08Hrs Analysis Completed on : 22.06. | | | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | | |
| TES SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 490 | 10000 | | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.29 | 5000 | | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 32.78 | 6000 | | |
| 4. | Ammonia as NH ₃ | k) | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 35.14 | Not Available | | |

-: END OF TEST REPORT :-

led by S. Mondal

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

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TEST REPORT

| No. E(D)/23-24/348 | _ | Date: 26 June 2023 | Page 1 of 1 |
|---|---|---|----------------------------|
| Issued to | : | M/s. PARADEEP PHOSPHATE Paradeep, Odisha | LIMITED |
| Description of Sample | : | Effluent | Parameter Tested: |
| Collection Source | : | ETP Outlet | pH, TSS, O & G, F, |
| Sample Drawn by us on | : | 19.06.2023 at 5.00 P.M. | NH3-N, TKN, NH3, P, N |
| Sample Carried out by | : | Mr. P.P. Mondal and Mr. G. Monda | 1 |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | ; | 24.06.2023 | |
| 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 |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|------------------------------------|--|------|---------|--|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.0 | 6.5 - 8.5 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 10 | 100 (Max.) |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | 2.8 | 10 (Max.) |
| 4 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 1.40 | 10 (Max.) |
| 5 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 28 | 50 (Max.) |
| 6 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 32.1 | 75 (Max.) |
| 7 | Free Ammonia as NH ₃ | APHA 23rd edition 4500 NH ₃ F | mg/l | 3.6 | 4 (Max.) |
| 8 | Dissolved Phosphates as P | APHA 23rd edition 4500-PD | mg/l | 4.34 | 5 (Max.) |
| 9 | Nitrate Nitrogen as NO3-N | APHA 23rd edition 4500-N03D | mg/l | 12.4 | 20 (Max.) |

Remarks: The sample of effluent complies with the above Specification. -: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM)

Technical Manager Authorised Signatory



ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

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TEST REPORT

| No. E(D)/23-24/349 | | Date: 26 June 2023 | Page 1 of 2 |
|---|---|--|------------------------------|
| Issued to | : | M/s. PARADEEP PHOSPHAT Paradeep, Odisha | E LIMITED |
| Description of Sample | ÷ | Effluent | Parameter Tested: |
| Collection Source | 5 | STP Outlet | pH, TSS, BOD |
| Sample Drawn by us on | - | 19.06.2023 at 4.30 P.M. | |
| Sample Carried out by | : | Mr. P.P. Mondal and Mr. G. Mond | dal |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | : | 24.06.2023 | |
| Sample collection Procedure | 1 | APHA 24th Edition 1060 | |
| Mode of Sampling | ÷ | Grab | |
| Environmental condition during sampling | 2 | Temperature : 31°C, Transported in Ic | e box, Cold chain maintained |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|---|------------------------------|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | i | 7.6 | 6.5 - 9.0 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | BDL | < 100 |
| 3 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 4.2 | < 30 |

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

Note : BDL: Below Detection Limit. Minimum Detection Limit of TSS .. 10 mg/l.

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM)

Technical Manager Authorised Signatory



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TEST REPORT

| No. E(D)/23-24/349 | | Date: 26 June 2023 | Page 2 of 2 |
|---|---|---------------------------------------|-----------------------------------|
| Issued to | | M/s. PARADEEP PHOSPHAT | E LIMITED |
| | | Paradeep, Odisha | |
| Description of Sample | ; | Effluent | Parameter Tested: |
| Collection Source | 1 | STP Outlet | Microbiological : Faecal Coliform |
| Sample Drawn by us on | : | 19.06.2023 at 4.30 P.M. | 1.0 |
| Sample Carried out by | | Mr. P.P. Mondal and Mr. G. Mond | dal |
| Sampling Plan | : | RVB/FM/44 | |
| Analysis completed on | : | 22.06.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 9060 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | : | Temperature : 31°C, Transported in Ic | e box, Cold chain maintained |

MICROBIOLOGICAL TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|-----------------|-------------------------|----------------|---------|---|
| 1 | Faecal Coliform | APHA 23rd Edition 9221E | MPN/ 100 ml | <2 | < 1000 |

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

-: END OF TEST REPORT:-

Samonto

Report Verified by

(Pijush Kanti Dutta) Sr. Microbiologist Authorized Signatory



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TEST REPORT

| No. | AP-AAQ/23-24/251 | | Date: August 04, 202 | 23 | | Page 1 of 1 | | |
|---|--|-----------------|--|---------------------------------|---|--------------------|--|--|
| Issued to : M/S. PARADEE | | | PARADEEP PHOSPHATE LTD. | | | | | |
| Address : Parad Your WO Ref. No. : 55000 Sample Description : Ambie Sample Lession : Nacr | | | Varadeep, Odisha 500005451, dtd. 13.08.2022 Imbient Air lear AAQMS # 01 120°16'31.01, E86°37'27.24) 7.07.2023 (09:30 A.M.)-28.07.2023 (09:30 A.M.) RVB/FM/45 14Hrs. | | Equipment used: ID No.: RVB/AFDS/PM2.5/09, Cal. Valid upto: 16.07.23 ID No.: RVB/RDS/APM460/BL/10, Cal. Valid upto: 03.11.23 Environmental conditions Temperature : Max: 38.0°C & Min: 27.0°C Barometric Presure : 750 mmHg Parameters Tested: PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₈ H ₆ , BaP | | | |
| (N20°1 Date & Time of sampling : 27.07. Sampling Plan : : RVB/ Duration of Sampling : 24Hrs Analysis Completed on : 04.08 | | | | | | | | |
| TES SL No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | | |
| 1. | PM _{2.5} (Size ≤ 2.5µm |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 37.9 | 60 (24 Hourly.) | | |
| 2. | PM ₁₀ (Size ≤ 10µm |) | IS 5182 (Part - 23): 2006 | µg/m ³ | 54.8 | 100 (24 Hourly.) | | |
| 3. | Sulphur Dioxide as | SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 6.25 | 80 (24 Hourly.) | | |
| 4 | Nitrogen Dioxide as | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 31.22 | 80 (24 Hourly.) | | |
| 5. | Ozone as O3 | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 17.85 | 180 (1 Hourly.) | | |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indeptend) Method) issue No. 04, issue Date: 12.01.2018 | hð,w ₃ | 18.11 | 400 (24 Hourly.) | | |
| 7. | Carbon Monoxide a | s CO | IS : 5182 (Part - 10), 1959 Non Dispersive Inita-Red (NDIR) spectroscopy | mg/m ³ | 0.88 | 04 (1 Hourly.) | | |
| 8 | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.079 | 1.0 (24 Hourly.) | | |
| 9 | 9. Nickel as Ni | | SOP No.: RVE/SOP/01/15 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | ^{l,} ng/m ³ | 5.0 | 20 | | |
| 10 | Arsenic as As | | SOP No.: RVB/SOP/01/15 (AAS Method) issue No. 0 issue Date: 10.01.2018 | ^{t,} ng/m ³ | 0.885 | 6.0 | | |
| 11 | , Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | 1.39 | 5.0 | | |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | | |

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

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(Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. | AP-AAQ/23-24/252 | | Date: August 04, 202 | 23 | | Page 1 of 1 |
|---------------------|--|----------|--|-------------------|---|---------------------------|
| Issued to : M/S. P/ | | | PARADEEP PHOSPHATE LTD. | | | |
| Add | ress | : Parac | leep, Odisha | | | |
| Your | WO Ref. No. | : 55000 | 05451, dtd. 13.08.2022 | | Equipment u | ised: |
| Sam | ple Description | : Ambie | ent Air | ID No.: RVB// | AFDS/PM2.5/09, Cal. | Valid upto: 16.07.23 |
| Sam | pling Location | : Near | AAQMS # 02 | ID No.: RVB/ | RDS/APM460/BL/10, (| Cal. Valid upto: 03.11.23 |
| | | (N20°1 | 6'30.06, E86°37'20.25) | | Environmental c | onditions |
| Date | & Time of sampling | : 28.07. | 2023 (09:40 A.M.)-29.07 2023 (09:40 A.M.) | Temperatur | e : Max: 32.0°C & N | fin: 27.0°C |
| Sam | pling Plan : | : RVB/ | FM/45 | Barometric I | Presure : 750 mmH | 9 |
| Dura | tion of Sampling | : 24Hrs | L | Parameters | Tested: PM _{2.5} , PM | 10, SO2, NO2, O3, NH3, |
| Anal | ysis Completed on | : 04.08 | 2023 | CO, Pb, Ni, | As, C _E H ₅ , BaP | |
| TES | T FINDINGS:- | | | 11.14 | Beculto | Norme as NAAO 2000 |
| SI. No. | I. Parameters D. | | Test Method | Unit | (Time Weighted Avg.) | Nonits as NAAQ,200 |
| 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 | 57.5 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as | SO₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 6.48 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as | NO2 | IS 5182 (Part - 6): 2006 | µg/m ³ | 33.64 | 80 (24 Hourly.) |
| 5. | Ozone as O3 | | IS 5182 (Part - 9) : 1974 | µg/m³ | 18.50 | 180 (1 Houriy.) |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 20.29 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide a | s CO | IS - 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.84 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.087 | 1.0 (24 Hourly.) |
| 9. | 9. Nickel as Ni | | SOP No.: RVB/SOPi01/15 (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 | 0.632 | 6.0 |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | 1.64 | 5.0 |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 |

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

rified by Re

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(Dr. R. KARIM) Technical Manager Authorised Signatory

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





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TEST REPORT

| No. | AP-AAQ/23-24/253 | | Date: August 04, 20 | 23 | | Page 1 of 1 |
|------------|--|-----------------|--|-------------------|---|---------------------------|
| SSU | ed to | : M/S. | PARADEEP PHOSPHATE LTD. | | | |
| Add | ress | : Para | deep, Odisha | | | |
| Your | WO Ref. No. | : 5500 | 005451, dtd. 13.08.2022 | l Nontreserves | Equipment u | ised: |
| Sam | ple Description | : Ambi | ent Air | ID No .: RVB/ | AFDS/PM2.5/04, Cal. | Valid upto: 16.07.23 |
| Sam | pling Location | : Near | AAQMS # 03 | ID No.: RVB/ | RDS/APM460/BL/05, (| Cal. Valid upto: 03.11.23 |
| | | (N20° | 17'11.74, E85°39'32.64) | | Environmental c | onditions |
| Date | & Time of sampling | : 25.07 | 2023 (09:20 A.M.)-26.07 2023 (09:20 A.M.) | Temperatur | e : Max: 33.0°C & N | fin: 27.0°C |
| Sam | pling Plan : | : RVB/ | FM/45 | Barometric | Presure : 750 mmH | 9 |
| Dura | ation of Sampling | : 24Hrs | 5. | Parameters | s Tested: PM25, PM | I10, SO2, NO2, O3, NH3, |
| Ала | lysis Completed on | : 04.08 | 3.2023 | CO, Pb, Ni, | As, C ₆ H ₆ , BaP | |
| TES | T FINDINGS:- | | | 1 11-14 | Pequite | Norme as NAAO 2005 |
| SI. No. | Parameters | | Test Method | Unit | (Time Weighted Avg.) | Norms as NAAQ,2003 |
| 1. | PM _{2.5} (Size ≤ 2.5µm |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 33.7 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm |) | IS 5182 (Part - 23): 2006 | µg/m³ | 49.3 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as | SO2 | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.01 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 29.87 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m³ | 19.77 | 180 (1 Hourly.) |
| 6. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (indephenel Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 17.49 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide a | s CO | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.93 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.060 | 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 | 0.379 | 6.0 |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | 1.19 | 5.0 |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 |

Minimum defection Aima: Nickel: 5 ng/m², Arsenic: 0.25 ng/m², Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

crified by Rep

S. Mondal

(Dr. R. KARIM) **Technical Manager**

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





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TEST REPORT

| No. | AP-AAQ/23-24/254 | Date: August 04, 20 | 023 | | Page 1 of 1 | | | |
|------------|--|--|----------------------------------|-------------------------|---------------------------|--|--|--|
| Issu | ed to : | M/S. PARADEEP PHOSPHATE LTD. | | | | | | |
| Add | ress : | Paradeep, Odisha | | | | | | |
| You | WO Ref. No. | 5500005451, dtd. 13.08.2022 | | Equipment used: | | | | |
| Sarr | ple Description : | Ambient Air | ID No.: RVB/ | AFDS/PM2.5/06, Cal. | Valid upto: 02.08.23 | | | |
| San | pling Location : | Near AAQMS # 04 | ID No.: RVB/ | RDS/APM460/BL/05, | Cal. Valid upto: 03.11.23 | | | |
| | | (N20°16'10.70, E86°38'32.54) | | Environmental c | onditions | | | |
| Date | & Time of sampling : | 24.07.2023 (09:00 A.M.)-25.07.2023 (09:00 A.M.) | Temperatur | e : Max: 32.0°C & M | Ain: 27.0°C | | | |
| San | pling Plan : | RVB/FM/45 | Barometric | Presure : 750 mmH | g so NO O NH | | | |
| Dur | ation of Sampling | 24Hrs. | Parameters | An CH Bap | 110, 302, 1102, 03, 1113, | | | |
| Ana | lysis Completed on | 04.08.2023 | CO, PD, NI, | AS, Ughis, Dar | | | | |
| TES | T FINDINGS:- | | 1 | Desutes | Name as NAAO 2009 | | | |
| SI. No. | Parameters | Test Method | Unit | (Time Weighted Avg.) | Norms as NAAQ,2008 | | | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 37.1 | 60 (24 Hourly.) | | | |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m ³ | 55.0 | 100 (24 Hourly.) | | | |
| 3. | Sulphur Dioxide as SC | 02 IS 5182 (Part - 2): 2001 | µg/m³ | 6.80 | 80 (24 Hourly.) | | | |
| 4. | Nitrogen Dioxide as N | O2 IS 5182 (Part - 6): 2005 | µg/m³ | 32.83 | 80 (24 Hourly.) | | | |
| 5. | Ozone as O ₃ | IS 5182 (Part - 9) : 1974 | µg/m³ | 18.32 | 180 (1 Hourly.) | | | |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (Indeptend Method) issu No. 04, issue Date: 10:01.2018 | e µg/m³ | 20.46 | 400 (24 Hourly.) | | | |
| 7. | Carbon Monoxide as (| CO IS : 5182 (Part - 10), 1999 Non Dispensive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.86 | 04 (1 Hourly.) | | | |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m³ | 0.062 | 1.0 (24 Hourly.) | | | |
| 9 | Nickel as Ni | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 0 Issue Date: 10.01.2018 | ^{04.} ng/m ³ | <5.0 | 20 | | | |
| 10 | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) issue No. Issue Date: 10.01.2018 | ^{34,} ng/m ³ | <0.25 | 6.0 | | | |
| 11 | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 1.30 | 5.0 | | | |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | | | |

Minimum delection Amit Nickel: 5 ng/m3, Arsenic: 0.25 ng/m3, Benzene: 1 ug/m3& Benzo(a)Pyrene: 0.5 ng/m3

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(Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. AP-WAQ/23-24/156 | | | Date: July 31, 20 | 23 | | Page 1 of 1 | |
|-------------------------|------------------------------------|--------------------|---|-------------------|--|--|--|
| Issued to : M/S | | : M/S. | PARADEEP PHOSPHATE LTD | | | | |
| Address : Parad | | | eep, Odisha | | | | |
| You | r Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment us | sed: | |
| Sam | ple Description | : Fugitiv | e Air | 10 | No .: RVB/RDS/APM | 1460/BL/06, | |
| Sam | pling Location | : SAP S | ection | | Cal. Valid upto: 03 | .11.2023 | |
| | | | Γ | | Environmental co | nditions | |
| Date | e & Time of sampling | : 26.07. | 2023 (09:50 A.M 05:50 P.M.) | Tem | perature : Max: 35.0° | C & Min: 30.0°C | |
| San | nolino Plan : | : RVB/F | M/45 | | Barometric Presure : | 750 mmHg | |
| Dur | ation of Sampling | : 08Hrs | | | Parameters Te | sted: | |
| Application of Sampling | | · 31 07 | 2023 | | SPM, SO ₂ , NO ₂ | & NH- | |
| TEC | T FINDINCE | . 01.07 | 2020 | | | | |
| SI. No. | Parameters | 1 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 481 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.25 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 23.22 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 32.46 | Not Available | |

-: END OF TEST REPORT :-

hu S. Mondal

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TEST REPORT

| No. AP-WAQ/23-24/157 | | | Date: July 31, 20 | 23 | | Page 1 of 1 | | | |
|---|---|--------------------------------|---|-------------------|--|--|--|--|--|
| Issued to : M/S Address : Para | | | PARADEEP PHOSPHATE LTD eep, Odisha | • | | | | | |
| Your Ref. WO. No. : 5500 Sample Description : Fugiti | | | 5500005451, dtd. 13.08.2022 Fugitive Air PAP Section | | Equipment used: ID No.: RVB/RDS/APM460/BL/06, Cal. Valid upto: 03.11.2023 | | | | |
| Date & Time of sampling : 27.07 Sampling Plan : : RVB/ | | : 27.07. : RVB/F : 08Hrs | : 27.07.2023 (10:10 A.M 06:10 P.M.) : RVB/FM/45 | | Environmental conditions Temperature : Max: 35.0°C & Min: 29.5°C Barometric Presure : 750 mmHg Parameters Tested: | | | | |
| Analysis Completed on : 31.07 | | | 2023 | | SPM, SO2, NO2 | & NH ₃ | | | |
| TEST FINDINGS:- SI. Parameters No. | | Parameters | | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | | | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 410 | 10000 | | | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 4.96 | 5000 | | | |
| 3. | uration of Sampling : 08Hrs nalysis Completed on : 31.07 EST FINDINGS:- 31. Parameters 10. Parameters 11. Suspended Particulate 12. Sulphur Dioxide as SO ₂ 13. Nitrogen Dioxide as NO ₂ 14. Ammonia as NH ₃ | | IS 5182 (Part - 6): 2006 | hð\w ₃ | 20.82 | 6000 | | | |
| 4. | | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 35.85 | Not Available | | | |

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TEST REPORT

| No. | AP-WAQ/23-24/158 | | Date: July 31, 20 | 23 | | Page 1 of 1 |
|-----------------|--|--------------------|---|-------------------|--|--|
| Issued to : M/S | | | PARADEEP PHOSPHATE LTD | | | |
| Add | iress | : Parad | eep, Odisha | | | |
| You | r Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment us | sed: |
| Sam | ple Description | : Fugitiv | e Air | H | No .: RVB/RDS/APM | /460/BL/05, |
| Sam | pling Location | : DAP, | A & B Section | | Cal. Valid upto: 03 | .11.2023 |
| 120302 | | | | | Environmental co | nditions |
| Date | & Time of sampling | : 25.07. | 2023 (09:30 A.M 05:30 P.M.) | Temp | perature : Max: 34.0° | C & Min: 31.0°C |
| San | nling Plan : | : RVB/F | M/45 | | Barometric Presure : | 750 mmHg |
| Dur | ation of Samoling | · 08Hrs | | | Parameters Te | sted: |
| Dur | lucia Completed on | 21.07 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| Апа | lysis Completed on | . 31.07. | 2023 | - | | |
| SI. No. | TEST FINDINGS:- SI. Parameters No. | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 438 | 10000 |
| 2. | . Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.21 | 5000 |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 23.72 | 6000 |
| 4. | Ammonia as NH ₃ | h. | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 40.58 | Not Available |

-: END OF TEST REPORT :-

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(Dr. R. KARIM)

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TEST REPORT

| No. AP-WAQ/23-24/159 | | | Date: July 31, 20 | 23 | | Page 1 of 1 | |
|---|--|-------|---|--|------------------------------------|--|--|
| Issued to : M/S Address : Para | | | PARADEEP PHOSPHATE LTD leep, Odisha | | | | |
| Your Ref. WO. No. : 550 Sample Description : Fugit Sampling Location : DAP, | | | 005451, dtd. 13.08.2022 re Air C & D Section | Equipment used: ID No.: RVB/RDS/APM460/BL/06, Cal. Valid upto: 03.11.2023 Environmental conditions | | | |
| Date & Time of sampling : 25.07 Sampling Plan : : RVB/ Duration of Sampling : 08Hr Analysis Completed on : 31.07 | | | 2023 (09:35 A.M 05:35 P.M.) M/45 2023 | Temperature : Max: 35.0°C & Min: 31.0°C Barometric Presure : 750 mmHg <u>Parameters Tested</u> : SPM, SO ₂ , NO ₂ & NH ₃ | | | |
| TEST FINDINGS:- SI. Parameters No. | | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m³ | 485 | 10000 | |
| 2. | 2. Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 8.97 | 5000 | |
| 3. | 3. Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 28.82 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 37.54 | Not Available | |

-: END OF TEST REPORT :-

eport Verified by S. Mondal

(Dr. R. KARIM)

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Results relate only to the parameters tested.



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TEST REPORT

| No. AP-WAQ/23-24/160 | | | Date: July 31, 20 | 23 | | Page 1 of 1 | | | |
|---|--|-------|---|--|---|--|-------|------|--|
| Issued to : M/S. Address : Para | | | PARADEEP PHOSPHATE LTD eep. Odisha | | | | | | |
| Your Ref. WO. No. : 5500 Sample Description : Fugiti Sampling Location : Off Si | | | 5500005451, dtd. 13.08.2022 Fugitive Air Off Site | | Equipment used: ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 03.11.2023 | | | | |
| Date & Time of sampling : 26.07 Sampling Plan : : RVB/ Duration of Sampling : 08Hm Analysis Completed on : 31.07 | | | 2023 (09:45 A.M 05:45 P.M.) M/45 2023 | Temperature : Max: 35.0°C & Min: 30.0°C Barometric Presure : 750 mmHg Parameters Tested: SPM, SO ₂ , NO ₂ & NH ₃ | | | | | |
| TEST FINDINGS:- SI. Parameters No. | | • | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | | | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 421 | 10000 | | | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.68 | 5000 | | | |
| 3. | Sulphur Dioxide as SO₂ Nitrogen Dioxide as NO₂ Ammonia as NH₃ | | Nitrogen Dioxide as NO ₂ IS 5182 (| | IS 5182 (Part - 6): 2006 | µg/m³ | 30.26 | 6000 | |
| 4. | | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 25.36 | Not Available | | | |

-: END OF TEST REPORT :-

ified by S. Mondal

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

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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007



TEST REPORT

| No. | AP-WAQ/23-24/161 | | Date: July 31, 20 | 23 | | Page 1 of 1 |
|-------------------------------------|---|-----------|---|-------------------|--|--|
| Issued to : M/S. Address : Parad | | : M/S. | PARADEEP PHOSPHATE LTD | | | |
| | | : Parac | leep, Odisha | | | |
| You | r Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment u | sed: |
| San | nple Description | : Fugitiv | ve Air | 1 | D No .: RVB/RDS/APM | 460/BL/05, |
| San | npling Location | : Baggi | ng Section | | Cal. Valid upto: 03 | .11.2023 |
| | 0.989 | | | | Environmental co | onditions |
| Date | e & Time of sampling | : 24.07 | 2023 (09:20 A.M 05:20 P.M.) | Tem | perature : Max: 35.0° | C & Min: 30.0°C |
| San | npling Plan : | : RVB/F | FM/45 | | Barometric Presure : | 750 mmHg |
| Dur | ation of Sampling | : 08Hrs | | - | Parameters Te | ested: |
| Ana | lysis Completed on | . 31 07 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | T EINDINGS | . 01.01 | 2020 | | | |
| SI. No. | EST FINDINGS:- SI. Parameters Io. | | Test Method | | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 426 | 10000 |
| 2. | 2. Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.49 | 5000 |
| 3. | 3. Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m ³ | 27.81 | 6000 |
| 4. Ammonia as NH ₃ | | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 20.97 | Not Available |

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TEST REPORT

| No. AP-WAQ/23-24/162 | | | Date: July 31, 20 | 23 | | Page 1 of 1 | | | |
|---|--|---------------------------------|---|-------|--|--|--|--|--|
| Issued to : M/S. Address : Parad | | | PARADEEP PHOSPHATE LTD. eep, Odisha | | | | | | |
| Your Ref. WO. No. : 5500 Sample Description : Fugiti Sampling Location : Zypm | | | 5500005451, dtd. 13.08.2022 Fugitive Air Zypmite Section | | Equipment used: ID No.: RVB/RDS/APM460/BL/05, Cal. Valid upto: 03.11.2023 | | | | |
| Date & Time of sampling : 27.07 Sampling Plan : : RVB/ Duration of Sampling : 08Hrs | | : 27.07. : RVB/F : 08Hrs. | : 27.07.2023 (10:00 A.M 06:00 P.M.) : RVB/FM/45 : 08Hrs. | | Temperature : Max: 35.0°C & Min; 30.0°C Barometric Presure : 750 mmHg Parameters Tested: | | | | |
| Ana | lysis Completed on | : 31.07. | 2023 | | SPM, SO ₂ , NO ₂ | & NH3 | | | |
| TEST FINDINGS:- SI. Parameters No. | | 8 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | | | |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m³ | 475 | 10000 | | | |
| 2. | te & Time of sampling : 27.07. mpling Plan : RVB/F ration of Sampling : 08Hrs alysis Completed on : 31.07. ST FINDINGS:- Suspended Particulate Matter Sulphur Dioxide as SO ₂ Nitrogen Dioxide as NO ₂ Ammonia as NH ₃ | | IS 5182 (Part - 2): 2001 | µg/m³ | 5.73 | 5000 | | | |
| 3. | | | IS 5182 (Part - 6): 2006 | µg/m³ | 31.89 | 6000 | | | |
| 4. | | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 22.66 | Not Available | | | |

-: END OF TEST REPORT :-

d by S. Mondal

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TEST REPORT

| No. E(D)/23-24/579 | _ | Date: 03 August 2023 | Page 1 of 2 |
|---|---|---|------------------------------|
| Issued to | : | M/s. PARADEEP PHOSPHATE Paradeep, Odisha | LIMITED |
| Description of Sample | 1 | Effluent | Parameter Tested: |
| Collection Source | ÷ | STP Outlet | pH, TSS, BOD |
| Sample Drawn by us on | : | 29.07.2023 at 2.10 P.M. | |
| Sample Carried out by | ; | Mr. S. Banerjee and Mr. G. Mondal | |
| Sampling Plan | : | RVB/FM/45 | |
| Analysis completed on | : | 03.08.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 1060 | |
| Mode of Sampling | ÷ | Grab | |
| Environmental condition during sampling | 2 | Temperature : 27.5°C, Transported in Ic | e box, Cold chain maintained |

TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|---|------------------------------|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.9 | 6.5 - 9.0 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | BDL | < 100 |
| 3 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 2.9 | < 30 |

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

Note : BDL: Below Detection Limit. Minimum Detection Limit of TSS .. 10 mg/l.

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM)

Technical Manager Authorised Signatory



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TEST REPORT

| No. E(D)/23-24/579 | | Date: 03 August 2023 | Page 2 of 2 |
|---|---|---|-----------------------------------|
| Issued to | | M/s. PARADEEP PHOSPHATE | LIMITED |
| Description of Sample | | Effluent | Parameter Tested: |
| Collection Source | : | STP Outlet | Microbiological : Faecal Coliform |
| Sample Drawn by us on | : | 29.07.2023 at 2.10 P.M. | |
| Sample Carried out by | : | Mr. S. Banerjee and Mr. G. Mondal | |
| Sampling Plan | : | RVB/FM/45 | |
| Analysis completed on | : | 31.07.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 9060 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | : | Temperature : 27.5°C, Transported in Ic | e box, Cold chain maintained |

MICROBIOLOGICAL TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|-----------------|-------------------------|----------------|---------|---|
| 1 | Faecal Coliform | APHA 23rd Edition 9221E | MPN/ 100 ml | <2 | < 1000 |

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

-: END OF TEST REPORT:-

Report Verified by

(Pijush Kanti Dutta)

Sr. Microbiologist Authorized Signatory



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TEST REPORT

| No. E(D)/23-24/578 | _ | Date: 03 August 2023 | Page 1 of 1 |
|---|----|---|--|
| Issued to | | M/s. PARADEEP PHOSPHATE Paradeep, Odisha | LIMITED |
| Description of Sample | 13 | Effluent | Parameter Tested: |
| Collection Source | : | ETP Outlet | nH TSS O & C F |
| Sample Drawn by us on | : | 29.07.2023 at 2.20 P.M. | NH-N, TKN, NH-, P, N |
| Sample Carried out by | 3 | Mr. S. Banerjee and Mr. G. Mondal | 1. |
| Sampling Plan | - | RVB/FM/45 | |
| Analysis completed on | : | 02.08.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 1060 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | 2 | Temperature : 28.2°C, Transported in Ice | box. Cold chain maintained |

TEST FINDINGS:

| Test Parameters | Test Method | Unit | Results | Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------------------------------|---|--|--|--|
| pH Value | APHA 23rd edition-4500H+B | 344 | 7.5 | 6.5 - 8.5 |
| Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 14 | 100 (Max.) |
| Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | BDL | 10 (Max.) |
| Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 2.72 | 10 (Max.) |
| Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 17 | 50 (Max.) |
| Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 18 | 75 (Max.) |
| Free Ammonia as NH ₃ | APHA 23rd edition 4500 NH3F | mg/l | 2.42 | 4 (Max.) |
| Dissolved Phosphates as P | APHA 23rd edition 4500-PD | mg/l | 2.85 | 5 (Max.) |
| Nitrate Nitrogen as NO3-N | APHA 23rd edition 4500-N03D | mg/l | 3.70 | 20 (Max.) |
| | Test Parameters pH Value Total Suspended Solids (TSS) Oil & Grease (O & G) Fluoride as F Ammoniacal Nitrogen as NH ₃ -N Total Kjeldahl Nitrogen (TKN) as N Free Ammonia as NH ₃ Dissolved Phosphates as P Nitrate Nitrogen as NO ₃ -N | Test ParametersTest MethodpH ValueAPHA 23rd edition-4500H+BTotal Suspended Solids (TSS)APHA 23rd edition 2540DOil & Grease (O & G)APHA 23rd edition 5520BFluoride as FAPHA 23rd edition 4500 F-CAmmoniacal Nitrogen as NH ₃ -NAPHA 23rd edition 4500 NH ₃ FTotal Kjeldahl Nitrogen (TKN) as NAPHA 23rd edition 4500 NH ₃ FDissolved Phosphates as PAPHA 23rd edition 4500 NH ₃ FNitrate Nitrogen as NO ₃ -NAPHA 23rd edition 4500-No ₃ D | Test ParametersTest MethodUnitpH ValueAPHA 23rd edition-4500H+BTotal Suspended Solids (TSS)APHA 23rd edition 2540Dmg/lOil & Grease (O & G)APHA 23rd edition 5520Bmg/lFluoride as FAPHA 23rd edition 4500 F-Cmg/lAmmoniacal Nitrogen as NH3-NAPHA 23rd edition 4500 NH3Fmg/lTotal Kjeldahl Nitrogen (TKN) as NAPHA 23rd edition 4500 NH3Fmg/lFree Ammonia as NH3APHA 23rd edition 4500 NH3Fmg/lDissolved Phosphates as PAPHA 23rd edition 4500 NH3Fmg/lNitrate Nitrogen as NO3-NAPHA 23rd edition 4500-N03Dmg/l | Test ParametersTest MethodUnitResultspH ValueAPHA 23rd edition-4500H+B7.5Total Suspended Solids (TSS)APHA 23rd edition 2540Dmg/l14Oil & Grease (O & G)APHA 23rd edition 5520Bmg/lBDLFluoride as FAPHA 23rd edition 4500 F-Cmg/l2.72Ammoniacal Nitrogen as NH ₃ -NAPHA 23rd edition 4500 NH ₃ Fmg/l17Total Kjeldahl Nitrogen (TKN) as NAPHA 23rd edition 4500 NH ₃ Fmg/l18Free Ammonia as NH ₃ APHA 23rd edition 4500 NH ₃ Fmg/l2.42Dissolved Phosphates as PAPHA 23rd edition 4500-NDmg/l2.85Nitrate Nitrogen as NO ₃ -NAPHA 23rd edition 4500-N0 ₃ Dmg/l3.70 |

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

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

Report Verified by

(J. Das)

(Dr. R. KARIM) **Technical Manager** Authorised Signatory



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. . .

TEST REPORT

| AP-FG/23-24/529 | Date: August 02, 2023 | 3 | | |
|--|--|---------------------|-----------------|---------------|
| sued to | : M/S. PARADEEP PHOSPHATE LT | D. | | |
| dress | : Paradeep, Odisha. | Fa | uinment use | d: |
| ample Description | : Stack Emission / Flue Gas | ID No · RVB/SMK | /05 (Cal. Valid | ty: 17/06/24) |
| ate & time of sampling | : 24.07.2023 (02:30 P.M. to 03:00 P.M.) | Par | ameters Tes | ted |
| ampling Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Physical : Tem | p., Velocity. | Gas flow |
| nalysis Completed on | : 02.08.2023 | Chemical : CC | , CO2 PM & | TF |
| | | Chemiter | | |
| A. General information al | bout stack : | | | |
| Boiler connected to | : DAP - A | | | |
| 2. Emission due to | Process Eminision | | | |
| Material of construction | of stack : M.S. | | | |
| Shape of stack | : Circular. | | | |
| Whether stack is provided | led with permanent platform at lauder . 103. | | | |
| B. Physical characteristi | cs of stack : | | | |
| Height of the stack from | n ground level 50 W | | | |
| Diameter of the stack a | t sampling point 22.8 M | | | |
| No. of Traverse point | ; 32 NOS. | | | |
| Height of the sampling | point from GL : 35 M | | | |
| C. Analysis / Characteri | stic of stack Gas / Flue Gas : | | .Load : | |
| 1. Fuel used : | 2. Fuel consumption : | | | |
| D. Environmental condi | tions : | 2 Temperatu | re : 34 °C | |
| 1. Barometric pressure : | 754 mmHg | a. remperint | | |
| E Results of Physical F | Parameters of Flue Gas : | Unit | R | esults |
| SI No Test Parameters | Test Method | "C | | 58 |
| 1 Temperature of emiss | ion IS 11255 : Part 3 : 2008 | C I | | 19.12 |
| 2 Velocity of gas in du | IS 11255:Part 3:2008 | m/sec | 2 | 41094 |
| 2. Velocity of gas finds | IS 11255:Part 3:2008 | NM ³ /hr | 3 | 41004 |
| 3. Quantity of gas now | amission : | | | 1 |
| E. Results of gaseous | Test Method | Unit | Results | Norms |
| SI No Test Parameters | Test method | | | as per CPCB |
| | 10 11255 - Pert 1 - 1085 By Orsat | % v/v | <0.2 | Not Available |
| 1. Carbon monoxide | IS 11255 Part 1 : 1985 By Orsan | 04 4/4 | 0.2 | Not Availabl |
| 7 Carbon dioxide | IS 11255 : Part 1 : 1985 By Orsau | 21-22 | 55 | 150 max. |
| 2 Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm5 | 0.00 | Not Availab |
| A Toral Eluorida | 1S 11255 (Part - 5) : 1990 | mg/Nm ² | 2.13 | Not Availab |
| 4. Total Fluoride | avice | | | |
| F. Pollution control ut | control devices attached with the stack : Wet Scru | ubber | | |
| Details of pollution | -: END OF TEST REPORT : | | nn. | |
| XON | | | X can | 5 |
| | | 3 | D P KAR | (M) |

S. Mondal

lechnical Manager Authorised Signatory For R.V.BRIGGS & CO. (P) LTD.

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TEST REPORT

| No. AP-FG/23-24/529 | | | Date: August 02, 2023 | | | Page 2 of 2 |
|---------------------|---|-------------------------------------|--|--------------------|--------------|------------------|
| ssued | to | : M/S. PA | RADEEP PHOSPHATE LTD | | | |
| Addres | s | : Paradeep | , Odisha. | 1 1 | aufament u | rade |
| Sample | Description | : Stack Em | ission / Flue Gas | ID No - DVD/SM | Quipment u | Setty: 17/06/24) |
| Date & | time of sampling | : 24.07.202 | 3 (02:30 P.M. to 03:00 P.M.) | ID NO. KYDIAN | anamatan T | orted |
| Sampli | ng Plan & Method | : RVB/FM | (44 & IS: 11255 (Part-1,2 & 3) | <u> </u> | arameters 1 | Esteu |
| Analysi | is Completed on | : 02.08.202 | 3 | | Chemical :] | NH3 |
| A. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling poin | t : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | point from GL | : 35 M | | | |
| C. | Analysis / Characterist | tic of stack Ga | as / Flue Gas : | | S | |
| 1. | Fuel used : | | Fuel consumption : | | 3.Load : | |
| D, | Results of gaseous en | nission : | | | | 1 |
| SLNo | Test Parameters | | Test Method | Unit | Results | Norms |
| 51.140 | | | | | | as per CPCB |
| | | | | | | and ber and and |
| 1. | Ammonia as NH3 | Method (In | s of Air Sampling & Analysis, 3rd Ed. ndophenol Method), Method 401 | mg/Nm ³ | 71 | Not Available |
| 1. E. | Ammonia as NH ₃ Pollution control devi | (li <u>ce</u> trol devices at | ndophenol Method), Method 401 | r mg/Nm | 71 | |

-: END OF TEST REPORT :-

field by Ret S. Mondal

(Dr. R. KARIM)

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

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TEST REPORT

| AP-FG/23-24/530 | Date: August 02, 2023 | | | Page Tori |
|--|---|---|--------------------------------|---|
| sued to | : M/S. PARADEEP PHOSPHATE LTD |) . | | 1 |
| ddress ample Description | : Paradeep, Odisha. : Stack Emission / Flue Gas | Eq ID No - RVB/SMK | uipment use /05 (Cal. Valid | d: |
| Date & time of sampling ampling Plan & Method analysis Completed on | : 24.07.2023 (03:10 P.M. to 03:44 P.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 02.08.2023 | Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ , PM & TF | | |
| A. General information a 1. Boiler connected to 2. Emission due to 3. Material of construction 4. Shape of stack 5. Whether stack is provid B. Physical characterist 1. Height of the stack from 2. Diameter of the stack a 3. No. of Traverse point 4. Height of the sampling | bout stack : : DAP - B : Process Emmision n of stack : M.S. : Circular. ded with permanent platform & ladder : Yes. ics of stack : m ground level : 50 M at sampling point : 2.8 M : 32 Nos. point from GL : 35 M stic of stack Gas / Flue Gas : | | | |
| Fuel used : Environmental cond Barometric pressure : | 2. Fuel consumption : itions : 754 mmHg | 2. Temperatu | re : 34 °C | |
| T. Barometre pressine | Parameters of Flue Gas : | | p | aculta |
| SI No Test Parameters 1. Temperature of emis 2. Velocity of gas in du | Test Method sion IS 11255 : Part 3 : 2008 ict IS 11255:Part 3:2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | °C m/sec NM ³ /hr | 59 17.48 308913 | |
| 3. Quantity of gas flow | amission ' | | | 1 |
| E. Results of gaseous SI No Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| Carbon monoxide Carbon dioxide S. Particulate Matters 4. Total Fluoride | IS 11255 : Part I : 1985 By Orsat IS 11255 : Part I : 1985 By Orsat IS 11255 : Part I : 1985 IS 11255 : Part I : 1985 IS 11255 (Part - 5) : 1990 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.1 67 2.21 | Not Available Not Available 150 max. Not Available |
| F. Pollution control d Details of pollution | evice control devices attached with the stack : Wet Scrub -: END OF TEST REPORT :- | ber | nm. | |

Repor d by S. Mondal

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

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TAHER MANSION, 1ST FLOOR 9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| No. AP-FG/23-24/530 | | | Date: August 02, 2023 | | | Page 2 of 2 |
|---------------------|--------------------------|------------------|---------------------------------------|----------------|-------------------------------|----------------------------|
| Issued to | | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Addres | s | : Paradeep | , Odisha. | | | |
| Sample | Description | : Stack Em | ission / Flue Gas | ID No.: RVB/SN | Equipment u AK/05 (Cal. Va | ised: lidity: 17/06/24) |
| Date & | time of sampling | - DVD/EM | AA & IS- 11755 (Part-1 7 & 3) | P | arameters 7 | ested |
| Analua | is Completed on | · 02 08 202 | a (13. 11235 (1 a) 1,2 (2 5) | 1 1 | | |
| Anaiys | is Completed on | . 02.00.202 | 2 | | Chemical : | NH3 |
| Α. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | d with perman | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Ga | s / Flue Gas : | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous em | ission : | | | | 1 |
| SINO | Test Parameters | | Test Method | Unit | Results | Norms |
| 51.10 | rest ratameters | | | | | CDCD |
| | | | | | | as per CPCB |
| | | Methods | s of Air Sampling & Analysis, 3rd Ed. | a1.3 | 76 | Not Available |
| 1. | Ammonia as NH3 | (In | dophenol Method), Method 401 | mg/Nm | 70 | 1 AOL AVAILADIN |
| F | Pollution control device | e | | - | | |
| | Details of pollution con | trol devices att | ached with the stack : Wet Scrubbe | C. | | |

-: END OF TEST REPORT :-

S. Mondal

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

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Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| 2/23.24/531 | Date: August 02, 2023 | | | Fageron |
|---|---|--|--|---|
| 3/23-24/301 | : M/S. PARADEEP PHOSPHATE LTD |) . | | |
| scription | : Paradeep, Odisha. : Stack Emission / Flue Gas | Equ ID No.: RVB/SMK/ | ipment used 05 (Cal. Validit | <u>i:</u> y: 17/06/24) |
| ne of sampling Plan & Method Completed on | : 24.07.2023 (04.00 P.M. 0 04.54 P.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 02.08.2023 | Para Physical : Temp Chemical : CO, | ., Velocity, CO2 PM & | ted Gas flow TF |
| eneral information abo piler connected to nission due to aterial of construction of hape of stack /hether stack is provided hysical characteristics leight of the stack from po- piameter of the stack at s lo. of Traverse point leight of the sampling po- Analysis / Characteristics Fuel used : | ut stack : : DAP - C : Process Emmision : M.S. f stack : M.S. : Circular. : Circular. with permanent platform & ladder : Yes. of stack : ground level : 50 M ampling point : 2.8 M : 32 Nos. : 32 Nos. oint from GL : 35 M c of stack Gas / Flue Gas : 2. Fuel consumption : | . 3. | Load : | |
| Environmental condition Barometric pressure : 75 | n <u>s :</u> 4 mmHg | 2. Temperatur | e : 34 °C | |
| Results of Physical Pa | rameters of Flue Gas : | Unit | R | esults |
| Test Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow | n IS 11255 : Part 3 : 2008 IS 11255:Part 3 :2008 IS 11255:Part 3 :2008 IS 11255:Part 3 :2008 | °C m/sec NM ³ /hr | 2 | 62 6.24 98801 |
| Results of gaseous er Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| Carbon monoxide Carbon dioxide | IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.4 43 3.78 | Not Available Not Available 150 max. Not Available |
| | scription te of sampling Plan & Method completed on eneral information abou iller connected to nission due to aterial of construction of tape of stack thether stack is provided hysical characteristics eight of the stack from g iameter of the stack at s to, of Traverse point leight of the sampling po- nalysis / Characteristi uel used : invironmental condition Barometric pressure : 75 Results of Physical Par Test Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous en Test Parameters Carbon monoxide Carbon monoxide | SIZES 24:031 : M/S. PARADEEP PHOSPHATE LTE : Paradeep, Odisha. scription : Stack Emission / Flue Gas te of sampling : 24.07.2023 (04:00 P.M. to 04:34 P.M.) Plan & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) ompleted on : 02.08.2023 eneral information about stack : : oiller connected to : DAP - C nission due to : Process Emmision aterial of construction of stack : M.S. hether stack is provided with permanent platform & ladder : Yes. hysical characteristics of stack : eight of the stack from ground level : 50 M iameter of the stack at sampling point : 32 Nos. teight of the sampling point from GL : 35 M malysis / Characteristic of stack Gas / Flue Gas : : rule used : 2. Fuel consumption : novironmental conditions : : Barometric pressure : 754 mmHg : Results of gaseous emission : IS 11255 : Part 3 : 2008 Velocity of gas in duct IS 11255 : Part 3 : 2008 Quantity of gas flow IS 11255 : Part 1 : 1985 By Orsat Carbon monoxide IS 11255 : Part 1 : 1985 B | Size2-24/031 : M/S. PARADEEP PHOSPHATE LTD. : Paradeep, Odisha. : Stack Emission / Flue Gas scription : Stack Emission / Flue Gas e of sampling : 24.07.2023 (04:00 P.M. to 04:34 P.M.) Plan & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) ompleted on : 02.08.2023 emeral information about stack : : DAP - C iller connected to : DAP - C insision due to : Process Emmision aterial of construction of stack : M.S. iape of stack : Circular. hether stack is provided with permanent platform & ladder : Yes. hysical characteristics of stack : : S0 M iameter of the stack at sampling point : 32 Nos. iopint from GL : 35 M inalysis / Characteristic of stack Gas / Flue Gas : : iule used : 2. Fuel consumption : 3. invironmental conditions : : 32008 °C reseautes of Physical Parameters of Flue Gas : : : . iule used : 2. Fuel consumption : 3. : Temperature of emission IS 11255 : Part 3 : 2008 °C <td< td=""><td>Image: Stack Emission / Flue Gas Equipment used Stack Emission / Flue Gas Equipment used Stack Emission / Flue Gas ID No: RVB/SMK/05 (Cal. Validi Parameters Tes Parameters Tes Physical : Temp., Velocity, Chemical : CO, CO₂ PM & ID No: RVB/SMK/05 (Cal. Validi Parameters Tes Physical : Temp., Velocity, Chemical : CO, CO₂ PM & ID No: RVB/SMK/05 (Cal. Validi Parameters Tes Physical : Temp., Velocity, Chemical : CO, CO₂ PM & ID No: RVB/SMK/05 (Cal. Validi ID No: RVB/SMK/05 (Cal. Validi Physical : Temp., Velocity, Chemical : CO, CO₂ PM & ID No: RVB/SMK/05 (Cal. Validi ID No: RVB/SMK/05 (Cal. Validi Physical : Temp., Velocity, Chemical : CO, CO₂ PM & ID No: RVB/SMK/05 (Cal. Validi ID No: RVB/SMK/05 (Cal. Vali</td></td<> | Image: Stack Emission / Flue Gas Equipment used Stack Emission / Flue Gas Equipment used Stack Emission / Flue Gas ID No: RVB/SMK/05 (Cal. Validi Parameters Tes Parameters Tes Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & ID No: RVB/SMK/05 (Cal. Validi Parameters Tes Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & ID No: RVB/SMK/05 (Cal. Validi Parameters Tes Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & ID No: RVB/SMK/05 (Cal. Validi ID No: RVB/SMK/05 (Cal. Validi Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & ID No: RVB/SMK/05 (Cal. Validi ID No: RVB/SMK/05 (Cal. Validi Physical : Temp., Velocity, Chemical : CO, CO ₂ PM & ID No: RVB/SMK/05 (Cal. Validi ID No: RVB/SMK/05 (Cal. Vali |

Report V S. Monda

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

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TEST REPORT

| No. AP-FG/23-24/531 | | Date: August 02, 2023 | | | Page 2 of 2 |
|------------------------------------|---|--|--|--|--|
| | : M/S. PA | ARADEEP PHOSPHATE LTD Odisha |). | | |
| ription of compling | : Stack Em | nission / Flue Gas 3 (04:00 P.M. to 04:34 P.M.) | E ID No.: RVB/SN | Cquipment u 4K/05 (Cal. Val | sed: lidity: 17/06/24) |
| an & Method | · RVB/FM | /44 & IS: 11255 (Part-1.2 & 3) | P | arameters T | ested |
| mpleted on | : 02.08.202 | 23 | | Chemical :) | NH3 |
| eral information at | out stack : | | | | |
| er connected to | | : DAP - C | | | |
| ssion due to | | : Process Emmision | | | |
| erial of construction | of stack | : M.S. | | | |
| e of stack | | : Circular. | | | |
| ther stack is provid | ed with perman | nent platform & ladder : Yes. | | | |
| sical characteristic | s of stack : | | | | |
| tht of the stack from | ground level | : 50 M | | | |
| neter of the stack at | sampling point | t : 2.8 M | | | |
| of Traverse point | | : 32 Nos. | | | |
| ght of the sampling | point from GL | : 35 M | | | |
| lysis / Characteris | tic of stack Ga | as / Flue Gas : | | | |
| used : | | Fuel consumption : | | 3.Load : | |
| ults of gaseous en | nission : | | | | |
| est Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| nmonia as NH3 | Method (Is | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | | 82 | Not Available |
| est P nmoni lutior ails o | a as NH ₃ a control devi f pollution cor | a as NH ₃ Method (In control device) f pollution control devices at | Parameters Test Method a as NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 a control device Fpollution control devices attached with the stack : Wet Scrubbe | Parameters Test Method Unit a as NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 mg/Nm ³ a control device f pollution control devices attached with the stack : Wet Scrubber | Parameters Test Method Unit Results a as NH ₃ Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 mg/Nm ³ 82 a control device f pollution control devices attached with the stack : Wet Scrubber Scrubber Scrubber |

-: END OF TEST REPORT :-

ort Ver fied S. Mondal

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

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TEST REPORT

| AD EC123-24/532 | Date: August 02, 2023 | 1 | | lugerer |
|--|--|---------------------|-----------------|---------------|
| D. AP-FG/23-24/302 | : M/S. PARADEEP PHOSPHATE LT | D. | | |
| sued to | - Paradeen Odisha | | | |
| idress | - Stack Emission / Flue Gas | Equ | ipment used | v: 17/06/24) |
| mple Description | - 24 07 2023 (04:45 P.M. to 05:21 P.M.) | ID No : RVB/SMN/ | /5 (Cal. Valien | bed |
| ate & time of sampling | - RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Para | Valocity | Gas flow |
| impling Plan & Method | 02.08.2023 | Physical : Temp | CO PM& | TF |
| nalysis Completed on | | Chemical: CO, | 002,1110 | |
| A General information | about stack : | | | |
| 1 Boiler connected to | : DAP - D | | | |
| Emission due to | : Process Emmission | | | |
| Material of construction | on of stack : M.S. | | | |
| A Shane of stack | : Circular. | | | |
| Whether stack is prov | ided with permanent platform & ladder : Yes. | | | |
| B. Physical characteris | tics of stack : | | | |
| 1. Height of the stack fr | om ground level | | | 1 |
| 2. Diameter of the stack | at sampling point 22.0 M | | | |
| 3. No. of Traverse point | : 32 Nos. | | | |
| 4 Height of the sampling | ig point from GL : 35 M | | | |
| C. Analysis / Characte | ristic of stack Gas / Flue Gas . | 3. | Load : | |
| 1. Fuel used : | 2. Fuer consumption | | | |
| D. Environmental con | ditions : | 2. Temperatur | re:33 °C | |
| 1. Barometric pressure | : 754 mmHg | | | |
| E. Results of Physica | Parameters of Flue Gas. | Unit | R | esults |
| SI No Test Parameter | s 11255 : Part 3 : 2008 | °C | | 00 |
| 1 Temperature of em | ission IS 11255 Trace 2 2008 | m/sec | | 16.86 |
| 2 Velocity of gas in G | luct IS 11255:Part 3.2008 | NM ³ /hr | 2 | 93915 |
| 2. Quantity of gas flo | w 1S 11255:Part 3:2008 | ISIN 710 | | |
| F Results of gaseou | s emission : | Unit | Results | Norms |
| E. Results or garameter | Test Method | Clin | | as per CPCB |
| SINO Test Farantetes | | % viv | <0.2 | Not Available |
| Carbon monovide | IS 11255 : Part 1 : 1985 By Orsat | Of whe | 0.3 | Not Available |
| 1. Carbon monoxide | IS 11255 : Part 1 : 1985 By Orsat | 70 4/ 4 | 48 | 150 max. |
| 2. Carbon dioxide | IS 11255 : Part 1 : 1985 | mg/Nm3 | 40 | Not Availabl |
| 3. Particulate Matter | s 11255 (Part - 5) : 1990 | mg/Nm [*] | 2.13 | Not Available |
| 4. Total Fluoride | 13 (1639 (510) 57 | | | |
| F. Pollution control | device | rubber | - | |
| Details of pollution | en control devices attached with the TEST REPORT | 5- | an. | + |
| 4 | | | alac | |

ed by S. Mondal

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

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TEST REPORT

| No. AP-FG/23-24/532 | | | Date: August 02, 2023 | | | Page 2 of 2 |
|---------------------|--------------------------|------------------|---------------------------------------|----------------|-------------------------------|----------------------------|
| Issued | to | : M/S. PA | RADEEP PHOSPHATE LTD | | | |
| Addres | s | : Paradeep | . Odisha. | | | |
| Sample | Description | : Stack Em | ission / Flue Gas | ID No.: RVB/SN | Equipment u MK/05 (Cal. Va | ised: lidity: 17/06/24) |
| Campline & | time of sampling | · DVD/EM | (44 & IS- 11255 (Part 1 2 & 3) | F | Parameters 1 | Tested |
| Analysi | s Completed on | 02 08 202 | 13 | 1 5 | | |
| Anaiya | s completed on | . 02.00.202 | | | Chemical : | NH3 |
| A. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | d with perman | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | |
| C. | Analysis / Characterist | ic of stack Ga | is / Flue Gas : | | | |
| 1. | Fuel used : | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous em | ission : | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms |
| 51110 | | | | | | CDCP |
| | | | | | | as per CPCB |
| | | Method | s of Air Sampling & Analysis, 3rd Ed. | | 70 | Not Available |
| 1. | Ammonia as NH3 | (In | dophenol Method), Method 401 | mg/Nm" | 19 | Not Available |
| F | Pollution control devic | 20 | | | | |
| E, | Datails of pollution con | trol devices att | ached with the stack : Wet Scrubber | ÷2 | | |

-: END OF TEST REPORT :-

S. Mondal

(Dr. R. KARIM)

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

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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| AP-FG/23-24/533 | Date: August 02, 20 | 23 | Tuge Te. |
|--|---|--------------------------------------|--|
| sued to | : M/S. PARADEEP PHOSPHATE L | .TD. | |
| idress | : Paradeep, Odisha. : Stack Emission / Flue Gas | Equip | nent used: Cal. Validity: 17/06/24) |
| ate & time of sampling ampling Plan & Method nalysis Completed on | : 25.07.2023 (02:20 P.M. to 02:50 P.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 02.08.2023 | Physical : Temp., Chemical : CO, CO | eters Tested Velocity, Gas flow O ₂ , SO ₂ & Acid Mist |
| A. <u>General information</u> 1. Boiler connected to 2. Emission due to 3. Material of construct 4. Shape of stack 5. Whether stack is properties B. <u>Physical character</u> | istics of stack : : SAP - A : Process Emmision : M.S. : Circular. : N.S. : Circular. : | (#) | |
| Height of the stack Diameter of the stack No. of Traverse poil Height of the samp C. Analysis / Charact | k at sampling point : 2.7 M int : 32 Nos. ing point from GL : 35 M teristic of stack Gas / Flue Gas : 2. Fuel consumption : | 3.Los | id : |
| D. Environmental co 1. Barometric pressure | nditions : e : 754 mmHg | 2. Temperature : | 33 °C |
| E. Results of Physic | al Parameters of Flue Gas : | Unit | Results |
| SI No Test Paramete 1. Temperature of er 2. Velocity of gas in 3. Quantity of gas fl | rs Test Method nission IS 11255 : Part 3 : 2008 duct IS 11255: Part 3:2008 ow IS 11255: Part 3:2008 | °C m/sec NM ³ /hr | 80 10.58 172399 |
| F. Results of gaseo | us emission : | Unit | Results |
| SI No Test Parameter 1. Sulphur dioxide 2. Carbon monoxid | e Test Method IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 | mg/Nm ³ % v/v % v/v | 691 <0.2 0.2 |

by Mondal

(Dr. R. KARIM) Technical Manager

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TEST REPORT

| o. AP-FC | G/23-24/534 | Date: August 02, 2023 | | Fage 1 01 | |
|--|---|--|---|--|--|
| sued to | | : M/S. PARADEEP PHOSPHATE LTD |) . | | |
| ddress | escription | : Paradeep, Odisha. : Stack Emission / Flue Gas | Equip | nent used: Cal. Validity: 17/06/24) | |
| ampling Plan & Method ampling Plan & Method analysis Completed on | | : 25.07.2023 (03:00 P.M. to 03:46 P.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 02.08.2023 | Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ , SO ₂ & Acid Mi | | |
| A. Ge 1. Bo 2. En 3. Ma 4. Sh 5. W B. Ph 1. He 2. Di 3. No 4. Hi C. All | eneral information about piler connected to nission due to aterial of construction of mape of stack hether stack is provided hysical characteristics eight of the stack from g iameter of the stack at sa lo. of Traverse point leight of the sampling po malvsis / Characteristic | it stack : : SAP - B : Process Emmision f stack : M.S. : Circular. with permanent platform & ladder : Yes. of stack : round level : 120 M impling point : 2.7 M : 32 Nos. int from GL : 35 M : of stack Gas / Flue Gas : | 21 or | | |
| 1. Fr | uel used : invironmental condition Barometric pressure : 754 | 2. Fuel consumption : | 2. Temperature : | 34 °C | |
| FR | Results of Physical Para | ameters of Flue Gas : | | Results | |
| SI No 1. 2. 3 | Test Parameters Temperature of emission Velocity of gas in duct Ouantity of gas flow | Test Method IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | °C m/sec NM ³ /hr | 84 12.35 200803 | |
| F. F | Results of gaseous em | ission : | Talt | Results | |
| SI No 1. 2. 3. | Test Parameters Sulphur dioxide Carbon monoxide Carbon dioxide | Test Method IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, | mg/Nm ³ % v/v % v/v mg/Nm ³ | 675 <0.2 0.2 35 | |

Mondal

(Dr. R. KARIM) Technical Manager

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

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TEST REPORT

| o. AP-FG/23-24/535 | | Date: August 02, 2023 | 3 | Fagero |
|---|---------------------|---------------------------------------|---------------------|---------------------------|
| sued to | : M/S. P/ | ARADEEP PHOSPHATE LT | D. | |
| ddress | : Paradeep | , Odisha. | Fault | ment word: |
| ample Description | : Stack En | nission / Flue Gas | ID No - RVB/SMK/05 | (Cal. Validity: 17/06/24) |
| Date & time of sampling | : 25.07.20 | 23 (04:05 P.M. to 04:35 P.M.) | Param | eters Tested |
| ampling Plan & Method | : RVB/FM | (45 & 15; 11255 (Part-1,2 & 5) | Physical : Temp., | Velocity, Gas flow |
| analysis Completed on | : 02.08.20 | 23 | Chemical : CO, C | O2, SO2 & Acid Mis |
| A. General information | n about stack : | 1127420 - 14 C | | |
| 1. Boiler connected to | | : SAP - C | | |
| 2. Emission due to | | : Process Emission | | |
| Material of construct | tion of stack | : M.S. | | |
| Shape of stack | uided with norma | nent nlatform & ladder : Yes. | | |
| 5. Whether stack is pro | ietics of stack : | nem pratoria de la como | | |
| B. Physical character | from ground level | : 120 M | | |
| Diameter of the state | k at sampling poin | nt : 2.7 M | | |
| No. of Traverse poi | nt | : 30 Nos. | | |
| 4. Height of the sampl | ing point from GL | : 35 M | | |
| C. Analysis / Charact | teristic of stack G | as / Flue Gas : | 3.Los | ad : |
| 1. Fuel used : | 1947 | 2. Fuel consumption : | | |
| D. Environmental co | nditions : | | 2. Temperature : | 33 °C |
| Barometric pressur | e : 754 mmHg | motors of stack Gas / Flue Gas | | |
| E. Results of Physic | al & General Para | Test Method | Unit | Results |
| SI No Test Parameter | rs | IS 11255 : Part 3 : 2008 | °C | 82 |
| 1. Temperature of en | nission | IS 11255 Part 3:2008 | m/sec | 8.67 |
| 2. Velocity of gas in | duct | 10 11255 Dec 2:000 | NM ³ /hr | 143153 |
| 3. Quantity of gas flo | ow | 15 11255:Part 5:2000 | Contral and | 599 |
| 4. Sulphur dioxide | | IS 11255 : Part 2 : 1985 | mg/Nm | <0.2 |
| 5. Carbon monoxide | | 1S 13270 (By Orsat): 1992 | % V/V | -0.2 |
| 6 Carbon dioxide | | IS 13270 (By Orsat): 1992 | % v/v | 0.2 |
| 0, Caroon dioxide | | SOP No.: RVB/SOP/01/20, | mg/Nm ³ | 28 |
| 7. Acid Mist | | Issue No.: 04, Issue Date: 10.01.2018 | ing the | |
| F. Pollution control | device | | | |
| Details of pollution | on control devices | attached with the stack : Nil | | 0.00 |
| 1001 | | . END OF TEST REPORT. | | N Kar |
| 1 Shis | | | (Dr. | R. KARIM) |

Report Verified by S. Mondal

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

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TEST REPORT

| o. AP-FG/23-24/536 | Date: August 02, 202 | 23 | | Tugerer | |
|--|--|--|---|---|--|
| sued to | : M/S. PARADEEP PHOSPHATE L | .TD. | | | |
| ample Description | : Paradeep, Odisha. : Stack Emission / Flue Gas | ID No.: RVB/SMK | Equipment used: SMK/05 (Cal. Validity: 17/06/24) | | |
| Date & time of sampling sampling Plan & Method Analysis Completed on | : 25.07.2023 (11:00 A.M. to 11:45 A.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 02.08.2023 | Par Physical : Tem Chemical : CC | Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ , PM & TF | | |
| A. <u>General information</u> 1. Boiler connected to 2. Emission due to 3. Material of construct 4. Shape of stack 5. Whether stack is properly and the stack 5. Whether stack is properly and the stack 6. <u>Physical character</u> 1. Height of the stack 2. Diameter of the stack 3. No. of Traverse properly and the start 4. Height of the same | etion of stack : rovided with permanent platform & ladder : Yes. ristics of stack : from ground level : 50 M ek at sampling point : 2.7 M int : 32 Nos. bling point from GL : 35 M togistic of stack Gas / Flue Gas : | | | | |
| C. Analysis / Charac | 2. Fuel consumption : | | .Load : | | |
| D. Environmental co | re : 754 mmHg | 2. Temperatu | re : 32 °C | | |
| F Results of Physic | cal Parameters of Flue Gas : | Unit | R | esults | |
| SI No Test Parameter 1. Temperature of er 2. Velocity of gas in 3. Quantity of gas f | Test Method mission IS 11255 : Part 3 : 2008 a duct IS 11255:Part 3:2008 low IS 11255:Part 3:2008 | °C m/sec NM ³ /hr | 1 | 42 5.72 07514 | |
| F. Results of gased SI No Test Paramet | ers Test Method | Unit | Results | Norms as per CPCB | |
| Carbon monoxid Carbon dioxide A Particulate Matt | le IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.2 39 3.20 | Not Available Not Available 150 max. Not Available | |

-: END OF TEST REPORT :-

field by S. Mondal

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TEST REPORT

| No. AP-FG/23-24/537 | | Date: August 02, 2023 Page 1 of | | | | |
|-----------------------|-----------------------------|---|---------------------------|--|--|--|
| issued to | | : M/S. PARADEEP PHOSPHATE LTD. | | | | |
| ddres | s | : Paradeep, Odisha. | | | | |
| ample | Description | : Stack Emission / Flue Gas | Equi ID No.: RVB/SMK/0 | pment used: 5 (Cal. Validity: 17/06/24) | | |
| Date & | time of sampling | : 28.07.2025 (11.50 A.M. to 12.00 1.M.) | Para | neters Tested | | |
| amplit | ng Plan & Method | (NVB/PM/45 & 15. 11255 (Parena & 5) | Physical : Temp. | Velocity, Gas flow | | |
| Analysis Completed on | | . 02.08.2025 | Chemical : CO, CO2, & PM | | | |
| A. | General information about | ut stack : | | | | |
| 1. | Boiler 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. | | | | |
| В. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level : 30 M | | | | |
| 2. | Diameter of the stack at sa | impling point : 1.03 M | | | | |
| 3. | No. of Traverse point | : 12 Nos. | | | | |
| C. | Analysis / Characteristic | Of stack Gas / Flue Gas : | 3.Lc | ad : | | |
| 1. | Fuel used : | 2. Fuer consumption : | | | | |
| D. | Environmental condition | 15 : | 2 Temperature | 33 °C | | |
| 1. | Barometric pressure : 754 | mmHg | 2. Temperature . | | | |
| E. | Results of Physical Para | Test Method | Unit | Results | | |
| SI No | Test Parameters | IS 11255 · Part 3 · 2008 | °C | 54 | | |
| 1. | Temperature of emission | 15 11255 . 1 41 5 1 2000 | minne | 17.76 | | |
| 2. | Velocity of gas in duct | IS 11255 ; Part 3 ; 2008 | m/sec | 17.70 | | |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 40/88 | | |
| F. | Results of gaseous emi | ssion : | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | |
| 1 | Carbon monoxide | IS 13270 (By Orsat): 1992 | % v/v | <0.2 | | |
| | Cashan dioxida | IS 13270 (By Orsat): 1992 | % v/v | 0.4 | | |
| 2. | Carbon dioxide | 18 11255 - Part 1 - 1985 | mg/Nm3 | 52 | | |
| 3. | Particulate Matters | 15 11455 . Fait 1 . 1985 | ingriting | | | |

ied by S. Mondal

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TAHER MANSION, 1ST FLOOR





TEST REPORT

| No. AP-FG/23-24/538 | | Date: August 02, 2023 Page 1 of | | | | | |
|-----------------------|-----------------------------|---|--------------------------|--|--|--|--|
| Issued to | | : M/S. PARADEEP PHOSPHATE LTD. | | | | | |
| Addres | S | : Paradeep, Odisha. | | | | | |
| Sample | Description | : Stack Emission / Flue Gas | ID No.: RVB/SMK/0 | pment used: 5 (Cal. Validity: 17/06/24) | | | |
| Jate & | time of sampling | : 28.07.2025 (12.15 P.M. to 12.45 P.M.) | Para | meters Tested | | | |
| samplin | ig Plan & Method | : KVB/FM/45 & 15, 11255 (Fater,2 & 5) | Physical : Temp | Velocity, Gas flow | | | |
| Analysis Completed on | | . 02.08.2023 | Chemical : CO, CO2, & PM | | | | |
| Α. | General information about | ut stack : | | | | | |
| 1. | Boiler 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. | | | | | |
| В. | Physical characteristics | of stack : | | | | | |
| 1. | Height of the stack from g | round level : 30 M | | | | | |
| 2. | Diameter of the stack at sa | mpling point : 0.85 M | | | | | |
| 3. | No. of Traverse point | : 12 Nos. | | | | | |
| C. | Analysis / Characteristic | Of Stack Gas / File Gas : | 310 | ad : | | | |
| 1. | Fuel used : | 2. Puer consumption | 0.00 | | | | |
| D. | Environmental condition | <u>8.</u> | 7 Temperature | 33 °C | | | |
| 1. | Barometric pressure : 754 | maters of Elue Gas : | 2. Temperature | | | | |
| E. | Results of Physical Para | Test Method | Unit | Results | | | |
| SINO | Test Parameters | IS 11255 : Part 3 : 2008 | °C | 80 | | | |
| 1. | Temperature of emission | IS 11255 - Part 3 - 2008 | m/sec | 19.37 | | | |
| 2. | Velocity of gas in duct | 13 11233 - 1413 - 2000 | and a | 33207 | | | |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ^{-/hr} | 32207 | | | |
| F. | Results of gaseous emis | ssion : | | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | | |
| 1. | Carbon monoxide | 1S 13270 (By Orsat): 1992 | % v/v | <0.2 | | | |
| 2 | Carbon dioxide | IS 13270 (By Orsat): 1992 | % v/v | 0.2 | | | |
| 3 | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 61 | | | |
| 9+ | Farticulate Matters | | | | | | |

ed by S. Mondal

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

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TEST REPORT

| No. AP-FG/23-24/539 | | Date: August 02, 2023 Page 1 | | | | |
|---------------------|-----------------------------|---|---|----------------------|--|--|
| Issued to | | : M/S. PARADEEP PHOSPHATE LTD. | | | | |
| Address | | : Paradeep, Odisha. | | | | |
| Sample D | Description | : Stack Emission / Flue Gas | Equipment used: ID No : RVB/SMK/05 (Cal. Validity: 17/06/24) | | | |
| Date & ti | me of sampling | : 28.07.2023 (01:00 P.M. to 01:32 P.M.) | Para | meters Tested | | |
| Sampling | Plan & Method | : KV B/FM/45 & 15: 11255 (Faile1,2 & 5) | Physical : Temp | , Velocity, Gas flow | | |
| Analysis | Completed on | . 02.08.2025 | Chemical : CO, CO2, & PM | | | |
| A. G | eneral information about | ut stack : | | | | |
| 1. B | oiler connected to | : Zypmite - 3 | | | | |
| 2. E | mission due to | : Process Emmision | | | | |
| 3. N | faterial of construction of | stack : M.S. | | | | |
| 4. S | hape of stack | : Circular. | | | | |
| 5. V | Whether stack is provided | with permanent platform & ladder : Yes. | | | | |
| B. <u>P</u> | Physical characteristics | of stack : | | | | |
| 1. F | leight of the stack from g | round level : 30 M | | | | |
| 2. I | Diameter of the stack at sa | mpling point : 0.5 M | | | | |
| 3. N | No. of Traverse point | : 8 NOS. | | | | |
| C. A | Analysis / Characteristic | 2 Fuel consumption : | 3.L | oad : | | |
| 1. 1 | -uel used | a, ruer consumption : | | | | |
| D. <u>c</u> | Invitorimental condition | mmHa | 2 Temperature | : 32 °C | | |
| 1. 1 | Parometric pressure . 754 | meters of Flue Gas : | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | |
| 1 | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 52 | | |
| 2 | Velocity of gas in duct | 15 11255 : Part 3 : 2008 | m/sec | 16.36 | | |
| 3. | Ouantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 10219 | | |
| E. | Results of gaseous emis | ssion : | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | |
| 1 | Carbon monoxide | 1S 13270 (By Orsat): 1992 | % v/v | <0.2 | | |
| 2 | Carbon dioxide | IS 13270 (By Orsat): 1992 | % v/v | 0.4 | | |
| 1 | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 49 | | |
| 6 | Pollution control device | Press received to the second second | | | | |
| 0. | Datails of pollution contro | ol devices attached with the stack : Zypnite Plan | t Granulator. | | | |

ed by S. Mondal

(Dr. R. KARIM) Technical Manager

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

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TEST REPORT

| No. AP | -FG/23-24/540 | | Date: August 02, 2 | 2023 | | Page 1 01 | |
|--|----------------------|--------------------------------|----------------------|--------------------|---------------------------------------|---|--|
| ssued to | | : M/S. PARADEEP PHOSPHATE LTD. | | | | | |
| ddress | 5 | : Paradeep, Odisha. | | | | | |
| Sample Description : Stack Emission / Flue Gas | | | e Gas | | Equipme | ent used: | |
| ate & | time of sampling | : 28.07.2023 (10:20 A. | M. to 11:12 A.M.) | ID No.: | RVB/SMK/05 | (Cal. Validity: 17/06/24) | |
| amplin | g Plan & Method | : RVB/FM/45 & IS: 11 | 255 (Part-1,2 & 3) | | Paramet | ers Testea | |
| nalysis | s Completed on | : 02.08.2023 | | Physical : 1er | np., velocit | y, Gas now | |
| | | | | Chemical : 5 | 0 ₂ , NO ₂ , CC | 7, CO ₂ , & TM | |
| A. 1 | General information | on about stack : | Discol Company | or Sat 2 | | | |
| 1. | Stack connected to | | : Diesel General | or Set - 2 | | | |
| 2. | Emission due to | | : Burning of H.S | 5.D | | | |
| 3. | Material of constru- | ction of stack | : M.S. | | | | |
| 4. | Shape of stack | | : Circular. | lac | | | |
| 5. | Whether stack is pr | ovided with permanent p | 1 MV/A | i es | | | |
| 6. | Generator capacity | visting of stock : | . 1 /// / А | | | | |
| в. | Physical characte | fistics of stack . | · 20 M | | | | |
| 1. | Height of the stack | al at compling point | - 0.4 M | | | | |
| 2. | Diameter of the sta | ck at sampling point | - 8 Nos | | | | |
| 3. | No. of Traverse po | initian of stack Gas / E | Lue Gas ' | | | | |
| C. | Analysis / Charac | USD | lue ous . | 2 Fuel consu | mption : 22 | Lt/hr. | |
| 1. | Fuel used | nditions : | | | | | |
| υ. | Environmental co | nuluons . | | 2 Tamparatu | - 34 °C | | |
| 1. | Barometric pressur | re : 754 mmHg | | 2. Temperatu | 10.34 C | | |
| E. | Finding of Physic | al Parameters of Flue G | ias : | 1 11 16 1 | | Deculte | |
| SI No | Test Paramete | rs Tes | st Method | Unit | | 210 | |
| 1. | Temperature of en | nission IS 112 | 55 : Part 3 : 2008 | -C | | 16.63 | |
| 2. | Velocity of gas in | duct IS 112 | 55 : Part 3 : 2008 | m/sec | | 10.05 | |
| 3. | Quantity of gas flo | ow 15 112 | 55 : Part 3 : 2008 | NM/nr | | 4212 | |
| F. | Results of gaseou | us emission : | | | | Norma as par | |
| Sl No | Test Paramete | rs Te | st Method | Unit | Results | Environment (Protection) Third Amendment Rules 2013, for 75 kw - ≤ 800 kw | |
| 1 | Sulphur dioxide | IS 112 | 55 : Part 2 : 1985 | mg/Nm ³ | 48 | Not Available | |
| | Nitrogen digyide | 15 112 | 55 : Part 7 : 2005 | mg/Nm ³ | 59 | | |
| 2. | Cashan manavida | 115 | EPA 10:2017 | mg/Nm ³ | 119 | | |
| 3. | Carbon monoxide | | ALL TE TOTAGTT | om/kay.hr | 0.63 | 3.5 | |
| | | 10 1222 | 0 (D. Oesath 1003 | gu/kw-u | <0.2 | | |
| | 18.00 TOP 8.0 | 15 1327 | 0 (By Orsat): 1992 | 70 V/V | 7.2 | Not Available | |
| 4. | Carbon dioxide | 18 1327 | 0 (By Orsat): 1992 | 2% V/V | 1.2 | Not Available | |
| 5. | Particulate Matter | rs IS 112 | 155 : Part 1 : 1985 | mg/Nm [*] | 39.2 | | |
| | | | | gm/kw-hr | 0.21 | 0.2 | |
| G. | Pollution control | device | d with the stack . N | il. | | 0.00 | |
| | Detays of poliuno | in control devices attache | END OF TEST RE | PORT :- | 1 | Kan | |
| | Austry | END OF TEST RE | | (Dr P KAPIM) | | | |
| | Report ventiep | бу | (DI. K. KARINI) | | | | |
| | S. Mondal | | | Technical Manager | | | |
| | | | | | Authoris | ed Signatory | |
| | | | | Fo | R.V.BRIG | GS & CO. (P) LTD. | |

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TEST REPORT

| Ssued to : M/S. PARADEEP PHOSPHATE LTD. Address : Paradeep, Odisha. Sample Description : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Gas / Flue Gas Date & time of sampling : Stack Completed on : Old Stack ID No:: RVB/SMK/05 (Cal. Validity: 17/06/24) A General information about stack IS: 11255 (Part-1,2 & 3) Material of construction of stack ID No:: RVB/SMK/05 (Cal. Validity: 17/06/24) Parameters Tested J Stack connected to : Dissel Generator Set -2 2 Emission due to : Burning of H.S.D 3 Material of construction of stack ID No. 4 Stape of stack : Circular. 5 <th>No. AP-</th> <th>FG/23-24/540</th> <th></th> <th>Date: August 02, 20</th> <th>23</th> <th></th> <th>Page 2 of 2</th> | No. AP- | FG/23-24/540 | | Date: August 02, 20 | 23 | | Page 2 of 2 | | |
|--|----------------------|---------------------------------|---|--|---|--------------|---|--|--|
| Sample Description : Stack Gas / Flue Gas Equipment used: ID No: RVB/SMK05 (Cal. Validity: 17/06/24) Date & time of sampling : 28.07.2023 (10:20 A.M. to 11:12 A.M.) Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Parameters Tested Malysis Completed on : 02.08.2023 A. General information about stack : 1. Stack connected to : Diesel Generator Set - 2 2. Emission due to : Burning of H.S.D Material of construction of stack : 5. Whether stack is provided with permanent platform & ladder : Yes Generator capacity : 1 MVA B. Physical characteristics of stack : 1. Height of the stack from ground level : 20 M 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No. Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No T e st M e t h o d Unit Results of gaseous emission : 75 kw - 5 800 kw O. Is 11255 : Part 7 : 2005 mg/Nm ³ 1.20 gm/kw-hr 0.01 O. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By As gm/kw-hr mg/Nm ³ 1.20 gm/kw-hr 0.01 O. Is 11255 : Part 7 : 2005 mg/Nm ³ 1.20 gm/k | Issued to | | : M/S. PARADEEP PHOSPHATE LTD. : Paradeep, Odisha, | | | | | | |
| Sampling Plan & Method : RVB/FM/44 & IS: 11255 (Part-1,2 & 3) Parameters Tested Hydrocarbon as HC Analysis Completed on :02.08.2023 Image: Display of the stack of the stack is provided with permanent platform Set - 2 A. General information about stack : Display of the stack onnected to :02.08.2023 Height of the stack onnected to :02.08.2023 Display of the stack is provided with permanent platform Set - 2 S. Material of construction of stack : M.S. Stack connected is provided with permanent platform & ladder : Yes G. Generator capacity : 1 MVA Physical characteristics of stack : 20 M Diameter of the stack from ground level : 20 M Diameter of the stack form ground level : 20 M Stack of gaseous emission : 0.4 M Stack of gaseous emission : 22 Lt/hr. D. Results of gaseous emission : T est M et h o d Unit Results Norms as per Environment (Protection) The Amendement Rules 2013, for 75 kw - 5 800 kw 6. Total Hydrocarbon as HC : 5182 (Part-22), 2004 RA 2009, By A# mg/Nm ³ 1.20 gm/kw-hr 0.01 4.0 Problution control devices Output divide is attached with the stack : Nil. | Sample I Date & t | Description ime of sampling | : Stack Ga | as / Flue Gas 23 (10:20 A.M. to 11:12 A.M.) | Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 17/06/24) | | | | |
| 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 : Cricular. 5. Whether stack is provided with permanent platform & ladder : Yes 6. Generator capacity : 1 MVA 8. Physical characteristics of stack : 1. Height of the stack from ground level : 20 M 2. Diameter of the stack at sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : Si No Environment Rules 2013, for 75 kw - 5 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By A/A mg/Nm ³ 1.20 gm/kw-hr 0.31 4.0 4.0 4.0 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 | Samplin Analysis | g Plan & Method Completed on | : RVB/FM : 02.08.20 | (/44 & 1S: 11255 (Part-1,2 & 3) 23 | Parameters Tested Hydrocarbon as HC | | ters Tested rbon as HC | | |
| 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. <u>Physical characteristics of stack :</u> 1. Height of the stack from ground level : 20 M 2. Diameter of the stack a sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : 1. 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No Test Parameters T est M et h o d Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - 5 800 kw | A. (| General informatio | n about sta | ack : | 41.0022 | | | | |
| 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 : 20 M 2. Diameter of the stack at sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : : 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : Sorms as per SI No Test Parameters T e s t M e t h o d Unit Results Norms as per Environment (Protection) Thi Amendment Rales 2013, for 75 kw - 5 800 kw : 5182 (Part - 22), 2004 RA 2009, By A^A mg/Nm ³ 1.20 gm/kw-hr 0.01 4.0 .0 4.0 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 7. Nitrogen dioxide< | 1. 5 | Stack connected to | | : Diesel Generator | Set - 2 | | | | |
| Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes Generator capacity : 1 MVA Physical characteristics of stack : Height of the stack from ground level : 20 M Diameter of the stack from ground level : 0.4 M No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : Fuel used : H.S.D Fuel used : H.S.D Results of gaseous emission : SI No Test Parameters T e s t M e t h o d Unit Results Norms as per Environment (Protection) Th Amendment Rules 2013, for 75 kw - 5 800 kw Total Hydrocarbon as HC S182 (Part - 22), 2004 RA 2009, By A^A mg/Nm³ 1.20 gm/kw-hr 0.01 4.0 Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 | 2. 1 | Emission due to | | : Burning of H.S.E |) | | | | |
| 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 : 20 M 2. Diameter of the stack at sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : . 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : Strong as per SI No Test Parameters T e s t M e t h o d Unit Results Environment (Protection) Thi Amendment Rules 2013, for 75 kw - 5 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By AA mg/Nm ³ 1.20 gm/kw-hr 0.01 4.0 4.0 gm/kw-hr 0.31 4.0 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 | 3. 1 | Material of construct | ction of stack | k : M.S. | | | | | |
| 5. Whether stack is provided with permanent platform & ladder : Yes 6. Generator capacity : 1 MVA B. Physical characteristics of stack : Height of the stack from ground level : 20 M Diameter of the stack at sampling point : 0.4 M No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No Test Parameters Test Method Unit Results Intervent (Protection) The Amendment Rules 2013, for 75 kw - 5 800 km 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By A4 mg/Nm³ 1.20 gm/kw-hr 0.01 4.0 T. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 E. Pollution control device Details of pollution control devices attached with the stack : Nil. | 4. 5 | Shape of stack | | : Circular. | | | | | |
| 6. Generator capacity : 1 MVA B. Physical characteristics of stack : 1. Height of the stack from ground level : 20 M 2. Diameter of the stack at sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : Xorms as per SI No Test Parameters T e s t M e t h o d Unit Results Norms as per 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By A# mg/Nm ³ 1.20 gm/kw-hr 0.01 4.0 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 | 5. | Whether stack is pro- | ovided with | permanent platform & ladder : Yes | s | | | | |
| B. Physical characteristics of stack : 1. Height of the stack from ground level : 20 M 2. Diameter of the stack at sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Evel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : T e s t M e t h o d Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - ≤ 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By A/A gm/kw-hr mg/Nm ³ 1.20 gm/kw-hr 4.0 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 | 6. 1 | Generator capacity | | : 1 MVA | | | | | |
| 1. Height of the stack from ground level : 20 M 2. Diameter of the stack at sampling point : 0.4 M 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No Test Parameters T est M ethod Vinit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - 5 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By AA mg/Nm ³ 1.20 gm/kw-hr 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 7. Pollution control device Details of pollution control devices Details of pollution control devices Nith the stack : Nil. | B. | Physical character | ristics of st | ack : | | | | | |
| 2. Diameter of the stack at sampling point : 0.4 M 3. No, of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : . 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No Test Parameters T e s t M e t h o d Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - ≤ 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By A# mg/Nm³ 1.20 gm/kw-hr 0.01 4.0 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 E. Pollution control device Details of pollution control devices attached with the stack : Nil. Nil. | 1. | Height of the stack | stack from ground level : 20 M | | | | | | |
| 3. No. of Traverse point : 8 Nos. C. Analysis / Characteristic of stack Gas / Flue Gas : 1. Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No Test Parameters T e s t M e t h o d Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - 5 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By AA mg/Nm ³ 1.20 gm/kw-hr 0.01 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 4.0 | 2. | Diameter of the stat | ck at sampli | ng point : 0.4 M | | | | | |
| C. Analysis / Characteristic of stack Gas / Flue Gas : Fuel used : H.S.D 2. Fuel consumption : 22 Lt/hr. D. Results of gaseous emission : SI No Test Parameters T est M ethod Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - ≤ 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By A4 mg/Nm ³ 1.20 9. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 F. Pollution control devices Datails of pollution control devices attached with the stack : Nil. | 3. | No. of Traverse poi | int | : 8 Nos. | | | | | |
| D. Results of gaseous emission : SI No Test Parameters Test Method Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - ≤ 800 kw 6. Total Hydrocarbon as HC : 5182 (Part - 22), 2004 RA 2009, By AA mg/Nm ³ 1.20 9. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 E. Pollution control devices Datails of pollution control devices attached with the stack : Nil. Pollution control devices attached with the stack : Nil. | C. | Analysis / Charact Fuel used | H.S.D | tack Gas / Flue Gas : | 2. Fuel consu | umption : 22 | Lt/hr. | | |
| SI No Test Parameters Test Method Unit Results Norms as per Environment (Protection) Thi Amendment Rules 2013, for 75 kw - ≤ 800 kw 6. Total Hydrocarbon as HC 3:5182 (Part - 22), 2004 RA 2009, By AA mg/Nm ³ 1.20 9. Nitrogen dioxide 15 11255 : Part 7 : 2005 gm/kw-hr 0.01 4.0 Pollution control devices Pollution control devices attached with the stack : Nil. Pollution control devices | D. | Results of gaseou | s emission | : | | | | | |
| 6. Total Hydrocarbon as HC 5:5182 (Part - 22), 2004 RA 2009, By AA mg/Nm ³ 1.20 9. Mitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.01 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 6. Pollution control devices Details of pollution control devices attached with the stack : Nil. | SI No | Test Parameter | rs | Test Method | Unit | Results | Norms as per Environment (Protection) Third Amendment Rules 2013, for 75 kw - ≤ 800 kw | | |
| 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.01 4.0 E. Pollution control device Details of pollution control devices attached with the stack : Nil. | 6. | Total Hydrocarbon | as HC | : 5182 (Part - 22), 2004 RA 2009, By AA | mg/Nm ³ | 1.20 | | | |
| 7. Nitrogen dioxide IS 11255 : Part 7 : 2005 gm/kw-hr 0.31 E. Pollution control devices Details of pollution control devices attached with the stack : Nil. | 1000 | | | | em/kw-hr | 0.01 | 4.0 | | |
| E. Pollution control device Details of pollution control devices attached with the stack : Nil. | 7. | Nitrogen dioxide | | IS 11255 : Part 7 : 2005 | gm/kw-hr | 0.31 | 4.0 | | |
| Details of pollution control devices attached with the stack ! Nil. | Ε. | Pollution control | device | | | | | | |
| Details of pollution counter and the analysis | | Details of pollution | n control dev | vices attached with the stack : Nil. | | | | | |

-: END OF TEST REPORT

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

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TEST REPORT

| No. A | P-SL/23-24/386-392 | Date | July 31, | 2023 | | Page 1 of 1 |
|---|--------------------------------|---|------------------|------------------|------------------------|--|
| Issue Addr Your | ed to ress P.O. Ref. no. | : M/S. PARADEEP PHOSPH : Paradeep, Odisha. : 5500005451, dtd 13.08.20 | IATE LTI | D. | | |
| Description of Sample Date of Monitoring | | : Sound Level Monitoring : 24.07.2023 to 26.07.2023 | | | Parameter Test Meth | rs Tested : L _{Min} , L _{Mas} & L _{eq} od : IS 4758 : 1968 |
| SOU | ND LEVEL MONI | TORING : | | | - | |
| SL. | Locations | TIME | Noise | Level in | n dB(A) | Exposure for Industrial |
| | | | L _{Min} | L _{Max} | L _{eq} | Workers as per The Nois Pollution (Regulation An Control) Rules, 2000 |
| I, | PAP Plant | 02:20 P.M 02:30 P.M. | 66.5 | 69.3 | 68.0 | |
| 2. | SAP Plant | 11:10 A.M 11:15 A.M. | 54.2 | 56.7 | 55.6 | |
| 3. | Zypmite Plant | 02:00 P.M 02:05 P.M. | 77.7 | 80.7 | 79.3 |] |
| 4. | AB Side - DAP | 10:30 A.M 10:35 A.M. | 63.6 | 66.4 | 65.1 | 90 dB(A) |
| 5. | CD Side - DAP | 02:20 P.M 02:30 P.M. | 59.5 | 62.3 | 61.0 |] |
| 6. | Offside | 10:30 A.M 10:35 A.M. | 68.3 | 71.1 | 69.8 | |
| 7. | Bagging Section | 11:30 A.M 11:35 A.M. | 73.4 | 76.2 | 74.9 |] |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

Report Verified by S. Mondal

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

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TEST REPORT

| Page 1 of 1 | | | | ly 31, 2023 | Date: Ju | | | P-SL/23-24/382-385 | No. AF | | |
|--|-----------------|------------------|------------------------------------|--|-----------------|------------------|-------------------|--------------------|---------------|--|--|
| | |) | IMITED | SPHATES I | EP PHO | ARADE | : M/S. P | d to | Issued | | |
| | | | | | sha. | ep, Odi | : Parade | Address | | | |
| - | | | | 8.2022 | Itd. 13.0 | 05451, c | : 550000 | Your P.O. Ref. no. | | | |
| Mine LiMax & Lug | s Tested : I | Parameters | of Sample : Sound Level Monitoring | | | | ription of Sample | Descr | | | |
| : 1968 | nd: IS 4758 | Test Metho | | 023 | 26.07.2 | 2023 to | : 24.07.3 | Date of Monitoring | | | |
| | | | | : | CATION | BIENT LO | IG AT AME | ID LEVEL MONITORIN | SOUN | | |
| 06.00 A.M) | 0 P.M t | ime (10.0 | Night T | 10.00 P.M) | 0 A.M to | ne (06.0 | Day Ti | Locations | SI. Locations | | |
| Norms as per | dB(A) | Level in | Sound | Norms as per | dB(A) | Level in | Sound | | No | | |
| Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{eq} | L _{Max} | L _{Min} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{eq} | L _{Max} | L _{Min} | | | | |
| | 53.6 | 52.7 | 51.2 | | 54.0 | 54.8 | 52.4 | Near AAQMS - 1 | 1. | | |
| 70 dB(A) | 43.7 | 44.8 | 42.3 | - 75 dB(A) - | 53.2 | 54.5 | 51.7 | Near AAQMS - 2 | 2. | | |
| 70 UB(A) | 52.8 | 54.2 | 51.2 | | 55.7 | 57.2 | 53.4 | Near AAQMS - 3 | 3. | | |
| | 52.9 | 54.8 | 50.7 | | 56.3 | 57.5 | 55.6 | Near AAQMS - 4 | 4. | | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

Report Verified by S. Mondal

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

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^{*} Results relate only to the parameters tested.



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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| No. AP-AAQ/23-24/319 | | | Date: August 30, 20 | 23 | | Page 1 of 1 |
|----------------------|------------------------------------|-------------------------------|--|-------------------|-------------------------|---------------------------|
| Issu | ied to | : M/S. | PARADEEP PHOSPHATE LTD. | | | |
| Add | ress | : Parad | leep, Odisha | | | |
| You | WO Ref. No. | : 5500005451, dtd. 13.08.2022 | | Equipment used: | | |
| Sam | ple Description | : Ambie | ent Air | ID No.: RVB/ | AFDS/PM2.5/10, Cal. | Valid upto: 01.08.24 |
| Sam | pling Location | : Near / | AAQMS # 01 | ID No.: RVB/ | RDS/APM460/BL/08, | Cal. Valid upto: 05.11.23 |
| | | (N20°1 | 6'31.01, E86''37'27.24) | | Environmental c | onditions |
| Date | & Time of sampling | : 27.08.2 | 2023 (09:50 A.M.)-28.08 2023 (09:50 A.M.) | Temperatur | e : Max: 33.0°C & N | Ain: 26.0°C |
| Sam | pling Plan : | : RVB/P | FM/45 | Barometric | Presure : 750 mmH | g |
| Dura | ation of Sampling | : 24Hrs | | Parameters | Ac CH RoP | 110, 302, NO2, O3, NH3, |
| Ana | lysis Completed on | : 30.08 | 2023 | CO, PD, NI, | AS, USHE, Dar | |
| TES | T FINDINGS:- | - | | Unit | Doculto | Norms as NAAO 2005 |
| SI. No. | Parameters | | Test Method | Unit | (Time Weighted Avg.) | NULLIS 45 NAA4,2003 |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | | USEPA 1997a,40 CFR Part 50, Appendix L. | hð\w ₃ | 38.7 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 56.9 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as S | O ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.27 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as N | 102 | IS 5182 (Part - 6): 2006 | µg/m ³ | 29.71 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m³ | 14.95 | 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 | 21.41 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide as CO | | IS : 5182 (Part - 10), 1999 Non Disportive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.85 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.111 | 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 | 22.5 | 20 |
| 10 | 10. Arsenic as As | | SOP No.: RVB/SOP/01/16 (AAS Method) issue No. 04 Issue Date: 10.01.2018 | ng/m ³ | 0.733 | 6.0 |
| 11 | Benzene as C_6H_6 | | IS 5182 (Part - 11): 2006, | hð/w ₃ | <1.0 | 5.0 |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | 0.03 | 1.0 |

Minimum detection Limit, Nickel: 5 ng/m², Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report Verified by

S. Mondal

allar (Dr. R. KARIM) Technical Manager

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



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TEST REPORT

| No. AP-AAQ/23-24/320 | | Date: August 30, 202 | 23 | | Page 1 of 1 | |
|----------------------|---|--|---|---|--|--|
| Add | red to : M/ ress : Pa | S. PARADEEP PHOSPHATE LTD. radeep, Odisha | | | | |
| Your | WO Ref. No. : 55 ple Description : An | 00005451, dtd. 13.08.2022 bient Air ar AAQMS # 02 | Equipment used: ID No.: RVB/AFDS/PM2.5/10, Cal. Valid upto: 01.08.24 ID No.: RVB/AFDS/APM460/BL/08, Cal. Valid upto: 05.11.23 | | | |
| Date San Dura | (N2 & Time of sampling : 26 pling Plan : : RV ation of Sampling : 24 | 0°16'30.06, E86°37'20.25) 08.2023 (09:30 A.M.)-27.08.2023 (09:30 A.M.) B/FM/45 Hrs. | Temperatur Barometric Parameters | Environmental c e : Max: 32.0°C & N Presure : 750 mmH s Tested: PM25, PM | onditions /iin: 26.0°C g I ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , | |
| Ana | lysis Completed on : 30 | 08.2023 | CO, PD, 141, | Aa, Ogrig, Dar | | |
| SI. No. | T FINDINGS:- Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 35 | 60 (24 Houriy.) | |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m³ | 54.8 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.73 | 80 (24 Hourty.) | |
| 4. | Nitrogen Dioxide as NO2 | IS 5182 (Part - 6): 2006 | µg/m³ | 30.23 | 80 (24 Hourly.) | |
| 5. | Ozone as O3 | IS 5182 (Part - 9) : 1974 | µg/m³ | 15.50 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH3 | SOP No.: RVB/SOP/01/10 (indeptiendi Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 18.91 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as CO | IS - 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NOIR) spectroscopy | mg/m ³ | 0.83 | 04 (1 Houriy.) | |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m³ | 0.158 | 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 | 19.0 | 20 | |
| 10 | Arsenic as As | SOP No.: RVB/SOP/01/16 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | ng/m ³ | 0.986 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | 1.06 | 5.0 | |
| 12 | Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

Minimum dejection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m², Benzene: 1 µg/m³& Benzo(a)Pyrene: 0.5 ng/m³

ified by S. Mondal

(Dr. R. KARIM) Technical Manager

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



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TEST REPORT

| No. AP-AAQ/23-24/321 | | | Date: August 30, 20 | 23 | | Page 1 of 1 | |
|-------------------------------------|--|--|--|---|--|--|--|
| Issued to : M/S. Address : Parac | | : M/S, I | PARADEEP PHOSPHATE LTD. | | | | |
| Your Sam Sam | WO Ref. No. ple Description pling Location | : 55000 : Ambie : Near / (N20°1 | : 5500005451, dtd. 13.08.2022 : Ambient Air : Near AAQMS # 03 (N20°17'11 74 E85°39'32 64) | | Equipment used: ID No.: RVB/AFDS/PM2.5/10, Cal. Valid upto: 01.08.24 ID No.: RVB/RDS/APM460/BL/08, Cal. Valid upto: 05.11.23 Environmental conditions | | |
| Date Sam Dura Ana | e & Time of sampling opling Plan : ation of Sampling lysis Completed on | : 24.08.2 : RVB/F : 24Hrs : 30.08 | 2023 (09:00 A.M.)-25:08:2023 (09:00 A.M.) FM/45 2023 | Temperatur Barometric Parameters CO, Pb, Ni, | e : Max: 32.0°C & N Presure : 750 mmH s Tested: PM _{2.5} , PM As, C ₆ H ₆ , BaP | tin: 26.0°C g I ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , | |
| TES | T FINDINGS:- | | | | | | |
| SL. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m ³ | 43.3 | 60 (24 Hourly.) | |
| 2. | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 66.5 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as S | 02 | IS 5182 (Part - 2); 2001 | µg/m³ | 5.58 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as N | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 28.68 | 80 (24 Hourly.) | |
| 5. | Ozone as O3 | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 15.29 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH ₃ | | SOP No.: RV8/SOP/01/10 (indeptience Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 18.05 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as | со | IS : 5182 (Part - 10), 1999 Non Dispersive Inita-Red (NDIR) spectroscopy | mg/m ³ | 0.92 | 04 (1 Hourly.) | |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.185 | 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 | 15.9 | 20 | |
| 10 | 0. Arsenic as As | | SOP No.: RVB/SOPI01/16 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | ng/m ³ | <0.25 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | <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/m², Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo(a)Pyrene: 0.5 ng/m³

Report verified by

S. Mondal

(Dr. R. KARIM) **Technical Manager** Authorised Signatory

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



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TEST REPORT

| No. AP-AAQ/23-24/322 | | | Date: August 30, 20 | 23 | | Page 1 of 1 | |
|---|--|---------------------|---|-------------------|--|--|--|
| Issu | ued to | : M/S. | PARADEEP PHOSPHATE LTD. | | | | |
| You | r WO Ref. No. | : Parac | Paradeep, Odisha 5500005451, dtd. 13.08.2022 | | Equipment used: | | |
| San San | ple Description | : Amble : Near / | nt Air AAQMS # 04 | ID No.: RVB/ | RDS/APM460/BL/08, | Cal, Valid upto: 01.08.24 Cal, Valid upto: 05.11.23 | |
| (N20° Date & Time of sampling : 25.08 Sampling Plan : : RVB/ Duration of Sampling : 24Hr | | | N20°16'10.70, E86°38'32.54) 25.08.2023 (09:15 A.M.)-26.08.2023 (09:15 A.M.) RVB/FM/45 24Hrs. | | Environmental conditions Temperature : Max: 32.0°C & Min: 26.0°C Barometric Presure : 750 mmHg Parameters Tested: PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , | | |
| Ana | lysis Completed on | : 30.08 | 2023 | 00,10,14, | (13, 0§) ig, bui | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 30.8 | 60 (24 Hourly.) | |
| 2 | PM ₁₀ (Size ≤ 10µm) | | IS 5182 (Part - 23): 2006 | µg/m³ | 51.3 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as S | O ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.57 | 80 (24 Hourty.) | |
| 4. | Nitrogen Dioxide as N | NO2 | IS 5182 (Part - 6): 2006 | µg/m³ | 29.20 | 80 (24 Hourly.) | |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 16.78 | 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 | 18.51 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as | со | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Rod (NDIR) spectroscopy | mg/m ³ | 0.82 | 04 (1 Hourly.) | |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.171 | 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 | 20.0 | 20 | |
| 10 | 0. Arsenic as As | | SOP No.: RVB/SOPI01/16 (AAS Method) Issue No. 04 Issue Cate: 10.01.2018 | ng/m ³ | 1.71 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m ³ | 1.17 | 5.0 | |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

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

Report Verified by

S. Mondal

(Dr. R. KARIM) **Technical Manager**

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TEST REPORT

| No. AP-WAQ/23-24/216 | | | Date: August 30, 2 | 2023 | | Page 1 of 1 | |
|----------------------------------|-------------------------------------|--------------------------------------|---|-------------------|--|--|--|
| lssi Add | ued to dress | : M/S. : Parad | PARADEEP PHOSPHATE LTD leep, Odisha | | | | |
| You | r Ref. WO. No. | D. No. : 5500005451, dtd. 13.08.2022 | | Equipment used: | | | |
| San | Sample Description : Fugiti | | ve Air | 11 | D No .: RVB/RDS/APM | /460/BL/09, | |
| San | Sampling Location : SAF | | Section | | Cal. Valid upto: 05 | .11.2023 | |
| | | | | | Environmental co | onditions | |
| Date | e & Time of sampling | : 25.08 | 2023 (10:00 A.M 06:00 P.M.) | Tem | perature : Max: 32.0° | C & Min: 29.0°C | |
| San | noling Plan : | : RVB/F | M/45 | | Barometric Presure : | 750 mmHg | |
| Dur | ation of Sampling | : 08Hrs | | | Parameters Te | ested: | |
| Assistation of Sampling . Vor in | | · 30.08 | 2023 | | SPM, SO ₂ , NO ₂ | & NHa | |
| TEC | T FINDINCS | . 50.00. | 2023 | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 2075 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.69 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 34.25 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 27.55 | Not Available | |

-: END OF TEST REPORT :-

Report V erified by

S. Mondal

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



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TEST REPORT

| No. AP-WAQ/23-24/217 | | | Date: August 30, 1 | 2023 | | Page 1 of | |
|-------------------------------|-------------------------------------|---------------------------------------|---|-------------------|--|--|--|
| Iss | ued to | : M/S. | PARADEEP PHOSPHATE LTD |). | | | |
| Ad | dress | : Parac | deep, Odisha | | | | |
| You | Ir Ref. WO. No. | NO. No. : 5500005451, dtd. 13.08.2022 | | Equipment used: | | | |
| San | nple Description | : Fugiti | ve Air | I | D No .: RVB/RDS/API | /460/BL/16, | |
| San | Sampling Location : PAP | | Section | | Cal. Valid upto: 03 | .11.2023 | |
| | | | | | Environmental co | onditions | |
| Date & Time of sampling : 25. | | : 25.08 | 2023 (10:15 A.M 06:15 P.M.) | Tem | perature : Max: 31.0° | C & Min: 29.0°C | |
| San | npling Plan : | : RVB/ | FM/45 | | Barometric Presure : | 750 mmHg | |
| Dur | ation of Sampling | : 08Hrs | E . | | Parameters Te | ested: | |
| Analysis Completed on 30.08 | | : 30.08 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₂ | |
| TES | ST FINDINGS:- | | 99/58) | | <u> </u> | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 2776 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 6.87 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 32.33 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 27.34 | Not Available | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP-WAQ/23-24/218 | | | Date: August 30, | 2023 | | Page 1 of | |
|-------------------------------|-------------------------------------|-------------------|---|-------------------|--|--|--|
| lss | ued to | : M/S. | PARADEEP PHOSPHATE LTD |). | | | |
| Ad | dress | : Para | deep, Odisha | | | | |
| You | ur Ref. WO. No. | : 5500 | 0005451, dtd. 13.08.2022 | Equipment used: | | | |
| Sar | Sample Description : Fugit | | ve Air | 1 | D No .: RVB/RDS/API | VI460/BL/10, | |
| Sar | Sampling Location : DAF | | A & B Section | | Cal. Valid upto: 05 | 5.11.2023 | |
| | | | | | Environmental co | onditions | |
| Date & Time of sampling : 2 | | : 26.08 | .2023 (10:00 A.M 06:00 P.M.) | Tem | perature : Max: 32.0° | C & Min: 29.0°C | |
| Sar | mpling Plan : | : RVB/ | FM/45 | | Barometric Presure : | 750 mmHg | |
| Duration of Sampling : 08Hr | | : 08Hrs | 5. | | Parameters Te | ested: | |
| Analysis Completed on : 30.08 | | : 30.08 | .2023 | | SPM, SO ₂ , NO ₂ | & NH3 | |
| TES | ST FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 4059 | 10000 | |
| 2. | Sulphur Dioxide as | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 7.77 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 30.23 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 28.90 | Not Available | |

-: END OF TEST REPORT :-

t Verified by S. Mondal

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TEST REPORT

| No. AP-WAQ/23-24/219 | | | Date: August 30, 3 | 2023 | | Page 1 of | |
|-------------------------------|-------------------------------------|-------------------------------|---|-------------------|--|--|--|
| Iss | ued to | : M/S. | PARADEEP PHOSPHATE LTD |). | | | |
| Ad | dress | : Para | deep, Odisha | | | | |
| You | ur Ref. WO. No. | lef. WO. No. : 5500005451, dt | | Equipment use | | sed: | |
| Sar | nple Description | : Fugiti | ve Air | 1 | D No .: RVB/RDS/API | W460/BL/09, | |
| San | Sampling Location : DA | | C & D Section | | Cal. Valid upto: 05 | 5.11.2023 | |
| | | | | | Environmental co | onditions | |
| Date & Time of sampling : 26 | | : 26.08 | .2023 (10:20 A.M 06:20 P.M.) | Tem | perature : Max: 31.0° | C & Min: 28.0°C | |
| Sar | mpling Plan : | : RVB/ | FM/45 | | Barometric Presure : | 750 mmHg | |
| Duration of Sampling : 08Hr | | : 08Hrs | i. | | Parameters Te | ested: | |
| Analysis Completed on : 30.08 | | : 30.08 | 2023 | | SPM, SO ₂ , NO ₂ | 2 & NH3 | |
| TES | ST FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 2697 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 7.25 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 31.14 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 28.23 | Not Available | |

-: END OF TEST REPORT :-

Report erified by S. Mondal

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TEST REPORT

| No. AP-WAQ/23-24/220 | | | Date: August 30, | 2023 | | Page 1 of | |
|-------------------------------|-------------------------------------|-----------------------------------|---|-------------------|--|--|--|
| Iss | ued to | : M/S. | PARADEEP PHOSPHATE LTD |). | | | |
| Ad | dress | : Para | deep, Odisha | | | | |
| You | Ir Ref. WO. No. | f. WO. No. : 5500005451, dtd. 13. | | | Equipment u | sed: | |
| San | nple Description | : Fugiti | ve Air | 1 | D No.: RVB/RDS/API | M460/BL/10, | |
| San | Sampling Location : Off S | | te | | Cal. Valid upto: 05 | 5.11.2023 | |
| | | | | | Environmental co | onditions | |
| Dat | e & Time of sampling | : 27.08 | .2023 (10:00 A.M 06:00 P.M.) | Tem | perature : Max: 32.0° | C & Min: 30.0°C | |
| San | mpling Plan : | : RVB/ | FM/45 | | Barometric Presure : | 750 mmHg | |
| Duration of Sampling : 08Hr | | : 08Hrs | L. | | Parameters Te | ested: | |
| Analysis Completed on : 30.08 | | : 30.08 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES | ST FINDINGS:- | 12/73/27.7 | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 1002 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m ³ | 8.23 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m ³ | 34.11 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 21.51 | Not Available | |

-: END OF TEST REPORT :-

Report Verified by

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TEST REPORT

| No. AP-WAQ/23-24/221 | | | Date: August 30, | 2023 | | Page 1 of 1 |
|-------------------------------|-------------------------------------|---------------------------------------|---|-------------------|--|--|
| lss | ued to | : M/S | PARADEEP PHOSPHATE LTD |). | | |
| Ad | dress | : Para | deep, Odisha | | | |
| You | Ir Ref. WO. No. | VO. No. : 5500005451, dtd. 13.08.2022 | | | Equipment u | sed: |
| San | Sample Description : Fugit | | ve Air | 1 | D No.: RVB/RDS/API | V460/BL/10, |
| Sar | npling Location | : Baggi | ng Section | | Cal. Valid upto: 05 | 5.11.2023 |
| | | | | | Environmental co | onditions |
| Dat | Date & Time of sampling : 24.0 | | .2023 (10:00 A.M 06:00 P.M.) | Tem | perature : Max: 31.0° | C & Min: 26.0°C |
| Sar | npling Plan : | : RVB/ | FM/45 | | Barometric Presure : | 750 mmHg |
| Duration of Sampling : 08Hr | | : 08Hrs | i. | | Parameters Te | ested: |
| Analysis Completed on : 30.08 | | : 30.08 | .2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES | ST FINDINGS:- | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Particu Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m³ | 1887 | 10000 |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 6.86 | 5000 |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 27.90 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 27.55 | Not Available |

-: END OF TEST REPORT :-

erified by S. Mondal

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



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TEST REPORT

| No. AP-WAQ/23-24/222 | | | Date: August 30, 2 | 2023 | | Page 1 of | |
|-------------------------------|-------------------------------------|-------------------------------------|---|-------------------|--|--|--|
| Iss | ued to | : M/S. | PARADEEP PHOSPHATE LTD |). | | | |
| Add | dress | : Parac | deep, Odisha | | | | |
| You | ır Ref. WO. No. | f. WO. No. : 5500005451, dtd. 13.08 | | Equipment used: | | sed: | |
| San | nple Description | : Fugitiv | ve Air | 1 | D No .: RVB/RDS/APM | M460/BL/09, | |
| San | Sampling Location : Zyp | | te Section | | Cal. Valid upto: 05 | .11.2023 | |
| | | | | | Environmental co | onditions | |
| Date & Time of sampling : 24. | | : 24.08 | 2023 (10:15 A.M 06:15 P.M.) | Tem | perature : Max: 31.0° | C & Min: 28.0°C | |
| San | npling Plan : | : RVB/F | FM/45 | | Barometric Presure : | 750 mmHg | |
| Dur | ation of Sampling | : 08Hrs | | | Parameters Te | ested: | |
| Analysis Completed on : 30.08 | | : 30.08 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES | ST FINDINGS:- | | | | | | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Particu Matter | late | IS : 5182 (Part – 4),1999 | µg/m³ | 2512 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 6.57 | 5000 | |
| 3. | Nitrogen Dioxide as NO ₂ | | IS 5182 (Part - 6): 2006 | µg/m³ | 28.80 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 21.51 | Not Available | |

-: END OF TEST REPORT :-

Report Verified by

S. Mondal

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

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TEST REPORT

| sued to | | | | | |
|--|---------------------------------|--|---------------------|---------------------|------------------------|
| | 0 | : M/S. PARADEEP PHOSPHATE LTD | | | |
| ddress | | : Paradeep, Odisha. | | | |
| ample I | Description | : Stack Emission / Flue Gas | EC | uipment us | ea: tity: 17/06/24) |
| ate & t | ime of sampling | : 26.08.2023 (03:10 P.M. to 03:40 P.M.) | ID NO.: KVD/3MI | rameters Te | sted |
| amplin | g Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Dhyrical - Ten | n Velocity | Gas flow |
| nalysis | Completed on | : 28.08.2023 | Chemical : Co | D. CO. PM | & TF |
| | | Chemicari | | | |
| A. 9 | General information about | DAP - A | | | |
| 1. 1 | Boiler connected to | · Process Emmision | | | |
| 2. 1 | Emission due to | · Process Eminister | | | |
| 3. 1 | Material of construction of | Stack . W.S. | | | |
| 4. | Shape of stack | : Circulai. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder . res. | | | |
| В. | Physical characteristics | of stack : | | | |
| 1. | Height of the stack from g | round level : 50 M | | | |
| 2. | Diameter of the stack at sa | impling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling po | int from GL : 35 M | | | |
| C. Analysis / Characteristic of stack Gas / Flue Gas : | | | 2 | Load | |
| 1. | Fuel used : | 2. Fuel consumption : | 5 | .Loau . | |
| D. | Environmental condition | 15 : | | 26.90 | |
| 1. | Barometric pressure : 752 | mmHg | 2. Temperatu | re : 30 C | |
| E. | Results of Physical Para | ameters of Flue Gas : | 1 1 1 1 | D | oculte |
| SI No | Test Parameters | Test Method | Unit | K | 62 |
| 1 | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | | 02 |
| | Valacity of gas in duct | IS 11255:Part 3:2008 | m/sec | | 17.84 |
| 2. | velocity of gas in duct | IS 11255:Part 3:2008 | NM ³ /hr | 3 | 35749 |
| 3. | Quantity of gas flow | con : | | | |
| E. | Results of gaseous emi | Ssion . | Unit | Results | Norms |
| SI No | Test Parameters | lest Methou | | Contra a provincia. | as per CPCB |
| | | 10 11066 . B 1 - 1086 Du Owni | 9/2 x/2 | <0.2 | Not Available |
| 1. | Carbon monoxide | IS 11255 : Part 1 : 1985 By Orsat | Of whe | 0.4 | Not Available |
| 2. | Carbon dioxide | IS 11255 : Part 1 : 1985 By Orsat | % V/V | 0.4 | 160 mar |
| 2 | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 40 | 150 max. |
| 4 | Total Fluoride | IS 11255 (Part - 5) : 1990 | mg/Nm ³ | 2.10 | Not Available |
| F | Pollution control devic | e | | | |
| 1.6 | Details of pollution cont | rol devices attached with the stack : Wet Scrubb | er | | |

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CIN: 051109WB1931P1C007

TEST REPORT

| No. AP-FG/23-24/664 | | | Date: August 28, 2023 | | | Page 2 of 2 |
|---------------------|--------------------------|------------------|---|--------------------|-----------------|-------------------|
| Issued to | | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Addres Sample | s Description | : Stack Em | ission / Flue Gas | E | quipment u | sed: |
| Date & | time of sampling | : 26.08.202 | 3 (03:10 P.M. to 03:40 P.M.) | ID No.: RVB/SM | 4K/05 (Cal. Val | lidity: 17/06/24) |
| Sampli | ng Plan & Method | : RVB/FM/ | 45 & IS: 11255 (Part-1,2 & 3) | <u>P</u> | arameters T | ested |
| Analysi | s Completed on | : 28.08.202 | 3 | 1 | Chemical : | NH3 |
| A. | General information ab | out stack : | | | | |
| 1. | Boiler 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 provide | ed with permane | ent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling j | point from GL | : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Ga | s / Flue Gas : | | 253 147 | |
| 1. | Fuel used ; | | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | | 1 |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms |
| 0.110 | | | | | | as ner CPCR |
| | | | | | | as per creb |
| 1. | Ammonia as NH3 | Methods (In | of Air Sampling & Analysis, 3rd Ed. dophenol Method), Method 401 | mg/Nm ³ | 69 | Not Available |
| E. | Pollution control devi | ce | Sector Marine av Assessment war | | | |
| 10-0 | Details of pollution con | trol devices att | ached with the stack : Wet Scrubbe | r | | |

-: END OF TEST REPORT :-

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TEST REPORT

| Io. AP | -FG/23-24/665 | Date: August 28, 2023 | | | Page 1011 |
|---------|-----------------------------|--|------------------|----------------|----------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD |). | | |
| ddres | S | : Paradeep, Odisha. | | | |
| ample | Description | : Stack Emission / Flue Gas | E | quipment us | ed: |
| Date & | time of sampling | : 26.08.2023 (03:55 P.M. to 04:28 P.M.) | ID No.: KVB/SM | N/05 (Cal. Van | atty. (now 24) |
| Samplin | ig Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Pa Di Lute Te | Velocity | Gas flow |
| Analysi | s Completed on | : 28.08.2023 | Physical : Ter | np., velocity | & TF |
| | | | Chemical : C | 0,002,111 | |
| Α. | General information about | it stack : | | | |
| 1. | Boiler connected to | : DAP - B | | | |
| 2. | Emission due to | Process Eminision | | | |
| 3. | Material of construction of | stack : M.S. | | | |
| 4. | Shape of stack | : Circular. | | | |
| 5. | Whether stack is provided | with permanent platform & ladder . 1 cs. | | | |
| В. | Physical characteristics | or stack : | | | |
| 1. | Height of the stack from g | round level . 50 M | | | |
| 2. | Diameter of the stack at sa | mpling point . 2.0 M | | | |
| 3. | No. of Traverse point | . 52 Nos. | | | |
| 4. | Height of the sampling po | of stock Gas / Flue Gas ' | | | |
| C. | Analysis / Characteristic | 2 Fuel consumption : | 3 | .Load : | |
| 1. | Fuel used : | 2. Tuer consumption : | | | |
| D. | Environmental condition | 15. | 2 Temperatu | re · 34 °C | |
| 1. | Barometric pressure : 752 | mmHg | a. remperate | | |
| E. | Results of Physical Para | meters of Flue Gas : | Unit | R | esults |
| SI No | Test Parameters | Test Method | 00 | | 60 |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | | | 17 41 |
| 2. | Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | | 27044 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM'/hr | 3 | 27866 |
| E. | Results of gaseous emi | ssion : | | | |
| SI No | Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| | | 15 11255 · Part 1 · 1985 By Orsat | % v/v | <0.2 | Not Available |
| 1. | Carbon monoxide | 10 11255 Dare 1 - 1085 Du Oreal | 9/4 4/4 | 0.4 | Not Available |
| 2. | Carbon dioxide | 15 11255 : Part 1 : 1985 By Orsat | mahim2 | 45 | 150 max |
| 3. | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/wins | 1.70 | Not Available |
| 4. | Total Fluoride | IS 11255 (Part - 5) : 1990 | mg/Nm' | 1./8 | Not Available |
| F. | Pollution control device | 2 | er | | |
| | Details of pollution contr | SID OF TEST REPORT - | ., | 00 | |

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erified by

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TEST REPORT

| No. AP | -FG/23-24/665 | Date: August 28, 2023 | | | Page 2 of 2 |
|-------------------|--|--|--------------------|-------------------------------|----------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha. |) . | | |
| Sample | Description | : Stack Emission / Flue Gas | ID No.: RVB/SM | quipment u 1K/05 (Cal. Val | idity: 17/06/24) |
| Date & Samplir | ng Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | P | arameters T | ested |
| Analysi | s Completed on | : 28.08.2023 | | Chemical :] | NH3 |
| A. | General information ab | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling | point from GL : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | 2. Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | | |
| SI No | Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | mg/Nm ³ | 83 | Not Available |
| E. | Pollution control devi Details of pollution cor | ce trol devices attached with the stack : Wet Scrubb | er | | |

-: END OF TEST REPORT :-

d by S. Mondal

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4 . 6 4

TEST REPORT

| | ruge | |
|--|---|--|
| | | |
| Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 17/06/24) Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ PM & TF | | |
| 3.Load : | | |
| R | Results | |
| 2 | 69 15.52 283626 | |
| Results | Norms | |
| | as per CPCB | |
| <0.2 0.4 3 38 3 2.21 | Not Availabl Not Availabl 150 max. Not Availab | |
| 3 | 38 2.21 | |

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TEST REPORT

| No. AP-FG/23-24/666 | | Date: August 28, 2023 | | | Page 2 of 2 |
|---------------------|--------------------------|--|--------------------|-------------------------------|---------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD | | | |
| Addres | \$ | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Emission / Flue Gas | ID No.: RVB/SM | quipment u (K/05 (Cal. Val | sed: lidity: 17/06/24) |
| Date & | time of sampling | : 26.08.2023 (11:55 A.M. to 12:51 P.M.) | P | arameters T | ested |
| Samplir | ng Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 5) | - | | |
| Analysi | s Completed on | : 28.08.2023 | | Chemical : 1 | NH3 |
| A. | General information ab | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| В. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling J | point from GL : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | Fuel consumption : | | 3.Load : | |
| D. | Results of gaseous en | nission : | | Sec. Sectors | |
| SLNo | Test Parameters | Test Method | Unit | Results | Norms |
| 51110 | Test Thinkeets | | 1 1 | | as ner CPCB |
| | | | | | as per creo |
| | Ammonia as NH- | Methods of Air Sampling & Analysis, 3rd Ed. | mg/Nm ³ | 88 | Not Available |
| 1.1 | | (Indopinenti Metilod), Metilod 401 | | | |
| F | Pollution control devi | ce | | | |
| | Details of pollution con | trol devices attached with the stack : Wet Scrubbe | r | | |

-: END OF TEST REPORT :-

Rei S. Mondal

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

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TEST REPORT

| | 0103 24/667 | Date: August 28, 2023 | | | Page 1011 | |
|--|--|---|--|--|--|--|
| o. AP-F | G/23-24/007 | : M/S. PARADEEP PHOSPHATE LTD | - | | | |
| idress imple Description ate & time of sampling ampling Plan & Method nalysis Completed on | | : Paradeep, Odisha. iption : Stack Emission / Flue Gas if sampling : 26.08.2023 (12:55 P.M. to 01:28 P.M.) a & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) ipleted on : 28.08.2023 | | Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 17/06/24) Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ , PM & TF | | |
| A. G. 1. B. 2. E. 3. M 4. S 5. V B. <u>P</u> 1. H 2. L 3. N 4. I C. <u>1</u> 1. I D. <u>1</u> | eneral information about oiler connected to mission due to taterial of construction of hape of stack Whether stack is provided hysical characteristics Height of the stack from g Diameter of the stack at stack No. of Traverse point Height of the sampling po Analysis / Characteristic Fuel used : | it stack : : DAP - D : Process Emmision : stack : Circular. with permanent platform & ladder : Yes. of stack : round level : 50 M impling point : 2.8 M : 32 Nos. int from GL : 35 M : of stack Gas / Flue Gas : 2. Fuel consumption : | 3. 2. Temperatur | Load : re : 36 °C | | |
| 1. | Barometric pressure . 15. | ameters of Flue Gas : | | R | esults | |
| E. SI No 1. 2. | Test Parameters Temperature of emission Velocity of gas in duct Ouantity of gas flow | Test Method 1S 11255 : Part 3 : 2008 1S 11255: Part 3:2008 1S 11255: Part 3:2008 | Onit °C m/sec NM ³ /hr | 1 | 63 18.93 50822 | |
| E. SI No | Results of gaseous en Test Parameters | ission: Test Method | Unit | Results | Norms as per CPCB | |
| 1. 2. 3. | Carbon monoxide Carbon dioxide Particulate Matters | IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 : Part 1 : 1985 IS 11255 (Part – 5) : 1990 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.4 69 1.93 | Not Availabi Not Availabi 150 max. Not Availabi | |
| 2. 3. 4. F. | Carbon dioxide Particulate Matters Total Fluoride Pollution control devi Details of pollution cor | IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 (Part - 5) : 1990 Ce atrol devices attached with the stack : Wet Scrub -: END OF TEST REPORT :- | mg/Nm3 mg/Nm ³ | | 69 1.93 | |

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TEST REPORT

| No. AP-FG/23-24/667 | | Date: August 28, 2023 | | | Page 2 of 2 |
|---------------------|----------------------------|--|--------------------|-------------------------------|---------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD Paradeep, Odisha. | | | |
| Sample | Description | : Stack Emission / Flue Gas | ID No.: RVB/SM | quipment u (K/05 (Cal. Val | sed: lidity: 17/06/24) |
| Date & | time of sampling | : 26.08.2023 (12:55 P.M. 10 01:26 P.M.) | P | arameters T | ested |
| Samplir | ig Plan & Method | - 28 08 2023 | - | | |
| Analysi | s Completed on | . 28.08.2023 | | Chemical : | NH3 |
| Α. | General information ab | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling j | point from GL : 35 M | | | |
| C. | Analysis / Characteris | tic of stack Gas / Flue Gas : | | | |
| 1. | Fuel used : | 2. Fuel consumption : | | 5.Load : | |
| D. | Results of gaseous en | nission : | | Dist. Valle | |
| SLNo | Test Parameters | Test Method | Unit | Results | Norms |
| Sino | Test Turnineere | | | | as per CPCB |
| | | | | | as per er es |
| 1 | Ammonia as NH3 | Methods of Air Sampling & Analysis, 3rd Ed. | mg/Nm ³ | 75 | Not Available |
| 1.000 | 8 I NA CESTI NA CALENCE AL | (independent medicate menical to r | | | |
| E. | Pollution control devi | ce | | | |
| | Details of pollution con | trol devices attached with the stack : Wet Scrubbe | r | | |

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TEST REPORT

| AP- | FG/23-24/668 | Date: August 28, 2023 | | |
|-------------|-----------------------------|--|----------------------|--------------------------|
| ued to |) | : M/S. PARADEEP PHOSPHATE LTD | | |
| dress | | : Paradeep, Odisha. | Fauin | ment used: |
| mple I | Description | : Stack Emission / Flue Gas | ID No : RVB/SMK/05 | Cal, Validity: 17/06/24) |
| te & ti | ime of sampling | : 27.08.2023 (02:10 P.M. to 02:3 / P.M.) | Param | eters Tested |
| mpling | g Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 5) | Physical : Temp., | Velocity, Gas flow |
| nalysis | Completed on | : 28.08.2023 | Chemical : CO, C | O2, SO2 & Acid Mis |
| | and the sheet | t stock : | | |
| A. <u>C</u> | General information abou | SAP - A | | |
| 1. H | Boiler connected to | Process Emmision | | |
| 2. 1 | mission due to | stack : M.S. | | |
| 3. 1 | Material of construction of | : Circular. | | |
| 4. | Shape of stack | with permanent platform & ladder : Yes. | | |
| D. 1 | Physical characteristics | of stack : | | |
| D. 1 | Height of the stack from g | round level : 120 M | | |
| 2 | Diameter of the stack at sa | mpling point : 2.7 M | | |
| 3 | No. of Traverse point | : 32 Nos. | | |
| 4 | Height of the sampling po | int from GL : 35 M | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | 21.0 | d * |
| 1 | Fuel used : | Fuel consumption : | 5.1.00 | 14 |
| D. | Environmental condition | 15 : | | 24.90 |
| 1. | Barometric pressure : 754 | mmHg | 2. Temperature : | 54 C |
| F | Results of Physical Para | ameters of Flue Gas : | | Docults |
| SINO | Test Parameters | Test Method | Unit | Results |
| J | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 04 |
| 1. | Temperature of emission | IS 11255:Part 3:2008 | m/sec | 10.77 |
| 2. | Velocity of gas in duct | 10 11255 Ded 7/2008 | NM ³ /hr | 174869 |
| 3. | Quantity of gas flow | IS 11255.Part 5.2008 | , and the | |
| F. | Results of gaseous emi | ission : | Unit | Results |
| SI No | Test Parameters | Test Method | one alm ³ | 866 |
| 1. | Sulphur dioxide | IS 11255 : Part 2 : 1985 | mg/ism | -0.2 |
| 2 | Carbon monoxide | IS 13270 (By Orsat): 1992 | % v/v | ~0.2 |
| 4.4 | Carbon monorates | 1S 13270 (By Orsat): 1992 | % v/v | 0.4 |
| 3. | Carbon dioxide | SOP No.: RVB/SOP/01/20, | ma (Nm ³ | 42.7 |
| 4. | Acid Mist | Issue No.: 04, Issue Date: 10.01.2018 | mg/Nm | 10,000,0 |
| - | Pollution control devic | e | | |
| | | | | |

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TEST REPORT

| AP-FO | G/23-24/669 | Date: August 28, 2023 | | |
|---|---|---|--|--|
| ued to | | : M/S. PARADEEP PHOSPHATE LTD | D . | |
| ddress : ample Description : ate & time of sampling ampling Plan & Method analysis Completed on : | | : Paradeep, Odisha. : Stack Emission / Flue Gas | Equips | nent used: Cal. Validity: 17/06/24) |
| | | : 27.08.2023 (02:50 P.M. to 03:14 P.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 28.08.2023 | Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ , SO ₂ & Acid Mis | |
| A. G(1. B(2. Er 3. M 4. SI 5. W B. P 1. H 2. D 3. N 4. L 4. C | eneral information about oiler connected to mission due to faterial of construction of hape of stack Whether stack is provided hysical characteristics leight of the stack from g Diameter of the stack at sa No. of Traverse point leight of the sampling po Analysis / Characteristics | it stack : : SAP - B : Process Emmision f stack : M.S. : Circular. with permanent platform & ladder : Yes. of stack : round level : 120 M ampling point : 2.7 M : 32 Nos. int from GL : 35 M c of stack Gas / Flue Gas : | 3.L02 | id : |
| 1. F | Fuel used : Environmental conditio Barometric pressure : 754 | 2. Fuer consumption : 4 mmHg | 2. Temperature : | 32 °C |
| E. 1 | Results of Physical Par | ameters of Flue Gas : | Unit | Results |
| SI No 1. 2. 3. | Test Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow | Test Method 1 IS 11255 : Part 3 : 2008 1S 11255:Part 3:2008 IS 11255:Part 3:2008 | °C m/sec NM ³ /hr | 81 11.37 184233 |
| F. | Results of gaseous em | ission : | Unit | Results |
| SI No 1. 2. 3. | Test Parameters Sulphur dioxide Carbon monoxide Carbon dioxide | Test Method IS 11255 : Part 2 : 1985 IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 SOP No.: RVB/SOP/01/20, No.: RVB/SOP/01/20, | mg/Nm ³ % v/v % v/v mg/Nm ³ | 927 <0.2 0.2 45.3 |

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TEST REPORT

| AP-FG/23-24/670 | Date: August 28, 2023 |) | |
|--|--|----------------------|--|
| event to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| ddress | : Paradeep, Odisha. | | nent used: |
| ample Description | : Stack Emission / Flue Gas | ID No.: RVB/SMK/05 (| Cal. Validity: 17/06/24) |
| ate & time of sampling | 27.08.2023 (12.20 Film: to Part-1,2 & 3) | Paramo | ters Tested |
| ampling Plan & Method | 28 08 2023 | Physical : Temp., V | elocity, Gas flow |
| nalysis Completed on | . 20.00.2020 | Chemical : CO, CO | D ₂ , SO ₂ & Acid Misi |
| A General information abo | out stack : | | |
| 1 Boiler connected to | : SAP - C | | |
| 2 Emission due to | : Process Emission | | |
| 3 Material of construction of | of stack : M.S. | | |
| 4. Shape of stack | : Circular. | | |
| 5. Whether stack is provide | d with permanent platform & ladder : Yes. | | |
| B. Physical characteristic | s of stack : | | |
| 1. Height of the stack from | ground level : 120 M | | |
| Diameter of the stack at : | sampling point 22.7 M | | |
| No. of Traverse point | : 50 Nos. | | |
| Height of the sampling p | cont from GL | | |
| C. Analysis / Characterist | 2. Fuel consumption : | 3.Loa | id : |
| 1. Fuel used : | one : | | |
| D. Environmental condition | 2 mmHg | 2. Temperature : | 33 °C |
| 1. Barometric pressure : / | Conoral Parameters of stack Gas / Flue Gas | : | |
| E. Results of Physical a | Test Method | Unit | Results |
| SI No Test Parameters | 18 11255 : Part 3 : 2008 | °C | 74 |
| 1. Temperature of emission | on 13 11255 Perf 3-2008 | m/sec | 8.05 |
| 2. Velocity of gas in duct | IS 11255:Part 5.2000 | NIN 43 the | 137471 |
| 3 Quantity of gas flow | IS 11255:Part 3:2008 | NM /III | 875 |
| 4 Sulphur diavida | IS 11255 : Part 2 : 1985 | mg/Nm' | 020 |
| 4. Suphur dioxide | IS 13270 (By Orsat): 1992 | % v/v | <0.2 |
| 5. Carbon monoxide | 16 12270 (Bu Oreat): 1992 | % v/v | 0.2 |
| 6. Carbon dioxide | 15 152/0 (By Olaw), 1972 | | 33.4 |
| 7 Acid Mist | SOP No.: RVB/SOF/01/20, Issue No.: 04, Issue Date: 10.01.2018 | mg/Nm* | |
| | ice | | |
| E Dellution control dou | | | |

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S. Mondal

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TEST REPORT

| | C/23_24/671 | Date: August 28, 2023 | | | Page 1011 |
|---|---|--|---|---------------------------|---|
| sued to | 0/23-24/07 1 | : M/S. PARADEEP PHOSPHATE LTD |). | | |
| Address | | : Paradeep, Odisha. : Stack Emission / Flue Gas | Equipment used: ID No - RVB/SMK/05 (Cal. Validity: 17/06/24) | | |
| Date & tir Sampling Analysis | me of sampling Plan & Method Completed on | : 26.08.2023 (05:00 P.M. to 05:27 P.M.) : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) : 28.08.2023 | Parameters Tested Physical : Temp., Velocity, Gas flow Chemical : CO, CO ₂ , PM & TF | | |
| A. G 1. B 2. E 3. M 4. S 5. V B. <u>F</u> 1. 1 2. 1 3. 1 4. 1 3. 1 | teneral information about toiler connected to taission due to Material of construction of Shape of stack Whether stack is provided Physical characteristics Height of the stack from g Diameter of the stack at stack No. of Traverse point Height of the sampling po | at stack : : PAP : Process Emmision f stack : M.S. : Circular. with permanent platform & ladder : Yes. of stack : round level : 50 M ampling point : 2.7 M : 32 Nos. oint from GL : 35 M | | | |
| C. | Analysis / Characteristic | c of stack Gas / Flue Gas : 2. Fuel consumption : | 3. | Load : | |
| D. | Environmental conditio Barometric pressure : 752 | ns : 2 mmHg | 2. Temperatur | re : 32 °C | |
| E. | Results of Physical Par | ameters of Flue Gas : | Unit | R | esults |
| 51 No 1. 2. 3 | Test Parameters Temperature of emission Velocity of gas in duct Ouantity of gas flow | Test Method IS 11255 : Part 3 : 2008 IS 11255:Part 3:2008 IS 11255:Part 3:2008 | °C m/sec NM ³ /hr | 9 | 43 5.08 06238 |
| F. SI No | Results of gaseous em Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| 1. 2. 3. | Carbon monoxide Carbon dioxide Particulate Matters Total Fluoride | IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 By Orsat IS 11255 : Part 1 : 1985 IS 11255 (Part - 5) : 1990 | % v/v % v/v mg/Nm3 mg/Nm ³ | <0.2 0.2 57 2.41 | Not Available Not Available 150 max. Not Available |
| G. | Pollution control devi Details of pollution cor | ce htrol devices attached with the stack : Wet Scrub | ober | | |

-: END OF TEST REPORT :-

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TEST REPORT

| | | Date: August 28, 2023 | 3 | ragere | | | |
|--|---|--|---|---|--|--|--|
| sued to | : M/S. P/ | : M/S. PARADEEP PHOSPHATE LTD. | | | | | |
| ddress | : Paradeep : Stack En |), Odisha. nission / Flue Gas | Equipment used: | | | | |
| ata & time of sampling | : 25.08.202 | 23 (05:22 P.M. to 05:58 P.M.) | ID No.: RVB/SMK/05 (| tan Valuty. 110024 | | | |
| ampling Plan & Method | : RVB/FM | /45 & IS: 11255 (Part-1,2 & 3) | Parame | Jalocity Gas flow | | | |
| nalysis Completed on | : 28.08.203 | 23 | Chemical : 1 emp., 0 | b. & PM | | | |
| | | | Chemical . co, co | 2, 62 7 1.1 | | | |
| A. General informat | ion about stack : | and the second sec | | | | | |
| 1. Boiler connected t | to | : Zypmite - 1 | | | | | |
| 2. Emission due to | 1 A 1 | : Process Eminision | | | | | |
| Material of constr | uction of stack | · Circular | | | | | |
| Shape of stack | ided with norma | nent platform & ladder : Yes. | | | | | |
| 5. Whether stack is p | provided with perma | nen panon s | | | | | |
| B. Physical charact | t from ground level | : 30 M | | | | | |
| 1. Height of the stac | tack at sampling poil | nt : 1.03 M | | | | | |
| 2. Diameter of the st | wint | : 12 Nos. | | | | | |
| C Analysis / Chara | acteristic of stack G | as / Flue Gas : | 21.00 | d t and | | | |
| 1 Fuel used : | | Fuel consumption : | - 5.1.04 | ų , | | | |
| D Environmental o | conditions : | | 2 B B | 100200 | | | |
| D. Littlionitionen | | | The second | 10 % | | | |
| 1. Barometric press | sure : 752 mmHg | | 2. Temperature : 3 | 50 °C | | | |
| Barometric press Results of Phys | sure : 752 mmHg sical Parameters of | Flue Gas : | 2. Temperature : 3 | 30 °C Results | | | |
| Barometric press E. Results of Phys SI No. Test Parame | sure : 752 mmHg sical Parameters of ters | Flue Gas: Test Method | 2. Temperature : 3 | Results | | | |
| Barometric press E. Results of Phys Si No Test Parame Temperature of | sure : 752 mmHg sical Parameters of ters emission | Flue Gas: Test Method 1S 11255 : Part 3 : 2008 | 2. Temperature : 3 | Results 50 | | | |
| Barometric press E. Results of Phys Si No Test Parame 1. Temperature of | sure : 752 mmHg sical Parameters of ters emission in dust | Flue Gas: <u>Test Method</u> 1S 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Temperature : 3 | 80 °C Results 50 14.15 | | | |
| Barometric press E. Results of Phys Si No Test Parame 1. Temperature of 2. Velocity of gas | sure : 752 mmHg sical Parameters of eters emission in duct | Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Temperature : 3 | Results 50 14.15 37659 | | | |
| Eliveronic press E. Results of Phys Si No Test Parame 1. Temperature of 2. Velocity of gas 3. Quantity of gas | sure : 752 mmHg sical Parameters of emission in duct flow | Flue Gas: <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Temperature : 3 Unit °C m/sec NM ³ /hr | Results 50 14.15 37659 | | | |
| Elivinotitionation Barometric press E. Results of Phys Si No Test Parame 1. Temperature of 2. Velocity of gas 3. Quantity of gas F. Results of gase | sure : 752 mmHg sical Parameters of ters emission in duct flow eous emission : | Flue Gas : <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 | 2. Temperature : 3 Unit °C m/sec NM ³ /hr Unit Unit | Results 50 14.15 37659 Results | | | |
| Elivinotitionation Barometric press E. Results of Phys Si No Test Parame 1. Temperature of 2. Velocity of gas 3. Quantity of gas F. Results of gas Si No Test Parame | sure : 752 mmHg sical Parameters of emission in duct flow eous emission : eters | Flue Gas: <u>Test Method</u> 1S 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 Test Method | 2. Temperature : 3 Unit °C m/sec NM ³ /hr Unit Unit | Results 50 14.15 37659 Results | | | |
| Elivinouncement Barometric press E. Results of Phys SI No Test Parame 1. Temperature of 2. Velocity of gas 3. Quantity of gas F. Results of gase SI No Test Parame | sure : 752 mmHg sical Parameters of ters emission in duct flow eous emission : eters | Flue Gas: <u>Test Method</u> IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 Test Method IS 13270 (By Orsat): 1992 | 2. Temperature : 3 Unit C M/sec NM ³ /hr Unit % v/v | Results 50 14.15 37659 Results <0.2 | | | |
| D. Environmentation 1. Barometric press E. Results of Phys SI No Test Parame 1. Temperature of 2. Velocity of gas 3. Quantity of gas F. Results of gas SI No Test Parame 1. Carbon monoxid | sure : 752 mmHg sical Parameters of emission in duct flow eous emission : eters ide | Flue Gas: <u>Test Method</u> 1S 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 <u>Test Method</u> IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 | 2. Temperature : 3 Unit C M/sec NM ³ /hr Unit % v/v % v/v | Results 50 14.15 37659 Results <0.2 | | | |
| Elivinotitionation Barometric press E. Results of Phys Si No Test Parame 1. Temperature of 2. Velocity of gas 3. Quantity of gas F. Results of gase Si No Test Parame 1. Carbon monoxi 2. Carbon dioxide | sure : 752 mmHg sical Parameters of emission in duct flow eous emission : eters ide | Flue Gas: <u>Test Method</u> 1S 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 IS 11255 : Part 3 : 2008 <u>Test Method</u> IS 13270 (By Orsat): 1992 IS 13270 (By Orsat): 1992 | 2. Temperature : 3 Unit °C m/sec NM ³ /hr Unit % v/v % v | Results 50 14.15 37659 Results <0.2 | | | |

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TEST REPORT

| | FG/23-24/673 | Date: August 28, 2023 | 5 | Fagere |
|-------------|-----------------------------|---|---------------------|---------------------------|
| sued t | 0 | : M/S. PARADEEP PHOSPHATE LT | D. | |
| ddress | | ; Paradeep, Odisha. | | t mode |
| ample 1 | Description | : Stack Emission / Flue Gas | Equip | (Cal. Validity: 17/06/24) |
| ate & t | time of sampling | : 25.08.2023 (06:00 P.M. to 06:36 P.M.) | Param | eters Tested |
| amplin | g Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Physical - Temp. | Velocity, Gas flow |
| nalysis | s Completed on | : 28.08.2023 | Chemical : CO, C | O2, & PM |
| A | General information abou | ut stack : | | |
| 1. | Boiler connected to | : Zypmite - 2 | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. | Material of construction of | f stack : M.S. | | |
| 4. | Shape of stack | : Circular. | | |
| 5. | Whether stack is provided | with permanent platform & ladder ; Yes. | | |
| Β. | Physical characteristics | of stack : | | |
| 1. | Height of the stack from g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | impling point : 0.85 M | | |
| 3. | No. of Traverse point | A shock Cas / Elve Gas ' | | |
| C. | Analysis / Characteristic | 2 Fuel consumption : | - 3.Lo | ad : |
| 1. | Fuel used : | 2.1 der consumption | | |
| D. | Environmental condition | | 2. Temperature : | 30 °C |
| 1. | Barometric pressure : 752 | maters of Elus Gas ' | | |
| E. | Results of Physical Para | ameters of Fide Gas. | Unit | Results |
| SI No | Test Parameters | Test Method | 00 | 55 |
| 1. | Temperature of emission | IS 11255 : Part 5 : 2006 | ~ | 16.11 |
| 2 | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 10.11 |
| 2 | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 28765 |
| F | Results of gaseous emi | ission : | | Decultz |
| SINO | Test Parameters | Test Method | Unit | Results |
| | | 15 13270 (By Orsat); 1992 | % v/v | <0.2 |
| 1. | Carbon monoxide | 10 10070 (D) Overhu 1007 | % V/V | 0.2 |
| 1. Contract | Carbon dioxide | IS 13270 (By Orsai): 1992 | | 72 |
| 2. | | 1005 | mag/ N003 1 | 5.444 |

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TEST REPORT

| o. AP-FG/23-24/674 | Date: August 28, 2023 | | ragere |
|---|--|--|--------------------------|
| sued to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| ddress | : Paradeep, Odisha. | Faultr | ment used: |
| ample Description | : Stack Emission / Flue Gas | ID No · RVB/SMK/05 (| Cal. Validity: 17/06/24) |
| ate & time of sampling | : 25.08.2023 (04:40 P.M. to 05:20 P.M.) | Parame | eters Tested |
| ampling Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Physical : Temp., | Velocity, Gas flow |
| nalysis Completed on | : 28.08.2023 | Chemical : CO, CO | 02, & PM |
| A Consul information sh | out stack : | | |
| A. General information ab | : Zypmite - 3 | | |
| 1. Boller connected to | : Process Emmision | | |
| 2. Material of construction | of stack : M.S. | | |
| A Shape of stack | : Circular. | | |
| Swhether stack is provide | ed with permanent platform & ladder : Yes. | | |
| B. Physical characteristic | cs of stack : | | |
| 1. Height of the stack from | ground level : 30 M | | |
| 2. Diameter of the stack at | sampling point : 0.5 M | | |
| 3. No. of Traverse point | : 8 Nos. | | |
| C. Analysis / Characteris | tic of stack Gas / Flue Gas ; | 3.Loa | id : |
| 1. Fuel used : | 2. Fuel consumption : | | |
| D. Environmental conditi | ions : | 2 Temperature : | 30 °C |
| Barometric pressure : 7 | 54 mmHg | 2. Temperanne : | |
| E. Results of Physical Pr | arameters of Flue Gas : | Unit | Results |
| SI No Test Parameters | Test Method | 20 | 48 |
| 1 Temperature of emissi | ion IS 11255 : Part 3 : 2008 | C | 12.56 |
| 2 Valacity of gas in due | IS 11255 : Part 3 : 2008 | m/sec | 13.30 |
| 2. Velocity of gas in duc | IS 11255 : Part 3 : 2008 | NM ³ /hr | 8564 |
| 3. Quantity of gas flow | window t | | |
| F. Results of gaseous e | mission . Test Mathod | Unit | Results |
| SI No Test Parameters | Test method | | 7.15 |
| | IS 13270 (By Orsat): 1992 | % v/v | <0.2 |
| 1. Carbon monoxide | 10 12270 (B) Oregit: 1997 | % v/v | 0.2 |
| 2. Carbon dioxide | IS 13270 (By Orsu): 1992 | ma Alm2 | 52 |
| 3 Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm5 | - ENI- |
| G. Pollution control der | vice | Plant Granulator. | |
| Details of pollution co | ontrol devices attached with the stack . Expense | AN114 Tel 2010 All 101 | 100 |

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TEST REPORT

| o. AP-F | G/23-24/675 | | Date: August 28, 2 | 2023 | | rugereri |
|----------|----------------------------|------------------|---------------------------------|---------------------|-------------|---|
| sued to |) | : M/S. PAR | ADEEP PHOSPHATE L | TD. | | |
| Idress | | : Paradeep, C | Odisha. | | P. I. | nt words |
| mple D | Description | : Stack Emis | sion / Flue Gas | ID No. P | Equipme | Cal Validity: 17/06/24) |
| ate & ti | me of sampling | : 27.08.2023 | (03:50 P.M. to 04:38 P.M.) | ID NO.: K | Benemato | re Tested |
| mpling | Plan & Method | : RVB/FM/4 | 5 & 1S: 11255 (Part-1,2 & 3) | m tota | Valacity | Gas flow |
| nalysis | Completed on | : 28.08.2023 | | Physical : 1em | NO. CO | CO- & PM |
| 124 J | | | | Chemical : 50 | 2, 1402, 00 | condition |
| A. G | Seneral information | on about stack | C Discal Canarat | or Set - 7 | | |
| 1. S | stack connected to | | : Diesel General | D Set - 2 | | |
| 2. E | Emission due to | | : Burning of File | | | |
| 3. N | Material of constru | ction of stack | : M.S. | | | |
| 4. S | Shape of stack | the toolship and | , Chedial. | (es | | |
| 5. \ | Whether stack is pl | ovided with pe | · 1 MVA | | | |
| 6. (| Generator capacity | minting of star | . 1 M VIV | | | |
| B. 1 | Physical characte | from around 1 | evel : 20 M | | | |
| 1. 1 | Height of the stack | non ground i | point : 0.4 M | | | |
| 2. 1 | Diameter of the su | int at sampring | : 8 Nos. | | | |
| 3. | No. of Travelse pe | teristic of sta | ck Gas / Flue Gas : | | | |
| U. 1 | Analysis / Charac | ·HSD | | 2. Fuel consu | mption : 22 | Lt/hr. |
| D. | Environmental Co | anditions : | | | 0.0 | |
| U. | Environmental or | ra · 754 mmHe | | 2. Temperatu | re: 32 °C | |
| 1. | Barometric pressu | el Darameter | s of Flue Gas : | | | |
| Ε. | Finding of Priysi | cal Faiameter | Test Method | Unit | | Results |
| SI No | Test Paramete | mission | IS 11255 : Part 3 : 2008 | °C | | 207 |
| 1. | Temperature of e | duct | IS 11255 : Part 3 : 2008 | m/sec | | 15.69 |
| 2. | Velocity of gas f | low | IS 11255 : Part 3 : 2008 | NM ³ /hr | | 4379 |
| 3. | Results of nased | us emission | | | | N |
| SI No | Test Paramet | ers | Test Method | Unit | Results | Environment (Protection) Third Amendment Rules 2013, for 75 kw - ≤ 800 kw |
| | | | 1.1084 | 213 | 40 | Not Available |
| 1. | Sulphur dioxide | | IS 11255 : Part 2 : 1985 | mg/Nm | 74 | |
| 2. | Nitrogen dioxid | | IS 11255 : Part 7 : 2005 | mg/Nm ³ | 122.5 | |
| 3. | Carbon monoxid | ie | USEPA 10:2017 | mg/Nm [*] | 0.22 | 3.5 |
| 1.00 | Long and the second second | | | gm/kw-hr | 0.75 | 5.5 |
| | | | IS 13270 (By Orsat): 1992 | % v/v | <0.2 | Not Available |
| 4 | Carbon dioxide | | IS 13270 (By Orsat): 1992 | % v/v | 7.0 | Not Available |
| 4 | Particulate Mat | ers | IS 11255 : Part 1 : 1985 | mg/Nm ³ | 27 | 0.2 |
| 3. | T at treature train | | | gm/kw-hr | 0.15 | 0.2 |
| G. | Pollution contr | ol device | | | | 0.0. |
| | Details of pollut | ion control dev | vices attached with the stack : | COOPT : | | Khar |
| | POI. | 1 | -: END OF TEST R | EPORT :- | (Dr | P KARIM) |
| | Report Verifie | b by | | | Tech | ical Manager |
| | S. Monda | al | | | rechn | ical Manager |
| | C. monor | | | | Authori | sed Signatory |
| | | | | Fo | or R.V.BRI | GGS & CO. (P) LID. |

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TEST REPORT

| No. AP-FG/23-24/675 | | Date: August 28, 202 | 23 | | i ugo z or z |
|------------------------------------|-----------------|---|--------------------------------|--------------|--|
| ssued to | : M/S. P | ARADEEP PHOSPHATE LT |) . | | |
| ddress | : Paradee | p, Odisha. | | Parton | ant weads |
| Sample Description | : Stack G | as / Flue Gas | ID Max T | Equipme | (Cal Validity: 17/06/24) |
| Date & time of sampling | : 27.08.20 |)23 (03:50 P.M. to 04:38 P.M.) | ID N0 1 | Deremet | ers Tested |
| Sampling Plan & Metho | d : RVB/FN | 4/45 & IS: 11255 (Part-1,2 & 3) | | Hydrocar | bon as HC |
| Analysis Completed on | : 28.08.20 | 023 | | Tiydroeda | |
| A. General informa | ation about st | tack : | Sat - 7 | | |
| 1. Stack connected | to | : Dieset Generator | 361 - 2 | | |
| 2. Emission due to | o | : Burning of rt.5.0 | | | |
| Material of cons | truction of sta | ck : M.S. | | | |
| Shape of stack | | , encular. | | | |
| Whether stack is | s provided wit | 1 MVA | | | |
| Generator capac | ity | tack t | | | |
| B. Physical chara | cteristics of a | nd level : 20 M | | | |
| 1. Height of the st | ack from grou | ling point : 0.4 M | | | |
| Diameter of the | stack at samp | : 8 Nos. | | | |
| 3. No. of Traverse | racteristic of | stack Gas / Flue Gas : | | 101 122 | |
| C. Analysis / Cila | ·HSD | | Fuel consult | imption : 22 | Lt/hr. |
| D Pocults of das | eous emissio | on : | | | Norma an est |
| SI No Test Param | eters | Test Method | Unit | Results | Environment (Protection) Third Amendment Rules 2013, for 75 kw - \$ 800 kw |
| a and the design | rhon at HC | + 5182 (Part - 22), 2004 RA 2009, By AA | mg/Nm ³ | 15.20 | |
| 6. Total Hydroca | roon as me | T-A-T-ALCENCE DATE MEDITIVE CONTRACT OF ALCENCE | om/kw-hr | 0.08 | 4.0 |
| 7 Nitrogen diox | ide | IS 11255 : Part 7 : 2005 | gm/kw-hr | 0.40 | 10 |
| E Pollution con | trol device | | | | |
| Details of poll | ution control o | levices attached with the stack : Nil. | | | |
| Dennis of peri | | -: END OF TEST REPO | DRT :- | | |

S. Mondal

(Dr. R. KARIM)

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

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TEST REPORT

| No. | AP-SL/23-24/476-479 | | | Date: A | ugust 30, 202 | 23 | | | Page 1 of 1 |
|------|---------------------|---|--|------------------|------------------|-----------------|--|--------------|----------------|
| Issu | ed to | : M/S. F | PARADE | EP PH | OSPHATES | LIMITE | D | | |
| Add | ress | : Parad | eep, Od | isha. | | | | | |
| You | r P.O. Ref. no. | : 55000 | 05451, | dtd. 13.0 | 08.2022 | | | | |
| Des | cription of Sample | : Sound | Level N | Aonitorir | ng | | Parameter | s Tested : I | Mar LMas & Leg |
| Date | e of Monitoring | : 24.08. | 2023 to | 27.08.2 | 023 | | Test Meth | od : IS 475 | 8:1968 |
| SOU | ND LEVEL MONITORIN | G AT AM | BIENT LC | CATION | : | | - | | |
| SI. | Locations | Day Ti | me (06.0 | 0 A.M to | 0 10.00 P.M) | Night 1 | Time (10. | 00 P.M t | o 06.00 A.M) |
| No | Sound Level in dB(A | | n dB(A) | Norms as per | Sound Level in | | n dB(A) | Norms as per | |
| | | L _{Min} L _{Max} L _{eq} Environmen Protection A 1986, rule 3 and 4 (1) fo Industrial an | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | | |
| 1. | Near AAQMS - 1 | 52.8 | 58.1 | 55.8 | | 50.8 | 53.7 | 52.6 | |
| 2. | Near AAQMS - 2 | 51.7 | 54.2 | 53.2 | | 50.4 | 52.9 | 52.0 | |
| 3. | Near AAQMS - 3 | 52.9 | 57.3 | 55.2 | 75 dB(A) | 51.4 | 54.1 | 53.2 | 70 dB(A) |
| 4. | Near AAQMS - 4 | 53.2 | 57.8 | 55.9 | 1 | 51.2 | 54.2 | 53.2 | 1 |

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

-: END OF TEST REPORT :-

Report Verified by

S. Mondal

0.0

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

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TEST REPORT

| No. A | AP-SL/23-24/480-486 | Date: | August 30 | , 2023 | | Page 1 of 1 |
|-----------------------|----------------------------------|--|--------------------|------------------|-----------------|---|
| Issue Addr Your | ed to ress r P.O. Ref. no. | : M/S. PARADEEP PHOSPI : Paradeep, Odisha. : 5500005451, dtd. 13.08.20 | HATE LT | D. | | 67 |
| Desc | ription of Sample | : Sound Level Monitoring | | | Parameter | rs Tested : LMins LMax & Las |
| Date | of Monitoring | : 24.08.2023 to 27.08.2023 | | | Test Meth | od : 1S 4758 : 1968 |
| SOU | ND LEVEL MONI | TORING : | | | | |
| SI. | Locations | DATE & TIME | Noise | e Level in | n dB(A) | Permissible Noise Exposure for Industrial |
| 110. | | | \mathbf{L}_{Min} | L _{Max} | L _{eq} | Workers as per The Noise Pollution (Regulation And Control) Rules, 2000 |
| 1. | PAP Plant | 27.08.2023 10:20 A.M 10:25 A.M. | 66.8 | 69.7 | 68.2 | |
| 2. | SAP Plant | 26.08.2023 10:40 A.M 10:45 A.M. | 53.8 | 58.1 | 56.6 | |
| 3. | Zypmite Plant | 24.08.2023 04:30 P.M 04:35 P.M. | 78.2 | 84.4 | 82.2 | |
| 4. | AB Side - DAP | 27.08.2023 11:00 A.M 11:05 A.M. | 81.4 | 89.4 | 87.0 | 90 dB(A) |
| 5. | CD Side - DAP | 27.08.2023 11:10 A.M 11:15 A.M. | 83.5 | 89.1 | 86.9 | |
| 6. | Off side | 26.08.2023 11:10 A.M 11:15 A.M. | 69.9 | 74.5 | 72.8 | |
| 7. | Bagging Section | 24.08.2023 11:50 A.M 11:55 A.M. | 74.8 | 78.4 | 76.8 | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

Report Verified by S. Mondal

a Kat (Dr. R. KARIM) Technical Manager

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TEST REPORT

| No. E(D)/23-24/711 | | Date: 02 September 2023 | Page 1 of |
|---|---|---|---|
| Issued to | | M/s. PARADEEP PHOSPHATI Paradeep, Odisha | E LIMITED |
| Description of Sample | : | Effluent | Parameter Tested: |
| Collection Source | : | ETP Outlet | pH, TSS, O & G, F, |
| Sample Drawn by us on | : | 28.08.2023 at 13.00 P.M. | NH ₂ -N, TKN, NH ₃ , P, N |
| Sample Carried out by | : | Mr. P.P.Mondal and Mr. A. Manna | - |
| Sampling Plan | : | RVB/FM/45 | |
| Analysis completed on | : | 02.09.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 1060 | 2 |
| Mode of Sampling | 1 | Grab | |
| Environmental condition during sampling | | Temperature : 24ºC, Transported in Ice | box. Cold chain maintained |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Norms prescribed by Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|------------------------------------|--|------|---------|--|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 8.4 | 6.5 - 8.5 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 46 | 100 (Max.) |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | BDL | 10 (Max.) |
| 4 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 1.40 | 10 (Max.) |
| 5 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH3F | mg/l | 36 | 50 (Max.) |
| 6 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 43 | 75 (Max.) |
| 7 | Free Ammonia as NH3 | APHA 23rd edition 4500 NH ₃ F | mg/l | BDL | 4 (Max.) |
| 8 | Dissolved Phosphates as P | APHA 23rd edition 4500-PD | mg/l | 2.97 | 5 (Max.) |
| 9 | Nitrate Nitrogen as NO3-N | APHA 23rd edition 4500-N03D | mg/l | 9.1 | 20 (Max.) |

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

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, Free Ammonia .. 0.2mg/l.

Report Verified by (J. Das)

-: END OF TEST REPORT:-

Kar (Dr. R. KARIM) Technical Manager Authorised Signatory

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TEST REPORT

| No. E(D)/23-24/712 | | Date: 02 September 2023 | Page 1 of 2 |
|---|---|--|---------------------------|
| Issued to | : | M/s. PARADEEP PHOSPHATE | LIMITED |
| Description of Sample | | Ffluent | Parameter Tected. |
| Collection Source | : | STP Outlet | pH, TSS, BOD |
| Sample Drawn by us on | : | 28.08.2023 at 12.20 P.M. | |
| Sample Carried out by | : | Mr. P.P.Mondal and Mr. A. Manna | |
| Sampling Plan | : | RVB/FM/45 | |
| Analysis completed on | : | 02.09.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 1060 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | : | Temperature : 23ºC, Transported in Ice b | ox, Cold chain maintained |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|---|------------------------------|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.5 | 6.5-9.0 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 35 | < 100 |
| 3 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 6.2 | < 30 |

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

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM) Technical Manager Authorised Signatory



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TEST REPORT

| No. E(D)/23-24/712 | | Date: 02 September 2023 | Page 2 of 2 |
|---|----|--|-----------------------------------|
| Issued to | •• | M/s. PARADEEP PHOSPHATE | LIMITED |
| Description of Sample | | Paradeep, Odisha | D |
| Collection Source | | STP Outlet | Microbiological - Fascal Coliform |
| Sample Drawn by us on | : | 28.08.2023 at 12.20 P.M. | sucrossological : Faccal Colliorm |
| Sample Carried out by | : | Mr. P.P.Mondal and Mr. A. Manna | |
| Sampling Plan | ÷ | RVB/FM/45 | |
| Analysis completed on | : | 30.08.2023 | |
| Sample collection Procedure | : | APHA 24th Edition 9060 | |
| Mode of Sampling | : | Grab | |
| Environmental condition during sampling | £ | Temperature : 23°C, Transported in Ice | box, Cold chain maintained |

MICROBIOLOGICAL TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|------------|-----------------|-------------------------|----------------|---------|---|
| 1 | Faecal Coliform | APHA 23rd Edition 9221E | MPN/ 100 ml | < 2 | < 1000 |

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

-: END OF TEST REPORT:-

Report Verified by

(Pijush Kanti Dutta) Sr. Microbiologist Authorized Signatory

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No. E(D)/23-24/713

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TEST REPORT

| Date: 02 September 2023 | Page 1 of 1 | | |
|-------------------------|-------------|--|--|
| | | | |

| | Issued to | : | M/s. PARADEEP PHOSPHATE LIMITED Paradeep, Odisha | | |
|---|----------------------------------|---|---|--------------------------------|--|
| | Description of Sample | : | Effluent | Parameter Tested: | |
| | Collection Source | : | Storm Drain - 1 | pH, TSS, TDS, O & G, BOD, COD, | |
| | Sample Drawn by us on | 1 | 28.08.2023 at 14:30 P.M. | P, F, NH3-N, TKN, NH3, N | |
| | Sample Carried out by | t | Mr. P.P.Mondal and Mr. A. Manna | 1 | |
| | Sampling Plan | : | RVB/FM/45 | | |
| | Analysis completed on | : | 02.09.2023 | | |
| 2 | Sample collection Procedure | | APHA 24th Edition 9060 | | |
| | Mode of Sampling | : | Grab | | |
| | Sample condition during sampling | : | Temperature : 25°C, Transported in Ice | box | |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results |
|------------|---|--|------|---------|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.8 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 46 |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | 3.5 |
| 4 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 2.5 |
| 5 | Chemical Oxygen Demand (COD) | APHA 23rd edition 5220B | mg/l | . 13 |
| 6 | Dissolved Phosphates as P | APHA 23rd edition 4500F-PD | mg/l | 3.63 |
| 7 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 1.28 |
| 8 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 24 |
| 9 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 34.2 |
| 10 | Free Ammonia as NH ₃ | APHA 23rd edition 4500 NH ₃ F | mg/l | 4.1 |
| 11 | Nitrate Nitrogen as N | APHA 23rd edition 4500-N03D | mg/l | 8.6 |

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.2mg/l.

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM) Technical Manager Authorised Signatory

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TEST REPORT

| No. E(D)/23-24/714 | _ | Date: 02 September 2023 | Page 1 of 1 | |
|----------------------------------|---|---|--------------------------------|--|
| Issued to | : M/s. PARADEEP PHOSPHATE LIMITED Paradeep, Odisha | | | |
| Description of Sample | : | Effluent | Parameter Tested: | |
| Collection Source | ; | Storm Drain - 2 | pH, TSS, TDS, O & G, BOD, COD, | |
| Sample Drawn by us on | : | 28.08.2023 at 14:45 P.M. | P, F, NH3-N, TKN, NH3, N | |
| Sample Carried out by | : | Mr. P.P.Mondal and Mr. A. Manna | | |
| Sampling Plan | : | RVB/FM/45 | | |
| Analysis completed on | : | 02.09.2023 | | |
| Sample collection Procedure | 3 | APHA 24th Edition 9060 | | |
| Mode of Sampling | : | Grab | | |
| Sample condition during sampling | | Temperature : 27°C Transported in Ice I | NOX . | |

TEST FINDINGS:

| SI. No. | Test Parameters | Test Method | Unit | Results |
|------------|---|--|------|---------|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 8.4 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 58 |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | 2.6 |
| 4 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 2.4 |
| 5 | Chemical Oxygen Demand (COD) | APHA 23rd edition 5220B | mg/l | 14 |
| 6 | Dissolved Phosphates as P | APHA 23rd edition 4500F-PD | mg/l | 3.7 |
| 7 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 1.15 |
| 8 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 32 |
| 9 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 37.4 |
| 10 | Free Ammonia as NH3 | APHA 23rd edition 4500 NH ₃ F | mg/l | 4 |
| 11 | Nitrate Nitrogen as N | APHA 23rd edition 4500-N03D | mg/l | 9.2 |

Note : BDL: Below Detection Limit. Minimum Detection Limit of Oil & Grease .. 2.0 mg/l, NH3 .. 0.2mg/l.

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM) Technical Manager Authorised Signatory

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CIN: U51109WB1931PTC007007

TEST REPORT

| No. | AP-AAQ/23-24/391 | Date: September 29, 2 | 023 | | Page 1 of 1 | |
|--------------------|---|--|---------------------------|---|--|--|
| ssu | ed to : M/s | S. PARADEEP PHOSPHATE LTD. | | | | |
| Add Your Sam | ress : Pai WO Ref. No. : 550 ple Description : Am | Second | | Equipment used: ID No.: RVB/AFDS/PM2.5/01, Cal. Valid upto: 04.06.24 | | |
| Sam Date Sam | e & Time of sampling 23.0 pling Plan : : : RV | 0°16'31.01, E86°37'27.24) 09.2023 (10:30 A.M.)-24.09.2023 (10:30 A.M.) B/FM/45 | Temp | Environmental c erature : Max: 34.0 Barometric Presure | onditions °C & Min: 26.0°C : 750 mmHg | |
| Duri Ana | ation of Sampling : 24 lysis Completed on : 29 | Hrs. 09.2023 | Parameters CO, Pb, Ni, | : <u>Tested</u> : PM _{2.5} , PM As, C ₆ H ₆ , BaP | 1 ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , | |
| TES SI. No. | T FINDINGS:- Parameters | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 28.7 | 60 (24 Hourly.) | |
| 2. | PM ₁₀ (Size ≤ 10µm) | IS 5182 (Part - 23): 2006 | µg/m ³ | 48.3 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.25 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 27.29 | 80 (24 Hourly.) | |
| 5. | Ozone as O3 | IS 5182 (Part - 9): 1974 | µg/m ³ | 14.00 | 180 (1 Hourly.) | |
| 6. | Ammonia as NH ₃ | SOP No.: RVB/SOP/01/10 (indopheno: Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 19.88 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide as CO | IS : 5182 (Part - 12), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.83 | 04 (1 Hourly.) | |
| 8. | Lead as Pb | IS 5182 (Part - 22): 2004 | µg/m³ | 0.182 | 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 | 6.2 | 20 | |
| 10 | Arsenic as As | SOP No.: RVB/SOPI01/16 (AAS Method) Issue No. 0/ Issue Date: 10.01.2018 | ng/m ³ | 0.988 | 6.0 | |
| 11 | . Benzene as C ₆ H ₆ | IS 5182 (Part - 11): 2006, | µg/m³ | <1.0 | 5.0 | |
| 12 | . Benzo (a) Pyrene | IS 5182 (Part - 12): 2004, | ng/m ³ | 0.05 | 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 S. Mondal

(Dr. R. KARIM) **Technical Manager**

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

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9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383. Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN: U51109WB1931PTC007007

TEST REPORT

| No. | AP-AAQ/23-24/392 | | Date: September 29, 20 | 023 | | Page 1 of 1 | |
|--|---|--|--|--|---|--------------------|--|
| Issu | ed to | : M/S. I | PARADEEP PHOSPHATE LTD. | | | | |
| Add Your Sam | Address : Parad four WO Ref. No. : 55000 Sample Description : Ambie | | : Paradeep, Odisha : 5500005451, dtd. 13.08.2022 : Ambient Air | | Equipment used: ID No.: RVB/AFDS/PM2.5/01, Cal. Valid upto: 04.06.24 | | |
| Sampling Location : Near A (N20°1 Date & Time of sampling : 22.09.2 Sampling Plan : : RVB/F Duration of Sampling : 24Hrs | | on : Near AAQMS # 02 (N20°16'30.06, E86°37'20.25) sampling : 22.09.2023 (10:10 A.M.)-26.09.2023 (10:10 A.M.) : RVB/FM/45 spling : 24Hrs. | | Environmental conditions Temperature : Max: 34.0°C & Min: 27.0°C Barometric Presure : 750 mmHg Parameters Tested: PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , | | | |
| Ana | lysis Completed on | : 29.09 | 2023 | 00,10,10, | 1.00, 00, 00, 000, | | |
| TES SI. No. | T FINDINGS:- Parameters | ŀ | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µn | n) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 32.5 | 60 (24 Hourly.) | |
| 2. | PM ₁₀ (Size ≤ 10µm |) | IS 5182 (Part - 23): 2006 | µg/m³ | 50.4 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as | SO2 | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.18 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 28.35 | 80 (24 Hourly.) | |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9): 1974 | µg/m³ | 14.40 | 180 (1 Hourly.) | |
| 6 | Ammonia as NH ₃ | | SOP No.: RVB/SOPI01/10 (Indophenal Method) Issue No. 04, Issue Date: 10.01.2018 | hð\w ₃ | 19.31 | 400 (24 Hourly.) | |
| 7 | Carbon Monoxide | as CO | IS : 5182 (Part - 10], 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.83 | 04 (1 Hourly.) | |
| 8 | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m³ | 0.220 | 1.0 (24 Hourly.) | |
| 9 | 9. Nickel as Ni | | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | 4 ng/m ³ | 18.0 | 20 | |
| 10 |). Arsenic as As | | SOP No.: RVB/SOPI01/16 (AAS Method) issue No. 0 issue Cate: 10.01.2018 | 4. ng/m ³ | 0.494 | 6.0 | |
| 1 | 1. Benzene as C _e H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | <1.0 | 5.0 | |
| 1 | 2. Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 ug/m³ & Benzo(a)Pyrene: 0.5 ng/m S. Mordal Report Verified by

S. Mondal

(Dr. R. KARIM) Technical Manager

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

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9, BENTINCK STREET, KOLKATA - 700 001

Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447

E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN: U51109WB1931PTC007007

TEST REPORT

| No. AP-AAQ/23-24/393 | | | Date: September 29, 2 | 023 | | Page 1 of 1 | |
|----------------------|---|----------------------|---|---------------------------------|---|--|--|
| ssu | ed to | : M/S. P | ARADEEP PHOSPHATE LTD. | | | | |
| Add Your Sam | Address : Parad Your WO Ref. No. : 55000 Sample Description : Amble | | ss : Paradeep, Odisha /O Ref. No. : 5500005451, dtd. 13.08.2022 a Description : Ambient Air | | Equipment used: ID No.: RVB/AFDS/PM2.5/01, Cal. Valid upto: 04.06.24 | | |
| Sam Date | e & Time of sampling | (N20°1) : 20.09.2 | 7'11.74, E85°39'32.64) 023 (09:30 A.M.)-21.09.2023 (09:30 A.M.) M/45 | Temp | Environmental co erature : Max: 34.0 Barometric Presure | onditions *C & Min: 27.0*C : 750 mmHg | |
| Dura Anal | pling Plan : ation of Sampling lysis Completed on | : 24Hrs. : 29.09. | 2023 | Parameters CO, Pb, Ni, | <u>Tested</u> : PM _{2.5} , PM As, C ₆ H ₅ , BaP | 10, SO ₂ , NO ₂ , O ₃ , NH ₃ , | |
| TES SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 | |
| 1. | PM _{2.5} (Size ≤ 2.5µm | 1) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 30.8 | 60 (24 Hourly.) | |
| 2. | PM _{to} (Size ≤ 10µm |) | IS 5182 (Part - 23): 2006 | µg/m³ | 49.1 | 100 (24 Hourly.) | |
| 3. | Sulphur Dioxide as | SO2 | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.88 | 80 (24 Hourly.) | |
| 4. | Nitrogen Dioxide as | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 25.44 | 80 (24 Hourly.) | |
| 5. | Ozone as O3 | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 14.07 | 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 | 16.55 | 400 (24 Hourly.) | |
| 7. | Carbon Monoxide a | as CO | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Ried (NDIR) spectroscopy | mg/m ³ | 0.79 | 04 (1 Hourly.) | |
| 8 | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.449 | 1.0 (24 Houriy.) | |
| 9 | , Nickel as Ni | | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 0 Issue Date: 10.01.2018 | ng/m ³ | 10.9 | 20 | |
| 10 | 10. Arsenic as As | | SCP No.: RVB/SOP/01/16 (AAS Method) Issue No. 0 Issue Date: 10.01 2018 | ^{4,} ng/m ³ | 0.741 | 6.0 | |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2006, | µg/m³ | <1.0 | 5.0 | |
| 12 | 2. Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 | |

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

Report Verified by S. Mondal

(Dr. R. KARIM) **Technical Manager** Authorised Signatory

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

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9, BENTINCK STREET, KOLKATA - 700 001

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E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN: U51109WB1931PTC007007

TEST REPORT

| No. AP-AAQ/23-24/394 | | | Date: September 29, 2 | 023 | | Page 1 of 1 |
|---|--|---|---|--|---|---|
| SSU | ed to | : M/S. I | PARADEEP PHOSPHATE LTD. | | | |
| Address : Parad Your WO Ref. No. : 55000 Sample Description : Ambie Sampling Location : Near A | | : Paradeep, Odisha : 5500005451, dtd. 13.08.2022 : Ambient Air : Near AAOMS # 04 | | Equipment used: ID No.: RVB/AFDS/PM2.5/01, Cal. Valid upto: 04.06.24 ID No.: RVB/RDS/APM460/NL/05, Cal. Valid upto: 15.07.24 | | |
| Date Sam | e & Time of sampling pling Plan : | (N20°1 : 21.09.2 : RVB/F | 6'10.70, E86 ^o 38'32.54) 2023 (09:50 A.M.)-22.09.2023 (09:50 A.M.) ² M/45 | Temp | Environmental c perature : Max: 34.0 Barometric Presure Tested: PM _{2.5} , PM | onditions °C & Min: 26.0°C ; 750 mmHg I ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , |
| Ала | lysis Completed on | : 29.09 | 2023 | CO, Pb, Ni, | As, C ₆ H ₆ , BaP | |
| SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as NAAQ,2009 |
| 1. | PM _{2.5} (Size ≤ 2.5µm |) | USEPA 1997a,40 CFR Part 50, Appendix L. | µg/m³ | 28.7 | 60 (24 Hourly.) |
| 2. | PM ₁₀ (Size ≤ 10µm |) | IS 5182 (Part - 23): 2006 | µg/m ³ | 46.9 | 100 (24 Hourly.) |
| 3. | Sulphur Dioxide as | SO2 | IS 5182 (Part - 2): 2001 | µg/m ³ | 5.03 | 80 (24 Hourly.) |
| 4. | Nitrogen Dioxide as | NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 25.17 | 80 (24 Hourly.) |
| 5. | Ozone as O ₃ | | IS 5182 (Part - 9) : 1974 | µg/m ³ | 13.90 | 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 | 16.04 | 400 (24 Hourly.) |
| 7. | Carbon Monoxide a | s CO | IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy | mg/m ³ | 0.79 | 04 (1 Hourly.) |
| 8. | Lead as Pb | | IS 5182 (Part - 22): 2004 | µg/m ³ | 0.131 | 1.0 (24 Hourly.) |
| 9 | Nickel as Ni | | SOP No.: RVB/SOP/01/15 (AAS Method) Issue No. 04 Issue Date: 10.01.2018 | ^{I.} ng/m ³ | 10.5 | 20 |
| 10 | 10. Arsenic as As | | SOP No.: RVB/SOP/61/16 (AAS Method) issue No. 04 issue Date: 10.01.2018 | 4. ng/m ³ | 0.747 | 6.0 |
| 11 | Benzene as C ₆ H ₆ | | IS 5182 (Part - 11): 2005, | µg/m² | <1.0 | 5.0 |
| 12 | Benzo (a) Pyrene | | IS 5182 (Part - 12): 2004, | ng/m ³ | <0.5 | 1.0 |

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

Report Verified by S. Mondal

40 (Dr. R. KARIM) **Technical Manager** Authorised Signatory

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



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TEST REPORT

| No. AP-WAQ/23-24/270 | | | Date: September 27, 2023 Page 1 of 1 | | | | |
|--|------------------------------------|----------------------|---|---|--|--|--|
| ssu Add | ed to ress | : M/S. I : Parad | PARADEEP PHOSPHATE LTD. eep, Odisha | | | | |
| Your Sam | Ref. WO. No. | : 55000 : Fugitiv | 005451, dtd. 13.08.2022 e Air ection | Equipment used: ID No.: RVB/RDS/APM460/BL/06, Cal. Valid upto: 05.11.2023 | | | |
| Sampling Location : SAP S Date & Time of sampling : 20.09. Sampling Plan : : RVB/F | | : 20.09.2 : RVB/F | 2023 (09:30 A.M 05:30 P.M.) M/45 | Environmental conditions Temperature : Max: 33.0°C & Min: 30. Barometric Presure : 750 mmHg | | nditions C & Min: 30.0°C 750 mmHg sted: | |
| Analysis Completed on : 27.09 | | : 27.09. | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| TES SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m³ | 1366 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 4.46 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 26.80 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 24.40 | Not Specified | |

-: END OF TEST REPORT :-

5. Mondo

Report Verified by S. Mondal

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



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TEST REPORT

| No. AP-WAQ/23-24/271 | | | Date: September 27, 2023 Page 1 of | | | | |
|----------------------|------------------------------------|--------------------|---|-------------------|--|--|--|
| ssu | ied to | : M/S. | PARADEEP PHOSPHATE LTD. | 8 | | | |
| Add | Iress | : Parad | eep, Odisha | | | | |
| You | our Ref. WO. No. : 550 | | 005451, dtd. 13.08.2022 | | Equipment us | sed: | |
| Sam | ple Description | : Fugitiv | e Air | IC | No .: RVB/RDS/APN | 1460/BL/07, | |
| Sam | pling Location | : PAP S | ection | | Cal. Valid upto: 03 | .11.2023 | |
| 75200 | | | Γ | | Environmental co | nditions | |
| Date | & Time of sampling | : 22.09.1 | 2023 (09:35 A.M 05:35 P.M.) | Temp | perature : Max: 33.5° | C & Min: 29.0°C | |
| San | noling Plan : | : RVB/F | M/45 | 1 | Barometric Presure : | 750 mmHg | |
| Dur | ation of Samoling | 08Hrs | | | Parameters Te | sted: | |
| Ann | lucia Completed on | - 27 00 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ | |
| Ana | Tysis Completed on | . 21.00. | 2023 | | | | |
| SI. No. | Parameters | 3 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 1420 | 10000 | |
| 2. | Sulphur Dioxide as SO ₂ | | IS 5182 (Part - 2): 2001 | µg/m³ | 4.77 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 28.06 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) issue No. 04, issue Date: 10.01.2018 | µg/m³ | 27.55 | Not Specified | |

-: END OF TEST REPORT :-

5 Monda

Report Verified by S. Mondal

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TEST REPORT

| No. AP-WAQ/23-24/272 | | | Date: September 27, | 2023 | | Page 1 of 1 |
|--|------------------------------------|---------------------|---|--|---|--|
| lssu Add | led to fress | : M/S. : Parad | PARADEEP PHOSPHATE LTD eep, Odisha | | | |
| You Sarr | r Ref. WO. No. pple Description | : 5500 : Fugitiv | 005451, dtd. 13.08.2022 e Air | Equipment used: ID No.: RVB/RDS/APM460/BL/06, | | |
| Date | e & Time of sampling | : 22.09. : RVB/F | 2023 (10:20 A.M 06:20 P.M.) M/45 | Temp | Environmental co perature : Max: 34.0° Barometric Presure : | nditions C & Min: 30.0°C 750 mmHg |
| Duration of Sampling : 08Hm Analysis Completed on : 27.09 | | : 08Hrs : 27.09. | 2023 | | Parameters Te SPM, SO ₂ , NO ₂ | sted: & NH ₃ |
| TES SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m³ | 2588 | 10000 |
| 2. | Sulphur Dioxide as | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 4.90 | 5000 |
| 3. | Nitrogen Dioxide a | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 23.65 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 30.83 | Not Specified |

-: END OF TEST REPORT :-

5. Monda Report Verified by

S. Mondal

(Dr. R. KARIM)

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



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TEST REPORT

| No. AP-WAQ/23-24/273 | | | Date: September 27, | 2023 | | Page 1 of |
|---|---|-----------------------------------|---|---|--|--|
| ssu Add | ed to ress | : M/S. F | PARADEEP PHOSPHATE LTD. eep, Odisha | | | |
| Your Sam Sam | Ref. WO. No. ple Description pling Location | : 55000 : Fugitive : DAP, C | 005451, dtd. 13.08.2022 e Air D Side | Equipment used: ID No.: RVB/RDS/APM460/NL/01, Cal. Valid upto: 05.11.2023 | | |
| Date Sam | e & Time of sampling pling Plan : | : 22.09.2 : RVB/FI | 2023 (09:55 A.M 05:55 P.M.) M/45 | Environmental conditions Temperature : Max: 33.0°C & Min: Barometric Presure : 750 mm | | C & Min: 30.5°C 750 mmHg |
| Duration of Sampling : 08Hrs Analysis Completed on : 27.09 | | : 08Hrs. : 27.09.2 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| TES SI. No. | T FINDINGS:- Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 2965 | 10000 |
| 2. | Sulphur Dioxide a | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 5.10 | 5000 |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 24.75 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 33.27 | Not Specified |

-: END OF TEST REPORT :-

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(Dr. R. KARIM)

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TAHER MANSION, 1ST FLOOR 9, BENTINCK STREET, KOLKATA - 700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| No. AP-WAQ/23-24/274 | | | Date: September 27, | 2023 | | Page 1 of | |
|--|---|----------------------------------|---|--|------------------------------------|--|--|
| Add | ssued to : M/S. Address : Parac | | PARADEEP PHOSPHATE LTD. eep, Odisha | | | | |
| You Sam Sam | Your Ref. WO. No. : 5500 Sample Description : Fugiti Sampling Location : Off Si | | 005451, dtd. 13.08.2022 e Air e | Equipment used: ID No.: RVB/RDS/APM460/BL/06, Cal. Valid upto: 05.11.2023 | | | |
| Date & Time of sampling : 21.09 Sampling Plan : : RVB/I Duration of Sampling : 08Hrs | | : 21.09.2 : RVB/F : 08Hrs. | 2023 (09:25 A.M 05:25 P.M.) M/45 | Environmental condit Temperature : Max: 33.0°C & Barometric Presure : 750 Parameters Tester | | nations C & Min: 30.0°C 750 mmHg sted: | |
| Ana | lysis Completed on T FINDINGS:- | : 27.09. | 2023 | | SFM, SO2, NO2 | a Ning | |
| SI. No. | Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) | |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m³ | 1064 | 10000 | |
| 2. | Sulphur Dioxide a | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 4.90 | 5000 | |
| 3. | Nitrogen Dioxide | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 21.28 | 6000 | |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 24.74 | Not Specified | |

-: END OF TEST REPORT :-

S. Manar Report Verified by S. Mondal

(Dr. R. KARIM)

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

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TEST REPORT

| No. AP-WAQ/23-24/275 Issued to : M/S. Address : Parad | | | Date: September 27, | 2023 | | Page 1 of 1 |
|---|-----------------------------------|--------------------|---|-------------------|--|--|
| | | : M/S. : Parad | PARADEEP PHOSPHATE LTD. eep, Odisha | | | |
| Your | Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment us | sed: |
| Sam | nle Description | : Fugitiv | e Air | 10 | No .: RVB/RDS/APN | 1460/NL/01, |
| Sam | pling Location | : Baggin | g Section | | Cal. Valid upto: 05 | .11.2023 |
| Court | ping Loodion | | - F | | Environmental co | nditions |
| Date | & Time of semoling | 21.09 | 2023 (09:50 A.M 05:50 P.M.) | Temp | erature : Max: 33.5° | C & Min: 30.0°C |
| Sam | noling Plan | · RVB/F | M/45 | | Barometric Presure : | 750 mmHg |
| Dur | tion of Sampling | · 08Hrs | | | Parameters Te | sted: |
| Dura | ation of Sampling | . 00/113. | 0002 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| Ana | lysis Completed on | : 27.09. | 2023 | | | |
| TES SI. No. | <u>T FINDINGS:-</u> Parameters | | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partice Matter | ulate | IS : 5182 (Part - 4),1999 | µg/m ³ | 688 | 10000 |
| 2. | Sulphur Dioxide a | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m³ | 4.22 | 5000 |
| 3. | Nitrogen Dioxide a | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m³ | 23.15 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m³ | 18.82 | Not Specified |

-: END OF TEST REPORT :-

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S. Mondal

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



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TEST REPORT

| No. AP-WAQ/23-24/276 | | | Date: September 27, | 2023 | | Page 1 of 1 |
|----------------------|----------------------------|--------------------|---|-------------------|--|--|
| Issu | ued to | : M/S. | PARADEEP PHOSPHATE LTD | | | |
| Add | iress | : Parad | eep, Odisha | | | |
| You | r Ref. WO. No. | : 5500 | 005451, dtd. 13.08.2022 | | Equipment us | sed: |
| Sam | ple Description | : Fugitiv | e Air | I | No .: RVB/RDS/APM | /460/BL/09, |
| Sam | pling Location | : Zypmi | te Section | | Cal. Valid upto: 05 | .11.2023 |
| | 9 1973 | | | | Environmental co | nditions |
| Date | e & Time of sampling | : 24.08. | 2023 (10:15 A.M 06:15 P.M.) | Temp | perature : Max: 31.0° | C & Min: 28.0°C |
| San | noling Plan : | : RVB/F | M/45 | | Barometric Presure : | 750 mmHg |
| Dun | ation of Samoling | : 08Hrs | | | Parameters Te | sted: |
| Ann | Jusic Completed on | . 30.08 | 2023 | | SPM, SO ₂ , NO ₂ | & NH ₃ |
| Alla | invisis Completed on | . 30.00. | 2023 | | | |
| SI. No. | Parameters | 0 | Test Method | Unit | Results (Time Weighted Avg.) | Norms as per Factory Act, 1948 (Time weighted average concentration) |
| 1. | Suspended Partic Matter | ulate | IS : 5182 (Part – 4),1999 | µg/m ³ | 1715 | 10000 |
| 2. | Sulphur Dioxide a | s SO ₂ | IS 5182 (Part - 2): 2001 | µg/m ³ | 4.66 | 5000 |
| 3. | Nitrogen Dioxide a | as NO ₂ | IS 5182 (Part - 6): 2006 | µg/m ³ | 22.35 | 6000 |
| 4. | Ammonia as NH ₃ | | SOP No.: RVB/SOP/01/10 (Indophenol Method) Issue No. 04, Issue Date: 10.01.2018 | µg/m ³ | 20.50 | Not Specified |

-: END OF TEST REPORT :-

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TEST REPORT

| Issu | ed to | · M/S DADADEED Streember 29, | 2023 | Page 1 of |
|---------|---------------------------------|---|--------------------|--------------------------------|
| Add | ress | NI/S. PARADEEP PHOSPHATE I | TD. | |
| Sam | ple Description | Paradeep, Odisha | | |
| Date | & time of sampling | me of sampling 20.00 2023 (02.00 PM | | quipment used: |
| Sam | oling Plan & Method | : RVB/FM/45 & IS: 11255 (D | ID No.: RVB/SM | K/05 (Cal. Validity: 17/06/24) |
| Anal | ysis Completed on | : 29.09.2023 | Pa | rameters Tested |
| | | 127.07.2023 | Physical : Ten | np., Velocity, Gas flow |
| Α. | General information abo | out stack : | Chemical : Co | D, CO2, SO2 & Acid Mist |
| 1. | Boiler connected to | : SAP - A | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. | Material of construction o | f stack : M.S. | | |
| 4. | Shape of stack | : Circular, | | |
|). P | Whether stack is provided | with permanent platform & ladder : Yes. | | |
| 1 | Physical characteristics | of stack : | | |
| 2 | Diamater of the stack from g | round level : 120 M | | |
| 3 | No. of Traverse point | mpling point : 2.7 M | | |
| 4 | Height of the sampling and | : 32 Nos. | | |
| C. | Analysis / Characteristic | nt from GL : 35 M | | |
| 1. | Fuel used | of stack Gas / Flue Gas : | | |
| D. | Environmental condition | 2. Fuel consumption : | 3.L | oad : |
| 1. | Barometric pressure : 751 | umHa | | |
| E. | Results of Physical Paran | neters of Eluc Coo : | 2. Temperature | : 30 °C |
| I No | Test Parameters | inclusion rule Gas ; | | |
| 1. | Temperature of emission | lest Method | Unit | Results |
| 2 | Value in Contentission | IS 11255 : Part 3 : 2008 | °C | 65 |
| 4. | velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | 11.10 |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NIN/3/1- | 102070 |
| F. | Results of gaseous emiss | ion : | NM /nr | 193071 |
| l No | Test Parameters | Test Method | 17.14 | |
| 1. | Sulphur dioxide | IS 11255 - Part 2 - 1095 | Unit | Results |
| 2. | Carbon monoxide | IS 12270 (D. C | mg/Nm ³ | 1161 |
| 3 | Carbon diavida | 15/15/270 (By Orsat): 1992 | % v/v | <0.2 |
| · · | Caroon dioxide | IS 13270 (By Orsat): 1992 | % v/v | 0.4 |
| 4. | Acid Mist | SOP No.: RVB/SOP/01/20, | | 100 |
| 3. | Pollution control device | Issue 140., 04, Issue Date: 10.01.2018 | ing/ism | 129 |
| | Details of pollution control of | levices attached with the start - NU | | |
| | 1.4 | -: END OF TEST REPORT - | | |
| | 5 Monde | Sho of TEST REPORT : | 0 | M |
| Rep | port Verified by | | X | Nar. |
| | S Mondal | | (Dr. R | . KARIM) |

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TEST REPORT

| No. AP-FG/23-24/845 | | Date: September 29, 2 | 2023 | Page 1 of | | |
|---------------------|---|--|-----------------------------------|--|--|--|
| ssued | to | : M/S. PARADEEP PHOSPHATE L | .TD. | | | |
| Addres | 55 | : Paradeep, Odisha. | | | | |
| Sample | e Description | : Stack Emission / Flue Gas | Equ | ipment used: | | |
| Date & | time of sampling | : 20.09.2023 (03:55 P.M. to 04:46 P.M.) | ID No.: RVB/SMK/0 | 05 (Cal. Validity: 17/06/24) | | |
| Sampli | ng Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Para | meters Tested | | |
| Analys | is Completed on | : 29.09.2023 | Physical : Temp Chemical : CO, | ., Velocity, Gas flow CO ₂ , SO ₂ & Acid Mist | | |
| Α. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | : SAP - B | | | | |
| 2, | Emission due to | : Process Emmision | | | | |
| 3. | Material of construction o | f stack : M.S. | | | | |
| 4. | Shape of stack | : Circular. | | | | |
| 5. | Whether stack is provided | with permanent platform & ladder : Yes. | | | | |
| В. | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | round level : 120 M | | | | |
| 2. | Diameter of the stack at sa | mpling point : 2.7 M | | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | | |
| 4. | Height of the sampling point from GL : 35 M | | | | | |
| C. | Analysis / Characteristic of stack Gas / Flue Gas : | | | | | |
| 1. | Fuel used : | 2. Fuel consumption : | - 3.Lo | ad : | | |
| D. | Environmental condition | <u>s:</u> | 978942200000000000000 | 2000200 | | |
| 1. | Barometric pressure : 751 | mmHg | Temperature : | 32 °C | | |
| E. | Results of Physical Para | meters of Flue Gas : | | | | |
| SI 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 | 11.34 | | |
| 3. | Quantity of gas flow | IS 11255:Part 3:2008 | NM ³ /hr | 190259 | | |
| F. | Results of gaseous emis | sion : | | | | |
| SI No | Test Parameters | Test Method | Unit | Results | | |
| 1. | Sulphur dioxide | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 1116 | | |
| 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. | Acid Mist | SOP No.: RVB/SOP/01/20, Issue No.: 04, Issue Date: 10.01.2018 | mg/Nm ³ | 110 | | |
| G. | Pollution control device Details of pollution control | devices attached with the stack : Nil | | | | |

bon Report Verified by

S. Mondal

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TEST REPORT

| lo. AP-FG/23-24/846 | Date: Septe | mber 29, 2023 | Page 10 |
|---|---|---|---|
| ssued to | : M/S. PARADEEP PHOS | PHATE LTD. | |
| ddress | : Paradeep, Odisha. | | |
| Sample Description | : Stack Emission / Flue Gas | Equi | oment used: (Cal Validity: 17/06/24) |
| Date & time of sampling | : 20.09.2023 (12:00 P.M. to 12: | 33 P.M.) | (Cal. Valuary, 11/0024) |
| ampling Plan & Method | : RVB/FM/45 & IS: 11255 (Par | t-1,2 & 3) | Velocity Cas flow |
| Analysis Completed on | : 29,09.2023 | Physical : Temp. | CO. SO & Acid Mist |
| | | Chemical : CO, C | 02, 501 & Acid Misi |
| A. General informatio | n about stack : | | |
| Boiler connected to | : SAP - C | | |
| 2. Emission due to | : Process Emi | ssion | |
| Material of construct | tion of stack : M.S. | | |
| Shape of stack | ; Circular. | vr - Vac | |
| 5. Whether stack is pro | wided with permanent platform & ladd | 51 : 1 CS. | |
| B. Physical character | istics of stack . | | |
| 1. Height of the stack | k at campling point : 2.7 M | | |
| 2. Diameter of the stat | st sampling point : 20 Nos. | | |
| No. of Traverse por Unight of the sample | ing point from GL : 35 M | | |
| C Analysis / Charact | eristic of stack Gas / Flue Gas : | | |
| 1. Fuel used : | 2. Fuel con | sumption : 3.Lo | ad : |
| D. Environmental con | ditions : | | |
| 1. Barometric pressure | : 751 mmHg | 2. Temperature : | 29 °C |
| F Results of Physica | & General Parameters of stack Gas | / Flue Gas : | |
| SI No Test Parameter | s Test Meth | od Unit | Results |
| 1. Temperature of en | ission IS 11255 : Part 3 : | 2008 °C | 76 |
| 2 Velocity of gas in | duct IS 11255:Part 3:2 | 008 m/sec | 8.30 |
| 3 Quantity of gas flo | w IS 11255:Part 3:2 | 008 NM ³ /hr | 136821 |
| 4 Sulphur dioxide | IS 11255 : Part 2 : | 1985 mg/Nm ³ | 1086 |
| 5. Carbon monoxide | 1S 13270 (By Orsat) | : 1992 % v/v | <0.2 |
| 6 Carbon dioxide | 1S 13270 (By Orsat) | : 1992 % v/v | 0.4 |
| 7. Acid Mist | SOP No.: RVB/SOP/ Issue No.: 04, Issue Date: | 01/20, 10.01.2018 mg/Nm ³ | 101 |
| F. Pollution control | device | | |
| Details of pollution | control devices attached with the stack | : Nil | |

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(Dr. R. KARIM)

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

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TEST REPORT

| No. AP-FG/23-24/847 | | Date: September 29, 20 | 23 | Page 10 |
|---------------------|---------------------------------|---|---------------------------------|--------------------------|
| ssued | to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| ddres | s | : Paradeep, Odisha. | | |
| ample | Description | : Stack Emission / Flue Gas | Equip | oment used: |
| Date & | time of sampling | : 21.09.2023 (12:10 P.M. to 12:46 P.M.) | ID NO.: KVB/SMK/05 | (Car. Vanuary, 1/100/24) |
| amplir | ng Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Paran Dissional Temp | Valocity Gas flow |
| Analysi | s Completed on | : 29.09.2023 | Chemical : CO (| O. & PM |
| | | a la charle de la co | Chemicar, co, c | |
| A. | General information abou | It stack : | | |
| 1. | Boiler connected to | : Zypmite - 1 | | |
| 2. | Emission due to | : Process Emmision | | |
| 3. | Material of construction of | stack . M.S. | | |
| 4. | Shape of stack | with normanent platform & ladder : Yes | | |
| 5. | Whether stack is provided | of stack : | | |
| D. | Height of the stack from g | round level : 30 M | | |
| 2 | Diameter of the stack itom g | mpling point : 1.03 M | | |
| 2 | No. of Traverse point | : 12 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | | |
| 1. | Fuel used : | 2. Fuel consumption : | 3.Lo | ad : |
| D. | Environmental condition | 15 : | | |
| 1. | Barometric pressure : 751 | mmHg | Temperature : | 30 °C |
| F | Results of Physical Para | meters of Flue Gas : | | |
| SI 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 | 14.49 |
| 3 | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 37942 |
| E. | Results of paseous emis | ssion : | | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1 | Carbon monoxide | IS 13270 (By Orsat): 1992 | % v/v | <0.2 |
| | Cashon diouida | IS 13270 (By Orsat): 1992 | % v/v | 0.4 |
| 2. | Carbon dioxide | 10 11255 . Deet 1 - 1025 | mg/Nm3 | 243 |
| 3 | Particulate Matters | 18 11255 : Part 1 : 1985 | mgrans | |

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(Dr. R. KARIM)

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CIN : U51109WB1931PTC007007

TEST REPORT

| | -FG/23-24/848 | Date: September 29, 20 | 123 | ragero |
|---------|---|---|--------------------------|-------------------|
| sued | to | : M/S. PARADEEP PHOSPHATE LT | D. | |
| ddres | S | : Paradeep, Odisha. | | |
| ample | Description | : Stack Emission / Flue Gas | Equip | ment used: |
| Date & | time of sampling | : 21.09.2023 (11:25 A.M. to 12:00 P.M.) | ID NO.1 KYB/SMIK/05 | actors Tested |
| Samplin | ig Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Paran Physical - Temp | Velocity Gas flow |
| Analysi | s Completed on | : 29.09.2023 - | Chemical : CO. (| CO2, & PM |
| | 0 Listernation about | t stack : | Chemical Foot | -21 |
| Α. | General information about | I SIGCK : | | |
| 1. | Boiler connected to | · Process Emmision | | |
| 2. | Emission due to | stack : M.S. | | |
| 3. A | 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 g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 0.85 M | | |
| 3. | No. of Traverse point | : 12 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | 31.0 | ad t |
| 1. | Fuel used : | 2. Fuel consumption : | . 5.00 | au , |
| D. | Environmental condition | <u>s:</u> | 7 Temperatura : | 30 °C |
| 1. | Barometric pressure : 751 | mmHg | 2. Temperature . | 30 0 |
| E. | Results of Physical Para | meters of Flue Gas : | Talt | Desults |
| SI No | Test Parameters | Test Method | Unit | 61 |
| 1. | Temperature of emission | IS 11255 : Part 3 : 2008 | °C | 01 |
| 2. | Velocity of gas in duct | IS 11255 : Part 3 : 2008 | m/sec | 16.61 |
| 3 | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 28641 |
| F | Results of gaseous emit | ssion : | | |
| SI No | Test Parameters | Test Method | Unit | Results |
| 1 | Carbon monoxide | IS 13270 (By Orsat): 1992 | % v/v | <0.2 |
| | Carbon diavida | 1S 13270 (By Orsat): 1992 | % v/v | 0.4 |
| 4. | Duringlate Matters | 1S 11255 : Part 1 : 1985 | mg/Nm3 | 86 |
| - | The second se | | | |

Report Verified by S. Mondal

(Dr. R. KARIM) Technical Manager

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

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CIN: U51109WB1931PTC007007

TEST REPORT

| No. AP-FG/23-24/849 | | Date: September 29, 202 | 3 | Page 1 o |
|---------------------|-----------------------------|--|---------------------|-----------------------------|
| Issued to : | | : M/S. PARADEEP PHOSPHATE LTD |) . | |
| Addres | s | : Paradeep, Odisha. | | |
| Sample | Description | : Stack Emission / Flue Gas | Equi | pment used: |
| Date & | time of sampling | : 21.09.2023 (12:10 P.M. to 12:50 P.M.) | ID No.: RVB/SMK/0 | 5 (Cal. Valianty: 17/06/24) |
| Samplin | ng Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Parat | Valacity Cos flow |
| Analysi | s Completed on | : 29.09.2023 | Chemical : CO | CO. & PM |
| | a li de diserba | d steak : | Chemical . CO, | 002 W 1 M |
| Α. | General information abou | IT STACK : | | |
| 1. | Boiler connected to | · Process Emmision | | |
| 2. | Emission due to | etack MS | | |
| 3. A | 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 g | round level : 30 M | | |
| 2. | Diameter of the stack at sa | mpling point : 0.5 M | | |
| 3. | No. of Traverse point | : 8 Nos. | | |
| C. | Analysis / Characteristic | of stack Gas / Flue Gas : | 21 | |
| 1. | Fuel used : | 2. Fuel consumption : | 5.L0 | ad : |
| D. | Environmental condition | <u>s:</u> | | 20.80 |
| 1. | Barometric pressure : 751 | mmHg | 2. Temperature : | 30 C |
| E. | Results of Physical Para | meters of Flue Gas : | 1 | D. U. |
| SI 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 | 13.05 |
| 3. | Quantity of gas flow | IS 11255 : Part 3 : 2008 | NM ³ /hr | 8290 |
| F. | Results of gaseous emis | sion : | | |
| SI 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 | Particulate Matters | IS 11255 : Part 1 : 1985 | mg/Nm3 | 44 |
| <i>a</i> . | Turteunite Matters | The second s | | |

Report Verified by

S. Mondal

-: END OF TEST REPORT :-

(Dr. R. KARIM)

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

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9, BENTINCK STREET, KOLKATA --700 001 Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447 E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com CIN : U51109WB1931PTC007007

TEST REPORT

| -FG/23-24/850 | Date: September 29, 202 | 3 | | Page 1 of 1 | |
|---------------------------------|--|--|--|---|--|
| to | : M/S. PARADEEP PHOSPHATE LTD |). | | | |
| 5 | : Paradeep, Odisha. | | | | |
| Description | : Stack Emission / Flue Gas | E | quipment u | sed: | |
| time of sampling | : 22.09.2023 (04:00 P.M. to 04:33 P.M.) | ID No.: RVB/SM | IK/05 (Cal. Val | idity: 17/06/24) | |
| g Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Pi | arameters T | ested | |
| s Completed on | : 29.09.2023 | Physical : Te Chemical : C | mp., Velocit O, CO ₂ PM | y, Gas flow & TF | |
| General information abo | neral information about stack : | | | | |
| Boiler connected to | : DAP - A | | | | |
| Emission due to | : Process Emmision | | | | |
| Material of construction of | f stack : M.S. | | | | |
| Shape of stack | : Circular. | | | | |
| Whether stack is provided | with permanent platform & ladder : Yes. | | _ | | |
| Physical characteristics | of stack : | | | | |
| Height of the stack from g | round level : 50 M | | | | |
| Diameter of the stack at sa | mpling point : 2.8 M | | | | |
| No. of Traverse point | : 32 Nos. | | | | |
| Height of the sampling po | int from GL : 35 M | | _ | | |
| Analysis / Characteristic | of stack Gas / Flue Gas : | | | | |
| Fuel used : | Fuel consumption : | 3 | .Load : | | |
| Environmental condition | 15 : | | | | |
| Barometric pressure : 751 | mmHg | Temperatu | ire : 30 °C | | |
| Results of Physical Para | meters of Flue Gas : | | | | |
| Test Parameters | Test Method | Unit | R | esults | |
| Temperature of emission | IS 11255 : Part 3 : 2008 | °C | | 54 | |
| Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | | 17,74 | |
| Quantity of eas flow | IS 11255:Part 3:2008 | NM ³ /hr | 3 | 28316 | |
| Peculte of naseous emit | ssion : | 1 | | | |
| Test Baramaters | Test Method | Unit | Results | Norms | |
| fest rarameters | rest method | | | as per CPCB | |
| Carbon monovida | IS 11255 : Part 1 : 1985 By Orsat | % v/v | < 0.2 | Not Available | |
| Carbon monoxide | IS 11255 - Part 1 - 1985 By Orsat | % v/v | 0.4 | Not Available | |
| Carbon dioxide | 10 11255 - Dert 1 - 1085 | mg/Nm3 | 51 | 150 max. | |
| Particulate Matters | 15 11233 ; Part 1 : 1983 | ingrand | \$ 20 | Not Available | |
| Total Fluoride | IS 11255 (Part - 5) : 1990 | mg/Nm [*] | 5.89 | NOT AVAILABLE | |
| Pollution control device | | | | | |
| Details of pollution contr | ol devices attached with the stack : Wet Scrubbe | er | | | |
| | FG/23-24/850 Description time of sampling g Plan & Method s Completed on General information abou Boiler connected to Emission due to Material of construction of Shape of stack Whether stack is provided Physical characteristics Height of the stack from g Diameter of the stack at sa No. of Traverse point Height of the sampling po Analysis / Characteristic Fuel used : Environmental condition Barometric pressure : 751 Results of Physical Para Test Parameters Temperature of emission Velocity of gas in duct Quantity of gas flow Results of gaseous emis Test Parameters Carbon monoxide Carbon dioxide Particulate Matters Total Fluoride Pollution control device Details of pollution control | FG/23-24/850 Date: September 25, 202 0 : M/S. PARADEEP PHOSPHATE LTD s : Paradeep, Odisha. Description : Stack Emission / Flue Gas ime of sampling : 22.09.2023 (04:00 P.M. to 04:33 P.M.) g Plan & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) s Completed on : 29.09.2023 General information about stack : Boiler connected to Emission due to : DAP - A Emission due to : Process Emmision Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : Height of the stack from ground level : 50 M Diameter of the stack as sampling point : 2.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : : Fuel used : 2. Fuel consumption : Environmental conditions : : Barometric pressure : 751 mmHg : Results of Physical Parameters of Flue Gas : : | FG/23-24/850 Date: september 23, 2023 0 : M/S. PARADEEP PHOSPHATE LTD. s : Paradeep, Odisha. Description : Stack Emission / Flue Gas time of sampling : 22.09.2023 (04:00 P.M. to 04:33 P.M.) g Plan & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) g Completed on : 29.09.2023 General information about stack : Ensistion Boiler connected to : DAP - A Emission due to : Process Emmision Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : Height of the stack from ground level : 50 M Diameter of the stack at sampling point : 2.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : Environmental conditions : Barometric pressure : 751 mmHg 2. Temperature Results of Physical Parameters of Flue Gas : "C Test Parameters T est M et h o d Unit Temperature of emiss | FG/23-24/850 Date: september 25, 2023 0 : M/S. PARADEEP PHOSPHATE LTD. s : Paradeep, Odisha. Description : Stack Emission / Flue Gas ime of sampling : 22.09.2023 (04:00 P.M. to 04:33 P.M.) g Plan & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) S completed on : 29.09.2023 General information about stack : Boiler connected to : DAP - A Enission due to Boiler connected to : DAP - A Emission due to : Process Emmision Material of construction of stack : M.S. Shape of stack : Circular. Whether stack is provided with permanent platform & ladder : Yes. Physical characteristics of stack : : 32 Nos. Height of the stack at sampling point : 2.8 M No. of Traverse point : 32 Nos. Height of the sampling point from GL : 35 M Analysis / Characteristic of stack Gas / Flue Gas : : Test Parameters T est M et h o d Unit Test Parameters T est M et h o d Unit Temperature of emission : IS 11255: Part 3: 2008 °C Veloci | |

Report Verified by S. Mondal

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

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TEST REPORT

|) | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
|--------------------------|---|---|---|--|---|
| | : Paradeep, | Odisha. | | | |
| escription | : Stack Em | ission / Flue Gas 3 (04:00 P.M. to 04:33 P.M.) | Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 17/06/24) | | |
| Plan & Method | : RVB/FM/ | 45 & IS: 11255 (Part-1,2 & 3) | P | arameters 7 | ested |
| Completed on | : 29.09.202 | 3 | 3 | Chemical : | NH3 |
| eneral information ab | out stack : | | | | |
| oiler connected to | | : DAP - A | | | |
| mission due to | | : Process Emmision | | | |
| laterial of construction | of stack | : M.S. | | | |
| hape of stack | | : Circular. | | | |
| Whether stack is provide | ed with perman | ent platform & ladder : Yes. | | | |
| hysical characteristic | s of stack : | | | | |
| leight of the stack from | ground level | : 50 M | | | |
| Diameter of the stack at | sampling point | : 2.8 M | | | |
| lo. of Traverse point | | : 32 Nos. | | | |
| leight of the sampling p | point from GL | : 35 M | | | |
| Analysis / Characterist | tic of stack Ga | s / Flue Gas : | | 2020 0420 | |
| uel used : | | Fuel consumption : | | 3.Load : | |
| Results of gaseous en | nission : | | | | |
| Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| Ammonia as NH3 | Methods (In | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | | 70 | Not Available |
| | Plan & Method Completed on eneral information ab oiler connected to nission due to laterial of construction hape of stack /hether stack is provide hysical characteristic eight of the stack from iameter of the stack at o. of Traverse point eight of the stack from iameter of the stack at o. of Traverse point eight of the sampling is nalysis / Characterist uel used : tesults of gaseous em Test Parameters Ammonia as NH ₃ | Plan & Method : RVB/FM/ Completed on : 29.09.202 eneral information about stack : oiler connected to nission due to (aterial of construction of stack hape of stack /hether stack is provided with permany hysical characteristics of stack : eight of the stack from ground level iameter of the stack at sampling point o. of Traverse point eight of the sampling point from GL nalysis / Characteristic of stack Ga uel used : esults of gaseous emission : Test Parameters Methods Ammonia as NH3 Methods | Plan & Method : RVB/FM/45 & IS: 11255 (Part-1, 2 & 3) Completed on : 29.09.2023 eneral information about stack : oiler connected to : DAP - A mission due to : Process Emmission laterial of construction of stack : M.S. nape of stack : Circular. /hether stack is provided with permanent platform & ladder : Yes. hysical characteristics of stack : eight of the stack from ground level : 50 M iameter of the stack at sampling point : 2.8 M o. of Traverse point : 32 Nos. eight of the sampling point from GL : 35 M nalysis / Characteristic of stack Gas / Flue Gas : uel used : 2. Fuel consumption : esults of gaseous emission : T e s t M e t h o d Ammonia as NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | Plan & Method : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) E Completed on : 29.09.2023 E eneral information about stack : DAP - A poiler connected to : DAP - A mission due to : Process Emmision laterial of construction of stack : M.S. hape of stack : Circular. /hether stack is provided with permanent platform & ladder : Yes. hysical characteristics of stack : eight of the stack from ground level : 50 M iameter of the stack at sampling point : 2.8 M o. of Traverse point : 32 Nos. eight of the sampling point from GL : 35 M nalysis / Characteristic of stack Gas / Flue Gas : uel used : 2. Fuel consumption : esults of gaseous emission : T e st M e th o d Unit Ammonia as NH3 Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 mg/Nm ³ | Plan & Method : RVB/FM/45 & IS: 11255 (Part-1, 2 & 3) Furumeters 1 Completed on : 29,09,2023 Chemical : 1 eneral information about stack : : DAP - A oiler connected to : DAP - A mission due to : Process Emmision laterial of construction of stack : M.S. hape of stack : Circular. /hether stack is provided with permanent platform & ladder : Yes. hysical characteristics of stack : eight of the stack from ground level : 50 M iameter of the stack at sampling point : 2.8 M o. of Traverse point : 32 Nos. eight of the sampling point from GL : 35 M nalysis / Characteristic of stack Gas / Flue Gas : uel used : uel used : 2. Fuel consumption : 3.Load : Test Parameters T e s t M e t h o d Unit Results Ammonia as NH ₃ Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 mg/Nm ³ 70 |

-: END OF TEST REPORT :-

Report Verified by S. Mondal

(Dr. R. Technical Manager

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

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TEST REPORT

| No. AP-FG/23-24/851 | | | Date: September 29, 202 | 3 | | Page 1 of 1 |
|---------------------|-----------------------------|------------------|----------------------------------|-----------------------------|-----------------------|----------------------|
| Issued to : | | : M/S. PAR | ADEEP PHOSPHATE LTD |) . | | |
| Addres | s | : Paradeep, (|)disha. | | | |
| Sample | Description | : Stack Emis | sion / Flue Gas | E | quipment us | sed: |
| Date & | time of sampling | : 22.09.2023 | (04:50 P.M. to 05:23 P.M.) | ID No.: RVB/SM | K/05 (Cal. Vali | any: 17/06/24) |
| Sampli | ng Plan & Method | : RVB/FM/4 | 5 & IS: 11255 (Part-1,2 & 3) | Pa Pa | rameters 1 | ested |
| Analys | is Completed on | : 29.09.2023 | | Chemical : C | O, CO ₂ PM | & TF |
| A. | General information abo | ut stack : | | | | |
| 1. | Boiler connected to | | : DAP - B | | | |
| 2. | Emission due to | | : Process Emmision | | | |
| 3. | Material of construction o | f stack | : M.S. | | | |
| 4. | Shape of stack | | : Circular. | | | |
| 5. | Whether stack is provided | I with permanent | nt platform & ladder : Yes. | | | |
| B, | Physical characteristics | of stack : | | | | |
| 1. | Height of the stack from g | ground level | : 50 M | | | |
| 2. | Diameter of the stack at si | ampling point | : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling po | oint from GL | : 35 M | | | |
| C. | Analysis / Characteristic | c of stack Gas | / Flue Gas : | | Lands | |
| 1. | Fuel used : | | 2. Fuel consumption : | د | Load : | |
| D. | Environmental condition | ns : | | | | |
| 1. | Barometric pressure : 751 | mmHg | | Temperatu | ire : 34 °C | |
| E. | Results of Physical Par | ameters of Flu | e Gas : | | | |
| SLNO | Test Parameters | | Test Method | Unit | R | lesults |
| 1 | Temperature of emission | 1 | IS 11255 ; Part 3 : 2008 | °C | | 59 |
| | Valacity of gas in duct | | IS 11255:Part 3:2008 | m/sec | | 17.50 |
| 4. | velocity of gas in duct | | IS 11255-Part 3:2008 | NM ³ /hr | 3 | 17787 |
| 3. | Quantity of gas now | lecion : | 10 112021 00 0000 | | | |
| E. SI No | Test Parameters | 1551011 . | Test Method | Unit | Results | Norms as per CPCB |
| L | | 15 | 1255 - Part 1 - 1985 By Orsat | % v/v | <0.2 | Not Available |
| 1. | Carbon monoxide | 15 | 1255 - Part 1 - 1985 By Orsat | % v/v | 0.2 | Not Available |
| 2. | Carbon dioxide | 15 | 10 11227 Day 1 . 1005 | ma/Nm2 | 54 | 150 max. |
| 3. | Particulate Matters | | 18 11255 : Purt 1 : 1985 | ing/win5 | 6.04 | Not Available |
| 4. | Total Fluoride | | IS 11255 (Part - 5) : 1990 | mg/Nm* | 0.04 | NOT AVAILABIL |
| F. | Pollution control devic | e | 24 | | | |
| | Details of pollution cont | rol devices atta | ched with the stack : Wet Scrubb | er | | |
| | | | -: END OF TEST REPORT :- | | nn. | |

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TEST REPORT

| No. AP | -FG/23-24/851 | | Date: September 29, 202 | 3 | | Page 2 of 2 |
|-----------|--------------------------|-----------------|--|----------------|-----------------|----------------------|
| Issued to | | : M/S. PA | RADEEP PHOSPHATE LTD |). | | |
| Addres | s | : Paradeep | , Odisha. | | | |
| Sample | Description | : Stack Em | ission / Flue Gas | E | quipment u | sed: |
| Date & | time of sampling | : 22.09.202 | 3 (04:50 P.M. to 05:23 P.M.) | ID No.; RVB/SM | 1K/05 (Cal. Val | idity: 17/06/24) |
| Samplin | ng Plan & Method | : RVB/FM/ | (45 & IS: 11255 (Part-1,2 & 3) | P | arameters T | ested |
| Analysi | s Completed on | : 29.09.202 | 3 | | Chemical :] | NH3 |
| Α. | General information ab | out stack : | | 1 | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | |
| В. | Physical characteristic | s of stack : | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | |
| 2. | Diameter of the stack at | sampling point | t : 2.8 M | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | |
| 4. | Height of the sampling p | point from GL | : 35 M | | | |
| C. | Analysis / Characterist | tic of stack Ga | as / Flue Gas : | | 1 and a | |
| 1. | Fuel used : | | Fuel consumption : | | S.Load : | |
| D. | Results of gaseous en | nission : | | | | 1 |
| SI No | Test Parameters | | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Method (Ir | Methods of Air Sampling & Analysis, 3rd Ed. (Indophenol Method), Method 401 | | 82 | Not Available |

-: END OF TEST REPORT :-

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TEST REPORT

| escription ne of sampling | : M/S. PARADEEP PHOSPHATE LTD : Paradeep, Odisha. |). | | | |
|--|---|--|--|--|--|
| escription ne of sampling | : Paradeep, Odisha. | | | | |
| escription ne of sampling | Deal Entration / Elvis Car | | | | |
| ne of sampling | : Stack Emission / Flue Gas | E | quipment us | sed: | |
| | : 22.09.2023 (11:30 A.M. to 12:06 P.M.) | ID No.; RVB/SM | K/05 (Cal. Vali | dity: 17/06/24) | |
| Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | Pa | rameters 1 | ested | |
| Completed on | : 29.09.2023 | Physical : Ter | np., velocity | y, Gas now | |
| | | Chemical : C | 0, CO2 PM | oc Tr | |
| eneral information about | it stack : | | | | |
| oiler connected to | : DAP - C | | | | |
| Emission due to : Process Emmision | | | | | |
| laterial of construction of | stack : M.S. | | | | |
| hape of stack | : Circular. | | | | |
| /hether stack is provided | with permanent platform & ladder : Yes. | | | | |
| hysical characteristics | of stack : | | | | |
| eight of the stack from g | round level : 50 M | | | | |
| iameter of the stack at sa | mpling point : 2.8 M | | | | |
| lo. of Traverse point | : 32 Nos. | | | | |
| leight of the sampling poi | int from GL : 35 M | | | | |
| C. Analysis / Characteristic of stack Gas / Flue Gas : | | | | | |
| uel used : | 2. Fuel consumption : | 3 | Load : | | |
| nvironmental condition | <u>IS :</u> | | 00 | | |
| arometric pressure : 751 | mmHg | 2. Temperatu | re : 34 °C | | |
| esults of Physical Para | meters of Flue Gas : | | | | |
| Test Parameters | Test Method | Unit | R | esults | |
| l'emperature of emission | IS 11255 : Part 3 : 2008 | °C | | 55 | |
| Velocity of gas in duct | IS 11255:Part 3:2008 | m/sec | | 15.18 | |
| Verbeity of gas in duct | IS 11255-Part 3:2008 | NM ³ /hr | 2 | 81870 | |
| Quantity of gas now | reion : | | | | |
| results of gaseous erms | Test Mathed | Unit | Results | Norms | |
| Test Parameters | lest Method | | | as per CPCB | |
| | 10 11255 . Dev 1 . 1085 Du Orest | 96 v/v | <0.2 | Not Available | |
| Carbon monoxide | IS 11255 : Part 1 : 1985 By Orsat | 76 4/4 | 0.4 | Not Amilable | |
| Carbon dioxide | 1S 11255 : Part 1 : 1985 By Orsat | % V/V | 0.4 | Not Available | |
| Particulate Matters | 1S 11255 : Part 1 : 1985 | mg/Nm3 | 42 | 150 max. | |
| Total Fluoride | IS 11255 (Part - 5): 1990 | mg/Nm ³ | 4.99 | Not Available | |
| Pollution control device | 1 | | | | |
| Details of pollution contr | ol devices attached with the stack : Wet Scrubbe | er | | | |
| | nission due to aterial of construction of ape of stack hether stack is provided vysical characteristics eight of the stack from g iameter of the stack at sa o. of Traverse point eight of the sampling poinalysis / Characteristic ael used : | nission due to introduction of stack in the end of stack in the end of stack is provided with permanent platform & ladder : Yes. | nission due to intervent in the stack is provided with permanent platform & ladder : Yes. ysical characteristics of stack : eight of the stack from ground level : 50 M iameter of the stack at sampling point : 2.8 M o. of Traverse point : 32 Nos. eight of the sampling point from GL : 35 M nalysis / Characteristic of stack Gas / Flue Gas : ael used : 2. Fuel consumption : 3 nvironmental conditions : arometric pressure : 751 mmHg 2. Temperatu esults of Physical Parameters of Flue Gas : Test Parameters Test Method Unit Premperature of emission IS 11255: Part 3 : 2008 °C Velocity of gas in duct IS 11255: Part 3 : 2008 NM ³ /hr tesults of gaseous emission : Test Parameters Test Method Unit Carbon monoxide IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v Details of pollution control devices attached with the stack : Wet Scrubber -: END OF TEST REPORT :- | nission due to intervention of stack in the stack is provided with permanent platform & ladder : Yes. A terial of construction of stack is provided with permanent platform & ladder : Yes. Tysical characteristics of stack : eight of the stack from ground level is 50 M iameter of the stack at sampling point is 2.8 M o. of Traverse point is 32 Nos. eight of the sampling point from GL is 35 M nalysis / Characteristic of stack Gas / Flue Gas : ael used : 2. Fuel consumption : 3.Load : nvironmental conditions : arometric pressure : 751 mmHg 2. Temperature : 34 °C esults of Physical Parameters of Flue Gas : Test Parameters Test Method Unit R femperature of emission IS 11255 : Part 3 : 2008 0°C esults of gaseous emission : Test Parameters Test Method Unit Results Carbon monoxide IS 11255 : Part 1 : 1985 By Orsat % v/v <-0.2 Carbon dioxide IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 11255 : Part 1 : 1985 By Orsat % v/v 0.4 Particulate Matters IS 112 | |

SIM Report Verified by

S. Mondal

(Dr. R. KARIM) Technical Manager Authorised Signatory

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

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CIN : U51109WB1931PTC007007

TEST REPORT

| No. AP | -FG/23-24/852 | Date: September 29, 20 | 023 | | Page 2 of 2 |
|-----------|--------------------------|--|------------------------|-----------------|----------------------|
| Issued to | | : M/S. PARADEEP PHOSPHATE L | rD. | | |
| Address | 5 | : Paradeep, Odisha. | | | |
| Sample | Description | : Stack Emission / Flue Gas | E | quipment u | sed: |
| Date & | time of sampling | : 22.09.2023 (11:30 A.M. to 12:06 P.M.) | ID No.: RVB/SM | 1K/05 (Cal. val | idity: 17/00/24) |
| Samplin | g Plan & Method | : RVB/FM/45 & IS: 11255 (Part-1,2 & 3) | <u>P</u> | arameters 1 | estea |
| Analysis | s Completed on | : 29.09.2023 | | Chemical :] | NH3 |
| Α. | General information ab | out stack : | | | |
| 1. | Boiler 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 provide | ed with permanent platform & ladder : Yes. | | | |
| B. | Physical characteristic | s of stack : | | | |
| 1. | Height of the stack from | ground level : 50 M | | | |
| 2. | Diameter of the stack at | sampling point : 2.8 M | | | |
| 3. | No. of Traverse point | : 32 Nos. | | | |
| 4. | Height of the sampling J | point from GL : 35 M | | | |
| C. | Analysis / Characterist | tic of stack Gas / Flue Gas : | | t and i | |
| 1. | Fuel used : | 2. Fuel consumption : | • . | 5.Load ; | |
| D. | Results of gaseous en | nission : | | | |
| SI No | Test Parameters | Test Method | Unit | Results | Norms as per CPCB |
| 1. | Ammonia as NH3 | Methods of Air Sampling & Analysis, 3rd E (Indophenol Method), Method 401 | id. mg/Nm ³ | 80 | Not Available |

-: END OF TEST REPORT :-

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(Dr.'R

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

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TEST REPORT

| No. AP-FG/23-24/853 | | | Date: September 29, 202 | 23 | | Page 1 of 1 |
|---------------------|-----------------------------|----------------|-----------------------------------|-------------------------------|---------------------------------------|------------------|
| Issued to | | : M/S. PA | RADEEP PHOSPHATE LTD | D . | | |
| Address | | : Paradeep, | Odisha. | | | |
| Sample D | Description | : Stack Emi | ssion / Flue Gas | E | quipment u | sed: |
| Date & ti | ime of sampling | : 22.09.2023 | 6 (12:15 P.M. to 12:45 P.M.) | ID No.: RVB/SM | IK/05 (Cal. Vali | idity: 17/06/24) |
| Sampling | g Plan & Method | : RVB/FM/4 | 45 & IS: 11255 (Part-1,2 & 3) | Pi | arameters T | ested |
| Analysis | Completed on | : 29.09.2023 | 1 | Physical : Te Chemical : C | mp., Velocit O, CO ₂ PM | & TF |
| A. G | General information abo | ut stack : | | | | |
| 1. B | Boiler connected to | | : DAP - D | | | |
| 2. E | Emission due to | | : Process Emmision | | | |
| 3. N | Material of construction of | fstack | : M.S. | | | |
| 4. S | Shape of stack | 187 | : Circular. | | | |
| 5. V | Whether stack is provided | with permane | ent platform & ladder : Yes. | | | |
| B. <u>P</u> | Physical characteristics | of stack : | 50.14 | | | |
| 1. F | leight of the stack from g | round level | : 50 M | | | |
| 2. I | Diameter of the stack at sa | impling point | : 2.8 M | | | |
| 3. N | No. of Traverse point | | : 32 N05. | | | |
| 4. ł | Height of the sampling po | int from GL | ; 35 M | | | |
| C. / | Analysis / Characteristic | of stack Ga | 2 Fuel consumption : | 3 | .Load : | |
| 1. I | Fuel used : | 10 1 | 2. Tuer consumption ? | | | |
| D. g | Barometric pressure : 751 | mmHø | | 2. Temperatu | ire : 32 °C | |
| E 8 | Results of Physical Para | meters of FI | ue Gas : | | | |
| E. I | Test Parameters | 1 | Test Method | Unit | R | esults |
| 1 | Temperature of emission | | IS 11255 : Part 3 : 2008 | °C | | 60 |
| 1. | Velocity of one in dust | | IS 11255:Part 3:2008 | m/sec | | 18.83 |
| 2. | velocity of gas in duct | | IS 11255 Part 3-2008 | NM ³ /hr | 3 | 42308 |
| 3. | Quantity of gas now | ceion : | 13 112551 01 5:2090 | 14141 7111 | | |
| E. | Results of gaseous ernin | 551011 . | Test Method | Unit | Results | Norms |
| SINO | lest Parameters | | rest sternod | | | as per CPCB |
| 1 | Carbon monovide | 15 | 11255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available |
| | Carbon dioxida | IS | 11255 : Part 1 : 1985 By Orsat | % v/v | 0.4 | Not Available |
| 4. | Carbon dioxide | | 15 11255 · Part 1 · 1985 | mg/Nm3 | 44 | 150 max. |
| 3. | Particulate Matters | | 10 11255 (Dect. 5) 1000 | mg (Mm) | 5.27 | Not Available |
| 4. | Total Fluoride | | 15 11255 (Part - 5): 1990 | mg/Nm | 141 | |
| F. | Pollution control device | 1 | had with the steels i Wet Semilah | or | | |
| | Details of pollution contr | ol devices att | ached with the stack : wei Scrubb | ci | 00 | |

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TEST REPORT

| IO. AP | -FG/23-24/853 | Date: September 29, 2023 Page 2 of 2 | | | | | | | |
|--------------------|--------------------------|--------------------------------------|---------------------------------------|---|---------------|---------------|--|--|--|
| ssued t | to | : M/S. PA | RADEEP PHOSPHATE LTD |). | | | | | |
| ddress | s | : Paradeep, | Odisha. | | | | | | |
| Sample Description | | : Stack Em | ission / Flue Gas | Equipment used: ID No.: RVB/SMK/05 (Cal. Validity: 17/06/24) | | | | | |
| Jate & | time of sampling | - DVD/EM/ | (15 & 18 11255 (Part-1 2 & 3) | P | arameters T | ested | | | |
| samplin | ig Plan & Method | . RVD/FM/ | 2 | - | | | | | |
| Analysis | s Completed on | . 29.09.202 | 3 | 3 | Chemical : | NH3 | | | |
| A. (| General information ab | out stack : | | | | | | | |
| 1. | Boiler 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 provide | ed with perman | ent platform & ladder : Yes. | | | | | | |
| B. | Physical characteristic | s of stack : | | | | | | | |
| 1. | Height of the stack from | ground level | : 50 M | | | | | | |
| 2. | Diameter of the stack at | sampling point | : 2.8 M | | | | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | | | | |
| 4. | Height of the sampling p | oint from GL | : 35 M | | | | | | |
| C. | Analysis / Characterist | tic of stack Ga | s / Flue Gas : | | 35200-0004202 | | | | |
| 1. | Fuel used : | | Fuel consumption : | 5 | 3.Load : | | | | |
| D. | Results of gaseous em | nission : | | | | 1 | | | |
| SINO | Test Parameters | | Test Method | Unit | Results | Norms | | | |
| 51110 | itsi futunotto | | | 1 1 | | as par CPCB | | | |
| | | | | | | as per ci cb | | | |
| | | Methods | s of Air Sampling & Analysis, 3rd Ed. | mg/Nm ³ | 85 | Not Available | | | |

-: END OF TEST REPORT :-

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TEST REPORT

| No. AP | -FG/23-24/854 | Date: September 29, 2023 Page 1 of 1 | | | | | | | | |
|---------|-----------------------------|--------------------------------------|----------------------------------|-----------------------|-----------------------|-----------------|--|--|--|--|
| ssued | to | : M/S. PARADEEP PHOSPHATE LTD. | | | | | | | | |
| Addres | s | : Paradeep, C | disha. | | | | | | | |
| Sample | Description | : Stack Emiss | ion / Flue Gas | e Gas Equipment used: | | | | | | |
| Date & | time of sampling | : 23.09.2023 | (11:00 A.M. to 11:45 A.M.) | ID No.: RVB/SM | K/05 (Cal. Val) | dity: 17/06/24) | | | | |
| Samplin | ng Plan & Method | : RVB/FM/45 | & IS: 11255 (Part-1,2 & 3) | Pa Pa | rameters To | ested | | | | |
| Analysi | is Completed on | : 29.09.2023 | | Chemical : C | O, CO ₂ PM | & TF | | | | |
| Α. | General information about | ut stack : | | | | | | | | |
| 1. | Boiler connected to | | : PAP | | | | | | | |
| 2. | Emission due to | | : Process Emmision | | | | | | | |
| 3. | Material of construction of | fstack | : M.S. | | | | | | | |
| 4. | Shape of stack | (130) - X | : Circular. | | | | | | | |
| 5. | Whether stack is provided | with permanen | t platform & ladder : Yes. | | | | | | | |
| В. | Physical characteristics | of stack : | 20.14 | | | | | | | |
| 1. | Height of the stack from g | round level | : 50 M | | | | | | | |
| 2. | Diameter of the stack at sa | impling point | : 2.7 M | | | | | | | |
| 3. | No. of Traverse point | | : 32 Nos. | | | | | | | |
| 4. | Height of the sampling po | int from GL | : 35 M | | | | | | | |
| C. | Analysis / Characteristic | of stack Gas | 2 Fuel consumption : | 3 | .Load : | | | | | |
| 1. | Fuel used : | | 2. Fuer consumption : | | | | | | | |
| D. | Environmental condition | 13 · | | 2 Temperatu | re : 30 °C | | | | | |
| 1. | Barometric pressure : 751 | maring | Gas : | | | | | | | |
| E. | Results of Physical Para | ineters of Flue | Test Method | Unit | R | esults | | | | |
| SI No | Test Parameters | | 15 11255 - Part 3 - 2008 | °C | | 44 | | | | |
| 1. | Temperature of emission | | 15 11255 Part 2:2008 | misac | | 5.07 | | | | |
| 2. | Velocity of gas in duct | | IS 11255:Part 3.2008 | nu sec | | 4607 | | | | |
| 3. | Quantity of gas flow | | IS 11255:Part 3:2008 | NM /nr | 2 | 4007 | | | | |
| F. | Results of gaseous emi | ssion : | | 1 1 1 | Densite | Norms | | | | |
| SI No | Test Parameters | | Test Method | Unit | Results | as per CPCB | | | | |
| 1 | Carbon monoxide | IS 1 | 1255 : Part 1 : 1985 By Orsat | % v/v | <0.2 | Not Available | | | | |
| 1 | Carbon dioxide | IS I | 1255 ; Part 1 : 1985 By Orsat | % v/v | 0.4 | Not Available | | | | |
| 2. | Carbon dioxide | | 1S 11255 : Part 1 : 1985 | mg/Nm3 | 35 | 150 max. | | | | |
| 3. | Total Fluoride | | IS 11255 (Part - 5) : 1990 | mg/Nm ³ | 3.12 | Not Available | | | | |
| G. | Pollution control device | 2 | | 22 | | | | | | |
| | Details of pollution contr | rol devices attac | ched with the stack : Wet Scrubb | er | | | | | | |

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S. Mondal

(Dr. R. KARIM)

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TEST REPORT

| Description ime of sampling | : M/S. PARA : Paradeep, Odi : Stack Emissio | DEEP PHOSPHATE L sha. | .TD. | | |
|--------------------------------|--|---|--|---|---|
| Description ime of sampling | : Paradeep, Odi : Stack Emissio | sha. | | | |
| Description ime of sampling | : Stack Emissio | | | | |
| ime of sampling | | n / Flue Gas | | Equipm | ent used: |
| | : 23.09.2023 (02 | 2:00 P.M. to 02:48 P.M.) | ID No.: | RVB/SMK/05 | (Cal. Validity: 17/06/24) |
| g Pian & Method | : RVB/FM/45 & | 2 IS: 11255 (Part-1,2 & 3) | | Parame | ters Tested |
| Completed on | : 29.09.2023 | | Physical : Te | mp., Veloci | ty, Gas flow |
| | | | Chemical : S | O_2 , NO_2 , C | O, CO ₂ , & PM |
| Seneral informatio | n about stack : | | 2 2 | | |
| stack connected to | | : Diesel Generat | tor Set - 2 | | |
| Emission due to | | : Burning of H.S | S.D | | |
| Material of construc | tion of stack | : M.S. | | | |
| Shape of stack | | : Circular. | 1000 C | | |
| Whether stack is pro | ovided with perm | anent platform & ladder : 1 | res | | |
| Generator capacity | | : 1 MVA | | | |
| Physical character | istics of stack : | 20.14 | | | |
| Height of the stack | from ground leve | 1 :20 M | | | |
| Diameter of the stat | k at sampling po | int : 0.4 M | | | |
| No. of Traverse poi | nt | : 8 NOS. | | | |
| Analysis / Charact | eristic of stack | Gas / Flue Gas : | 7 Fuel consu | motion : 27 | 1 t/hr |
| Fuel used | : H.S.D | | 2. Fuer consu | mprios : | . Dom. |
| Environmental col | naitions ; | | о. т | | |
| Barometric pressure | e: 751 mmHg | | 2. Temperatu | ire : 52 C | |
| Finding of Physica | al Parameters of | Flue Gas : | | | |
| Test Parameter | 5 | Test Method | Unit | | Results |
| Temperature of em | nission | IS 11255 : Part 3 : 2008 | °C | | 201 |
| Velocity of gas in | duct | IS 11255 : Part 3 : 2008 | m/sec | | 15.44 |
| Quantity of gas flo | w | IS 11255 : Part 3 : 2008 | NM [*] /hr | | 4540 |
| Results of gaseou | is emission : | | | | E damage |
| Test Parameter | rs | Test Method | Unit | Results | (Protection) Amendment Rul 2002, for > 800 kw |
| Sulphur dioxide | | IS 11255 : Part 2 : 1985 | mg/Nm ³ | 70 | Not Available |
| Nitrogan dioxide | | IS 11255 : Part 7 : 2005 | mg/Nm ³ | 117 | |
| Carban monovide | | USEPA 10:2017 | mg/Nm ³ | 124 | |
| Carbon monoxide | | | gm/kw-hr | 0.67 | 3.5 |
| | 1 | 15 13270 (By Oreat): 1992 | 9/6 V/V | <0.2 | |
| a 1 1 14 | | 15 13270 (By Oreat): 1992 | 96 v/v | 6.8 | Not Available |
| Carbon dioxide | | 16 11255 · Part 1 · 1085 | mc/Nm ³ | 35 | |
| Particulate Matter | S | 15 11255 . 1411 1 . 1965 | mg/sui | 0.19 | 0.2 |
| | | | gin/kw-nr | 0.12 | 0.2 |
| Pollution control | device | attached with the steel - N | 0 | | 100 |
| Details of pollution | n control devices | attached with the stack . It | PORT | | KAN- |
| Silla | der | . END OF TEST RE | | (Dr | RKARIM |
| Report Verifieb | by | | | Tech- | cal Manager |
| S. Mondal | | | | Techn | |
| | | | | Authori | sed Signatory |
| | Seneral informatio tack connected to mission due to Material of construct hape of stack Whether stack is pro- denerator capacity Physical character leight of the stack Diameter | General information about stack : tack connected to Imission due to Material of construction of stack Image of stack Whether stack is provided with permisenerator capacity Physical characteristics of stack : Reight of the stack from ground level Diameter of the stack at sampling potentiation of stack of the stack at sampling potentiation of the stack at samplicity at the stack at sampling potentiation of the s | General information about stack : : Diesel General imission due to : Burning of H.S. Material of construction of stack : M.S. hape of stack : Circular. Whether stack is provided with permanent platform & ladder : M.S. Generator capacity : 1 MVA Physical characteristics of stack : Height of the stack from ground level : 20 M Diameter of the stack at sampling point : 0.4 M No. of Traverse point : 8 Nos. Analysis / Characteristic of stack Gas / Flue Gas : : Fuel used : H.S.D Environmental conditions : : Barometric pressure : 751 mmHg : Finding of Physical Parameters of Flue Gas : : Test Parameters T est M eth o d Temperature of emission IS 11255 : Part 3 : 2008 Velocity of gas in duct IS 11255 : Part 3 : 2008 Quantity of gas flow IS 11255 : Part 2 : 1985 Nitrogen dioxide IS 11255 : Part 7 : 2005 Carbon monoxide IS 13270 (By Orsat): 1992 Particulate Matters IS 13270 (By Orsat): 1992 Particulate Matters IS 11255 : Part 1 : 1985 | General information about stack : tack connected to : Diesel Generator Set - 2 mission due to : Burning of H.S.D Material of construction of stack : M.S. hape of stack : Circular. Vhether stack is provided with permanent platform & ladder : Yes ienerator capacity : 1 MVA Physical Characteristics of stack : Height of the stack from ground level : 20 M Diameter of the stack from ground level : 20 M Diameter of the stack as sampling point : 0.4 M No. of Traverse point : 8 Nos. Manalysis / Characteristic of stack Gas / Flue Gas : : Tuel used : H.S.D 2. Fuel consultations : Barometric pressure : 751 mmHg 2. Temperature Finding of Physical Parameters of Flue Gas : : Test Parameters T est M eth o d Unit Test Parameters T est M eth o d Unit Sulphur dioxide IS 11255 : Part 3 : 2008 M/M ³ /nr Results of gaseous emission : : mg/Nm ³ Test Parameters T est M eth o d Unit Sulphur dioxide IS 11255 : Part 7 : 2005 mg/Nm ³ Nitrogen dioxide | Chemical : SO2: NO2: C Chemical : SO2: NO2: C Chemical : SO2: NO2: C Internation about stack : Enerator capacity A series of stack : MAX Analysis / Characteristics of stack : Note: So of stack : Note: So of stack : MAX My A No A Suppontent and stack from ground level : 20 M Suppontent of the stack at sampling point : 0.4 M Nore: Colspan="2">Colspan="2">Fuel consumption : 22 Invironmental conditions : Test Method Unit |

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TEST REPORT

| No. AP-FG/23-24/855 | | Date: September 29, 3 | 2023 | | Page 2 of 2 |
|--|--|--|--------------------------------|----------------------|--|
| Issued to Address | : M/S. F | PARADEEP PHOSPHATE LT pp. Odisha. | D. | | |
| Sample Description | : Stack C | ias / Flue Gas | ID No.: | Equips RVB/SMK/0: | nent used: 5 (Cal. Validity: 17/06/24) |
| Sampling Plan & Method Analysis Completed on | : RVB/FI : 29.09.2 | M/45 & IS: 11255 (Part-1,2 & 3) 023 | | Parame Hydroca | ters Tested arbon as HC |
| A. <u>General informati</u> 1. Stack connected to 2. Emission due to 3. Material of constru 4. Shape of stack 5. Whether stack is p 6. Generator capacity B. <u>Physical character 1. Height of the stack 2. Diameter of the stack 3. No. of Traverse p C. <u>Analysis / Character 1. Evel used 1. Evel used 1. Evel used 1. Evel used 1. Evel used </u></u> | on about since the section of states | tack : : Diesel Generator : Burning of H.S.E ck : M.S. : Circular. h permanent platform & ladder : Ye : 1 MVA tack : nd level : 20 M ling point : 0.4 M : 8 Nos. stack Gas / Flue Gas : | Set - 2 s | imption : 2 | 2 Lt/hr. |
| D Results of gaseo | us emissio | n : | | | |
| SI No Test Paramete | ers | Test Method | Unit | Results | Norms as per Environment (Protection) Amendment Rules 2002, for > 800 kw |
| 6. Total Hydrocarbo | n as HC | s : 5182 (Part - 22), 2004 RA 2009, By AA | mg/Nm ³ gm/kw-hr | 15.02 0.08 | 4.0 |
| 7. Nitrogen dioxide | | IS 11255 : Part 7 : 2005 | gm/kw-hr | 0.64 | |
| E. <u>Pollution control</u> Details of pollution | device on control d | evices attached with the stack : Nil. | RT :- | | |

S. Marder Report Verified by

S. Mondal

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

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TEST REPORT

| No. A | P-SL/23-24/679-685 | Date: Sej | ptember 2 | 6, 2023 | | Page 1 of 1 | |
|---------------|--|--|------------------|------------------|-------------------------|---|--|
| Issue Addr | ed to ress | M/S. PARADEEP PHOSPH Paradeep, Odisha. | ATE LTI | D. | | | |
| Desc Date | ription of Sample of Monitoring | : Sound Level Monitoring : 20.09.2023 to 23.09.2023 | | | Parameter Test Metho | <u>s Tested</u> : L _{Min} , L _{Max} & L _{eq} <u>od</u> : IS 4758 : 1968 | |
| SOU | ND LEVEL MONI | TORING : | | | | | |
| SI. | Locations | DATE & TIME | Noise | Level in | dB(A) | Permissible Noise Exposure for Industrial | |
| No. | | - | L _{Min} | L _{Max} | L _{eq} | Workers as per The Nois Pollution (Regulation An Control) Rules, 2000 | |
| 1. | Production Area, Ground Floor, PAP Plant | 22.09.2023 10:00 A.M 10:05 A.M. | 81.4 | 85.2 | 83.8 | | |
| 2. | Near Control Room, SAP Plant | 20.09.2023 10:00 A.M 10:05 A.M. | 76.8 | 82.5 | 80.1 | | |
| 3. | Ball Mill Area, Zypmite Plant | 21.09.2023 10:30 A.M 10:35 A.M. | 82.7 | 88.1 | 85.8 | | |
| 4. | Near Ball Mill Area, AB Side - DAP | 23.09.2023 10:20 A.M 10:25 A.M. | 86.6 | 91.4 | 89.9 | 90 dB(A) | |
| 5. | Near Ball Mill Area, CD Side - DAP | 22.09.2023 10:40 A.M 10:45 A.M. | 84.7 | 91.2 | 89.0 | | |
| 6. | Near Control Room, Off site | 21.09.2023 09:50 A.M 09:55 A.M. | 72.6 | 76.2 | 74.8 | | |
| 7. | Container Loading Area, Bagging Section | 20.09.2023 10:30 A.M 10:35 A.M. | 76.8 | 85.2 | 83.2 | | |

Note : - L eq - Equivalent sound energy.

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TEST REPORT

| No. | AP-SL/23-24/675-678 | | | Date: S | eptember 26, | 2023 | | | Page 1 of 1 |
|------|---------------------|---------------------|------------------|-----------------|--|------------------|------------------|-----------------|--|
| Issu | ed to | : M/S. F | ARADE | EP PH | OSPHATES | LIMITE | D | | |
| Add | ress | : Paradeep, Odisha. | | | | | | | |
| You | r P.O. Ref. no. | : 55000 | 05451, 0 | dtd. 13.0 | 08.2022 | | | | |
| Des | cription of Sample | : Sound | Level N | Ionitorin | ng | | Parameter | s Tested : l | -Min LMax & Log |
| Date | e of Monitoring | : 20.09. | 2023 to | 23.09.2 | 023 | | Test Meth | od : IS 475 | 8 : 1968 |
| SOU | ND LEVEL MONITORIN | G AT AME | BIENT LO | CATION | : | | | | |
| SI. | Locations | Day Ti | me (06.0 | 0 A.M to | 10.00 P.M) | Night 1 | Time (10. | 00 P.M t | o 06.00 A.M) |
| No | | Sound | Level in | n dB(A) | Norms as per | Sound | Level in | n dB(A) | Norms as per |
| | | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area | L _{Min} | L _{Max} | L _{eq} | Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area |
| 1. | Near AAQMS - 1 | 51.7 | 55.3 | 53.9 | | 41.9 | 44.8 | 43.2 | |
| 2. | Near AAQMS - 2 | 51.5 | 55.7 | 53.9 | 1 | 42.4 | 44.7 | 43.7 | |
| 3. | Near AAQMS - 3 | 52.5 | 55.2 | 54.0 | 75 dB(A) | 40.4 | 44.1 | 42.7 | - 70 dB(A) |
| 4. | Near AAQMS - 4 | 53.4 | 56.5 | 54.9 | 1 | 41.5 | 44.5 | 43.1 | |

Note : - L eq - Equivalent sound energy.

-: END OF TEST REPORT :-

5 Monder

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TEST REPORT

| No. E(D)/23-24/930 | _ | Date: 29 September 2023 | | Page 1 of 2 |
|---|---|--|----------------|--------------|
| Issued to | : | M/s. PARADEEP PHOSPHATI | E LIMITED | |
| Description of Sample | 5 | Effluent [| Paramet | or Testad. |
| Collection Source | : | STP Outlet | nH TS | s BOD |
| Sample Drawn by us on | 3 | 25.09.2023 at 12.20 P.M. | pii, 13 | 3,000 |
| Sample Carried out by | 1 | Mr. P.P.Mondal | | |
| Sampling Plan | : | RVB/FM/45 | | |
| Analysis completed on | : | 29.09.2023 | | |
| Sample collection Procedure | : | APHA 24th Edition 1060 | | - |
| Mode of Sampling | : | Grab | | |
| Environmental condition during sampling | : | Temperature : 23°C, Transported in Ice | box, Cold chai | n maintained |

TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|---|------------------------------|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.6 | 6.5 - 9.0 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 28 | < 100 |
| 3 | Biochemical Oxygen Demand for 3 days at 27°C (BOD) | I.S. 3025 (Part - 44) - 1993 | mg/l | 9.7 | < 30 |

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

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM) Technical Manager Authorised Signatory



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TEST REPORT

| No. E(D)/23-24/930 | | Date: 29 September 202 | 3 | Page 2 of 2 |
|---|---|--|----------------|-----------------------------|
| Issued to | : | M/s. PARADEEP PHOSPH Paradeep, Odisha | IATE LIM | ITED |
| Description of Sample | ÷ | Effluent | P | arameter Tested |
| Collection Source | : | STP Outlet | Microh | iological : Faccal Coliform |
| Sample Drawn by us on | : | 28.08.2023 at 12.20 P.M. | meroo | stogical : Patcal Contorm |
| Sample Carried out by | | Mr. P.P.Mondal | | |
| Sampling Plan | : | RVB/FM/45 | | * 1 1 Sec. |
| Analysis completed on | : | 25.09.2023 | | |
| Sample collection Procedure | 1 | APHA 24th Edition 9060 | | |
| Mode of Sampling | ÷ | Grab | | |
| Environmental condition during sampling | : | Temperature : 23°C, Transported | in Ice box. Co | ld chain maintained |

MICROBIOLOGICAL TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|-----------------|-------------------------|----------------|---------|---|
| 1 | Faecal Coliform | APHA 23rd Edition 9221E | MPN/ 100 ml | 84 | < 1000 |

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

-: END OF TEST REPORT:-

Report Verified by

(Pijush Kanti Dutta) Sr. Microbiologist Authorized Signatory



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TEST REPORT

| No. E(D)/23-24/929 | | Date: 29 September 2023 | 1 M 10 | Page 1 of 1 |
|---|---|--|-----------------|---------------------------------------|
| Issued to | | M/s. PARADEEP PHOSPHAT | E LIMITED | |
| Description of Sample | | Effluent | Paramete | r Tostad. |
| Collection Source | : | ETP Outlet | nu TSS | a resteu. |
| Sample Drawn by us on | : | 25.09.2023 at 13.00 P.M. | NH_N TKY | NH PN |
| Sample Carried out by | 4 | Mr. P.P.Mondal | | , , , , , , , , , , , , , , , , , , , |
| Sampling Plan | : | RVB/FM/45 | | - 25 I - 23 I |
| Analysis completed on | : | 29.09.2023 | | |
| Sample collection Procedure | : | APHA 24th Edition 1060 | | |
| Mode of Sampling | : | Grab | | |
| Environmental condition during sampling | | Temperature : 24°C, Transported in Ice | box. Cold chair | maintained |

TEST FINDINGS:

| SL No. | Test Parameters | Test Method | Unit | Results | Paradeep Phosphate Ltd., Paradeep, Odisha |
|-----------|------------------------------------|--|------|---------|---|
| 1 | pH Value | APHA 23rd edition-4500H+B | | 7.7 | 6.5 - 8.5 |
| 2 | Total Suspended Solids (TSS) | APHA 23rd edition 2540D | mg/l | 18 | 100 (Max.) |
| 3 | Oil & Grease (O & G) | APHA 23rd edition 5520B | mg/l | BDL | 10 (Max.) |
| 4 | Fluoride as F | APHA 23rd edition 4500 F-C | mg/l | 2.20 | 10 (Max.) |
| 5 | Ammoniacal Nitrogen as NH3-N | APHA 23rd edition 4500 NH ₃ F | mg/l | 23.9 | 50 (Max.) |
| 6 | Total Kjeldahl Nitrogen (TKN) as N | APHA 23rd edition 4500-NorgA | mg/l | 33 | 75 (Max.) |
| 7 | Free Ammonia as NH ₃ | APHA 23rd edition 4500 NH ₃ F | mg/l | BDL | 4 (Max.) |
| 8 | Dissolved Phosphates as P | APHA 23rd edition 4500-PD | mg/l | 3.69 | 5 (Max.) |
| 9 | Nitrate Nitrogen as NO3-N | APHA 23rd edition 4500-N03D | mg/l | 8.6 | 20 (Max.) |

Remarks: The sample of effluent does not comply with the above Specification in respect of P

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

Free Ammonia .. 0.2mg/l.

ant

-: END OF TEST REPORT:-

Report Verified by (J. Das)

(Dr. R. KARIM) Technical Manager Authorised Signatory

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Annexure-1

| SULPHUR MUCK (APRIL-SEPTEMBER 2023) | | |
|-------------------------------------|-----------------|-----------------|
| MONTH | GENERATION (MT) | UTILISATION(MT) |
| APRIL | 96 | 96 |
| MAY | 109 | 109 |
| JUNE | 147 | 147 |
| | 196 | 196 |
| | 104 | 104 |
| AUGUSI | 194 | 194 |
| SEPTEMBER | 196 | 196 |

Г



PARADEEP PHOSPHATES LTD.

BIOASSAY TOXICITY STUDIES(Treated Effluent Stream and Storm Water Drains)





Submitted By:-

SIMALABS PVT. LTD.

A-3/7, Mayapuri Industrial Area, Phase-II NewDelhi, 110064

Bio Assay & Toxicity Studies of Paradeep Phosphates Ltd. 2022-23

FOREWORD

In the present scenario, due to Industrialization & Urbanization have mainly contributed to the economic growth of the developing nations 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 it swings-air, water, and land. But the pressure should not be so high that it will break there salience 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 granting the environmental clearances for the projects Ministry of Environment & Forest vide their environmentalclearanceno11011/17/86-IA-IIdt. 23.7.1990 for Phase-II expansion has directed PPL to comply to22no'sofspecific conditions incorporated in the environmental Clearance and out of 22 nos. of specific conditions "Routine toxicity 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 knowhow 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. NEWDELHI 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 27th October to 29th October 2022. The study was carried out as per standard methods and practices and we are 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.

DGM-Environment

PROJECT PERSONNEL

ProjectLeader

Mr. DiwakarJha

SCIENTIFIC TEAM

Ms. Pinky Rai (Chemist) Ms.PratibhaRaut (Microbiologist) Mr. Ankit Mishra, Chemist

SAMPLING TEAM Mr.SudiptaSaha Mr. Saroj Kumar Ojha

1.Introduction:

Paradeep Phosphates Limited an OHSAS:18001, ISO 14001:2004 and ISO 9001:2008 certified company, situated at Paradeep in Jagatsingpur District of Odisha and was established in1982 to manufacture 2400 TPD Di-ammonium Phosphate (DAP) consisting of four streams each of 600 TPD capacity under phase-I programme. The commercial production started in theyear1986. 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 acid is met through imports. The requirement of Ammonia is through imports. Phase Π plants comprisingofa750TPD Phosphoric Acid Plant (PAP), 2 x 1000MTPD 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 5000 TPD, 2400 TPD and 1400 TPD respectively after getting the environmental clearance from MoEF, New Delhi. In January, 2016 SAP-C stream of capacity 2000 MTPD and by product power generation of 23 MW was commissioned. Besides, M/s PPL has developed a product Zypmite which is a mixture of Phosphogypsum and basic slag by product of steel industry. The project was setup during the year 2010 with a capacity of 240 TPD 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 ball 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 September 29th to 1st October 2021with 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 g u ard pond and both storm drains (1. storm water drain near zero point 2. storm water drain near Time office).

1.2 ProjectSetting

Paradeep Phosphates Limited is located in Kujang Tehsil of Jagatsingpur District. The project site is situatedat 200 16'45.54" North latitude and 860 38' 43.7" East longitude and about 50 km from the Jagatsingpur town. On the East of PPL, Paradeep port is situated.

This site is situated in a remote 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 spreaded 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 fertilizersas its final product with intermediate products like Sulfuricacid and Phosphoricacid. Mahanadi River is flowing at a distance of about 5 km from the project site and meets Bay of Bengal which is abou 3 km away from the site. Atharbanki 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 prone to frequent and severe cyclonic storms and very windy during most of the times of the year. The average annual rainfall is 1500 mm mostof 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% to 85% and the average wind speed varies from 12 to 70 Kmph. The maximum temperature goes up to 40^{0} C in summer while the minimum temperature is around 12^{0} C 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 rangeof18-140 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 6000 MT Sulphuric acid storage tank as well as 2x1500 MT 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.

Demineralization 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 and LT power through two numbers of 1KVA DG sets.



Plant inside view

1.4 Brief Description of Manufacturing Process

1.4.1 Di-ammoniumPhosphatePlant

The existing 5000 TPD DAP plant consist of four streams each of 1250 TPD capacity.

The process is based on indigenous knowhow 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, MOP and filler. Phosphoric acid and Ammonia are pumped from storagetanks to preneutralizer where they react with each other to a mole ratio of 1.45 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 a mole ratio of 1.7 to 1.8. Wet DAP granules are then dried up by a counter current stream of hot air in a rotary dryer. The dried up granules are screened for size separation in a double-deck vibrating screen. The fines and crushed over size fraction of DAP is recycled back to granulator and the proper size material is cooled in a product cooler. The cooled product is conveyed either to product silo (75000 MT capacity) 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. Sulphur is 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 4200C, is fed to a converter having 4 catalyst beds. The final gas of 4th catalyst bed, after getting cooled to a temperature of 1700C 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.

MANUFACTURING 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 knowhow. 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 a reactor 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 inhibit 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 capacity 300 MT/day for concentrating 29% dilute acid to 52% with the use of evaporators. Normally54%imported acid will be blended with 29% acid for direct use in DAP plant .The flow diagram of Phosphoric acid process is shown in**Fig1.5**.

FLOW DIAGRAM OF PHOSPHORIC ACID PLANT



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 diverted to ETP where the effluent is being treated scientifically as per the process requirement & to meet the prescribed standards .As the treated effluent passes through the guard pond , Bio-assay test was considered to be best suited in the "Guard pond at the Discharge of ETP (Location 1, as L1)". The other two discharge points of the plant are" Inside the Storm Water Drain at Near Time Office (Location 2, as L2)" and "Inside the Storm Water Drain at Near Zero Point(Location3, asL3)" running in front of ETP & Time office and the other running at the eastern side of the plant near Zero Point. Samples were collected from the pre-determined points and analyzed for physico – 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 samples supplied by PPL officials on 29/10/2022 The Range finding Bioassay results are presented in **Table-I** for **guard pond(L1)**using fresh water fishes and estuarine fishes available in Atharbanki creek.



Cage for Bio-assay study

Status during study period



Table 1

Bioassay Test Result for Sample Location L1, L2 & L3.

| Time Period of | Location Identification | | | | | | |
|-------------------|-------------------------|--------------------------|------------|-------------------------|------------|---------------------|--|
| Testing | L | .1 | L2 | 2 | L3 | | |
| (113) | Nos. Of Dead Fish | % of Dead Fish | Nos. Of | % of Dead Fis | Nos. Of | % of Dead | |
| 6 | - | - | - | - | - | _ | |
| 12 | - | - | - | - | - | - | |
| 24 | - | - | - | - | - | - | |
| 48 | - | - | - | - | - | - | |
| 72 | - | - | - | - | - | - | |
| 96 | 4 | 4 | 3 | 3 | 3 | 3 | |

Water Sampling from Guard Pond(Location- L-1)



Water Sampling from Storm Drain 2(Location-L2)



21 Report Submitted By: SIMA LABS PVT.LTD.

Water Sampling from Storm Drain 1 (Location-L-3)



Table -2Physico-chemical parameters of effluents taken for Bioassay:

| | | | | | | Contractor of |
|--|---|--|--|---|---|--|
| | | | TE | ST REPORT | | |
| | | | | | | |
| PARTY COD | E : F/DLH/043 | | | | REPORT NO. : US1118000522 | |
| ISSCED TO | PARADEEP PI | IOSPHAT | ES LIMITED | | REF. NO. : NS | 1 |
| | Pisnt-PPL Tox | nahin Rar | orloon Orlinia | 76.44.75 | DEE LINTE - NO | - |
| | | contribut Land | erebep, criteria- | -704175 | DIRECD 12/11/2022 | - |
| | | | | | 01.102022 | 1000 |
| SHOPLE NA | E : EFFLUENT W | ATER (GU | ARD POND) | Shine. | | |
| | | | RESU | LTS OF ANALYS | SIS | 1110 |
| DESCRIPTI | | | Referen | nce ; EP Act Stand | ard | |
| 1.2.2.2.14.14 | · · · · · | ident wag | semple was a | arawn by us on 28/1 | 8/2022 | |
| 1000 | | | | | | |
| SAMPLIN/2 | DATE - ANUMA | | | | | |
| Crear Lines | DATE : 29/10/2 | :022 | | SA | MPLE GTY. ; 2 LTR. | |
| a.No. (Param | eters | Units | Results | Limit (Max.) | Protocols | Detec |
| | | 1 | | | | 1 insié |
| | | | | | | Lanne |
| 1 44 | - Andrew | and the | - | | | |
| 1. pH | | NA | 7.35 | 6.5 1: 0.6 | IS:8025 (P-11) | NA |
| 1. pH 2. Total S. | uspended Solids | NA mgiL | 7,35 | 6.5 1:: 0.6 100 | IS:8025 (P-11) IS:3026 (P-17) | NA NA |
| 1. pH 2. Total S 3. Total D | uspences Solids esolver: Solids | NA mg/L rng/L | 7.35 49 796 | 6.5 to 0.6 100 NA | IS:8025 (P-11) IS:2025 (P-17) IS:2025 (P-18) | NA NA NA |
| 1. pH 2 Total S. 3. Total D 4. Chemic | uspences Solids esolve: Solids al Chyger Demand | NA mg/L rig/L mg/L | 7.35 43 795 172 | 6.5 to 8,6 100 NA 250 | IS:3025 (P-11) IS:3025 (P-17) IS:3025 (P-18) (S:3025 (P-59) | NA NA NA NA |
| 1. pH 2. Total S. 3. Total D. 4. Chemic 5. Biochemic (for 3 d) | lapences Solids solved Solids al Cxyger Demand nical Oxyger Demand nical Oxyger Demand ye at 27°C) | NA mg/L mg/L mg/L | 7.35 43 706 172 29 | 8.5 15 8.6 100 NA 250 30 | IS:3025 (P-11) IS:3025 (P-17) IS:3025 (P-18) (S:3025 (P-59) IS:3025 (P-44) | NA NA NA NA NA |
| 1. pH 2 Total S 3. Total D 4. Chemic 5. Riochen (for 3 d) 6. Phosph | apended Solids solved Solids al Oxygen Demand nical Oxygen Demand ays at 27*C) ale (as P) | NA mg/L ng/L mg/L mg/L | 7.35 49 795 172 26 1.25 | 6.5 to 8.6 100 NA 250 30 | IS:3025 (P-11) IS:3025 (P-17) IS:3025 (P-18) (S:3025 (P-59) IS:3025 (P-69) IS:3025 (P-44) | NA NA NA NA NA |
| 1. 2H 2. Total S. 3. Total D. 4. Chemic 5. Riechan (for 3 ds 6. Phosph 7. Candud | apenced Solids sealed Solids al Crygen Demand nical Oxygen Demand ays at 27°C) ale (as P) With (as 25°C) | NA mg/L mg/L mg/L mg/L uS/am | 7.35 49 705 172 26 125 1154 | 6.5 1: 8,6 100 NA 250 30 5.0 NA | IS:8025 (P-11) IS:3025 (P-17) IS:3025 (P-19) IS:3025 (P-59) IS:3025 (P-64) IS:3025 (P-44) IS:3025 (P-31) | NA NA NA NA NA |
| 1. 2H 2. Total S. 3. Total D. 4. Chemic 3. Riechan (Jor 3 d) 6. Phosph 7. Cenduc 8. Chlaride | appended Solids esolved Solids al Oxygen Demand nical Oxygen Demand nical Oxygen Demand nical Oxygen Demand ale (as P) Givity (as 25°C) (as C) | NA mg/L mg/L mg/L mg/L µS/cm ma/L | 7.35 44 796 172 29 125 1154 1154 | 6.5 1:: 0.0 100 NA 250 30 5.0 NA NA | IS:8025 (P-11) IS:3025 (P-17) IS:3025 (P-19) IS:3025 (P-59) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-14) | NA NA NA NA NA NA |
| 1. aH 2. Total S. 3. Total D. 4. Chemic 5. Riochan (for 3 ds 6. Phosphi 7. Canduc 6. Chloride 9. Nitrate (| Ispenced Solids Isolved Solids al Oxygen Demand nical Oxygen Demand nical Oxygen Demand also (as P) Birlity (as 25°C) (as C) as NO3; | NA mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L | 7.35 44 798 172 26 125 1154 1154 113 24 | E.5 1:: 0.0 100 NA 250 30 5.0 NA NA NA | IS:8025 (P-11) IS:2025 (P-17) IS:2025 (P-18) IS:3025 (P-59) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-14) IS:3025 (P-14) IS:3025 (P-52) | NA NA NA NA NA NA |
| 1. aH 2. Total S 3. Total D 4. Coemic 5. Riochen (for 3 d) 6. Phosph 7. Canduc 8. Chloride 9. Nibrate (10. Total He | Ispenced Solids isolved Solids al Oxygen Demand nical Oxygen Demand nical Oxygen Demand nical Oxygen Demand alson Total alson Col alson Col as NO3; refnass (as CaCO3) | NA mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L | 7.35 49 708 172 29 125 1154 115 1154 115 2.4 | E.5 1:: 0.0 100 NA 250 30 5.0 NA NA NA 10 10 | IS:8025 (P-11) IS:3025 (P-17) IS:3025 (P-19) IS:3025 (P-69) IS:3025 (P-69) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-14) IS:3025 (P-32) IS:3025 (P-34) | NA NA NA NA NA NA NA |
| 1. aH 2. Total S: 3. Total D: 4. Coemic 5. Riochen (for 3 d: 6. Phosphi 7. Candud 8. Chlaride 9. Nitrate (10. Total Ha 11. Ammoni | Inspended Solids isolved Solids al Cxygen Demand nical Oxygen Demand ways at 27°C) ate (as P) Svity (as 25°C) (as C) as NO3) inchass (as CaCO3) (cal Nifrogen (as NH3-N) | NA mg/L mg/L mg/L mg/L pS/cm mg/L mg/L mg/L mg/L | 7.35 49 708 172 29 125 1154 115 1154 115 2.4 176 95 | E.5 1:: 0.0 103 NA 250 30 5.0 NA NA NA 10 NA 50 | IS:8025 (P-11) IS:3025 (P-17) IS:3025 (P-19) IS:3025 (P-59) IS:3025 (P-69) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-32) IS:3025 (P-21) IS:3025 (P-21) | NA NA NA NA NA NA NA NA NA |
| 1. pH 2. Total S. 3. Total O. 4. Chemic 5. Riochen (for 3 di 6. Phosph 7. Cenduc 8. Chloride 9. Nitrate (10. Total His 11. Ammoni 12. Sulphats | Japences Solids leadved Solids al Oxygen Demand nical Oxygen Demand alog at 25°C) ale (as P) Ovity (as 25°C) (as C) as NO3; induces (as CaCO3) Cal Nitrogon (as NH3-N) (as SO4) | NA mg/L mg/L mg/L mg/L pS/cm mg/L mg/L mg/L mg/L mg/L | 7.35 49 708 172 20 125 1154 1154 115 1154 115 2.4 178 9.5 45 | E.5 1:: 8,6 100 NA 250 30 5.0 NA NA 10 NA 50 Ye | IS:8025 (P-11) IS:3025 (P-17) IS:3025 (P-19) IS:3025 (P-59) IS:3025 (P-69) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-21) IS:3025 (P-34) | NA NA NA NA NA NA NA NA NA NA |
| 1. aH 2. Total S. 3. Total D. 4. Chemic 5. Riechen (for 3 di 6. Phosphi 7. Cenduc 8. Chlaride 9. Nitrate (10. Total He 11. Ammon 12. Suphas 13. Churide | Itapences Solids Isolved Solids al Coygen Demand nical Oxygen Demand ays at 27°C) ale (as P) Sivity (as 25°C) (as C) as NC3; minass (as CaCC3) Kal Nifrogen (as NH3-N) (as SC4) s (as F) | NA mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L | 7.35 49 705 172 20 125 1154 1154 115 2.4 176 9.5 45 3.05 | E.5 1:: 8,6 T00 NA 250 30 5.0 NA NA 10 NA 50 NA 20 | IS:8025 (P-11) IS:8025 (P-17) IS:3025 (P-19) IS:3025 (P-49) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-41) IS:3025 (P-34) IS:3025 (P-24) IS:3025 (P-24) IS:3025 (P-24) | NA NA NA NA NA NA NA NA NA NA |
| 1. aH 2. Total S. 3. Total D. 4. Chemis 5. Riechen (for 3 de 6. Phosphi 7. Cenduc 8. Chlaride 9. Nitrate (10. Total Ha 11. Ammoni 12. Suphas 13. Fluende 14. Turbidity | Itapences Solids Isolved Solids al Cxygen Demand nical Oxygen Demand ays at 27°C) as (as P) Givity (as 25°C) (as C) as NO3) trinass (as CaCC3) Kal Nitrogon (as NH3-N) (as 804) a (as P) (a) | NA mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/ | 7.35 49 795 172 29 125 1154 1154 178 9.5 45 0.05 13.8 | E.5 1:: 8,6 100 NA 250 30 5.0 NA 10 NA 10 NA 50 NA 20 NA 20 NA | IS:8026 (P-11) IS:8026 (P-17) IS:8026 (P-17) IS:8025 (P-69) IS:8025 (P-69) IS:8025 (P-44) IS:8025 (P-44) IS:8025 (P-31) IS:8025 (P-32) IS:8025 (P-32) IS:8025 (P-34) IS:8025 (P-34) IS:8025 (P-24) IS:8025 (P-24) APH6,4500 P-D IS:8026 (P-10) | NA NA NA NA NA NA NA NA NA NA NA NA NA |
| 1. aH 2. Total S. 3. Total D. 4. Chemic 5. Riochen (for 3 ds 6. Phosphi 7. Cenduc 8. Chloride 9. Nitrate (10. Total Hs 11. Ammoni 12. Subhats 13. Flucida 14. Turbidig 15. Iron (as | Itapenced Solids Isolved Solids al Oxygen Demand incal Oxygen Demand incal Oxygen Demand also (as P) birity (as 25°C) (as C) as NO3; inchass (as CaCO3) Cal Nitrogen (as NH3-N) (as SO4; s (as F)) Fel | NA mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L | 7.35 49 796 172 29 125 1154 1154 1154 1154 1154 1154 1154 | E.5 1:: 8,6 100 NA 250 30 5.0 NA NA 10 NA 50 NA 20 NA 8,0 | IS:8025 (P-11) IS:8025 (P-11) IS:8025 (P-17) IS:8025 (P-19) IS:8025 (P-59) IS:8025 (P-44) IS:8025 (P-44) IS:8025 (P-31) IS:8025 (P-31) IS:8025 (P-21) IS:8025 (P-21) IS:8025 (P-24) APHA-4500 F-D IS:8025 (P-10) IS:8025 (P-10) | NA NA NA NA NA NA NA NA NA NA NA NA |
| aH Total S Total S Total D Total D Chemic Riochan (Sor 3 ds Phosphi Chorde Phosphi Chorde Chorde Chorde Nitrate (Total Ha Total Ha Total Ha Sulphase Churide Turbility Ion (as Toisolve | Japenced Solids isobed Solids al Oxygen Demand nical Oxygen Demand nical Oxygen Demand ale (as P) Grity (as 25°C) (as C) as NO3) trainas (as CaCC3) Kal Nifrogen (as NH3-N) (as SO4) (as SO4) (as SO4) (as SO4) (as SO4) (as SO4) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c | NA mg/L mg/L mg/L mg/L pS/cm mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/ | 7.35 44 708 172 26 125 1154 1154 115 2.4 178 9.5 45 3.05 13.3 BDL 4.3 | E.5 1:: 0.0 100 NA 250 30 5.0 NA 10 NA 10 NA 50 NA 2.0 NA 2.0 NA 3.0 NA 2.0 NA | IS:8026 (P-11) IS:3026 (P-17) IS:3025 (P-18) IS:3025 (P-59) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-32) IS:3025 (P-34) IS:3025 (P-34) IS:3025 (P-24) APHA-4500 F-D IS:3025 (P-10) IS:3025 (P-2) IS:3025 (P-2) | NA NA |
| aH Total S Total D Total D Total D Chemic Riochan (for 3 d) Phosphi Phosphi Charde Charde Charde Nbrate (Total Ha Total Ha Sulphasi Churnde Furnide Turbidity Iron (as Total Alk | Ispenced Solids isolved Solids al Cxygen Demand nical Cxygen Demand nical Cxygen Demand ays at 27°C) ale (as P) Givity (as 25°C) (as CC) as NC3) michaes (as CaCC3) Cal Nifrogen (as NH3-N) (as SO4) (as SO4) (a) (as SO4) (a) (as SO4) (a) (as SO4) (a) (a) (a) (a) (a) (a) (a) (a) (a) (a) | NA mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/ | 7.35 44 788 172 26 125 1154 115 1154 115 2.4 178 9.5 45 3.05 13.3 BDL 4.3 87 | E.5 1:: 0.0 100 NA 250 30 5.0 NA NA 10 NA 50 NA 2:0 NA 2:0 NA 3.0 NA 2.0 NA 3.0 NA NA 1.0 NA | IS:8026 (P-11) IS:2026 (P-17) IS:2026 (P-17) IS:2026 (P-19) IS:2025 (P-59) IS:2025 (P-44) IS:2025 (P-44) IS:2025 (P-44) IS:2025 (P-31) IS:2025 (P-34) IS:2025 (P-34) IS:2025 (P-34) IS:2025 (P-34) IS:2025 (P-34) IS:2025 (P-20) IS:2025 (P-20) IS:2025 (P-20) IS:2025 (P-36) | NA NA |
| aH Total S Total D Chemis Chemis Chemis Chemis Phosphi Chorde Phosphi Chlorde Chlorde Nibrate (Total He Ammoni Sulphas Total He Ammoni Sulphas Fluende Fluende Ion (as Basolve Total Alk Chroma | Japences Solids isolved Solids al Cxygen Demand nical Oxygen Demand nical Oxygen Demand also (as P) Solidy (as 25°C) (as C) as NO3(as NO3) (as SO4) (as SO4) (b) (as SO4) (b) (as SO4) (b) (as SO4) (b) (a) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b | Ν(4 mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L | 7.35 44 705 172 29 125 1154 115 2.4 176 9.5 46 3.05 18.3 BDL 4.3 87 BDL | E.5 1:: 8,6 100 NA 250 30 5.0 NA NA 10 NA 50 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA NA 2.0 NA NA NA 2.0 NA NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA NA 2.0 NA 2.0 NA NA 2.0 NA NA 2.0 NA | IS:8025 (P-11) IS:8025 (P-17) IS:3025 (P-19) IS:3025 (P-59) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-34) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-24) APHA-4500 F-D IS:3025 (P-20) IS:3025 (P-36) IS:3025 (P-20) IS:3025 (P-20) IS:3025 (P-20) | NA |

| Sophisticate Anelyt Jeovy APPRov | d Industric Labs P | BS iel Materials vt. Ltd. ABURATORIES) | Address : Plot No Phone : 1(S1). Email : simple CIN No : 1/7469 Website : www.s | a 37, Sector-7, II.E, SilDCUL, MARI 013345-255552 M + Cese71 333 andwar@simalab.co.jn 9DL1938PTC0stras metah.nat www.simalab.com | DWAR-249403 345 |
|---|--|--|---|---|---|
| TESTING STREAMS FO | OD & AGRI | PRODUCTS . | DRUGS & COSME | TICS · ENVIRONMENT · | WATER |
| | | MLA TE | ST REPORT | | 7.8 F-01 |
| PARTY CODE : P/DLH/043 INSUED TO PARADEEP | PHOSPIN | TES LIMITED | | REPCRIMO : US11160007 REF.NO: : NS | 22 |
| Plant-PPL T | ownship, Pa | radoop, Odisha | a-764175 | REF. DATE : NS DT.RECD : 18/11/2022 | |
| WASTE WASTE WA | TERISTOR | RESU | LTS OF ANALY | SIS | STOR |
| DESCRIPTION | 181-11-1-1 | Rofere | ence : EP Act Stand | ard | |
| SAMPLING DATE 2900 | SIN | | | | |
| SAMPLING DATE : 29/1 S.No. Parameters | C/2022 Units | Results | SA | MPLE QTY. : 2'LTR. | SIM |
| SAMPLING DATE : 29/1 S.No. Parameters | 0/2022 Units | Results | SA Umit (Max.) | MPLE QTY. : 2 LTR. | Detecti Limit |
| SAMPLING DATE : 29/1 S.No. Paraméters | 0/2022 Units NA | Results | SA Limit (Max.) | MPLE QTY. ; 2 LTR. Protocols | Detecti Limit |
| SAMPLING DATE : 29/1 S.No. Parameters t. pH Z. Total Suspended Solids | 0/2022 Units NA mg/L | Rasids 7,42 40 | SA Limit (Max.) 9.5 to 6.5 100 | MPLE QTY. ; 2 LTR. Protocols IS:3025 (P-11) 8:3725 (P-12) | Detecti Limit |
| SAMPLING DATE : 29/1 S.No. Parameters 1. pH 2. Total Suspended Solids | D/2022 Units NA mg/L mg/L | Rest#bs 7,42 40 756 | SA Llinit (Max.) 3.5 to 8.5 100 NA | MPLE QTY. : 2'LTR. Protocols IS-3025 (P-11) (S:3025 (P-17) (S:3025 (P-17) | Detecti Limit NA NA |
| SAMPLING DATE : 29/1 S.No. Parameters PH Total Suspended Solids Total Dissolvid Solids Shemical Oxygen Demand | D/2D22 Units NA mg/L mg/L | Results 7,42 40 756 145 | SA Lunit (Max.) 3.5 to 6.5 100 NA 253 | MPLE QTY. : 2'LTR. Protocols IS:3025 (P-11) .6:3025 (P-17) IS:3026 (P-16) IS:3025 (2-50) | Detecti Linsit NA NA NA |
| SAMPLING DATE : 29/1 S.No. Parameters I. pH 2. Total Suspended Solids 3. Total Dissolvid Solids 4. Chemical Oxygen Damand 5. Biochemical Oxygen Damand 10r 3 days at 27°C) | D/2D22 Units NA mg/L mg/L i mg/L | Results 7,42 40 756 145 25 | SA Lunit (Max.) 3.5 to 6.5 100 NA 253 30 | MPLE QTY. : 2'LTR. Protocols IS:3025 (P-14) (6:3025 (P-17) (5:3025 (P-16) IS:3025 (P-46) IS:3025 (P-44) | NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.Mo. Parameters I. pH 2. Total Dissolved Solids 3. Total Dissolved Solids 4. Chemical Oxygen Damand 5. Biochemical Oxygen Damand (for 3 days at 27°C) 6. Phosphate (as P) | D/2022 Units NA mg/L mg/L i mg/L i mg/L | Results 7,42 40 766 145 25 1,19 | SA Limit (Max.) 3.5 to 8.5 100 NA 283 30 6.5 | MPLE QTY. : 2'LTR. Protocols IS'3025 (P-14) .8:8025 (P-17) IS:3026 (P-16) IS:3025 (P-46) IS:3025 (P-44) IS:3025 (P-31) | NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.Mo. Parameters 1. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Damand 5. Biochemical Oxygen Damand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) | C/2022 Units NA mg/L mg/L i mg/L i mg/L i mg/L i g/L | Rasidts 7.42 40 766 146 25 1.19 1129 | SA Limit (Max.) 9.5 to 8.5 100 NA 283 90 6.0 RA | MPLE QTY. : 2'LTR. Protocols IS'3025 (P-14) .8:3025 (P-17) IS:3025 (P-16) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-14) | NA NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.No. Parameters 1. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) | C/2022 Units NA mg/L mg/L i fng/L i fng/L uS/om mg/L | Results 7,42 40 766 145 25 1,19 4129 171 | SA Limit (Max.) 9.5 to 8.5 100 NA 250 00 6.5 NA NA | MPLE QTY: : 2 LTR. Protecols IS:3025 (P-11) .8:3025 (P-17) IS:3025 (P-17) IS:3025 (P-16) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) | Detectil Limit NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.Mo. Paremeters 1. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chiloride (as C) 9. Nitrate (as NO3) | C/2D22 Units NA mg/L mg/L trg/L uS/cm mg/L uS/cm | Results 7,42 40 756 145 25 1,19 4129 171 1,11 | SA Limit (Max.) 9.5 to 6.5 100 NA 280 30 6.5 NA NA NA 10 | MPLE QTY. : 2 LTR. Protocols IS:3025 (P-14) .6:3025 (P-17) IS:3026 (P-16) IS:3026 (P-46) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-34) | Detectil Limit NA NA NA NA NA NA NA |
| SAWPLING DATE : 29/1 S.No. Paremeters 1. pH 2. Total Suspended Solide 3. Total Dissolved Solids 4. Chemical Oxygen Damand 5. Biochemical Oxygen Damand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) | C/2022 Units NA mg/L mg/L fmg/L fmg/L uS/cm mg/L mg/L mg/L mg/L mg/L | Results 7,42 40 756 145 25 1.19 1129 171 1,11 162 | SA Llinit (Max.) 3.5 to 8.5 100 NA 250 30 6.0 NA NA NA 10 NA | MPLE QTY. : 2'LTR. Protocols IS:3025 (P-14) IS:3025 (P-17) IS:3025 (P-16) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-32) IS:3025 (P-32) IS:3025 (P-21) | Detectil Limit NA NA NA NA NA NA NA NA |
| SAWPLING DATE : 29/1 S.No. Parameters 1. pH 2. Total Suspended Solids 3. Total Dissolvid Solids 4. Chemical Oxygen Demand 5. Biochemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Animonical Nitrogen (as NH3) | C/2022 Units NA mg/L mg/L mg/L i mg/L µS/om mg/L mg/L mg/L Mg/L | Results 7,42 40 756 145 25 1,19 1129 1129 17,1 1,11 1,52 7,4 | SA LUmit (Max.) 9.5 to 8.5 100 NA 283 30 6.0 8A NA 10 NA 10 NA 50 | MPLE QTY. : 2'LTR. Protecols IS:3025 (P-14) IS:3025 (P-17) IS:3025 (P-46) IS:3025 (P-46) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-32) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-34) | NA NA NA NA NA NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.Mo. Parameters 1. pH 2. Total Suspended Solids 3. Total Suspended Solids 4. Chemical Oxygen Damand 5. Biochemical Oxygen Damand 16r 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Animonical Nitrogen (as NH3) 12. Sulphata (as SO4) | C/2022 Units NA mg/L mg/L mg/L i mg/L µS/om mg/L mg/L mg/L mg/L mg/L mg/L mg/L | Restable 7,42 40 756 145 25 1,19 1129 1129 17,1 1,11 1,52 7,4 36.9 | SA LUmit (Max.) 3.5 to 8.5 100 NA 253 30 6.0 RA NA 10 NA 50 NA | MPLE QTY. : 2'LTR. Protecols IS:3025 (P-14) .6:3025 (P-17) IS:3025 (P-17) IS:3025 (P-46) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-32) IS:3025 (P-21) IS:3025 (P-24) IS:3025 (P-24) | NA NA NA NA NA NA NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.Mo. Parameters I. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Ammenical Nitrogen (as NH3) 12. Sulphete (as C) 13. Funder (as F) 14. Ammenical Nitrogen (as NH3) 15. Sulphete (as C) 16. Funder (as F) 17. Conductivity (as SO4) 18. Chloride (as P) 19. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Ammenical Nitrogen (as NH3) 12. Sulphete (as F) 13. Funder (as F) 14. Funder (as F) 15. Funder (as F) 16. Funder (as F) 17. Conductivity (as SO4) 18. Chloride (as F) 19. Nitrate (as P) 10. Total Hardness (as CaCO3) 11. Ammenical Nitrogen (as NH3) 12. Sulphete (as F) 13. Funder (as F) 14. Ammenical SUlphete (as F) 15. Funder (as F) 16. Funder (as F) 17. Conductivity (as SO4) 18. Funder (as F) 19. Sulphete (as F) 19. Sulphete (as F) 10. Funder (as F) 10. Funder (as F) 11. Sulphete (as F) 13. Funder (as F) 14. Sulphete (as F) 15. Sulphete (as F) 15. Sulphete (as F) 16. Funder (as F) 17. Sulphete (as F) 17. Sulphete (as F) 18. Sulphete (as F) 19. Sulphete (as F) 19. Sulphete (as F) 10. Funder (as F) 10. Funder (as F) 10. Funder (as F) 11. Sulphete (as SO4) 13. Funder (as F) 13. Funder (as F) 14. Sulphete (as F) 15. Sulphete (as F) 15. Sulphete (as F) 16. Funder (as F) 17. Sulphete (as F) 17. Sulphete (as F) 18. Sulphete (as F) 18. Sulphete (as F) 19. Sulphete (as F | D/2022 Units NA mg/L mg/L i mg/L i mg/L mg/L mg/L N mg/L ng/L ng/L ng/L | Results 7,42 40 756 145 25 1,19 1129 171 1,11 162 7,4 36,5 0,40 | SA LUmit (Max.) 9.5 to 8 5 100 NA 263 30 6.5 NA NA 10 NA 10 NA 30 NA 20 | MPLE QTY. : 2'LTR. Protocols IS:3025 (P-14) .6:3025 (P-17) IS:3025 (P-16) IS:3025 (P-46) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-24) IS:3025 (P-24) APHA-4500 F-0 | NA NA NA NA NA NA NA NA NA NA NA NA NA |
| SAMPLING DATE : 29/1 S.Mo. Parameters I. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Anthonical Nitrogen (as NH3) 12. Sulphete (as SO4) 13. Fubrides (as F) 14. Turbiday 15. Sulphete (as F) 15. Sulphete (as SO4) 16. Fubrides (as F) 17. Conductivity 17. Conductivity 18. Chloride (as C) 19. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Anthonical Nitrogen (as NH3) 12. Sulphete (as SO4) 13. Fubrides (as F) 14. Turbiday | 0/2022 Units NA mg/L mg/L mg/L mg/L mg/L mg/L mg/L N) mg/L ng/L Ng/L NTU | Results 7,42 40 756 146 25 1,19 1129 171 1,11 162 7,4 36,5 0,40 -0,7 | SA Lunit (Max.) 3.5 to 8 5 100 NA 263 30 6.5 NA NA 10 NA 30 NA 2.0 NA | MPLE QTY. : 2'LTR. Protocols IS:3025 (P-14) .8:3025 (P-17) IS:3025 (P-16) IS:3025 (P-46) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-24) IS:3025 (P-24) APHA-4600 F-D IS:3025 (P-10) | NA NA NA NA NA NA NA NA NA NA NA NA NA N |
| SAMPLING DATE : 29/1 S.Mo. Paremeters 1. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Damand 5. Siechemical Oxygen Damand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Anthonical Nitrogen (as NH3 12. Sulphate (as SO4) 13. Fubrides (as F) 14. Tubiday 15. Iron (as Fe) | 0/2022 Units NA mg/L mg/L i mg/L i mg/L i mg/L mg/L mg/L ng/L ng/L ng/L NU mg/L NTU mg/L | Results 7,42 40 756 145 25 1,19 4129 171 1,11 162 7,4 36.5 0,40 -0,7 DDL | SA Lunit (Max.) 3.5 to 8.5 100 NA 283 30 6.5 NA NA 10 NA 10 NA 50 NA 2.0 NA 3.0 | MPLE QTY. : 2'LTR. Protocols IS:3025 (P-14) .8:3025 (P-17) IS:3025 (P-16) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-24) IS:3025 (P-24) IS:3025 (P-20) IS:3025 (P-20) | NA NA NA NA NA NA NA NA NA NA NA NA NA N |
| SAMPLING DATE : 29/1 S.Mo. Parameters 1. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Demand 5. Biochemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCO3) 11. Anthonical Nitrogen (as NH3) 12. St. phate (as SO4) 13. Fluorides (as F) 14. Turbiday 15. Iron (as Fe) 16. Dissolved Oxygen (as DO) | D/2022 Units NA mg/L mg/L i mg/L i mg/L i mg/L yS/om mg/L mg/L ng/L ng/L ng/L ng/L mg/L mg/L | Results 7,42 40 766 145 25 1,19 4120 171 1,11 162 7,4 36,6 0,40 20,7 DDL 4,8 | SA Limit (Max.) 3.5 to 8.5 100 NA 233 30 6.5 NA NA 10 NA 10 NA 20 NA 30 NA 30 NA 30 NA 30 NA 30 NA | MPLE QTY. : 2'LTR. Protopols IS:3025 (P-14) .8:3025 (P-17) IS:3025 (P-16) IS:3025 (P-44) IS:3025 (P-34) IS:3025 (P-34) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-24) IS:3025 (P-24) | NA NA NA NA NA NA NA NA NA NA NA NA NA N |
| SAMPLING DATE : 29/1 S.Mo. Parameters 1. pH 2. Total Suspended Solids 3. Total Dissolved Solids 4. Chemical Oxygen Demand 5. Biochemical Oxygen Demand (for 3 days at 27°C) 6. Phosphate (as P) 7. Conductivity (as 25°C) 8. Chloride (as C) 9. Nitrate (as NO3) 10. Total Hardness (as CaCC3) 11. Animonical Nitrogen (as NH3 12. St. phate (as SO4) 13. Fluorides (as F) 14. Turbiday 15. Iron (as Fe) 16. Dissolved Oxygen (as DO) 17. Total Akalmäy (as GeCC3) | D/2022 Units NA mg/L mg/L mg/L i mg/L i mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L | Results 7,42 40 766 145 25 1,19 4129 171 1,11 162 7,4 36,5 0,40 -0,7 DDL 4,8 84,5 | SA Limit (Max.) 3.5 to 6.5 100 NA 233 30 6.5 NA NA 10 NA 10 NA 20 NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA 30 NA NA 30 NA 30 NA NA 30 NA 30 NA 30 NA 30 NA NA 30 NA 30 NA 30 NA 30 NA NA 30 NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA NA 30 NA | MPLE QTY. : 2'LTR. Protopols IS:3025 (P-14) .8:3025 (P-14) .8:3025 (P-14) IS:3025 (P-44) IS:3025 (P-44) IS:3025 (P-34) IS:3025 (P-34) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-24) APHA-4600 F-D IS:3025 (P-2) IS:3025 (P-2) | NA NA NA NA NA NA NA NA NA NA NA NA NA N |

Date of completion : 23/11/2022

admin

AUTHORISED SIGNATORY

| 1.5 | Sophisticated Analytic (COVT. APPROVED TESTING STREAMS = POO | A LA Industri Labs Pu restate D | BS si Materiale rt. Ltd. ssoratories) Phopucts | Address : Plot No Phone 1 +(91)-0 Email : simana CIN No : U7455 Website : www.al DRUGS & COSME | x 37, Sector-7, I.I.E, SIDCUL, HAI 01834)-235552 M : 008971 3 Midwan@simelad.co.in 90, 1983PTC051755 Melab.net www.simelab.com TICS + ENVIRION/MENT - | RDWAR-249403 8345 WATER |
|--|---|---|---|---|--|---|
| | | | те | ST REPORT | A SIMA | 7.8 F-01 |
| PAI | RTY CODE : P/DLH/043 PARADEEP P Plant-PPL To. | HOSPHAT Wiship, Pai | TES LIMITED radcop, Odishe M DRAIN-1) | r754175 | REPORTING. : US1116000 REF.NO. : NS REF.DATE : NS DT.RECD : 16/11/2022 | |
| - | | 1 | RESU | LTS OF ANALY | SIS | |
| - | | | Refere | nce : EP Act Stand | ard | |
| S.N | o. Parameters | Units | Results | SA Limit (Max.) | MPLE QTY. ; 2 LTR. Protocols | Detection |
| 1. | pH | bia. | 2.00 | | | |
| | Total Suspended Solide | mo/l | 36 | 0.0108.5 | S:0025 (P-11) | NA |
| 2. | | mark | 726 | 100 | (IS:3025 (P-17) | NA |
| 2. | Tota' Dissolved Solids | | | 1130.4 | 15:3025 (P-16) | 18.14 |
| 2. 3. 4. | Total Dissolved Solids Chemical Oxygen Demand | mg/L | 160 | 250 | 18 2025 (7 50) | Na |
| 2. 3. 4. 5. | Total Dissolved Solids Chemical Oxygen Demand Biochamical Oxygen Damand (for 5 days at 27°C) | mg/L mg/L | 160 27 | 250 30 | IS:3025 (P-58) IS:3025 (P-44) | NA NA |
| 2. 3. 4. 5. | Total Dissolved Solids Chemical Oxygen Demand Blochomical Oxygen Demand (for 3 days at 27°C) Phosphate (as P) | mg/L mg/L mg/L | 160 27 1.2 | 250 30 5.0 | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-31) | NA NA NA |
| 2. 3. 4. 5. 3. | Total Dissolved Salids Chemical Oxygen Demand Biochomical Oxygen Damand (for 5 days at 27°C) Phosphale (iss P) Consultivity (as 25°C) | mg/L mg/L mg/L mg/L | 160 27 1.2 1117 | 250 30 5.0 NA | IS:3025 (P-58) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-14) | NA NA NA NA |
| 2. 3. 4. 5. 7. 8. | Total Dissolved Solids Chemical Oxygen Demand Biochamical Oxygen Damand (for 3 days at 27°C) Phosphate (as P) Consultivity (as 25°C) Chloride (as CI) | mg/L mg/L mg/L mg/L µS/cm mg/L | 160 27 1.2 1117 162 | 250 30 5.0 NA NA | IS:3025 (P-58) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-14) IS:3025 (P-32) | NA NA NA NA NA |
| 2. 3. 4. 5. 5. 7. 8. 8. | Total Dissolved Solids Chemical Oxygen Demand Biochomical Oxygen Demand (for 3 days at 2710) Phosphate (as P) Conclusivity (as 2510) Chionde (as CI) Nitrate (as NO2) Total Haster (an 0,000) | mg/L mg/L mg/L µS/cm mg/L mg/L | 160 27 1.2 1117 162 1.18 | 250 30 5.0 NA NA 10 | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-31) IS 3025 (P-31) IS 3025 (P-32) IS 3025 (P-32) IS 3025 (P-34) | NA NA NA NA NA NA |
| 2. 3. 4. 5. 5. 7. 8. 8. 10. | Total Dissolved Solids Chemical Oxygen Demand Biochamical Oxygen Demand (for 3 days at 27°C) Phosphate (as P) Concustivity (as 25°C) Chlonde (as CI) Nitrate (as NO2) Total Hardness (as CeOO3) | mg/L mg/L mg/L μS/cm mg/L mg/L mg/L | 160 27 1.2 1117 162 1.18 149 | 250 30 5.0 NA NA 10 NA | 15:3025 (P-58) 15:3025 (P-44) 15:3025 (P-31) 15:3025 (P-14) 15:3025 (P-32) 15:3025 (P-34) 15:3025 (P-21) | NA NA NA NA NA NA NA |
| 2. 3. 4. 5. 6. 7. 8. 8. 10. 11. | Total Dissolved Solids Chemical Oxygen Demand Biochomical Oxygen Demand (for Sidays at 27°C) Phosphate (as P) Conductivity (as 25°C) Chlonde (as Cl) Nitrate (as NO3) Total Hardness (as CeDO3) Arrimonical Nitrogen (as NH3-N Sulphate (as SO4) | mg/L mg/L mg/L μS/cm mg/L | 160 27 1.2 1117 162 1.18 149 7.95 | 250 30 5.0 NA NA 10 NA 50 | IS:3025 (P-58) IS:3025 (P-44) IS:3025 (P-31) IS:3025 (P-31) IS:3025 (P-32) IS:3025 (P-34) IS:3025 (P-21) IS:3025 (P-34) | NA NA NA NA NA NA NA NA NA |
| 2. 3. 4. 5. 6. 7. 8. 8. 10. 11. 12. | Total Dissolved Solids Chemical Oxygen Demand Biochomical Oxygen Demand (for 5 days at 27°C) Phosphate (as P) Conductivity (as 25°C) Chlonde (as Cl) Nitrate (as NO2) Tatal Hardness (as Ca0C3) Arrimonical Nitrogen (as NH3-h Sulphate (as SO4) Physices (as P) | mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L mg/L | 160 27 1.2 1117 162 1.18 149 7.95 40 9.00 | 250 30 5.0 NA NA 10 NA 50 NA | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-41) IS 3025 (P-31) IS 3025 (P-32) IS 3025 (P-32) IS 3025 (P-34) IS 3025 (P-21) IS 3025 (P-34) IS 3025 (P-24) | NA |
| 2. 3. 4. 5. 5. 7. 8. 8. 10. 11. 13. 14. | Total Dissolved Solids Chemical Oxygen Demand Biochomical Oxygen Demand (for 5 days at 27°C) Phosphate (as P) Conductivity (as 25°C) Chlonde (as Cl) Nitrate (as NO2) Tatal Hardness (as Ce003) Ammonical Nitrogen (as NH3-h Sulphate (as SO4) Fluorides (as F) Turbidity | mg/L mg/L mg/L μS/cm mg/L | 160 27 1.2 1117 162 1.18 149 7.95 40 0.09 10.4 | 250 30 5.0 NA NA 10 NA 50 NA 2.0 NA | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-44) IS 3025 (P-31) IS 3025 (P-31) IS 3025 (P-32) IS 3025 (P-34) IS 3025 (P-21) IS 3025 (P-24) IS 3025 (P-24) APHA 4500 F-D | NA NA NA NA NA NA NA NA NA NA |
| 2. 3. 4. 5. 5. 7. 8. 8. 9. 10. 11. 12. 13. 14. | Total Dissolved Solids Chemical Oxygen Demand Bioshomical Oxygen Demand (for 5 days at 27°C) Phosphate (as P) Consumitivity (as 25°C) Chloride (as Cl) Nitrate (as NO2) Tatal Hardness (as CeOO3) Ammonical Nitrogen (as NH3-N Sulphate (as SO4) Fluorides (as F) Turoldity Itan (as Fc) | mg/L mg/L mg/L uS/cm mg/L mg/L mg/L mg/L mg/L mg/L NTU mg/L | 160 27 1.2 1117 162 1.18 149 7.95 40 0.09 10.3 BDI | 250 30 5.0 NA NA 10 NA 50 NA 2.0 NA 3.0 | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-44) IS 3025 (P-31) IS 3025 (P-32) IS 3025 (P-32) IS 3025 (P-34) IS 3025 (P-24) IS 3025 (P-24) IS 3025 (P-24) APHA 4500 F-D IS 3025 (P-10) | NA NA NA NA NA NA NA NA NA NA |
| 2. 3. 4. 5. 8. 7. 8. 10. 11. 12. 13. 14. 15. | Total Dissolved Solids Chemical Oxygen Demand Biochamical Oxygen Demand (for 3 days at 27°C) Phosphate (as P) Concuctivity (as 25°C) Chlonde (as CI) Nitrate (as NO2) Tatal Hardness (as CeOO3) Ammonical Nitrogen (as NH3-N Subhate (as SO4) Fluorities (as F) Turbidity Iran (as Fc) Dissolved Cxygen (as DO) | mg/L mg/L | 160 27 1.2 1117 162 1.18 149 7.95 40 0.59 10.4 BDL 4.6 | 250 30 5.0 NA NA 10 NA 50 NA 2.0 NA 3.0 NG | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-44) IS 3025 (P-31) IS 3025 (P-32) IS 3025 (P-32) IS 3025 (P-34) IS 3025 (P-24) IS 3025 (P-24) APHA 4503 F-D IS 3025 (P-2) IS 3025 (P-2) | NA |
| 2. 3. 4. 5. 3. 7. 8. 8. 8. 10. 11. 12. 13. 14. 15. 14. 15. | Total Dissolved Solids Chemical Oxygen Demand Biochomical Oxygen Demand (for 3 days et 27°C) Phosphate (as P) Concuctivity (as 25°C) Chlonde (as Cl) Nitrate (as NO2) Total Hardness (as CeOO3) Ammonical Nitrogen (as NH3-N Sulphate (as SO4) Fluorides (as F) Turbidity Iron (as Fc) Dissolved Oxygen (as DO) Total Alkalinity (as CaCO3) | mg/L | 160 27 1.2 1117 162 1.18 149 7.95 40 0.09 10.4 80L 4.6 83 | 250 30 5.0 NA NA 10 NA 50 NA 2.0 NA 3.0 NA NA | IS 3025 (P-58) IS 3025 (P-44) IS 3025 (P-44) IS 3025 (P-31) IS 3025 (P-31) IS 3025 (P-34) IS 3025 (P-21) IS 3025 (P-21) IS 3025 (P-24) IS 3025 (P-36) IS 3025 (P-36) | NA |
| 2. 3. 4. 5. 7. 8. 8. 10. 11. 12. 13. 14. 15. 16. 17. 18. | Total Dissolved Solids Chemical Oxygen Demand Biochomical Oxygen Demand (for Sidays at 27°C) Phosphate (as P) Concuctivity (as 25°C) Chlonde (as Cl) Nitrate (as NO2) Total Hardness (as CeDO3) Arrimonical Nitrogen (as NH3-N Sulphate (as SO4) Fluorides (as F) Turoldity Iran (as Fc) Dissolved Oxygen (as DO) Total Akatinity (as CaCO3) Chromium (as Cr) | mg/L | 160 27 1.2 1117 162 1.18 149 7.95 40 0.09 10.5 80L 4.6 83 80L | 250 30 5.0 NA NA 10 NA 50 NA 2.0 NA 3.0 NA 2.0 NA 3.0 NA 2.0 NA | 15:3025 (P-58) 15:3025 (P-44) 15:3025 (P-44) 15:3025 (P-31) 15:3025 (P-31) 15:3025 (P-31) 15:3025 (P-34) 15:3025 (P-21) 15:3025 (P-21) 15:3025 (P-24) 15:3025 (P-23) 15:3025 (P-23) 15:3025 (P-23) | NA NA |

3.2 In-situ Bio-assay Toxicity Test

In-situ toxicity tests were carried out in pre-fabricated stainless steel cages (70cmx40cmx40cm) provided with inside lining of 2 mm nylon mesh. The cages were allowed to dip into the channel by suspending them from the sides with the help of two nylon ropes. Three points of observations, First(L1) in the Guard pond at the discharge of ETP selected for detailed study from 27.10.2022 to 29.10.2022.



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 fishs pecies and estuarine species were kept in the cages for observations on mortality. These tests were carried out on 3 species of fresh water fishes and 5 estuarine species and one prawn species. The test fishes were collected from local ponds (fresh water fish) and Atharbanki River (Estuarinefish). The following fish species were selected for the *in-situ* toxicity tests.

| Sl. No. | Species | L1 | L2 | L3 |
|------------|-------------|----|----|----|
| 1 | Kau | 08 | 06 | 08 |
| 2 | Kerandi | 09 | 06 | 05 |
| 3 | Balia | 06 | 08 | 07 |
| 4 | Prawn | 06 | 06 | 05 |
| 5 | Baliguri | 05 | 05 | 06 |
| 6 | Bombite | 08 | 06 | 05 |
| 7 | Khasuli | 04 | 05 | 06 |
| 8 | Gong Tengra | 02 | 08 | 08 |
| Total | | 50 | 50 | 50 |

Table-3AquaticSpeciesDistribution

| Sl. | Fish | L1 | | L2 | | L3 | |
|------|-----------------|-------|-------|-------|-------|-------|-------|
| INO. | Species | | | | | | |
| | | LT50 | LT100 | LT5 | LT100 | LT50 | LT10 |
| | | | | 0 | | | 0 |
| 1 | Bombite | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr |
| 2 | Kerandi | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr |
| 3 | Khasuli | 96 hr |
| 4 | Prawn | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr |
| 5 | Baliguri | 96 hr |
| 6 | Balia | 96 hr |
| 7 | Gong- Tengra | 96 hr |
| 8 | Kau | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr |

Table-4 LT50 / LT100

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 do not 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 |

| | DO in mg / l | | | | | | | | |
|------------|--------------|---------|-----|-------|-----|-------|--|--|--|
| Date | - | L1 | I | 2 | L3 | | | | |
| | Day | Night | Day | Night | Day | Night | | | |
| 29.09.2021 | 4.6 | 5. | 4.6 | 5.3 | 4.4 | 4.8 | | | |
| 30.09.2021 | 5.4 | 6. | 5.4 | 4.8 | 4.6 | 5.1 | | | |
| 01.10.2021 | 4.3 | 4. 8 | 5.0 | 5.3 | 5.3 | 5.5 | | | |

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, L2,L3 is 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, L3 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 | I | .1 | - | L2 | I | .3 |
|--------|-----------------|-------|-------|-------|-------|-------|-------|
| | | LT50 | LT100 | LT50 | LT100 | LT50 | LT100 |
| 1 | Kau | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr |
| 2 | Kerandi | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr |
| 3 | Balia | 96 hr |
| 4 | Prawn | 96 hr | 90 hr | 96 hr | 90 hr | 96 hr | 90 hr |
| 5 | Baliguri | 96 hr |
| 6 | Bombite | 96 hr |
| 7 | Khasuli | 96 hr |
| 8 | Gong Tengra | 96 hr |





4.0 FISH FAUNA IN ATHARBANKI & SHYAMAKOTI CREEK

Fishing is generally carried out in the adjoining 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 |
|---------------|---------------------|-------------------------|
| Bombite | Cristispectinata | 30-50gm |
| Kau | Anabas festitues | 30-70gm |
| Gong Tengra | Gogatasp | 20-30gm |
| Kerandi | Puntiusconctonius | 05-10gm |
| Baliguri | Glossogobiousgiuris | 10-30gm |
| Balia | Wallagoattu | 20-50gm |
| BagdaChingudi | Panaeusmonodon | 05-10gm |
| Khasuli | Colisafasciata | 20-30gm |



5.0 INFERENCE

The Bio-assay study carried out in the Guard pond reflects that the different parameters of treated effluent were within the prescribed limits and have no toxic effect on the fish . The surrounding low lying area to which the treated effluent is discharged has a flush green area with presence of a variety of birds species indicates the state of environment itself. Bio-assay study carried out in both the storm water drains are found to be very much within the prescribed limit and non-toxic to the fish and fish food organisms.




Bio Assay & Toxicity Studies of Paradeep Phosphates Ltd. 2022-23



Report Submitted By: SIMA LABS PVT.LTD.

Bio Assay & Toxicity Studies of Paradeep Phosphates Ltd. 2022-23

6.0 ACKNOWLEDGEMET

M/s SIMA Labs Pvt. Ltd., New Delhi express its deep gratitude to M/s. Paradeep Phosphates Limited for keeping faith on us & again entrusting the assignment for carrying out the Bio-Assay Toxicity Study.We thank Shri Ranjit Singh Chugh ,COO ;Shri Pranab Kumar Bhattacharyya ,CMO ,Mr. A K Tiwari , GM(Tech Services) ,Mr. Ambikesh Kumar Mishra ,DGM(Env Mgt) and Mr.Narayan Sahoo , Manager (Env.Mgt) fortheir wholehearted cooperation during the Study Period . The cooperation and hospitality extended by the other officials and staff of Paradeep Phosphates Limited is also gratefully acknowledged.

Report Submitted By: SIMA LABS PVT.LTD.

Annexure – III



भारत सरकार परमाणु ऊर्जा विभाग विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड



Government of India Department of Atomic Energy Board of Radiation & Isotope Technology

Certificate Tracking ID / CTID: 2306689Date of Issue / DOI: 07-Jul-2023Certificate Serial No. / CSN: RAL(V)-2300052



Radioanalytical Laboratory

RADIOACTIVITY TEST CERTIFICATE

Ref : BRIT/RAL/DOM/26-49/MISC/06-29/23-24

To :

M/S. PARADEEP PHOSPHATES LIMITED P.O.: PPL TOWNSHIP PARADEEP - 754 145 DIST. JAGATSINGHPUR, ODISHA, INDIA.

This is regarding the samples of "ROCK PHOSPHATE & PHOSPHO GYPSUM " submitted for radioactivity analysis vide your letter dt. 18.04.2023 with the following descriptions as shown in italics:

| NAME OF THE FIRM/COMPANY | : | M/S. PARADEEP PHOSPHATES LIMITED P.O.: PPL TOWNSHIP PARADEEP - 754 145 DIST. JAGATSINGHPUR, ODISHA, INDIA. |
|--------------------------|---|--|
| MATERIAL DESCRIPTION | : | i) ROCK PHOSPHATE ii) PHOSPHO GYPSUM |
| PLACE OF SAMPLING | : | i) ROCK PHOSPHATE FROM ROCK SILO ii) GYPSUM FROM PAP PLANT |
| DATE OF SAMPLING | : | 14.04.2023 |

DATE OF RECEIPT OF SAMPLE: 02.05.2023

DATE OF COMPLETION OF TEST: 18.06.2023

The Samples were analysed by HPGe Gamma spectrometry and the values obtained for U-238 and Ra-226 against each sample is shown in the table below :

| Sr. No | SAMPLE NO. | SAMPLE DESCRIPTION | U-238 (Bq/Kg) | Ra-226 (Bq/Kg) |
|--------|------------|--------------------|-------------------|----------------|
| 1 | RP-76 | ROCK PHOSPHATE | 1061.8 ± 16.0 | 1046 ± 26.5 |
| 2 | RP-77 | ROCK PHOSPHATE | 1601 ± 24.2 | 1538 ± 39.3 |
| 3 | RP-78 | ROCK PHOSPHATE | 1080.1 ± 16.3 | 1095 ± 27.6 |
| 4 | RP-79 | ROCK PHOSPHATE | 1151.7 ± 17.1 | 1092 ± 27.9 |
| 5 | RP-80 | ROCK PHOSPHATE | 504 ± 8.2 | 477.3 ± 15.0 |
| 6 | RP-81 | ROCK PHOSPHATE | 491.1 ± 8.2 | 461 ± 14.5 |
| 7 | PG-76 | PHOSPHO GYPSUM | 314.7 ± 6.0 | 285.2 ± 12.4 |
| 8 | PG-77 | PHOSPHO GYPSUM | 298.5 ± 5.7 | 272.9 ± 12.1 |
| 9 | PG-78 | PHOSPHO GYPSUM | 295.3 ± 5.7 | 257 ± 11.5 |
| 10 | PG-79 | PHOSPHO GYPSUM | 372.9 ± 7.1 | 337.9 ± 14.7 |
| 11 | PG-80 | PHOSPHO GYPSUM | 368.6 ± 6.8 | 330.6 ± 13.5 |
| 12 | PG-81 | PHOSPHO GYPSUM | 312.4 ± 5.9 | 304.3 ± 12.6 |

<u>Opinion</u>: The measurement values except for sr.nos. 1,2,3,4 w/r to U-238 & Ra-226 are below the clearance level for radionuclides of natural origin in bulk solid materials, as per AERB directive 01/2010 (table-3) dated 26/11/2010.

The authenticity of this certificate is verifiable. Please scan the QR code using a QR scanning application on any mobile devices. Upon redirection you must enter the necessary information in landing page https://eportal.britatom.gov.in. We will then revert you back with a digital copy of the certificate in your verified e-mail ID. In accordance to IT Act 2000 (21 of 2000), this document is generated electronically through a validated s/w and need no physical/ digital signature(s).



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भारत सरकार परमाणू ऊर्जा विभाग विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड



Government of India Department of Atomic Energy Board of Radiation & Isotope Technology

Certificate Tracking ID / CTID : 2306689 Date of Issue / DOI Certificate Serial No. / CSN

: 07-Jul-2023 : RAL(V)-2300052



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Checked by: SHEEBA S.W. Assistant

AJAY NANA THAMKE OIC, RAL

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Annexure-V

Quantitative Risk Assessment (QRA) Paradeep Phosphates Limited

| SI. | | Compliance status |
|-----|--|---|
| No | Recommendations | |
| 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 (6nos) are installed at the following places. 1) At conveyors Zero point. 2) NH3 transfer pump 1 area 3) NH3 transfer pump4 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 | SOP for transfer of Ammonia in to storage tank |
|----|---|---|
| | storage tank should elaborate the risk of | is to prevent against risk of over pressure and |
| | overpressure and overfilling – the two most | over filling is available |
| | common causes for failure of storage tanks - | over mining is available. |
| | and the actions / precautions to be taken to | |
| | prevent them | |
| 10 | The flare stack and its ignition system should | We are testing the Flare stack and its ignition |
| 10 | be tested periodically | system periodically and the record of the same is |
| | be tested periodically. | being maintained |
| 11 | The isolation valves, especially the vent valve | The isolation value especially the vent value is |
| 11 | should be 'eased' periodically to make sure | being 'eased' periodically to operate freely in |
| | that these will operate freely in case of need | case of need |
| 12 | Monitor moisture content in liquid ammonia | We are receiving Ammonia that contains around |
| 12 | in each shipment. Presence of 0.2% water in | 0.2% moisture in liquid Ammonia |
| | liquid ammonia provides protection against | 0.270 moisture in riquid 7 minionia. |
| | stress corrosion cracking (SCC) | |
| | sitess corrosion cracking (See). | |
| 13 | The tank shell plates are susceptible to stress | We are following SOP and taking extra care by |
| | corrosion cracking (SCC) in presence of | doing Nitrogen purging. N2 gas exchanging and |
| | oxygen. During normal service no oxygen is | Ammonia gas exchanging for removal of oxygen |
| | present inside the tank. However, oxygen | before taking the tank back in service. |
| | will enter the system during | 6 |
| | decommissioning, testing and maintenance. | |
| | Under such circumstances great care is to be | |
| | taken for removal of oxygen before taking the | |
| | tank back in service | |
| 14 | As a practice, the drains of pipelines, | All drains of pipe lines, equipments and |
| | equipments, instruments etc. that are nor | instruments that are not being used frequently |
| | frequently used should be plugged or blinded | were blinded and the same practice is being |
| | in a consistent manner | followed strictly. |
| 15 | A scheme to monitor the settlement if any of | Settlement checking of the foundation of all |
| | the foundation of the Storage Tank may be put | ammonia storage tanks are being carried out |
| | in place. An expert study of the condition of | periodically by our Civil department. Condition |
| | the foundation and piles may also be carried | of foundation and piles are being carried out on |
| | out. | regular basis. |
| | | |
| 16 | Carry out detailed periodic inspection of the | Periodic inspection of the tanks is being carried |
| | tanks to ensure their integrity. | out to ensure their integrity. |
| | | |
| 17 | Review the inventory management practice to | We are keeping maximum inventory 40000MT |
| | determine if the maximum permitted storage | or less against our maximum storage capacity of |
| | in a tank can be lowered from the current | 50000 mt, which is 80%. |
| | level of ~80%. | |
| 18 | Ammonia Unloading | Our operation and maintenance team is taking |
| | During ammonia unloading from ship tanker, | care for zero leakage by preventive maintenance |
| | necessary patrolling and surveillance is to be | further during Ammonia unloading, our |
| | ensured to prevent emergency due to major | patrolling team is available to ensure for |
| | leak in the pipeline. | preventing emergency due to any major leak in |
| | | pipe line. |

| 19 20 | Tanker LoadingUse 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.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 | 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. This condition is not applicable to us since we are not using hoses for loading ammonia tankers. |
|-------------|---|---|
| 21 | test should be attached to the hoses. There should also be a replacement schedule for the hoses. 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 | 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 | Total 14 no of wind socks are installed at the following areas |
|-----|---|---|
| | areas. | 1)WTP 2) Offsite 3)PAP/SAP area 4) Gate |
| | | house near F&S depart 5) DAP 6) PPL Township |
| 20 | Torria Dalaaga Chlaring | and /) Navaratna Building. |
| 20 | <u>I OXIC Kelease - Chiorine</u> Efforts should be concentrated on reducing | being used |
| | the probability of release of Chlorine in the | being used. |
| | chlorine handling area - WTP - especially | |
| | since this is in the high risk region of | |
| | township. | |
| 29 | Only chlorine toners with assured integrity | Not Applicable as chlorine handling system has |
| | should be allowed. It is suggested that the | already replaced as above. |
| | management insist on a copy of the test | |
| | certificate to accompany the toners when they | |
| 30 | The Chlorine toner in use should be fitted | Not Applicable as chloring handling system has |
| 50 | with a leak extraction hood connected to a | already replaced as above |
| | 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 | |
| 2.1 | chlorine leak detector for added safety. | |
| 31 | he chlorine sensor installed in w IP should be fitted with a booter to alert personnel about | Not Applicable as chlorine nandling system nas |
| | a leak. It should be serviced and calibration | aneady replaced as above. |
| | checked periodically. | |
| 32 | The toner leak arrestor kit inspected at regular | Not Applicable as chlorine handling system has |
| | intervals to ensure that all items are available | already replaced as above. |
| | in the kit. A list of items should be available | |
| 22 | in the kit. | Not Applicable of chloring handling system has |
| 33 | A programme for replacing the chlorine toner | Not Applicable as chlorine nandling system nas |
| | implemented | aneady replaced as above. |
| | | |
| 34 | Ensure that gaskets of correct material is | Not Applicable as chlorine handling system has |
| | procured and used. As a safe practice, a fresh | already replaced as above. |
| | gasket should be used every time tubing is | |
| | connected and the used gaskets should be | |
| 25 | destroyed to avoid accidental reuse. | Two numbers of SCPAs are evailable in WTP |
| 33 | contained breathing apparatus giving supply | 1 wo numbers of SCDAs are available in WIP control room and 4 Nos available in $F\&S$ |
| | for 30-40 minutes with audible alarm when | department in case of emergency |
| | the pressure falls below a stipulated figure. | aspannent in case of emergency. |
| | Sufficient number of these SCBA should be | |
| | stocked at a convenient place nearby where | |
| | these can be accessed without difficulty in an | |
| | emergency. | |

| 36 | Escape suits for use only for emergency | Two no of escape suits are available for |
|------|--|---|
| | be available. | emergency stock available in F&S Department |
| | | also. |
| 37 | More than having these self-contained | Our operating staff are well trained and also |
| | the users are imparted adequate training. The | adequate training is imparted periodically. |
| | upkeep of this safety equipment is equally | |
| | important | |
| 38 | As a measure to remove the risk emanating | Replacement of chlorine with chlorine dioxide |
| | from the use of chlorine toner on a long term | is implemented. |
| | over from chlorine to chlorine dioxide for | |
| | treating water. | |
| 39 | Since the residents and the occupants of | 1) Wind socks are provided in township and |
| | several establishments in the township are | WTP area to guide the people in case of a gas |
| | following additional measures are suggested: | 2) We are Educating our residents and other |
| | i-Provide wind socks at several locations | members of the public on the actions to be taken |
| | surrounding the WTP to guide the people in | in the event of a leak. |
| | case of a gas leak. | |
| | 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. | |
| 40 | Fire – FO and HSD Storage Tanks and Day | Inspection of storage and day tanks is being |
| | Tanks A detailed inspection of the storage and day | carried out periodically by our E&I Department |
| | tanks should be carried out at regular intervals | to ensure the meenamear integrity of the tanks. |
| | to ensure the mechanical integrity of the tanks. | |
| 41 | The monitoring instruments of the tanks for | Level and Temperature monitoring instruments |
| | level and temperature should be maintained in | are being maintained in good condition by our |
| | monitored regularly. | maintained |
| 42 | The fire hydrants, monitors, foam trolleys and | Fire hydrants, foam trolleys and hose boxes |
| | hose boxes near the storage tanks and day | Foam type and CO2 Fire Extinguishers and fire |
| | tanks should be identified for more focused | buckets are kept near the storage tanks. |
| 43 | Adequate quantity of foam to be stored in the | A dequate quantity of foam is stored in premises |
| J -J | premises. Additional inventory of foam should | and additional quantity is being maintained by |
| | be maintained in the Fire Station / Fire-, Foam | F&S department |
| | Tenders | |
| 44 | In the storage tank areas, the fire fighting | Fire fighting procedure is already displayed near |
| | procedure may be displayed for the | storage tank area. |

| | information of the plant personnel who will be | |
|----|--|---|
| | the first responders in the event of a fire. | |
| 45 | In view of its importance as secondary | The drains and other outlets from the dyke are |
| | containment in the case of a tank failure or | normally kept closed. We open these drains only |
| | other spillages, the integrity of the dykes of the | under supervision for draining water. |
| | tanks should be ensured at all times. Any | |
| | drains or other outlets from the dyke should | |
| | remain closed except when opened under | |
| | supervision for draining water or spillage. | |
| 46 | Clean the flame arrestors on the tank vents at | Not applicable. |
| | regular intervals to ensure that they are clear of | |
| | choking which could lead to pressure / vacuum | |
| | condition in the tanks. | |
| 47 | Ensure that the storage tanks are covered by | Lightening protection is available |
| | adequate lightning protection. | |
| 48 | The unloading hoses should be inspected | We do not use unloading hoses and hence not |
| | periodically and maintained in good condition. | applicable. |
| 49 | Ensure that all hot works on or near the tanks | SWP system is being followed strictly. |
| | are carried out under safe work permits. | |
| 50 | Install a system of Manual Fire Call Points in | Already in place. |
| | the factory, connected to a control panel in the | |
| | Fire Station to reduce the response time to | |
| | fires. | |

Annexure -20

CSR REPORT (2022-23)



Paradeep Phosphates Ltd

Introduction

The Corporate Social Responsibility of the company encompasses the culture of trust and caring while discharging its Social Responsibility to meet the expectation of all stakeholder and the society at large. As a responsible corporate, the company contributes towards inclusive growth and development by empowering communities residing in its operating territory focusing the Socio-Economic and Environmental requirements.

The CSR policy framework details the mechanism for undertaking various programs in accordance with section 135 of the companies Act 2013 for the benefit of the community.

Over the years CSR project area has expanded to include poorer villages/beneficiaries and urban slum pockets in Paradeep and plant surrounding locations of Goa. The CSR activities focuses to address key aspects broadly in four categories:

- WaSH & Healthcare
- Education
- Empowerment
- Environment

The projects spread over 35 villages of 9 Gram Panchayats of Kujang Block namely Mangarajpur, Kothi, Fatepur, Bagadia, Malasahi, Gopiakud, Gandakipur, ParadeepGarh and Bhutamundai and 2 slums of Paradeep Municipality namely Balijhara and Bauriapalanda.

In the FY 2022-23, the company spread its CSR geography to South Goa District of the state of Goa after acquisition of Goa plant. The CSR activities impacted more than 10,000 lives in Goa in the Healthcare and Education domain form the beginning of its activities in Goa.

1. Skill Development and Livelihood Promotion

of the FPC and a become the shareholder of the company.

Farm Based livelihood activities:

Farmer Producer Company:- Farmer Producer Company (FPC) enable farmers to collectively address challenges such as limited market access, lack of bargaining power, and difficulties in accessing credit and finance. By pooling their resources, knowledge and efforts, FPC empowers farmers to collectively market their produce, negotiate better prices, add value, access credit, manage risks, and enhance their livelihoods. FPC can also provide a legal framework for governance, transparency, and accountability while fostering social and environmental benefits. Overall, FPC serves as a platform for farmers to collaborate, share resources, and achieve common goals, leading to improved economic, social, and environmental outcomes. Through the regular training and capacity building process these women had been mobilised and collectivised into farmer Producer Company. The existing 21 Producer Groups (PG) comprising of 600 farmers doing vegetable cultivation are mobilised into an FPC named "UTKALDEEP FARMER PRODUCER COMPANY LTD, KUJANG". More than 240 farmers deposited their share capital @ Rs. 1,000.00 each, accumulating Rs. 2,40,000.00 (rupees two lakh forty thousand) in the bank account

Establishment of Agriculture Tools & Equipment Bank:- Present agriculture scope in our operational area has constraint of small land holding patterns, limited access to advance agri machinery and technologies. Establishment of tool bank in the communities address issue related to agricultural tools and equipment, especially for small land holder farmers who haven't the resources to purchase or maintain them. It also fostered community collaboration and resource sharing, as farmers can collectively utilise the tools and equipment in the tool bank.

| Name of Farmer | Bata | Narishakti PG, | Maa Sarala PG, | Baba Kalpeswar |
|------------------|----------------|----------------|----------------|----------------|
| Group | Mahapurusha | Daleisahi | Duadia | PG, Hasina |
| | PG, Tenteikuda | | | |
| No. of Farmers | 31 | 14 | 30 | 35 |
| covered | | | | |
| Equipment | Power tiller | Power tiller | Power tiller | Paddy Reaper |
| details | | | | |
| Total Cost | ₹ 2,00,300.00 | ₹ 2,00,300.00 | ₹ 2,00,300.00 | ₹ 1,65,000.00 |
| PPL Contribution | ₹ 1,30,195.00 | ₹ 1,30,195.00 | ₹ 1,30,195.00 | ₹ 1,07,250.00 |

Paradeep Phosphates Ltd.

| Farmer's | ₹ | 70,105.00 | ₹ | 70,105.00 | ₹ | 70,105.00 | ₹ | 57,750.00 |
|----------------|----|-----------|----|-----------|----|-----------|----|-----------|
| Contribution | | | | | | | | |
| Subsidy | ₹ | 85,000.00 | ₹ | 85,000.00 | ₹ | 85,000.00 | ₹ | 60,000.00 |
| Expected | 70 | | 60 | | 56 | | 54 | |
| coverage (area | | | | | | | | |
| in acres) | | | | | | | | |

This year the intervention was extended to 4 PGs by supporting 3 power tillers and 1 paddy reaper (one piece of equipment for each group). Through convergence with the Agriculture Department, Kujang, the machinery was purchased with a subsidy of Rs. 85,000.00 and Rs. 60,000.00 in power tiller and paddy reaper, respectively and the community contributed 35% of the machine costs.

Commercial Vegetable Cultivation:- Introducing scientific method in vegetable farming was one of the key intervention in the farming community. By introducing the trellis method in creeper farming along with the intervention of mulching, the farmers were multi-fold their harvest. Apart from this intervention, the regular training and capacity building program around the package of practices of the particular crops was the priority area in the operational village. The objective of commercial vegetable cultivation is to generate income and profit through large-scale production of vegetables for sale in the market. It involves utilizing modern agricultural practices, maximizing yields, and optimizing market demand to meet the needs of consumers and generate revenue for farmers. Looking to the need it was planned to support the farmers with Trellis and Mulching method of cultivation.

The trellis method of cultivation includes increased yield, space optimization, pest and disease management, improved quality, ease of harvesting, sustainability, climate resilience, flexibility and diversification, aesthetic appeal, and opportunities for education and innovation. Trellising allows for efficient space utilization, higher productivity, reduced pest and disease risks, improved crop quality, easier harvesting, and potential for sustainable and climate-resilient agriculture. It also provides flexibility in crop selection, opportunities for innovation, and visually appealing cultivation setups.

Likewise Mulching offers several benefits in cultivation, such as weed suppression, moisture conservation, soil temperature moderation, erosion control, improved soil fertility, reduced disease risks, time and labour

savings, improved aesthetics, and environmental sustainability.

Mulching helps to suppress weeds, conserve soil moisture, moderate soil temperature, prevent erosion, enhance soil fertility, reduce disease transmission, save time and labour, improve aesthetics, and promote sustainable farming practices.

| Name of Farmer Group | Bata Mahapurusha PG, Tenteikuda | | |
|--------------------------|---------------------------------|-------------|--|
| Intervention | Trellis | Mulching | |
| No. of Farmers | 15 | 11 | |
| Total Cost | ₹ 5,92,310.00 | ₹ 37,500.00 | |
| PPL Contribution | ₹ 5,02,310.00 | ₹ 37,500.00 | |
| Beneficiary Contribution | ₹ 90,000.00 | - | |
| Support per farmer | ₹ 33,487.33 | ₹ 3,409.09 | |
| Contribution per farmer | ₹ 6,000.00 | - | |
| Total area (acre) | 3.75 | 2.75 | |

Solar Based Irrigation Infrastructure:- Frequent power cuts in the villages is a major challenge in providing timely irrigation to the vegetable fields and diesel pump set adds cost to the cultivation. To reduce the cost of cultivation, solar based irrigation intervention taken up in the context of input cost reduction as well as promotion of clean and renewable energy in the project and environment friendly option for irrigation. Solar irrigation is cost-effective in the long run as it reduces dependence on costly fossil fuels or grid electricity. Timely irrigation through Solar irrigation technology improves crop productivity, protection of livelihoods and food security thus contributing to rural development and poverty alleviation.

In FY 2022-23, three solar irrigation infrastructures were supported to the PGs.

| Name of Farmer | Narishakti | Bata Mahapurusha PG | , Tenteikuda |
|--------------------|---------------|---------------------|--------------|
| Group | PG, Daleisahi | | |
| Pump set Capacity | 3 HP | 3 HP | 1 HP |
| Cost of Solar pump | ₹ | ₹ 1,85,703.00 | ₹ 85,390.00 |
| sets | 1,85,703.00 | | |
| Area covered (ir | 6 | 8 | 4 |
| acrs) | | | |
| No.offarmers 18 | | 15 | 7 |
| benefited | | | |

Animal Husbandry promotion for livelihood security of marginalised Poor:-Integrated goat rearing is a comprehensive approach which combines various features of goat farming including nutrition, health care, housing, and breeding to maximise productivity and profitability. It involves careful planning and management to ensure the optimal growth and development of goats, resulting in saleable weight in less time, improved growth while minimizing disease risks and other challenges associated with goat farming.

Since last three years we supported the beneficiaries with timely vaccination, low-cost feed preparation and capacity building of goat farmers. This year we supported the beneficiary with improved goat sheds. Goats are prone to diseases if not kept in dry place. So, the improved goat sheds designed in such a way that after discharge from the body, the excreta and urine fall to the ground and the platform remains dry.

| Gram Panchayat Name | Village Name | No. of New Goat Shed |
|---------------------|--------------|----------------------|
| Fatepur | Pratappur | 8 |
| | Polei | 1 |
| Malhasahi | Tenteikuda | 4 |
| Mangrajpur | Hasina | 1 |
| | Talapada | 1 |
| Total | * | 15 |

Vaccination of Livestock

Vaccination of cattle and small ruminants is crucial for preventing the spread of infectious diseases, reducing mortality and morbidity rates. Protecting herd health, improving productivity and profitability of livestock farming, we ensured 100% deworming of all animals in project villages animal health camps were organised with community participation.

| GP Name | Deworming program | | | | |
|-----------|-------------------|-------------|------------------|---------------|---------|
| | | | | | Health |
| | | | | | Camp |
| | | 0 | 97 V | | program |
| | No. of HH | No. of cows | No. of Buffaloes | Nos. of Goats | No.of |
| | | | | | animals |
| Bagadia | 124 | 418 | 47 | 13 | 0 |
| Fatepur | 166 | 363 | 0 | 59 | 264 |
| Gopiakuda | 153 | 436 | 22 | 27 | 0 |
| Kothi | 151 | 387 | 100 | 103 | 210 |
| Malhasahi | 199 | 456 | 0 | 145 | 188 |

| Mangrajpur | 159 | 393 | 0 | 31 | 0 |
|------------|-----|------|-----|-----|-----|
| Total | 952 | 2453 | 169 | 378 | 662 |

Women Entrepreneurship Development

Establishment of Portside business hub (Café cum rural product sales outlet):- In collaboration with the Mission Shakti Dept., ORMAS and District administration-Jagatsinghpur, we supported to a group of 16 women entrepreneurs to set up a Café and Sales outlet to promote selling of rural products sourced from rural artisans and SHG groups in the district of Jagatsinghpur and other known parts of Odisha. The project was inaugurated by senior officials of the state Govt. of Odisha along with the Unit Head, PPL and other industry leaders of Pardeep.

Establishment of Mushroom Spawn Unit:- In collaboration with the Mission Shakti dept., Govt. of Odisha, we established a spawn manufacturing unit and dedicated the laboratory to the women PG Maa Mangala Producer Group (PG), Naudia. 276 women entrepreneurs engaged in mushroom production for eight months in a calendar year will be benefitted and earn more income from this initiative. The laboratory is equipped with sterile laboratory technology with a specialised facility, equipped with laminar flow hoods, autoclaves for sterilisation, and environmental controls for temperature, humidity, and lighting. The material cost was borne by PPL's CSR initiative, and the labour cost was borne by the PG and machines were provided by the Mission Shakti Dept, Govt. of Odisha.

| Name of PG | Maa Mangala |
|---------------------------------------|-------------|
| Village Name | Naudia |
| Gram Panchayat Name | Kothi |
| No. of Members | 30 |
| Estimated cost of Mushroom Spawn Unit | 370860 |
| PPL Contribution | 300000 |
| PG Contribution | 70860 |

Capacity Building:- Capacity building of farmers in agriculture and allied activities is essential for sustainable agricultural development, rural livelihood improvement, food security, innovation, and community empowerment. It empowers communities to make informed decisions, take ownership of their agricultural activities, and participate in rural development processes. This FY, we conducted two types of training programs i.e., one at the field level and the other by sending lead farmers to PPL's Farm School.

Through the training programs, farmers gain knowledge about the latest agricultural technologies, techniques, and best practices. They learn about sustainable farming methods, non-pesticide management, modern machinery, disease management and irrigation techniques.

This exposure visit helped our beneficiaries to understand modern practices, build confidence in adopting new methods, and overcome barriers to change. It also helped them access resources, such as improved seeds, fertilisers, and market linkages, necessary for adopting modern practices.

| Type of Capacity | Quantity (Nos.) | Male Farmers | Female Farmers |
|-----------------------|-----------------|--------------|----------------|
| Building Activity | | | |
| Field Level Trainings | 15 | 75 | 348 |
| Training to PPL Farm | 2 | 28 | 28 |
| School | | | |
| Exposure visit to FPC | 1 | 2 | 12 |
| Total | 18 | 105 | 388 |

2. Promotion of Healthcare and WaSH

Holistic Village Development Program: - In an attempt to demonstrate best practices in the field of agriculture and allied activities, entrepreneurship, access to safe drinking water in every HHs, improved sanitation, access to education & healthcare and adoption renewable energy in a single village, PratapPur village of Fatepur Gram Panchayat had been identified and taken up to develop under holistic village development program. This village is a platform to promote holistic development, technology adoption, and replication of successful interventions. The Company developed physical infrastructure in the above-mentioned areas through community participation and taken up community awareness program to develop the village as model village in next three years.

| Type of Events | Quantity (Nos.) | Women Participated |
|----------------------------|-----------------|--------------------|
| Village Cleaning | 5 | 22 |
| ODF Awareness | 1 | 78 |
| Waste segregation | 1 | 64 |
| Pond cleaning | 2 | 140 |
| Wall painting | 10 | 0 |
| Garbage Bins (wet and dry) | 20 | 0 |

Access to safe Drinking Water Program: - Getting safe drinking water for households is a major challenge in project area. As per the availability of water resource and quality of the water source; different intervention plan had been designed as per the village context. The area where the TDS level was high, establishing of RO water plant-based drinking water facility and piped water supply through deep borewell has been taken up in project villages.

High Total Dissolved Solids (TDS) in drinking water pose challenges to water quality and human health in the intervention area. It is a cause of health concerns, as excessive intake of certain minerals and salts leads to health risks, such as kidney stones, cardiovascular issues, and gastrointestinal problems. The TDS level ranges from 3000 to 14000 parts per million (ppm). So, proper water treatment, such as reverse osmosis (RO) or distillation effectively reduces TDS levels, ensuring safe and desirable drinking water.

After a detailed study of water samples and technologies implementation, high capacity RO equipment were installed in six plants. Presently all the plants are functioning well and providing safe drinking water supply to more than 5000 HHs. 140 HHs of Nuasahi village of Bagadia Gram Panchayat also fully covered through our house hold level piped water supply initiative.

Mobile Health Unit: - In association with HelpAge India, the company support basic healthcare services through Mobile Health Unit (MHU). It was a strategic approach used in healthcare to provide medical services to communities with limited access to healthcare facilities. 31,000 (11,089 males, 19,911 females) were treated through MHU service while 149 patient were referred to hospitals for better healthcare services. 97 home visits conducted to take care of bed-ridden and elderly patient who barely access to healthcare service. It is observed that Gastritis / Peptic ulcer (15.59%) Cough/Cold/Fever (13.74%) Skin Disorder (11.09%) and Osteoarthritis (9.49%) were the main issues in the community and the patient were treated through our initiative.

Assistive Devices support to elderly people: - Assistive devices are crucial for persons with disabilities or limited mobility as they provide tools and support to enhance their independence, mobility, and overall quality of life. We conducted a need assessment survey and listed persons with high need of wheelchairs, crutches, walking sticks, and communication aids. These devices would help them to perform daily activities, participate in social interactions and engage in their communities.

| Device | Commode Wheel | | Knee B | Knee Braces | | Walker | | Walking | |
|------------|---------------|------|--------|-------------|-------|--------|-------|---------|--|
| Name | Chai | r | | | | | Stic | ¢ | |
| GP Name | Female | Male | Femal | Mal | Femal | Mal | Femal | Mal | |
| 4 | 3 | - | е | е | е | е | е | е | |
| Bagadia | 1 | 2 | 5 | 3 | 1 | 6 | 12 | 18 | |
| Fatepur | 9 | 5 | 2 | 4 | 6 | 6 | 22 | 18 | |
| Kothi | 4 | 1 | 10 | 10 | 2 | 3 | 30 | 62 | |
| Mangrajpur | 4 | 1 | 3 | 4 | 4 | 2 | 21 | 26 | |
| Total | 18 | 9 | 20 | 20 | 13 | 17 | 85 | 124 | |

Also, these assistive devices will play a vital role in promoting inclusion and accessibility for persons with disabilities and will empower them to overcome barriers, maximise their functional abilities, and live a more fulfilling and independent life.

Health Camps: - Health camps in village communities are vital for providing health education, early detection of diseases and management of health conditions, improving access to healthcare services, and preventive care, fostering community engagement and empowerment, and facilitating referrals and follow-ups. Health camps contribute to improving the health and well-being of villagers, promoting health equity, and empowering communities to take charge of their health.

Three mega camps were organized wherein Specialists doctors for Skin, Obstetrics and Gynaecology (O&G), Pediatrics and Medicine attended and provided health care support to the community. The community volunteer, the PRI members and community leaders came forward to make it a successful event. Over 1100 people received doctor consultations, free medicines and health check-ups in three camps.

Capacity Building of Adolescent Girls

It was observed that in our project locations, rural girls face a wide range of challenges related to life skills, menstrual hygiene management, limited access to education, stigma and cultural taboos, lack of access to menstrual products, gender roles and responsibilities, limited awareness and resources, and socio-economic constraints. Addressing these challenges requires multi-faceted approaches, including comprehensive education, community engagement, improved infrastructure, and access to affordable menstrual products, to empower rural girls and promote their well-being. We groomed 12 adolescent cadres by providing them training by experts. They have been provided info graphic training and life skill training to further impart training in different villages in cascading manner. Through a proper monitoring mechanism these master trainers are tracked and remunerated.

| Village Name | No. of girls undergone training |
|--------------|---------------------------------|
| Fatepur | 40 |
| Raghunathpur | 21 |
| Pratappur | 25 |
| Jaladharpur | 25 |
| Kharigotha | 53 |
| Polei | 20 |
| Total | 184 |

Support to Sanitary Napkin Manufacturing Unit

In FY 2020-21, a sanitary napkin manufacturing unit was established by organizing 20 women from different SHGs. These women have undergone training in manufacturing, bookkeeping and sales. The group also got exposure to different expos, exhibitions at the district level and events organized at the state capital. The group also supplied sanitary napkin to the flood victims during the flood in August 2022. The USP of the sanitary napkin is its bio-degradable. This year a horizontal sealing machine and label printing machine were also provided to the group. The unit is also designed for a women-friendly work environment.

Navratna Balyagruha Initiative

For the past three years, UNICEF has been the knowledge partner in restructuring the Anganwadi Centres (AWC) in Building as Learning Aid (BaLA) and WaSH compliant model. It's an innovative approach that integrates the physical infrastructure of Anganwadi centers with learning aids to create an engaging and stimulating environment for preschool children.

The building has distinctive features, such as ramps, railings, blind tiles, a wellfurnished kitchen, WaSH-compliant child-friendly toilets, an interactive classroom with eye-catching arts, and many more. In order to focus the specified focus groups under ICDS program such as children, adolescent girls and pregnant cum lactating mothers, separate toilets with water connections are ensured. Also, the building has a water recharge pit to harvest the rainwater. This year we renovated the following eight AWCs as per the UNICEF standard. To enhance the attractiveness of the Aanganwadi centers and make it eye catchy for the early age children BaLA art had been ensured. As a result of all this intervention, better infrastructure had been ensured at village itself with all the integrated facilities inside the Anganwadi premises which is definitely increasing the overall learning growth from the early age itself. A total of 8 Wash Compliant Anganwadi Centres Developed benefitting 184 children, 274 adolescent girls and 112 mothers.

| Sl. No. | Renovation work in AWC | No. of Children | No. of Adolescent Girls | No. of Pregnant and Lactating Mothers |
|---------|---------------------------|--------------------|-------------------------------|--|
| 1 | Santara | 27 | 51 | 9 |
| 2 | Talapada | 28 | 38 | 12 |
| 3 | Mangrajpur-1 | 20 | 49 | 14 |
| 4 | Pratappur | 18 | 25 | 14 |
| 5 | Kaliapata | 33 | 28 | 21 |
| 6 | Barunakandha | 22 | 34 | 18 |
| 7 | Chasapada | 18 | 22 | 11 |
| 8 | Ghodamara | 18 | 27 | 13 |

Community Nutrition Management Initiative: - In rural areas, nutrition is vital for the health, growth, and development of children and women. It is crucial for healthy brain development, bone formation, muscle growth, and immune function in children. Proper nutrition during pregnancy reduces the risk of complications and promotes optimal fetal growth. For women, nutrition impacts menstrual health, bone health, and overall energy levels. It also has inter-generational impact, as good nutrition in women can positively influence the health of their children. Ensuring proper nutrition for children and women is essential for their overall health and well-being. So, we conducted Prusti Mahostav and training on Participatory Learning Action and Linkage Agriculture with Natural resource and Nutrition (PLA-LANN) for the CRP and MBK of GPLF of all the 6 Gram Panchayat.

3. Education development Initiative

School Transformation Programme: - 19 High schools across Jagatsinghpur district have been developed under 5T high school transformation program of Govt. of Odisha. Wherein smart classrooms, additional classroom, Toilet blocks and periphery

development has been done in the schools. More than 5000 students will be benefitted from these initiatives and will reduce absenteeism in schools and create an enabling atmosphere for the students.

Development of Govt. Primary and upper primary schools: - As a responsible corporate, PPL always focuses on education development in the periphery gram panchayats. We developed 15 Govt. Primary and Upper Primary schools under holistic development approach wherein three aspects will be ensured in the schools.

- 1. Literacy enhancement (Early Child Care, Grade Level Learning, Bridge Program)
- 2. School Transformation (Essential facilities such as toilets, drinking water, handwash stations, classroom, school building painting, and compound walls.)
- 3. Environment and Vocational courses

The initiative will be helpful for more than 3000 students studying in the schools.

Sathi Initiative: - The Sathi initiative has been continuing since FY 2019-20, wherein local youths have been trained and placed at schools to address teacher student ratio in the school as well as develop the learning level in the school. At present, nine Sathis are engaged in six schools and running nine learning centres in the project area. The very objective of the intervention was to support the poor-performing students between classes 1 to 5 through learning centres. The Sathis also attend schools and take classes not as a teacher but as "Sathi". Presently in 6 schools up to 5th class, the Sathis are reaching 571 students, of which 281 are boys and 290 are girls. Similarly, through the learning centre, 83 boys and 118 girls are directly learning from their respective Sathis.

Science Exhibition: - Science exhibitions play a crucial role in promoting scientific literacy, enhancing STEM education, showcasing scientific advancements, encouraging creativity and innovation, fostering community engagement, and inspiring future scientists and technologists. Recognizing the importance and need for such initiatives, we conducted multiple science exhibition at different schools in our identified model schools. The events were served as a valuable platform for promoting scientific knowledge, awareness, and interest among students, parents, the general public, and other stakeholders.

Toilet Construction: - Considering the needs of girl students four toilet complex has been constructed in the following school campus. The toilet is equipped with water connection, mirrors. The facility ensures amenities improvement in schools and also boosts confidence to attend school, even during their menstrual days.

| SI No | Activity | Name of the Village | Unit in umber |
|-------|----------------------------|---------------------|---------------|
| 1 | School Toilet Construction | Jaladharpur | 1 |
| 2 | | Gangadharapur | |
| | School Toilet Construction | Sasan | 1 |
| 3 | School Toilet Construction | Nuasahi | 1 |
| 4 | School Toilet Construction | Jhimani | 1 |

Har Ghar Tiranga Program: - As part of Azadi ki Amrit Mahostav program, Har Ghar Tiranga campaign initiated in schools and with the Commissionerate police personnel of Odisha. More than 5000 Khadi made flags distributed to students, villagers and volunteers to promote patriotism and awareness on India's rich independence history.

4. Youth Empowerment (Skilling and Employment)

In an effort to skill the unemployed youths and to create enabling career opportunity for the youths, skill development activity has been taken up in formal and non-formal sector. The company taken up skilling of unemployed youths through apprenticeship training and facilitated the training of 75 students in Paradeep plant. Trainees were trained in SAP, DAP and other dept. for a period of one year and get an hands on experience in chemical plant operation.

5. PROMOTE ENVIRONMENT AND BIODIVERSITY

Support Towards Youth for Water Campaign Led by UNICEF: - Youth4Water is a global campaign led by UNICEF that specifically targets United Nations Sustainable Development Goals (SDGs) 6 and 13. SDG 6 aims to ensure availability and sustainable management of water and sanitation for all, while SDG 13 focuses on taking urgent action to combat climate change and its impacts. The Youth4Water campaign, led by UNICEF, recognizes the critical linkages between water and climate change, and the disproportionate impacts of these issues on vulnerable communities, including children and youth. The campaign aims to engage and empower 60 young people to take action on water-related challenges and climate change, and to contribute to achieving SDGs 6 and 13. In this regard, we extended our support to UNICEF for organizing a three months orientation cum training program to engage the youth to achieve SDG 6 and 13 in their respective village and locations.

Community Park Development: - Rural parks play a crucial role in preserving natural landscapes, promoting environmental conservation, and providing recreational opportunities for rural communities. They offer a space for people to connect with nature, engage in physical activities, and enjoy outdoor leisure pursuits. In this year, we initiated plantation, lighting, irrigation and recreational instruments facility in the park. More than 2600 HHs of Mangrajpur and other villages like Hasina, Santara, Ucchabanandapur and Fatepur will be benefitted from this initiative.

Repair of Solar Lights: - During 2019-20, 110 solar lights were installed in Mangrajpur, Fatepur, Bagadia and Kothi Gram Panchayat. In due course, few were damaged and nonfunctional. For the nonfunctional lights, we took up repair and installation of new lights wherever needed. Accordingly, an agency was hired to conduct the survey work, and based on the survey report, 32 light posts were repaired this year.

6. PROMOTION OF SPORTS

Community Football Coaching: - In rural areas, there is a huge demand for sports like Football and Volley Ball. However, due to a lack of professional coaching, talents could not reach their district and state-level competitors. The Kujang block has a history of organising state-level tournaments and sending many talented youths to play in clubs at the state capital. Presently, 155 children are playing football regularly, which includes 115 boys and 40 girls who are coached by 4certified coaches and one community coach.

Major achievements:

- The girls' team participated in the All-India Football Federation (AIFF) Women's Football week event held at ODM Global School, Bhubaneswar. Pooja Naik was felicitated as a Penalty Queen in the Under 10 age category, whereas Ira Mohanty won the Crossbar Challenge in the Under 15 age category.
- 2. Three boys participated in the Open Football Delhi League 2023 Trials held at ODM Global School, Bhubaneswar.
- 3. Two teams in the U14 age category participated in the All-India Football Tournament exhibition match held in Mangrajpur. Sonu Tarai, one among the trainees, was awarded the man of the match.

4. Five girls from the U14 age category travelled to Narayangarh to participate in the All-India Football Tournament for an exhibition match.

Annual Sports Meet for women: - Women in rural areas are still confined behind closed doors, despite having talent in various fields. Many of them sacrifice their education, passions, and social lives for the sake of their family, husband, and children. We took a step towards women's empowerment by organising an annual sports event for women. We believe that women's sports are paramount for the physical, mental, social, and cultural well-being of women and girls. A two-day event was organised in Pratappur village, where more than 370 women participated in six different sports, including the 100-meter run, Shot put, Puchhi, Musical Chair, Skipping and Spoon potato. The event attracted women and drew the attention of the audience and government officials.

Sponsorship to participate in National level championship: - Our state has a pool of resources and Srabani Jena is one example. Financial problems hindering her to participate in national level forum, however with the support of PPL, she played and brought fame for the state. Srabani Jena, participated in National Sub Junior Power lifting Championship at Maharashtra from 15th Jan to 20th and ranked 4th position in (Sub Junior-63 kg)

Sponsoring sports tournaments: - **T**wo inter-district volleyball tournaments were organised at Netajiclub, Mangrajpur and Youth Club, Pratappur. The company promoted the local youths to participate in the state level event.

Development of playground: - With the request of Sarpanch Mangrajpur, Fatepur and Gopiakuda, land development activity and seating facility were developed in the community playground. More than 50 cement chairs were installed in Krushnachandrapur, Pratappur and Kaliapata play grounds.

7. COMMUNITY ASSET AND RURAL INFRASTRUCTURE DEVELOPMENT

Community Infrastructure: - Different village level infrastructure had already been created and renovated that has impacted the life of villagers. A summary list of different type of work is mentioned below

| SI No | Nmae of the work | Village | Beneficiary type (Individual /Group/Community) |
|----------|--------------------------------|-----------------------|--|
| | Construction of Community hall | Balarampur | Community |
| 1 | | | |
| 2 | Pipe water supply | Nuasahi and Dalimbpur | Community |
| 3 | Culvert | Jhimani | Community |
| 4 | CC Road | Barunakandha | Community |
| 5 | CC Road | Samagola | Community |
| 6 | CC Road | Jhimani | Community |
| 7 | CC Road | Talapada | Community |
| 8 | Community Toilet Renovation | Jaladharpur | Community |
| 9 | Bus Stop Rest Shed | Santara | Community |

Construction of the New Building of Kaibarta Community Hall: - Kaibarta means 'Fishermen''. The community holds the maximum SC population of Kujang block. The community has its own social and cultural celebrations; however, they do not have any community hall to celebrate the events. The facility will help the community to conducting meetings and get-togethers.

Renovation of Rest Shed: - A bus stop/visitor's rest shed at Santara village is a major point for those who used to catch a bus/taxi to Cuttack and Bhubaneswar. The rest shed also provides a shed for many college students of Kujang College. The rest has been in vulnerable condition for so many years, which received our attention due to the request from Sarpanch Mangrajpur GP followed by BDO Kujang.

8. DISASTER MITIGATION, EMERGENCY RELIEF SUPPORT

Illness Care / Emergency Cases: - PPL always stood with the vulnerable families to support treatment of cancer, paralysis, critical illness and accidents. After due verification of parameters of such families and by involving the PRI members a support amount of Rs. 10,000/- supported for the convenience and medicine cost. In this financial year, support was extended to 11 families out of which 9 for the treatment of cancer and 2 for illness care.

Support to Families in Disaster: - Being a coastal district, Jagatsinghpur has always been a centre point of many disasters. The district has experienced cyclones, floods and heavy rain, followed by water logging situation every year. This year we experienced flood and domestic fire accident cases. During severe flash flood, we supported Dry ration, Cooked food to more than 1,00,000 people of Jagatsinghpur district and Baripada District of Odisha. Hygiene Kit including Sanitary Pads (Sreedhara- Biodegrdable sanitary pad manufactured by SHGs promoted by PPL, CSR Program) provided to District administration, Jagatsinghpur.

Support to Fire Victims: - For domestic fire accident cases, support of dry ration, tarpaulin sheet and necessary items procured and supplied to the victims. In this financial year, 12 families supported with dry rations, utensils and daily uses materials affected due to fire menace.

International White Cane Day: - The international white cane day is celebrated on 15th October. This year through the CSR initiative, white cane and other devices have been provided to more than 85 persons through BICHANDA TRUST OF WELFARE. The trust is hope for many visually impaired persons and support extended to them always helps the deprived persons.

JalaSeva Initiitve: - Every year from March to June, we opened water Kiosk as an initiative of Seva to the people during the scorching summer time. The Jala Seva program provides free distribution of drinking water including curd to the dwellers and other peoples.

9. Women Empowerment and Slum Area development Initiative:

Judo Training Program: - 40 girls from the slum community being provided JUDO coaching support program through Jagatsinghpur Judo Association. The trainees participated in East Zone Judo Championship held in Kolkata. The girls team bagged total 17 medals (3 Gold/3 Silver and 11 bronze) in the state championship, Bhubaneswar.

Livelihood Production center and Community initiative: - The livelihood center at Balijhara facilitate the woe SHG groups to utilize the space for operate the training center facility and turned into livelihood activity. The sewing machine facility and Agarbati making facility is being utilized for livelihood generation by the 40 SHG members and they become self-sufficient with the initiative.

Total expenses towards CSR for the year – 7.65 crores

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AGREEMENT FOR SUPPLY OF WATER FOR THE PURPOSE OF INDUSTRIAL/COMMERCIAL USE

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THE AGREEMENT is made on 30th day of November Two Thousand Twenty-Two between Sri Pranab Kumar Bhattacharyya, son of Late Ramdayal Bhattacharyya, 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

AND

Sri Anil Kumar Verma, Son of Shri Mehetaru Ram Verma, resident of Village: PPL Township, PS: Paradeep, District – Jagatsinghpur by Profession General Manager (Progluction), Paradeep Phosphates Ltd, Paradeep and (2) Sri Prachi Sourabh Panda, son of Late Bijayananda Panda resident of Village: PPL Township, PS: Paradeep, District - Jagatsinghpur by profession Deputy General Manager (Production), Paradeep Phosphates Ltd, Paradeep (hereinafter referred to as the "Sureties") of the Second Part:

Debubrata Sahoo Anvocate, Odisha High 10 ... Regd. No. : 0-1461/

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AND

Chief Manufacturing Officer & Unit Hear P.cradeep Phosophates Limited

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The Governor 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 Government 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.

brata ocate, Odisha Hudk Regd. No. : O-146 (10)

| 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) | 01.12.2022 To 30.11.2023 | P.P.L Reservoir |

NOW THIS AGREEMENT witness as follows:

- 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.8.96 (Rupees Eight and Ninety-Six 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.

If 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.

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Pranab Kumar Bhattacharyya

(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 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 nonfunctioning 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.

Regd. No. : 0-146 INST

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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 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.

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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 interest.

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 triaw 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 ripartan rights in the downstream will be attended and the company shall have to blain on the googent to a solution of the googent to blain on the googent to blain
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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 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.

This agreement shall be valid for a period of 1 year i.e., up to 30.11.2023 subject to the same by the concerned Superintending Engineer. For the renewal of agreement, the concerned drawee has to apply minimum three months before the exclusion 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. irbubiato anni Anvocate, Odisha High 1)A . Regd. No. : 0-1461/6 Nob -9938553346 - 485342-247

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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.

- 24. The exact place of tifting 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.

year first above written.

In the presence of Witnesses:

Pralama Kun Artrys.

1.Prasanna Kumar Acharya

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Signature of Applicant

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Pranab Kumar Bhattachanyya Pranab Kumar Bhattachanyya Chief Manufacturing Officer & Unit Head Paradeep Phosphates Limited Paradeep-754 145, Odisha

Signature of Sureties

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2. Prachi Sourabh Panda

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SIGNATURE OF SUPERINTENDING ENGINEER

| NEERI Recommendations | & PPL | Compliance |
|------------------------------|-------|------------|
|------------------------------|-------|------------|

| NEERI Recommendations | Action taken by PPL |
|---|--|
| i) The "L" shaped area near ETP- needs | As per the measures suggested, |
| remediation 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 | As per the measures suggested |
| main gate - needs remediation . | Area near main gate has already been |
| | neutralized and plantation done. |
| iii) The Sulphur muck dump site near the scrap | The Sulphur muck dump site near the scrap yard |
| yard- can be taken care by natural attenuation | 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 | The oil contaminated site near offsite area has |
| traces of oil remaining at this site may be taken | already cleaned and developed . |
| care by natural attenuation. | |
| v) The oil contaminated site near workshop area - | The oil contaminated site near workshop area |
| The traces of oil remaining at this site may be taken | has already cleaned and developed. |
| care by natural attenuation. | |
| vi) Old spent catalyst disposal site- it is | Old spent catalyst disposal site has already |
| recommended that PPL should continue to monitor | closed and sold to authorized recycler/ disposal |
| so as to asses the possibility of contamination in | to SLF. |
| terms of vanadium, if any. | |
| vii) Phosphogypsum contaminated site near | Phosphogypsum contaminated site near railway |
| railway yard - needs remediation as per the | yard has already neutralized and |
| measures suggested. | decontaminated. |
| In order to prevent further contamination of soil | PPL has provided a shed & an impervious |
| and groundwater .It is recommended to provide a | platform for phosphogypsum stacked at railway |
| shed and an impervious platform for | siding. |
| phosphogypsum stacked at railway siding. | |
| | |
| viii) Old Sulphur muck disposal area (north of | Old Sulphur muck disposal area (north of |
| Sulphur silo)- remedial measures as delineated | Sulphur silo) has already decontaminated and |
| need to be taken to decontaminate site. | developed. |

<u>Annexure - IX</u>

CREP guidelines for Fertilizer Industry

| Waste water Management | | | |
|------------------------|---|---|--|
| SI. 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 system 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 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 2kg 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 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 grinding systemin rock phosphate grinding. | | |
| 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 25 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 is installed in 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 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 off in our captive Secured Landfill as per Hazardous waste authorisation condition. | | |
| 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 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 | | |