

WORKS: Village - Padampur, Behind P.G.C.I.L. Substation, Adityapur - Kandra Road, Saraikela - Kharsawan, PIN - 832402 Jharkhand Phone: +91 - 657 - 6628400, Fax: +91 - 657 - 6628440 CIN - U40101WB2005PLC102935

Ref: MOE&F, RNC/HYC/KKJ/280522/01

Dated: 28.05.2022

To,

Regional Office (ECZ), Ministry of Environment, Forest and Climate Change, Bungalow No. A-2, Shyamali Colony, Ranchi – 834002

Sub:- Submission of Half yearly compliance status report (Unit I) for the period – October 2021 to March 2022 -Reg.

Ref:- MoEF letter No.J-13011/8/2009-IA.II(T), dated 29th Aug 2009.

Sir,

With reference to the above referred Environmental Clearance, we are pleased to submit herewith the half yearly compliance status report (Unit I) for the period of October 2021 to March 2022.

This is for your reference and record, please.

Thanking you,

For Adhunik Power & Natural resources Limited

(Authorized Signatory)

Encl: As Above

Copy to:

1. Central Pollution Control Board, Kolkata

Member Secretary, Jharkhand State Pollution Control Board, Jharkhand

3. Regional Officer, JSPCB, Jamshedpur

CORPORATE OFFICE: "LANSDOWNE TOWER", 2/1A, Sarat Bose Road, Kolkata - 700 020

Ph: +91 - 33 - 30517100 / 7200 / 7300 • Fax: +91 - 33 - 22890285

REGD. OFFICE

: 14, N. S. Road, 2nd Floor, Kolkata - 700 001, Phone No. +91 - 33 - 22428551, 22428553

Website

: www.adhunikpower.com



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## REPORT

# ENVIRONMENTAL COMPLIANCE STATUS REPORT FOR 1X270 MW COAL BASED POWER PLANT (Unit I)



#### **OCTOBER 2021 - MARCH 2022**

Adhunik Power & Natural Resources Limited
Village: Padampur, Behind PGCIL Substation
Kandra Chouka Road, Saraikela-Kharsawan
Jharkhand

#### Adhunik Power & Natural Resources Limited

Vill: Padampur, Behind PGCIL Substation, Kandra Chouka Road, Saraikela-Kharsawan, Jharkhand

Environmental Clearance Letter No: J-13011/8/2009-IA.II(T), dated 29th Aug 2009.

| Period Of | Compliances: | October 2021 | to March 2022 |
|-----------|--------------|--------------|---------------|
|-----------|--------------|--------------|---------------|

| SI No |   |   |  |  |  |  |  |  |
|-------|---|---|--|--|--|--|--|--|
|       | EC Conditions   | Status as on 31st March 2022  |  |  |  |  |  |  |
| 1     | No additional land in excess of 119 ha shall be acquired for any activity/facility of this project.   | Total Land acquired for Unit I is well within the land mentioned in Environment Clearance.  |  |  |  |  |  |  |
| 2     | EC is subject to obtaining clearance under<br>the Wildlife Protection Act, 1972 from the<br>competent authority   | 8 00 00 00 00 00 00 00 00 00 00 00 00 00  |  |  |  |  |  |  |
| 3     | EC is subject to final order of the Hon'ble Supreme court of India in the matter of Goa foundation Vs Union of India in Writ. Petition (Civil) no. 460 of 2004 as may be applicable to this project.  | Not applicable.   |  |  |  |  |  |  |
| 4     | Project proponent should contribute @ Rs. 20000/ha for project area as proportionate cost to the regional Wildlife Conservation plan and a copy of the plan should be submitted to the ministry.  | As in SI. No. 2 the Wild Life Management Plan (WLMP) prepared has already been approved by PCCF, Ranchi on May'10.2010.  1st installment already submitted.  Complied   |  |  |  |  |  |  |
| 5     | Sulphur and ash contents in the coal to be used in the project shall not exceed 0.45 % and 46 % respectively at any given time. In case of variation of coal quality at the time of issuance of LOA, a fresh reference shall be made to MoEF for suitable amendment to EC condition wherever necessary                  | The Sulphur content in used coal conforms the limits. As per the Environment (Protection) Amendment Rules, 2020 dated 21 May 2020, Use of coal by Thermal Power Plants, without stipulations as regards ash content or distance shall be permitted.   |  |  |  |  |  |  |
| 6     | A single stack of 220 m height shall be provided with continuous online monitoring equipment's for Sox, Nox and PM. Exit velocity of flue gases shall not be less than 25 m/sec. Hg emission from stack may also be monitored on periodic basis.  | Twin flue chimney of 275m height has constructed for proper dispersion of gases.  Online monitoring equipment has installed in chimney. Photographs with details of CEMS enclosed as Annexure I  Hg concentration in flue gases is well within prescribed limits.   |  |  |  |  |  |  |
| 7     | High efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emissions does not exceed 50 mg/Nm3  | High efficient ESPs of 32 fields has been installed to ensure control Particulate matter emission in flue gas.  Stack monitoring report for the month of March 2022 enclosed as Annexure II.  |  |  |  |  |  |  |
| 8     | Adequate dust extraction system such as cyclones/bag filters and water spray in dusty areas such as in coal handling and ash handling points, transfer area and other vulnerable dusty areas shall be provided.   | Necessary mitigation measures in accordance with EMP and EC conditions has taken to control fugitive emissions from ash storage/transfer and coal handling plant such as installation and operation of bag filters collectors, use of water spray systems and enclosed conveyors with well designed, extraction and filtration equipment on transfer points.  Photographs Attached as Annexure III. |  |  |  |  |  |  |
| 9     | Fly ash shall be collected in dry form and storage facility (Silos) shall be provided. 100 % fly ash utilization shall be ensured from 4th year onwards. Unutilized ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the | Fly Ash utilization are adhered in compliance with MoEF&CC notification dated 31.12.2021. Fly Ash generation & Utilization report (April 2021-March 2022) are enclosed as Annexure IV. Monitoring of mercury and other heavy metals (As, Hg, Cr, Pd etc. in the bottom ash and also in the effluents emanating from the ash pond is being done periodically. Bottom                                 |  |  |  |  |  |  |

|    |   | The second secon |
|----|---|--|
|    | bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.   | ash analysis report & effluent analysis report of ash pond for the month of March 2022 enclosed as Annexure V & Annexure VI respectively.  |
| 10 | Ash pond shall be lined with impervious lining. Adequate safety measures shall be implemented to protect the ash dyke from getting breached.  | Complied   |
| 11 | Closed cycling cooling system with natural cooling towers shall be provided. The effluents shall be treated as per the prescribed norms.  | The project design involves closed cycle cooling systems with induce draft cooling towers. The effluent generated from process operation is being treated in a Guard pond to ensure conformance to CPCB standards and recycled in plant process. Treated effluent analysis report of ETP for the month of March 2022 enclosed as Annexure VII.   |
| 12 | No ground water shall be extracted for project work at any stage.   | We adhere.   |
| 13 | Natural drainage system within the project site should not be disturbed.  | Natural drainage system has not been disturbed.  |
| 14 | The treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not get mixed.  | The project is designed with zero discharge provisions and there is separate arrangement for storm water and effluent water.  Complied   |
| 15 | A sewage treatment plant shall be provided and the treated sewage shall be used for raising green belt /plantation.   | STP 60 KLD capacity (03 No) has installed within plant premises to treat sewage waste. Photographs enclosed as Annexure VIII.  |
| 16 | Rainwater harvesting should be adopted CGWA shall be consulted for finalization of appropriate rain water technology within a period of three months from the date of clearance and details shall be furnished  | The Rain water harvesting report has submitted and approved from CGWA Ranchi.  13 No Rain water harvesting system has been constructed in accordance with the approved rain water harvesting plan.   |
| 17 | Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires of coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to RO of the Ministry at Bhubaneswar.         | The design of coal yard along with provision of fire safety measures viz. fire hydrants, water sprinklers has installed and submitted to the Ministry.  Complied   |
| 18 | Storage facilities of auxiliary liquid fuel such as LDO and HFO/LSHS shall be made in the plant area in consultation with dept. Of Explosive, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5 %. DMP shall be prepared to meet any eventuality in case of an accident taking place due to storage oil. | "C") for operations. Copy of Approval are enclosed as<br>Annexure IX. Disaster management plan (DMP) has<br>been prepared to handle the any eventuality in case  |
| 19 | Regular monitoring of ground water in and around to ash pond area including heavy metals (Hg, Cr, As, Pb) shall be carried out, records maintained and six monthly report shall be furnished to RO of ministry. The   | Regular monitoring of ground water in and around ash pond area including heavy metals is being carried out. Ground water analysis report of upstream & downstream of ash pond compared with baseline   |

|    | data so obtained should be compared with   | Annexure XI.  |
|----|--|---|
|    | the base line data so as to ensure that the ground water quality is not adversely affected due to the project.   | Alliexure All   |
| 20 | A green belt of adequate with and density shall be developed around the plant periphery covering 1/3 of the project area preferably with local species.  | A thick green belt of adequate width is being developed.68123 nos. (Area covered-30.9 Hac) of plantation has been completed in and outside along the periphery of the power plant to arrest any dust emissions and help in attenuation of noise. Total Survival rate of Plant are 85.6 %. Name of Plant Species- Neem, , Seesam, Mango, Jamun etc.  |
| 21 | First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.  | Plant is under operation however first aid center comprising of competent medical staff (6 no's) and equipped with necessary medical facilities is made available onsite to provide emergency medical aid to both contract workers and company staff.   |
| 22 | Noise level emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise area, requisite PPE like ear plug/ear muff etc shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to nonnoisy/less noisy areas.  | Adequate measures has implemented in consistent with the EMP to control turbine noise levels within stipulated limits. This include installing of sufficient engineering control in turbines as per design specifications, provision of ear plugs/ear muffs for workers exposed to high noise, rotation of workers and carrying out periodic audiometric testing of workers and records is being maintained. Noise level monitoring report for the month of March 2022 As Annexure XII. |
| 23 | Regular monitoring of ground level concentration of SO2, NOx, RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to RO of ministry. The data shall also be put on the website of the company. | Monitoring of Air quality is being conducted by APNRL on monthly basis. Review of air quality monitoring results revealed compliance to NAAQS.  Ambient Air monitoring reports for the month of March 2022 is enclosed as Annexure XIII.  |
| 24 | 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 structure to be removed after the completion of the project.   | Plant is in operational condition and local labors are coming from nearby villages.   |
| 25 | The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded EC and copies of clearance letter are available with the SPCB/committee and may also be seen at Website of the MoEF at  | Complied.   |

|    | http://envfor.nic.in.  |   |
|----|--|---|
|    |  |   |
| 26 | A copy of the clearance letter shall be sent by the proponent to concerned Panchayat Zila Praised/Municipal Corporation, urban local body and the local NGO, is any from whom suggestion/representation, if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.  | Complied.   |
| 27 | A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.   | A Environmental Management Cell is being operational onsite to ensure effective implementation of specific EMPs. Organization chart of Environmental Management Cell enclosed as Annexure XIV.  |
| 28 | The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the RO of MoEF the respective zonal office of CPCB and the SPCB the criteria pollutant level namely SPM, RSPM, SO2, NOx (ambient level as stack emission) shall be monitored and displayed at a convenient location near the main gate of the company in the public domain. | The updated compliance status of the stipulated EC conditions along with monitored data has been displayed at the company website. The monitoring data (SPM, RSPM, SO2, NOx) for both ambient air quality and chimney emissions is being displayed at the main gate of the company.  Status of compliance of the stipulated EC conditions has been uploaded on company website for the period of April 2021 to September 2021.    |
| 29 | The project proponent shall also submit six monthly report on the status of compliance of the stipulated condition including result of monitored data (both in hard copy as well by email) to the respective RO of MoEF, the respective zonal office of CPCB and the SPCB.   | Last six monthly reports (April 2021 to September 2021) for the project along with environmental monitoring data submitted to MoEF RO at Ranchi vide letter No MOE&F,RNC/HYC/KKJ/271121/01 dated 27 <sup>th</sup> Nov 2021 . Acknowledgement copy of same enclosed as Annexure XV.  |
| 30 | The environmental statement for each financial year ending 31st March in form-V as is mandated to be submitted by the project proponent to the concern SBCB 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 the compliance of EC condition and shall also be sent to the respective RO of MoEF by email.   | The last environmental statement for financial year (2020-2021) in Form V has submitted dated 20 <sup>th</sup> Sep 2021. Acknowledgement copy of same enclosed as Annexure XVI.   |
| 31 | RO of the MoEF located at Bhubaneswar will monitor the implementation of the stipulated conditions. A complete set-up of documents including EIA report EMP along with the additional information submitted from time to time shall be forwarded to the RO for their use during monitoring. Project proponent will upload the compliance status their website and update the same from   | The updated compliance status of the stipulated EC conditions along with monitored data has been displayed at the company website. The monitoring data (SPM, RSPM, SO2, NOx) for both ambient air quality and chimney emissions is being displayed at the main gate of the company. However Half yearly progress report is being sent to RO office, Ranchi on regular basis as per the requirement & uploaded on company website. |

|    | time to time at least six monthly basis.<br>Criteria pollutant level (Stack and ambient<br>level of NOx) will be displayed at the main<br>gate of the power plant.   |   |
|----|--|---|
| 32 | Separate fund shall be allocated for implementation of environmental protection measures along with item wise break up this cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year wise expenditure should be reported to the ministry. | Adequate budgetary provision has been made by the APNRL for execution of environmental management plan. |
| 33 | The project authorities shall inform the RO as well as the ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work and commissioning of plant.  | Complied  |
| 34 | Full cooperation shall be extended to the Scientists/officers from the ministry / RO of the ministry at Bhubaneswar/the CPCB/the SPCB who would be monitoring the compliance of environmental status.  |   |





#### CODEL

REF: DCEM2100/DS/02

| en re-   |   | ATA SHEET DCEM2100 DUST MONITOR   |
|--|---|---|
| GENER  |   |   |
| 18660  | Make  | Codel, UK.  |
| 2,42,411   | Model   | DCEM2100 Dust Monitor   |
| 3.   | Турс  | In-Situ Non contact cross duct type   |
| 4.   | Qty of units                                    | 2 No  |
| 5.   | Tag No.   | HNEI0CQ003  |
|  |   | FEATURES  |
| 6  | Runge   | 0-100% Opacity . 0-999mg/m3, 0-999mg/Nm3 (Fully site selectable)  |
| 7  | Min. detectable conc.                           | I mg/m3   |
| 8  | Measurement Units                               | Fully selectable units-, mg/m3 (measured), mg/Nm3(Normalized) and opacity(%)  |
| 9  | Measurement averaging                           | Fully selectable in range 10sec to 30 days  |
| 10   | Response time                                   | 90% in 5 seconds.   |
| ii.  | Auto/manual calibration                         | In built automatic zero and span calibration  |
| 12   | Accuracy  |   |
| 13   | Drift   | 4/-0.2% Opacity of measurement  |
| 14   |   | Less than 1% per month  |
| The state of the s | Resolution                                      | →/-0.1% opacity   |
| 15   | Linearity                                       | 1/- 0.1% of full scale  |
| 16   | Repeatability                                   | +/-0.1% opacity   |
| 17   | Power supply                                    | 88 - 264 VAC , 50-60Hz, 125 VA  |
| 18   | Remote/Local control<br>unit                    | Isolated 2x 4-20 mA, 500 ohms outputs fully configurable.  3 x Volt free SPCO contact rated at 50 VDC   Amp.  2 Line X 32 character alpha-numeric LCD displays with 4 key keypad. |
| 19   | Automatic misalignment detection                | Provided in the instrument as a warning signal of misalignment  |
| 20   | Correction for contamination                    | Automatic window contamination check  |
| 21   | Error Diagnostics                               | Dirty optics, Misalignment, Valve 1 closed, Valve 2 closed to indicate the error conditions.  |
| 22   | Construction material and Enclosures            | Fully sealed aluminum enclosures to IP 66   |
|  | CONDITIONS                                      | E COMMERCER HANDSER AND ELECTRIC CONTRACTOR OF STREET   |
| 23   | Source  | Modulated high intensity LED  |
| 24   | Detector  | Silicon photocell   |
| 25   | Ambient air temp.                               | - 20deg.C to 60 deg.C   |
| 26   | Gas Temperature                                 | Upto 850 deg.c  |
| CONNEC   | TIONS & DIMENSIONS                              |   |
| 27   | Analyzer mounting details                       | Analyser can be mounted in Chimney at Elevation of 91.6 Mtrs<br>Please refer drawing for analyser mounting flange details.  |
| 28   | Path length                                     | Suitable for 0.5 to 12m duct/stack inner diameter   |
| ACCESSO  |   | Suitable for 0.5 to 1211 outpeach mile diameter   |
| 29   | Fail safe shutters                              | Built in  |
| 30   | Air Purges                                      |   |
| 31   | Interconnecting cables<br>and mounting hardware | Air purges for continuous air supply to instrument provided<br>Included in supply.  |
| 32   | Temp. transmitter                               | 24 VDC Supply   |
|  |   | Make: Precision Converter   |
|  |   | Model: PCHMR  |
|  |   | Range: 0 to 300 Deg C   |
| 100  |   |   |
|  |   |   |





## CODEL

#### Ref: GCEM40A0/DS/02

|      | D                                       | ATA SHE   | CET   |  |  |  |  |  |
|------|---|---|---|--|--|--|--|--|
|      | CO, SO2, I                              | NOx GAS   | SANALYSER   |  |  |  |  |  |
| GENE | RAL                                     |   |   |  |  |  |  |  |
| 1.   | Make                                    |   | ernational Ltd., UK   |  |  |  |  |  |
| 2.   | Model/Article No                        | GCEM4000  | Series Article no GCEM40A0  |  |  |  |  |  |
| 3.   | Туре                                    | Infrared Abs  | sorption Analyser-In-Situ type  |  |  |  |  |  |
| 4.   | Qty                                     | 2 No.   |   |  |  |  |  |  |
| 5.   | Tag No.                                 | SOx   | HNE10CQ004  |  |  |  |  |  |
|      |   | NOx   | HNE10CQ001  |  |  |  |  |  |
|      | *************************************** | CO  | HNE10CQ002  |  |  |  |  |  |
|      |   |   | FEATURES  |  |  |  |  |  |
| 6.   | Range                                   | SO2 : 0 to 10<br>NOx : 0 to 10<br>CO2 : 0 to 25<br>H2O : 0 to 2:  |   |  |  |  |  |  |
| 7.   | Min. detectable conc.                   | I ppm , lmg   | z/m3, 1mg/Nm3 for CO,SO2,NOx & 0.5% for CO2,H2O.  |  |  |  |  |  |
| 8.   | Measurement Units                       | Fully selectable units-ppm or % by volume, mg/m3 (measured) and mg/Nm3 (Normalised to temperature, pressure, H2O & CO2) |   |  |  |  |  |  |
| 9.   | Measurement averaging                   |   | able in range 10Sec to 1 hour   |  |  |  |  |  |
| 10.  | Response time (T90)                     |   | s than 10 seconds, Calibration less than 200 seconds.   |  |  |  |  |  |
| 11.  | Auto & manual calibration               | In built and  |   |  |  |  |  |  |
| 12.  | Function                                | Continuous  | function  |  |  |  |  |  |
| 13.  | Accuracy                                | +/- 2% of m   | easured value for CO,SO2, NOx,& 0.5% for CO2 & H2O  |  |  |  |  |  |
| 14.  | Zero/span drift(24hrs)                  | Over all drif   | ft less than +/-2% per month  |  |  |  |  |  |
| 15.  | Repeatability                           | Less than 29  | % of span   |  |  |  |  |  |
| 16.  | Sensitivity                             |   | CO,SO2,NOx, 0.5% for CO2,H2O  |  |  |  |  |  |
| 17.  | Linearity                               | Less than 29  | %   |  |  |  |  |  |
| 18.  | LCD Display                             | LCD with b  |   |  |  |  |  |  |
| 19.  | Power supply                            |   | 0-60Hz, +/-10% 400VA  |  |  |  |  |  |
| 20.  | Outputs                                 | Keypad for<br>configurable<br>Logic: 5 x V  | x 4-20 mA isolated, max. 500 Ohms, full configurable from<br>CO,SO2,NOx in ppm & CO2,H2O in % to DCS fully site<br>e.<br>/olt free contacts, SPCO rated at 50 volt 1A &<br>alid output (System fault) |  |  |  |  |  |
| 21.  | Serial Communications                   | RS232/RS4   | 85 Modbus O/P   |  |  |  |  |  |
| 22.  | Construction material and Enclosures    | Electronic I  | Housings (DDU): Corrosion resistant, epoxy coated<br>housing sealed to IP 66  |  |  |  |  |  |

|     | IN CONDITIONS     | 141 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                             |
|-----|-------------------|---|
| 23. | Infrared source   | Heater cartridge assembly   |
| 24. | Infrared detector | Lead selenid detecter   |
| 25. | Ambient air temp. | Transceiver unit 0 to 70 °C, Electronic unit (PSU & DDU) 0 to 60 °C |
| 26  | Flue gas temp.    | Up to 350 deg.C   |



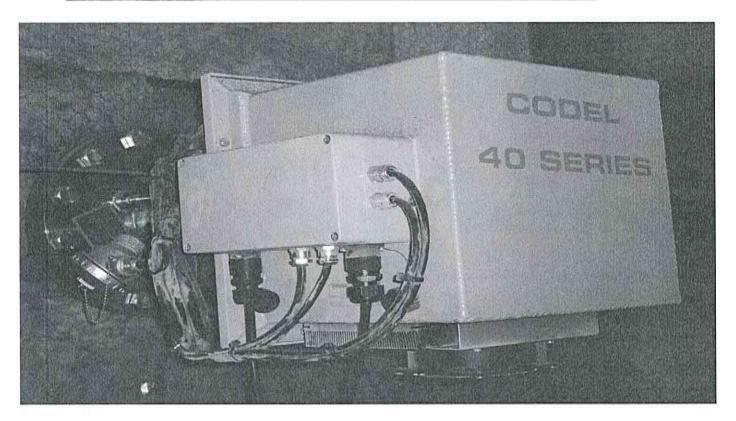


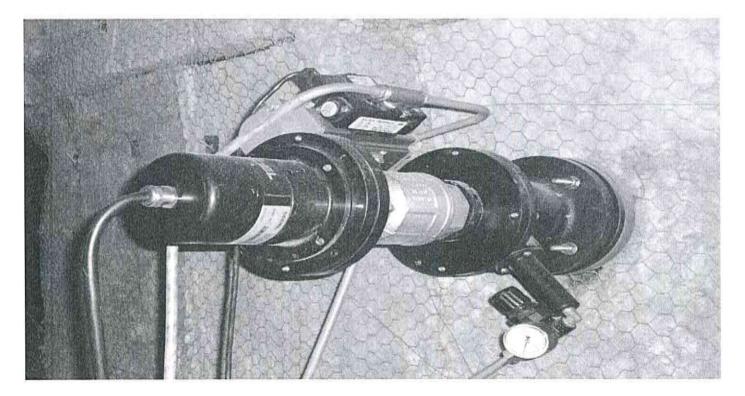
## CODEL

| 27   | Analyser mounting details           | Please refer drawing for analyser mounting flange details.  Mounting location on Chimney at 91 Mtrs Elevation.  |
|------|-------------------------------------|---|
| 28   | Stack width                         | Suitable for duct/Stack inner diameter of more than 2000mm.   |
| ACCE | SSORIES                             |   |
| 29   | Standard span gas for calibration   | Make: Chemtron Science Laboratory, Mumbai Material: Aluminium Cylinder Capacity: 10 ltr W.C Filled with: 500ppm CO, 500ppm SO2, 500ppm NO and balance Nitrogen (N2) Cylinder with SS regulator, necessary tubing's & fittings. Filled pressure: filled at 120-130kg/cm2 |
| 30   | Zero Calibration                    | For zero calibration we use plant compressed air.   |
| 31   | Air dryer unit                      | Maximum Pressure: 10 bar Maximum temperature: 57 deg.C Air dryer unit to dry down the compressed air to -20 deg.c.  |
| 32   | Zero/span gas calibration tubes     | For zero calibration, client to provide plant instrument air line up to probe (10 mm OD connection)  For span gas calibration, 20 mtr length SS tube of 10mm OD with necessary fittings from Cylinder to probe.   |
| 33   | Pressure transmitter                | Mounted on GCEM40A0 probe Make: Druck Range: 1.6bar absolute with 4-20mA output Input supply: 24VDC operated  |
| 34   | Temperature transmitter             | Mounted on GCEM40A0 probe Make: Peak Sensor Limited, Washington Type: K type thermocouple Range: 0 - 600 deg.C with 4-20mA output Input supply: 24VDC operated  |
| 35   | Plant instrument air<br>Consumption | 5 LPM @3 bar pressure continuous<br>10LPM @3 bar pressure during zero calibration   |



## Continuous emission monitoring system







#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by -

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018



Annexum II

#### Test Certificate

| ULR (Unique I | Lab Report) No.    |   | T       | C     | 4      | 0     | 3     | 2      | 2    | 1 2   | 2      | 0     | 0    | 0     | 0     | 0     | 4      | 8     | 1    | F                                       |
|---------------|--------------------|---|---------|-------|--------|-------|-------|--------|------|-------|--------|-------|------|-------|-------|-------|--------|-------|------|---|
| Discipline    | Chemical           | Group                                   | Atm     | osph  | eric l | ollut | ion   | San    | nple | De    | scr    | iptic | n    | Stat  | ionar | y Sou | rce E  | mis   | sion | - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 |
| Report Relea  | ase Date           | 31st March, 2                           | )22     |       |        |       |       | Rep    | ort  | ID    |        | -     |      | YB/   | EEL-  | 2203  | 22-183 | 3133  | - 51 |   |
| W. Order/ JS  | PCB App. No.       | 3030005781                              |         |       |        |       |       | Wo     | rk O | rde   | D      | ate   |      | 18.1  | 2.202 | 1     |        | -     |      | 11.1                                    |
| Type of Indu  | stry(if any)       | Thermal Pow                             | er Plar | it    |        |       |       | Job    | coc  | de/ F | ₹ef    | . no  |      | YBA   | EEL   | WA/L  | /A/Ma  | r-22  | /38  |   |
| Report Issue  |                    | M/s Adhunil<br>VillPadam<br>Seraikela-K | our, Po | GCIL  | S, Ka  | ndra  | -832  |        | Ltd. |       |        |       |      |       |       |       |        |       |      |   |
| Sampling Pe   | riod               | 21/03/2022                              |         |       |        | IN    | Mode  | of sar | mple | co    | llec   | tion  | 1    | E     | y YB  | AEEL  | Tean   | 1     |      |   |
| Sampling Pr   | atocol             | IS: 11255 & C                           | PCB G   | uidel | ine (L | ats/8 | 0/201 | 3-14)  | V2   |       |        |       |      |       |       |       |        |       |      |   |
| Meteorologic  | cal Cond. of Field | W.C Clear                               |         |       |        | F     | RH %  | - 45   |      |       |        |       |      | T     | emp.  | - 340 | С      |       |      |   |
| Sample rece   | ipt Date           | 23/03/2022                              | Ana     | lysis | Start  | ed or | 1     | 23/03  | /202 | 2     | vi i e | Ar    | alys | is co | nplet | ed or | 2      | 6/03/ | 2022 |   |

#### General Information

| As observed while sam                 | pling              | As reported by customer                |             |  |  |  |
|---------------------------------------|--------------------|--|-------------|--|--|--|
| Location                              | Sampling port hole | Type of fuel Used                      | Coal        |  |  |  |
| Platform                              | Permanent          | Quantity of Fuel Used(During Sampling) | 176 Ton/Hr. |  |  |  |
| Stack Description (Shape & Material ) | Circular / RCC     | Total production Capacity              | 274 MW      |  |  |  |
| Sampling port                         | Available          | Height of Stack from ground level      | 275mtr.     |  |  |  |
| Stack Identification                  | Unit - I           | Inner Diameter of Stack                | 4.2 mtr.    |  |  |  |
| Height of port hole from Ground level | 90 mtr.            | Pollution Controlling Device (if any)  | ESP         |  |  |  |
| Running Oven during sampling (if any) | N/A                | Total No. of Oven (if any)             | N/A         |  |  |  |

#### \*\*\*\*\*Test Results \*\*\*\*\*

| SI | Parameters                              | Test Method                   | Units  | MU % | Results       | Limits   |
|----|---|-------------------------------|--------|------|---------------|----------|
| 1. | Stack gas Temperature                   | IS 11255 (Part 3)2008 .       | k      |      | 403.0         |          |
| 2, | Stack gas Velocity                      | IS 11255 (Part 3)2008         | m/s    | ***  | 28.0          |          |
| 3. | Volumetric Flow Rate                    | IS 11255 (Part 3)2008         | Nm3/hr |      | 100429.9      | NI LITTE |
| 3. | Particulate Matter (PM)                 | IS 11255 (Part 1)2009         | mg/Nm³ | 2.12 | 43.5          | 50       |
| 4. | Sulphure Dioxide (SO <sub>2</sub> )     | IS 11255 (Part 2)2009         | mg/Nm³ | 3.06 | 1303.0        | 600      |
| 5. | Oxide of Nitrogen (as NO <sub>x</sub> ) | IS 11255 (Part 7)2005 RA 2012 | mg/Nm³ | 2.70 | 725.0         | 450      |
| 7. | Carbon Monoxide (CO)                    | IS 13270:1992 (RA 2009)       | %      | -    | BDL (MDL 0.2) |          |

| Emis | sion Rate                               |                               |        |         |  |
|------|---|-------------------------------|--------|---------|--|
| 1.   | Particulate Matter (PM)                 | IS 11255 (Part 1)2009         | kg/hr. | 43.53   |  |
| 2.   | Sulphure Dioxide (SO <sub>2</sub> )     | IS 11255 (Part 2)2009         | kg/hr. | 1303,45 |  |
| 3.   | Oxide of Nitrogen (as NO <sub>x</sub> ) | IS 11255 (Part 7)2005 RA 2012 | kg/hr. | 725.0   |  |

\*\*\*\*\*End of Report\*\*\*\*\*

|                       | City of the post  |  |  |  |  |  |  |
|-----------------------|---|--|--|--|--|--|--|
| Limit is specified as | Environmental (Protection) Rule – 1986.   |  |  |  |  |  |  |
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,   |  |  |  |  |  |  |
| Env. Condition of Lab | Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |  |  |  |  |  |  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |  |  |  |  |  |  |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law,                                      |  |  |  |  |  |  |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO  |  |  |  |  |  |  |
|                       | The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise                  |  |  |  |  |  |  |
|                       | The liability of the laboratory is limited to the invoiced amount.  |  |  |  |  |  |  |
|                       | All disputes are subjected to the Ranchi Jurisdiction   |  |  |  |  |  |  |
| Remarks               | Sample complies with prescribed limits, except parameter Sulphure Dioxide & Oxide of Nitrogen Serial No. 4 & 5.                             |  |  |  |  |  |  |

Sample Drawn By - Angad Munda
Tested By - Amit Kumar Sinha (Lab Analyst)

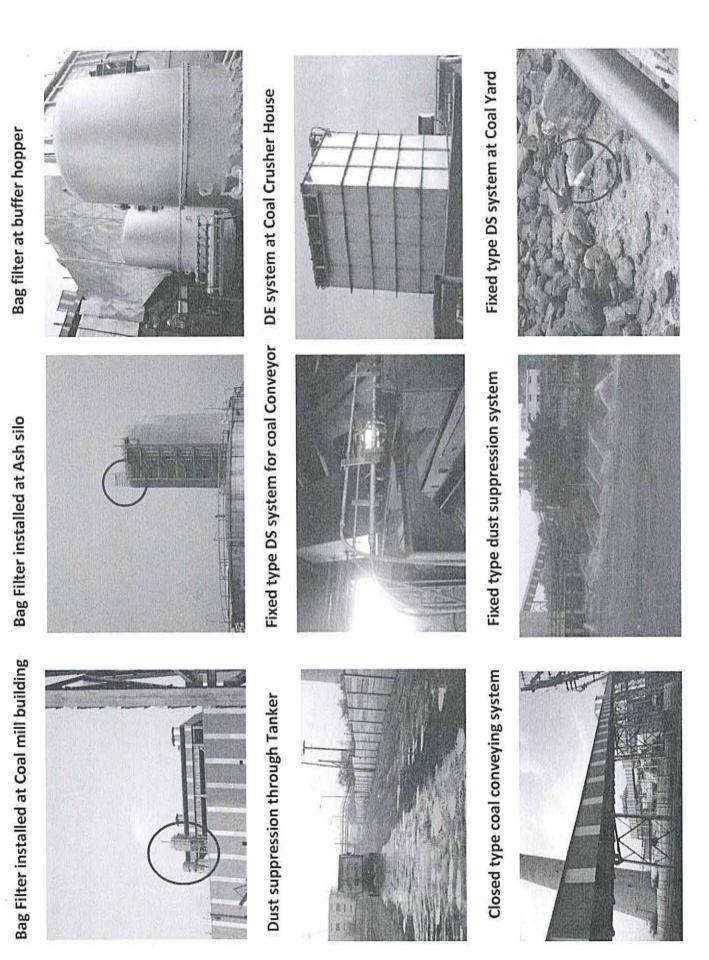
> Authorized Signatory Atmospharic Pollution Yugantar Bitarati Analytical & Environmental Engineering Laboratory

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Branch Office : - | Jamshedpur | Dhanbad | Hazaribag | Pakur







#### **Adhunik Power & Natural Resource Limited**

FLY ASH GENERATION & UTILIZATION REPORT (2021-22)

|         |        | Ash           | Genera                      | tion and U         | tilization          |                  |  | M   | ode of A | sh Utilizatio                                  | on  |   |
|---------|--------|---------------|-----------------------------|--------------------|---------------------|------------------|--|---|----------|--|---|---|
| SI. No. | Months | Coal Consumed | Ash Contents of Coal<br>(%) | Fly Ash Generation | Fly Ash Utilization | %age Utilization | In Making of Fly Ash<br>Based bricks /Blocks<br>/Tiles etc | In manufacturing of<br>Portland Pozzolana<br>Cement | RMC      | Fly Ash In<br>Reclamation of Low<br>Lying Area | Bottom Ash In<br>Reclamation of Low<br>Lying Area | Pond Ash In<br>Reclamation of Low<br>Lying Area /Brick<br>Plant |
| (1)     | (2)    | (3)           | (4)                         | (5)                | (6)                 | (7)              | (8)  | (9)   |          | (10)   | (11)  | (12)  |
| 1       | APRIL  | 243924        | 39.38                       | 96051.2            | 96051.25            | 100.0%           | 10574.90   | 50300.9   | 3477.0   | 17290.8  | 14407.69  |   |
| 2       | MAY    | 193394        | 39.16                       | 75739.2            | 75739.19            | 100.0%           | 4859.80  | 29912.2   | 2551.1   | 27055.2  | 11360.9   |   |
| 3       | JUNE   | 213058        | 45.11                       | 96115.0            | 96114.99            | 100.0%           | 4555.87  | 40141.9   | 3691.7   | 33308.3  | 14417.2   |   |
| 4       | JULY   | 246476        | 48.00                       | 118299.3           | 118299.31           | 100.0%           | 4119.92  | 27285.3   | 3595.1   | 65554.1  | 17744.9   |   |
| 5       | AUG    | 178436        | 51.75                       | 92344.6            | 92344.64            | 100.0%           | 4500.68  | 18187.3   | 3570.1   | 52234.9  | 13851.7   |   |
| 6       | SEP    | 152138        | 42.53                       | 64710.7            | 64710.73            | 100.0%           | 3393.18  | 33497.9   | 3539.7   | 14573.4  | 9706.6  |   |
| 7       | ост    | 220681        | 41.67                       | 91959.8            | 58286.75            | 63.4%            | 6506.91  | 47207.8   | 4572.1   |  |   |   |
| 8       | NOV    | 193574        | 43.99                       | 85148.5            | 64300.87            | 75.5%            | 6115.13  | 55300.9   | 2884.8   |  |   |   |
| 9       | DEC    | 244445        | 41.05                       | 100350.2           | 66448.99            | 66.2%            | 4652.73  | 59639.5   | 2156.8   |  |   |   |
| 10      | JAN    | 199873        | 49.80                       | 99535.1            | 80329.59            | 80.7%            | 5398.28  | 72387.2   | 2544.1   |  |   |   |
| 11      | FEB    | 215192        | 43.39                       | 93368.2            | 73286.27            | 78.5%            | 6231.91  | 63596.2   | 3458.2   | 8 (01)   |   |   |
| 12      | MAR    | 246362        | 43.12                       | 106240.8           | 90304.64            | 85.0%            | 7816.50  | 79794.1   | 2694.0   |  |   |   |



## The Control of the Co

#### YUGANTAR BHARATI

#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Certified by:-

Accredited by: - | Jharkhand State Pollution Control Board (JSPCB)

An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline            | Chemical            | Group    | Pollution & Environme  | nt       | Sample Descr   | ription                                  | ASH                     |                 |  |  |
|-----------------------|---------------------|----------|--|----------|----------------|--|-------------------------|-----------------|--|--|
| Report Release Date   |                     | 31st Mar | h, 2022  |          | Report ID      |  | YBAEEL-220322-183133- S |                 |  |  |
| W. Order/ JS          | SPCB App. No.       | 3030005  | 781  | u name-t | Work Order D   | ate                                      | 18.12.2021              |                 |  |  |
| Type of Indu          | ustry(If any)       | Thermal  | Power Plant  |          | Job code/ Rei  | f. no.                                   | YBAEEL/W                | A/L/S/Mar-22/02 |  |  |
| Report Issue to       |                     | VillPa   | unik Power & Natural<br>Jampur, PGCILS, Kand<br>Ja-Kharsawan, Jharkh | ra-83    | 2402,          |  | Orton and               | Ni di           |  |  |
| Sampling D            | ate                 | 24/03/20 | 22   |          | Mode of samp   | Mode of sample collection By YBAEEL Team |                         |                 |  |  |
| Sampling P            | rotocol             | IS: 3025 | (Part-1) 1987, R-2003  |          | Sample Code    |  | 220324-S-A              | 02              |  |  |
| Sampling L            | ocation             | Hopper   |  |          | Sampling Sou   | <b>1</b>                                 |                         |                 |  |  |
| Sample pkg. Condition |                     | Sealed I | ack in Zipper Bag  |          | Sample Quan    | tity                                     | 2.5 Kg Approx.          |                 |  |  |
| Meteorologi           | ical Cond. of Field | W.C C    | ear  | RH       | RH % - 46 Temp |  |                         |                 |  |  |
| Sample receipt Date 2 |                     | 24/03/20 | 22 Analysis Started  | on       | 24/03/2022     | Analysis o                               | ompleted on             | 30/03/2022      |  |  |

| ******Test Results ***** | ***** | Test | Recults | ***** |  |
|--------------------------|-------|------|---------|-------|--|
|--------------------------|-------|------|---------|-------|--|

| SI  | Parameter        | Test Method                    | Units | MU %    | Results        |
|-----|------------------|--------------------------------|-------|---------|----------------|
| 1.  | Iron (as Fe)     | USEPA 3050 B :1996/APHA 3111 B | ppm   | 2.73    | 22.8           |
| 2.  | Zinc (as Zn)     | USEPA 3050 B :1996/APHA 3111 B | ppm   | 4.44    | 0.29           |
| 3.  | Copper (as Cu)   | USEPA 3050 B :1996/APHA 3111 B | ppm   | 10.18   | BDL (MDL 0.01) |
| 4.  | Lead (as Pb)     | USEPA 3050 B :1996/APHA 3111 B | ppm   | 2.82    | BDL (MDL 0,02) |
| 5.  | Nickel (as Ni)   | USEPA 3050 B :1996/APHA 3111 B | ppm   | 4.10    | BDL (MDL 0.02) |
| 6.  | Cadmium (as Cd)  | USEPA 3050 B :1996/APHA 3111 B | ppm   | 9.57    | 1.1            |
| 7.  | Chromium (as Cr) | USEPA 3050 B :1996/APHA 3111 B | ppm   | 5.44    | 0.38           |
| 8.  | Arsenic (as As)  | USEPA 3050 B :1996/APHA 3114 B | ppm   |         | 0.1            |
| 9.  | Mercury (Hg)     | USEPA 3050 B :1996/APHA 3112 B | ppm   | ///     | 0.06           |
| 10. | Unburn Carbon    | IS 1727:1967                   | %     | 41 - 10 | 2.6            |
| 11. | Selenium (as Se) | USEPA 3050 B :1996/APHA 3114 B | ppm   |         | 0.06           |

| Limit is specified as | Constituting the contractory.   |  |  |  |  |
|-----------------------|---|--|--|--|--|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,   |  |  |  |  |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1965 (C).                  |  |  |  |  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |  |  |  |  |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |  |  |  |  |
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|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |  |  |  |  |
|                       | The liability of the laboratory is limited to the invoiced amount.  |  |  |  |  |
|                       | All disputes are subjected to the Ranchi Jurisdiction   |  |  |  |  |
| Remarks               | ***************************************   |  |  |  |  |

Sample Drawn By

Angad Munda

Tested By

Shivani Kumari Singh (Lab Analyst)

| Onling her!       | 3-329             |
|-------------------|-------------------|
| Verified by       | issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Technical Manager Yugantar Bharati Analytical & Environmental Engineering Laboratory

150 45001 2018

Branch Office : - Jamshedpur

Dhanbad

Hazaribag

Pakur

ISO 9001:2015

Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 098351-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





Accredited by: Certified by: -

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB) ISO 9001:2015 & ISO 45001:2018



#### Test Certificate

| ULR (Unique                                  | e Lab Report) No.   |                                    |          |             | 4       | 0      | 3 2 2 2 0 0                                |         |        |       |       | 0               | 0                            | 0     | 4    | 4 8 7 F |      |     |  |  |
|--|---------------------|------------------------------------|----------|-------------|---------|--------|--|---------|--------|-------|-------|-----------------|------------------------------|-------|------|---------|------|-----|--|--|
| Discipline                                   | Chemical            | Group                              | Polluti  | on &        | Enviro  | nment  | Sample Description                         |         |        |       |       | W               | Waste Water / Effluent Water |       |      |         |      | er  |  |  |
| Report Rele                                  | ease Date           | 31st March                         | R        | eport I     | )       |        |  | YE      | AEE    | L-220 | 322-1 | 831             | 33 V                         | VW03  |      |         |      |     |  |  |
| W. Order/ JSPCB App. No. 3030005781 W        |                     |                                    |          | ork Or      | der Dat | e      |  | 18      | .12.20 | 021   |       |                 |                              |       |      |         |      |     |  |  |
| Type of Industry(If any) Thermal Power Plant |                     |                                    |          | 0011        | 10.     | J      | Job code/ Ref. no. YBAEEL/WA/L/W/Mar-22/20 |         |        |       |       |                 |                              | )     |      |         |      |     |  |  |
| Sampling D                                   | )ate                | VillPada<br>Seraikela<br>24/03/202 | a-Khars  |             |         |        | -  |         | sample | colle | ction | By              | YBA                          | EEL 1 | Team | 63      | 7.5  | (3) |  |  |
| Sampling P                                   | Protocol            | IS: 3025                           |          | 987,        | R-2003  |        | _  | ample   |        |       | 10.00 | - 220324-WW-A03 |                              |       |      |         |      |     |  |  |
| Sampling L                                   | ocation             | Ash Pond                           |          | un many.    |         |        | Sampling Source                            |         |        |       |       |                 | Effluent Water               |       |      |         |      |     |  |  |
| Sample pkg. Condition                        |                     | Sealed Pa                          | ck in PF | Bott        | е       | ****   | Sample Quantity                            |         |        |       |       | 3000 ml         |                              |       |      |         |      |     |  |  |
| Meteorolog                                   | ical Cond. of Field | W.C Cle                            | ar       | Table Seite | *       |        | R  | H % - 4 | 5      |       | 0 10  | Te              | Temp 31°C                    |       |      |         |      |     |  |  |
| Sample rec                                   | elpt Date           | 24/03/202                          | 2 A      | nalys       | is Star | ted on | 2  | /03/20  | 22     | A     | nalys | s con           | nolete                       | d on  | 30   | 0/03/   | 2022 |     |  |  |

#### \*\*\*\*\*Test Results \*\*\*\*\*

| SI | Parameter              | Test Method                   | Units | MU %  | Results         | Limits      |  |
|----|------------------------|-------------------------------|-------|-------|-----------------|-------------|--|
| 1. | pH value               | IS 3025 (P-11):2002           | pН    | 2.53  | 7.16            | 6.5 - 8.5   |  |
| 2. | Temperature            | IS 3025 (P-09)                | °C    | 1.55  | 30.2            | _           |  |
| 3. | Total suspended solids | IS 3025 (P-17):2012           | mg/l  | 8.26  | 68.0            | 100         |  |
| 4. | Oil and grease         | IS 3025 (P-39):2003           | mg/l  | 14.60 | BDL (MDL- 4.0)  | 20.0        |  |
| 5. | Arsenic (as As)        | APHA 3114 B 23rd edition 2017 | mg/l  | 7.86  | BDL (MDL 0.003) |             |  |
| 6. | Chromium (as Cr)       | APHA 3111 B 23rd edition 2017 | mg/l  | 7.14  | 0.12            | 10 THE LAND |  |
| 7. | Lead (as Pb)           | APHA 3111 B 23rd edition 2017 | mg/l  | 6.26  | BDL (MDL 0.02)  | 7           |  |
| 8. | Mercury (as Hg)        | APHA 3112 B 23rd edition 2017 | mg/l  | 25.0  | BDL (MDL 0.003) | 17:3-       |  |
| 9. | Chloride (as CI-")     | IS 3025 (P-32):2003           | mg/l  | 3,44  | 98.97           |             |  |

\*\*\*\*\*End of Report\*\*\*\*\*

| Environmental (Protection) Rule – 1985.  |  |  |  |  |  |
|--|--|--|--|--|--|
| MDL: Minimum detection limit, BDL: Below detection limit.  |  |  |  |  |  |
| Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                     |  |  |  |  |  |
| All values are expressed in as unit and results fisted refer only to the tested sample and applicable parameter in Lab's Permanent Facilities. |  |  |  |  |  |
| This report, in full or in part, shall not be used for advertising or as evidence in any court of law.   |  |  |  |  |  |
| This report cannot be reproduced, except when in full, without the written permission of the CEO.  |  |  |  |  |  |
| The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                    |  |  |  |  |  |
| The liability of the laboratory is limited to the invoiced amount.   |  |  |  |  |  |
| All disputes are subjected to the Ranchi Jurisdiction.   |  |  |  |  |  |
| Sample compiles with prescribed limits.  |  |  |  |  |  |
|  |  |  |  |  |  |

Sample Drawn By

Angad Munda

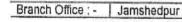
Tested By

Shivani Kumari Singh (Lab Analyst)

| Bolling 123/2022  | 33/3/2            |
|-------------------|-------------------|
| . Verified by     | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory Chemical Section Yugantar Bhar-ti Analytical & Environnie. F.I. ing Laboratory

Technical Manager Yugantar Bharati Analytical & Environmental Engineering Laboratory



Dhanbad

Hazaribag

Pakur



Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by Certified by :-

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB) ISO 9001:2015 & ISO 45001:2018



Annexum VII

#### Test Certificate

| ULR (Unique Lab Report) No.   |                     | -01.000  | T                    | C      | 4     | 0               | 3                  | 2               | 1                         | 2     | 0                         | 0              | 0                            | 0      | 0   | 4     | 8    | 5    | F    |
|-------------------------------|---------------------|--|----------------------|--------|-------|-----------------|--------------------|-----------------|---------------------------|-------|---------------------------|----------------|------------------------------|--------|-----|-------|------|------|------|
| Discipline Chemical           | Group               | roup Pollution & Environment                       |                      |        |       | S               | Sample Description |                 |                           |       |                           |                | Waste Water / Effluent Water |        |     |       |      |      |      |
| Report Release Date           | 31st March, 2022    |  |                      |        | R     | Report ID       |                    |                 |                           |       | YBAEEL-220322-183133- WW0 |                |                              |        |     |       | N01  |      |      |
| W. Order/ JSPCB App. No.      | 30300057            | 3030005781   |                      |        |       |                 | W                  | Work Order Date |                           |       |                           |                |                              | .12.20 | )21 |       |      | 31.0 |      |
| Type of Industry(If any)      | Thermal I           | mal Power Plant Job code/ Ref. no. YBAEEL/WA/L/W/M |                      |        |       |                 |                    | Var-2           | 22/18                     |       |                           |                |                              |        |     |       |      |      |      |
| Sampling Date                 | VillPad<br>Seraikel | a-Kha  |                      |        |       |                 |                    | _               | 2017                      | ample | colle                     | ction          | B                            | / YBA  | EEL | Геат  | 11   |      | A.7" |
| Sampling Protocol             | IS: 3025            | (Part-1  | ) 19                 | 87, R  | -2003 | 639             | S                  | Sample Code     |                           |       |                           |                | . 220324-WW-A01              |        |     |       |      | 35   |      |
| Sampling Location             | Effluent 7          | Treatm   | eatment Plant Outlet |        |       | S               | am                 | pling           | Sour                      | 95    |                           | Effluent Water |                              |        |     |       |      |      |      |
| Sample pkg. Condition         | Sealed P            | d Pack in PP Bottle                                |                      |        | S     | Sample Quantity |                    |                 |                           |       | 3000 ml                   |                |                              |        |     |       |      |      |      |
| Meteorological Cond. of Field | W.C Cl              | ear  |                      |        |       |                 | R                  | H %             | 6 - 45                    |       |                           |                | Temp 31°C                    |        |     |       |      |      |      |
| Sample receipt Date           | 24/03/202           | 22   | Ana                  | alysis | Star  | ted on          | 2                  | 4/03            | 3/2022 Analysis completed |       |                           |                |                              | ed on  | 30  | 0/03/ | 2022 |      |      |

\*\*\*\*\*Test Results \*\*\*\*\*\*

| SI  | Parameter                        | Test Method                   | Units | MU %  | Results        | Limits    |
|-----|----------------------------------|-------------------------------|-------|-------|----------------|-----------|
| 1.  | pH value                         | IS 3025 (P-11):2002           | pН    | 2.53  | 8.25           | 5.5 - 9.0 |
| 2.  | Temperature                      | IS 3025 (P-09)                | °C    | 1.55  | 29.6           | -         |
| 3.  | Total suspended solids           | IS 3025 (P-17):2012           | mg/l  | 8.26  | 16.0           | 100       |
| 4.  | Chloride (as CI)                 | IS 3025 (P-32):2003           | mg/l  | 3.44  | 13.4           | -         |
| 5.  | BOD                              | IS 3025 (P-44):2009           | mg/l  | 6.85  | 16.0           | 30        |
| 6.  | COD                              | IS 3025 (P-58):2006           | mg/l  | 4.02  | 120.0          | 250       |
| 7.  | Chromlum (as Cr)                 | APHA 3111 B 23rd edition 2017 | mg/l  | 7.14  | BDL (MDL 0.02) | - 2       |
| 8.  | Copper (as Cu)                   | APHA 3111 B 23rd edition 2017 | mg/l  | 16.09 | BDL (MDL 0.01) | 3         |
| 9.  | Lead (as Pb)                     | APHA 3111 B 23rd edition 2017 | mg/l  | 6.26  | BDL (MDL 0.02) | 0.1       |
| 10. | Zinc (as Zn)                     | APHA 3111 B 23rd edition 2017 | mg/l  | 6.57  | 0.08           | 5         |
| 11. | Sulphate (as SO <sub>4</sub> 2-) | IS 3025 (P-24):2003           | mg/l  | 4.37  | 14.8           |           |

| Limit is specified as | Environmental (Protection) Rule – 1986.   |
|-----------------------|---|
| Abbreviation .        | MDL : Minimum detection limit, BDL : Below detection limit,   |
| Env. Condition of Lab | Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
| 1 3.                  | The liability of the laboratory is limited to the invoiced amount.  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample compiles with prescribed limits.   |

Sample Drawn By Tested By

Angad Munda

Shivani Kumari Singh (Lab Analyst)

| Politica 2002     | 3313122           |
|-------------------|-------------------|
| Verified by       | Issued by .       |
| Brij Nandan Kumar | Umesh Das -       |
| Section In-Charge | Technical Manager |

Authorized Signatory Chemical Section Yugantar Bharati Analytical & Environmental Enc. inclusionale ing Laboratory

Technical Manager Yunantar Bharati Analytical & Em ... name tingingering Laboratory

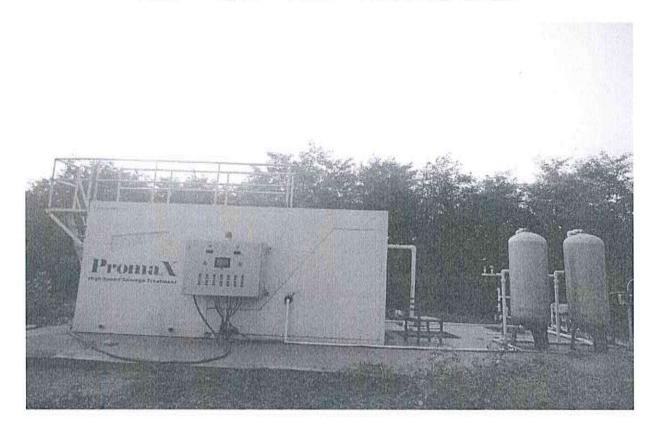


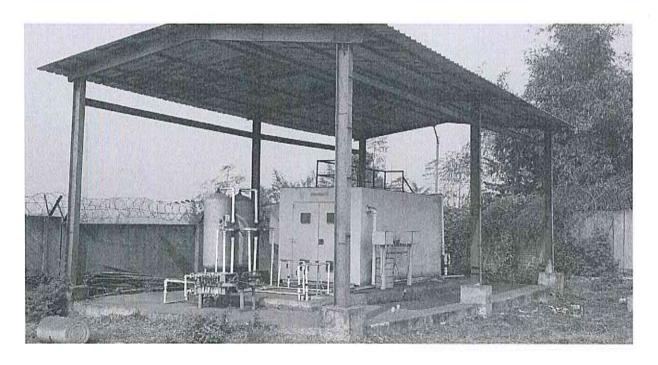
Branch Office : - | Jamshedpur Dhanbad Hazaribag Pakur

Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com; Web - https://ybaeel.in



## **Sewage Treatment Plant**





Page 1 of 1

परूप XV (पथम अनुसूची का अनुष्टेद 6 देखिए) FORM XV (see Article 6 of the First Schedule)

अधिष्ठापनों में पेट्रोलियम के आयात और अंशरकरण के लिए अनुनम्ति LICENCE TO IMPORT AND STORE PETROLEUM IN AN INSTALLATION

अनुजन्ति सं. (Licence No.) : P/HQ/JH/15/1065(P257355)

कीस रूपए (Fee Rs.) 50000 Per year

M/s. Adhunik Power & Natural Resources Ltd., Village-Padampur, Behind PGCIL Substation, Adityapur-Kandra Road, Taluka: Adityapur(Gamharia), District: SARAIKELLA KHARSWAN, State: Jharkhand, PIN: 832105 को केवल इसमें यथा विकिदिंग्दु वर्ग और मात्राओं में पेट्रोलियम 5000.00 KL आयात करने के लिए और उसका, नीचे वर्णित और अनुसंदित नक्शा संख्या P/HQ/JH/15/1065(P257355) तारीख 23/12/2011 जो कि इससे उपावद हैं, में दिखाए गए स्थान पर भण्डारकरण के लिए पेट्रोलियम अधिनियम, 1934 के उपवंधों या उसके अधीन बनाए गए नियमों लथा इस अनुजन्ति की अतिरिक्त शर्तों के अधीन रहते हुए, यह अनुजन्ति अनुद्धत्व की जाती

Licence is hereby granted to M/s. Adhunik Power & Natural Resources Ltd., Village-Padampur,Behind PGCIC Substation., Adityapur-Kandra Road., Taluka: Adityapur(Gamharia), District: SARAIKELLA KHARSWAN, State: Jharkhand, PIN: 832105 valid only for the importation and storage of 5000.00 KL Petroleum of the class and quantities as herein specified and storage thereof in the place described below and shown on the approved plan No P/HQ/JH/15/1065 (P257355) dated 23/12/2011 attached hereto subject to the provisions of the Petroleum Act. 1934 and the rule made thereunder and to the further conditions of

यह अनुज्ञाण्स 31st day of December 2022 तक प्रवृत रहेगी । The Licence shall remain in force till the 31st day of December 2022

| पेट्रोलियम का विवरण /Description of Petroleum                                 | अनुजन्त मात्रा (किलोलीटर्स में) /Quantity<br>licenced in KL |
|---|---|
| वर्ग क प्रयुक्त पेट्टोलियम /Petroleum Class A in bulk                         | NIL   |
| वर्ग क प्रपुंज पेट्रोतियम से भिन्स /Petroleum Class A, otherwise than in bulk | NIL   |
| वर्ग य प्रपुत्र पेट्रोतियम /Petroleum Class B in bulk                         | NIL   |
| वर्ग ख प्रपुंज पेट्रोलियम से भिन्न /Petroleum Class B, otherwise than in bulk | NIL   |
| वर्ग ग प्रपुंज पेट्रोलियम /Petroleum Class C in bulk                          | 5000.00 KL  |
| वर्ग ग प्रपुंज पेट्रोतियम से भिन्न /Petroleum Class C.otherwise than in bulk  | NIL   |
| कुल क्षमता /Total Capacity  | 5000.00 KL  |

December 15, 2011

this Licence.

Chief Controller of Explosives

1). Amendment dated - 23/12/2011

#### अनुप्रण्त परिसरों का विवरण और अवस्थान DESCRIPTION AND LOCATION OF THE LICENSED PREMISES

अनुज्ञन्त परिसर जिसकी हिन्यास सीमाएं अन्य विशिष्टयां संलग्न अनुमोदित नक्शी में दिखाई गई हैं Plot No: Plot No. 161,, Behind PGCIL.Substation adityapur, Kandra Road, Village- Padampur, District: SARAIKELLA KHARSWAN, State: Jharkhand, PIN: 999999 स्थान पर अवस्थित है तथा उसमें निम्नतिखित Two Petroleum ClassCAboveground storage tanks,logetherwith other connected facilities. सम्मितित हैं |

The licensed premises, the layout, boundaries and other particulars of which are shown in the attached approved plan are situated at Plot No: Plot No. 161,, Behind PGCIL.Substation adityapur, Kandra Road, Village- Padampur, District: SARAIKELLA KHARSWAN, State: Jharkhand, PIN: 999999 and consists of Two Petroleum ClassCAboveground storage tanks,togetherwith other connected facilities, together with connected facilities.



#### पेज सं. 2

अनुजन्ति संख्या-(Licence No.) P/HQ/JH/15/1065 (P257355)

#### नवीनीकरण के पृष्ठांकन के लिए स्थान SPACE FOR ENDORSEMENT OF RENEWALS

पेट्रोलियम अधिनियम, १९३४ के उपबन्धों या उनके अधीन वनाए गए नियमों या इस अनुजरित की शर्तों का उल्लंघन न होने की दशा में यह अनुजिन्ति फिस में विज्ञा किसी छूट के दस दर्प तक नवीकृत की जा सकेशी। This licence shall be renewable without any concession in fee for ten years in the absence of contravention of any provisions of the Petroleum Act, 1934 or of the rules framed thereunder or of any of the conditions of this licence.

नदीकरण की तारीख Date of

समाप्ति की तारीख Date of Expiry of license

अन्जापन प्राधिकारी के हस्ताक्षर और स्टाम्प Signature and office stamp of the licencing authority.

1)

2).

31/12/2013

31/12/2018

PESO ADMIN

23/09/2013

Sd/-

R.P.Singh

Jt. Chief Controller of Explosives For Dy. Chief Controller of Explosives

Ranchi

3)

18/02/2019 31/12/2022 K Thiagarajan

Dy. Chief Controller of Explosives Ranchi

खप मुख्य विस्फोटक नियंत्रक, रांची Dv. Chief Controller of Explosives, Ranchi

यदि अनुजप्ति परिसर इसने उपाबद विवरण और धर्ती के अनुरुप नहीं पाए जाते हैं और जिन नियमों और शर्तों ने अधीन यह अनुजप्ति संजुर की गई है उनमें से किसी का उल्लंघन होने की दशा में यह अनुजस्ति रद की जा सकती है और अनुजस्तिधारी प्रथम अपराध के लिए लाधारण कारावास से, जो एक मास

तक हो सकता है, या जुर्माने से, जो एक हजार रुपये तक हो सकता है, या दोनों से, और प्रत्येक पश्चालवर्ती अपराध के लिए साधारण कारावास से जो तीन मास तक हो सकता है, या जुर्माने से, जो पांच हजार रुपये तक हो सकता है, या दोनों से, दण्डनीय होगा | This licence is liable to be cancelled if the licensed premises are not found conforming to the description given on the approved plan attached hereto and contravention of any of the rules and conditions under which this licence is granted and the holder of this licence is also punishable for the first offence with simple imprisonment which may be extend to one month, or with fine which may extend to one thousand rupees, or with both and for every subsequent offence with simple imprisonment which may extend to three months, or with fine which may extend to five thousand rupees or with both.



#### HINDUSTAN PETROLEUM CORPORATION LIMITED

(A Government of India Enterprise)

#### QUALITY CONTROL LABORATORY

Visakha New Terminal CONVENT JN.-SHEELANAGAR ROAD, BEHIND AIRPORT, VISAKHAPATNAM-530014

#### **TEST REPORT**

Product : HP INDUSTRIAL DIESEL OIL

| Customer / Supplier /  |   | NBOT-BONDED TANKS-PSD           | )   |   | Test Report No.        | ż   | BFT/10835 |
|------------------------|---|---------------------------------|-----|---|------------------------|-----|-----------|
| Branch Plant           |   | 7 - F.W. X-20 - 586<br>V        |     |   | Date of Sample Drawn   |     | 20/07/19  |
| Source of Sample       | ; | TK105                           | 9   | , | Date of Sample Receipt |     | 21/07/19  |
| Tank No                | 4 | TK105 , ,                       |     |   | Date of Sample Testing |     | 22/07/19  |
| Qty of Sample/         |   | 1lfr uml / tk70/868.3 b.no.36/2 | 019 |   |                        | ď   | AMIN'T I  |
| Density/Type of Sample |   | 4                               |     | 4 | Date of Report         | 198 | 22/07/19  |
| Catg / Evnt / Activity |   | Aft Receipt thru Dedicated P/L  |     |   | Date of Printing       |     | 22/07/19  |
| Receipt/Despatch Mode  | 9 | ₹                               | 20  |   | JDE Sample Number      |     | 865213    |
| Sample Drawn by        | 3 | RAMAKRISHNA                     | 9   |   | Batch No               | i   |           |
|                        |   |                                 |     |   |                        |     |           |

' Specifications

| E STATE             |                            |            |                  | ореспи | Janons                                  |              |
|---------------------|----------------------------|------------|------------------|--------|---|--------------|
| Test Line<br>Number | Characteristics            | Units      | Test Mothod      | Min    | Max                                     | Result Value |
| 5                   | DENSITY® 15°C              | Kg/m3      | IS 1448 ( P :16) |        | *************************************** | 867.8        |
| 6                   | KINEMATIC VISCOSITY @ 40°C | c31        | IS 1448 P :25    | 2.500  | 15.000                                  | 4,860        |
| 7                   | FLASH POINT - PMCC         | <b>'</b> a | IS 1440 P :21    | 65     | American Company                        | 79           |
| 8                   | WATER CONTENT              | % Vol      | IS 1448 P 140    |        | .250                                    | 100          |
| 9 '                 | TOTAL SULPHUR              | % Mass     | ASTM D 4294      |        | 1.50                                    | .47          |
| 10                  | POUR POINT BUMMER          | .0         | IS 1448 P :10    |        | 21                                      | 3            |

Remarks

Sample S.No.5FT/271 mosts specification as per IS-15770.2008(Realizmed2014) in the above parameters

Appuarance : Light Brown

Notes :. 1) The sample is drawn by client and results relate to sample tested

2) The test report shall not be reproduced except in full without prior written approval of the Lab Incharge

3) This test report shall not be used in any advertising media or as avidence in the Court of Law without prior written consent of Laboratory

4) Test results reported are valid at the time of testing

5) This is a system generated test report and hence does not require signature

Tested By: 35323320

VELAMURI DATTATREYA

Reviewed and Approved By: 35323320

VELAMURI DATTATREYA

\*\*\* END OF TEST REPORT \*\*\*

Page No. : 1 of 1





Accredited by: -NABL accredited testing laboratory vide certificate Number TC-4032 Certified by: -

Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018



Hnnexum

#### Test Certificate

| ULR (Unique Lab Report) No.   |   | T      | C                   | 4      | 0               | 3                  | 2                  | 2   | 2    | 0     | 0         | 0      | 0                          | 0     | 4      | 9     |                  | F   |
|-------------------------------|---|--------|---------------------|--------|-----------------|--------------------|--------------------|-----|------|-------|-----------|--------|----------------------------|-------|--------|-------|------------------|-----|
| Discipline Chemical           | Group   |        | Water               | 45     |                 | S                  | Sample Description |     |      |       |           |        | Ground Water               |       |        |       |                  |     |
| Report Release Date           | 31st March, 20  | 22     |                     |        |                 | R                  | Report ID          |     |      |       |           |        | YBAEEL-220322-183133- GW01 |       |        |       |                  |     |
| W. Order/ JSPCB App. No.      | 3030005781  |        |                     |        | W               | Work Order Date    |                    |     |      |       |           | 8.12.2 | 021                        |       |        | _46   | Xelx             |     |
| Type of Industry(if any)      | Thermal Power Plant                                     |        |                     |        | J               | Job code/ Ref. no. |                    |     |      |       | Y         | BAEE   | L/WA                       | L/C/N | /lar-  | 22/16 |                  |     |
| Sampling Date                 | M/s Adhunik<br>VillPadamp<br>Seraikela-Kh<br>24/03/2022 | ur, P  | GCIL                | S, Kai | ndra-           | 3324               |                    |     | mple | colle | ction     | TE     | v YB/                      | VEET. | ream . |       | f <sub>201</sub> | 37" |
| Sampling Protocol             | IS : 3025 (Par  | -1) 19 | 987, R-             | 2003   | 10              |                    | Sample Code        |     |      |       |           |        | 220324-GW-A01              |       |        |       |                  |     |
| Sampling Location             | Srirampur Bo  | rewel  | ı                   | . P T  |                 | S                  | Sampling Source    |     |      |       |           | 0      | Ground Water               |       |        |       |                  |     |
| Sample pkg. Condition         | Sealed Pack in PP Bottle                                |        |                     | S      | Sample Quantity |                    |                    |     |      | 3     | 3000 ml   |        |                            |       |        |       |                  |     |
| Meteorological Cond. of Field | W.C Clear   |        |                     |        | RH % - 45       |                    |                    |     |      | T     | Temp 31°C |        |                            |       |        |       |                  |     |
| Sample receipt Date           | 24/03/2022  | Ar     | Analysis Started on |        |                 | 2                  | 4/03/2             | 022 |      | A     | nalys     | is co  | s completed on 30/03/2022  |       |        |       |                  |     |

\*\*\*\*\*\*Test Results \*\*\*\*\*\*

| SI  | Parameter                                | Test Method                                      | Units | MU %   | Results        | Limits           |
|-----|--|--|-------|--------|----------------|------------------|
| 1.  | pH value                                 | IS 3025 (P-11):2002                              | pН    | 1.77   | 6.89           | 6.5-8.5          |
| 2.  | Colour                                   | IS 3025 (P-04):1983                              | Hazen | EE ATU | 5              | 5-15             |
| 3.  | Conductivity                             | IS 3025 (P-14):2013                              | µs/cm | 1.90   | 576.0          |                  |
| 4.  | Total Alkalinity (as CaCO <sub>3</sub> ) | IS 3025 (P-23):2003                              | mg/l  | 3.68   | 192.0          | 200-600          |
| 5.  | Total Hardness (as CaCO <sub>3</sub> )   | IS 3025 (P-21):2009                              | mg/l  | 1,35   | 180.0          | 200-600          |
| 6.  | Total dissolved solids                   | IS 3025 (P-16):2006                              | mg/l  | 2.85   | 280.0          | 500-2000         |
| 7,  | Chlorine Residual                        | IS 3025 (P-26):2003                              | mg/I  | 30.64  | BDL (MDL 0.07) | 0.2-1            |
| 8.  | Chloride (as Cl)                         | IS 3025 (P-32):2003                              | mg/l  | 3.41   | 47.5           | 250-1000         |
| 9.  | Fluoride (as F-)                         | APHA 4500 F-C 23rd edition 2017                  | mg/l  | 12.22  | 0.6            | 1,0-1,5          |
| 10. | Nitrate (as NO <sub>3</sub> -)           | APHA 4500 NO <sub>3</sub> - (B) 23rdedition 2017 | mg/l  | 11.33  | 2.52           | 45-No relaxation |
| 11, | Calcium (as Ca2+)                        | IS 3025 (P-40): 2003                             | mg/l  | 4,19   | 55.2           | 75-200           |
| 12. | Magnesium (as Mg2+)                      | APHA 3500 Mg B : 2017                            | mg/l  | 1.90   | 10.21          | 30-100           |
| 13. | Sulphate (as SO <sub>4</sub> 2-)         | IS 3025 (P-24):2003                              | mg/l  | 5.42   | 18.7           | 200-400          |
| 14. | Sodium (as Na+)                          | APHA 3111 B 23rd edition 2017                    | mg/l  | 16.98  | 26.0           |                  |
| 15. | Potassium (as K+)                        | APHA 3111 B 23rd edition 2017                    | mg/l  | 9.21   | 3.0            | 400 U.S. 100     |

|                       | *****End of Report*****   |
|-----------------------|---|
| Limit is specified as | IS 10500: 2021  |
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,   |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
|                       | The liability of the laboratory is limited to the invoiced amount.  |
| 7.0 m. 12             | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample complies with prescribed limits.   |

Sample Drawn By

Angad Munda

Tested By

Prem Kumar (Lab Analyst)

| Palin 83/2022     | 31312             |
|-------------------|-------------------|
| - Verified by     | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory Chemical Section Yugantar Bharati Analytical & Environmental Engineering Laboratory

Technical Manager Yugantar Bharati Analytical & Environmental Engineering Laboratory

Branch Office : - | Jamshedpur

Dhanbad

Hazaribag

Pakur



Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in







Accredited by: -

Jharkhand State Pollution Control Board (JSPCB)

Certified by: - An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline               | Chemical | Group                          | Water  | Sample Description | n         | Ground Water              |   |
|--------------------------|----------|--------------------------------|--|--------------------|-----------|---------------------------|---|
| Report Release Date      |          | 31st March, 2022               |  | Report ID          |           | YBAEEL-220322-183133- GW0 |   |
| W. Order/ JSPCB App. No. |          | 3030005781                     |  | Work Order Date    |           | 18.12.2021                | er er ser er e |
| Type of Industry(If any) |          | Thermal Pow                    | er Plant   | Job code/ Ref. no. | 4400      | YBAEEL/WA/L               | JC/Mar-22/16                                    |
| Report Issu              |          | VillPadamp<br>Seraikela-Ki     | Power & Natural Res<br>our, PGCILS, Kandra-8<br>arsawan, Jharkhand | 32402,             | 14 7 2    | a Series                  | F1254   |
| Sampling D               | ate      | 24/03/2022                     | 1917 A 16 COLUMN   | Mode of sample co  | ollection | By YBAEEL To              | eam   |
| Sampling Protocol IS     |          | IS: 3025 (Part-1) 1987, R-2003 |  | Sample Code        | the True  | 200224 014/ 4/            |   |
| Sampling P               | 1010001  | 10: 3023 (Fat                  | 1-1) 1301, K-2003  | Sample Code        |           | 220324-GW-A               | 01  |
|                          |          | Srirampur Bo                   |  | Sampling Source    |           | Ground Water              |   |
| Sampling L               |          |                                | rewell   |                    |           |                           |   |
| Sampling L<br>Sample pkg | ocation  | Srirampur Bo                   | rewell   | Sampling Source    | 1.14      | Ground Water              |   |

#### \*\*\*\*\*Test Results \*\*\*\*\*\*

| SI | Parameter        | Test Method         | Units      | MU %     | Results       | Limits             |
|----|------------------|---------------------|------------|----------|---------------|--------------------|
| 1. | Odour            | IS 3025 (P-05):2002 |            |          | Agree.        | Agreeable          |
| 2. | Taste            | IS 3025 (P-07):2002 | 7:0 Oi. Ji | AND SHIP | Agree.        | Agreeable          |
| 3. | Cyanide (as CN-) | IS 3025 (P-27)      | mg/l       | 50 L     | BDL (MDL 1.0) | 0.05-No relaxation |

\*\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as | IS 10500: 2021  |
|-----------------------|---|
| Abbreviation          | MDL : Minimum detection limit, BDL : Belaw detection limit,   |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
| To 100 No. 10 Pt.     | The liability of the laboratory is limited to the invoiced amount.  |
| THE PROPERTY OF       | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample complies with prescribed limits.   |

Sample Drawn By

Angad Munda

Tested By

150 45001:2018

Prem Kumar (Lab Analyst)

| (A) VIII TO TO STATE OF THE STA | 1 28 32 -         |
|--|-------------------|
| D12 311031   | 31312             |
| . Verified by  | issued by         |
| Brij Nandan Kumar  | Umesh Das -       |
| Section In-Charge  | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bhar H Analytical &
Environmental Eng. ring Laboratory

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Branch Office : - Jamshedpur | Dhanbad | Hazaribag | Pakur



ISO 9001:2015



#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by:

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018



#### Test Certificate

| T C 4 0  | 3 2 2 2 0 0   | 0 0 0 4 9 3 F  |  |  |
|--|---|--|--|--|
| Group Water  | Sample Description  | Residue & Contaminants in Water  |  |  |
| 31st March, 2022   | Report ID   | YBAEEL-220322-183133- GW01   |  |  |
| W. Order/ JSPCB App. No. 3030005781  |   | 18.12.2021   |  |  |
| Thermal Power Plant  | Job code/ Ref. no.  | YBAEEL/WA/L/R/Mar-22/06  |  |  |
| VillPadampur, PGCILS, Kandra-83<br>Seraikela-Kharsawan, Jharkhand<br>24/03/2022  | 27 X E-1  | By YBAEEL Team   |  |  |
| IS: 3025 (Part-1) 1987, R-2003   |   | 220324-GW-A01  |  |  |
| Srirampur Borewell   |   | Ground Water   |  |  |
| Sealed Pack in PP Bottle   |   | 3000 ml  |  |  |
| Meteorological Cond. of Field W.C Clear  |   |  |  |  |
| Titlo: Glean   | 1111 10 10  | Temp 31°C  |  |  |
| The state of the s | 31st March, 2022 3030005781  Thermal Power Plant  M/s Adhunik Power & Natural ResovillPadampur, PGCILS, Kandra-8: Seraikela-Kharsawan, Jharkhand 24/03/2022  IS: 3025 (Part-1) 1987, R-2003  Srirampur Borewell  Sealed Pack in PP Bottle | 31st March, 2022 Report ID 3030005781 Work Order Date Thermal Power Plant Job code/ Ref. no.  M/s Adhunik Power & Natural Resources Ltd. VillPadampur, PGCILS, Kandra-832402, Seraikela-Kharsawan, Jharkhand 24/03/2022 Mode of sample collection IS: 3025 (Part-1) 1987, R-2003 Sample Code Srirampur Borewell Sampling Source Sealed Pack in PP Bottle Sample Quantity |  |  |

\*\*\*\*\*\*Test Results \*\*\*\*\*\*

| SI  | Parameter        | Test Method                   | Units | MU %    | Results         | Limits              |
|-----|------------------|-------------------------------|-------|---------|-----------------|---------------------|
| 1.  | Arsenic (as As)  | APHA 3114 B 23rd edition 2017 | mg/l  | 10.34   | BDL (MDL 0.003) | 0.01-No relaxation  |
| 2.  | Copper (as Cu)   | APHA 3111 B 23rd edition 2017 | mg/l  | 11.14   | BDL (MDL 0.01)  | 0.05-1.5            |
| 3,  | Iron (as Fe)     | APHA 3111 B 23rd edition 2017 | mg/l  | 2.34    | 0.75            | 1.0-No relaxation   |
| 4.  | Lead (as Pb)     | APHA 3111 B 23rd edition 2017 | mg/l  | 10,64   | BDL (MDL 0.02)  | 0.01-No relaxation  |
| 5.  | Zinc (as Zn)     | APHA 3111 B 23rd edition 2017 | mg/l  | 15.35   | 0.18            | 5-15                |
| 6.  | Cadmium (as Cd)  | APHA 3111 B 23rd edition 2017 | mg/l  | 5.0     | BDL (MDL 0.02)  | 0.003-No relaxation |
| 7.  | Mercury (as Hg)  | APHA 3112 B 23rd edition 2017 | mg/l  | 8.47    | BDL (MDL 0.003) | 0.001-No relaxation |
| 8.  | Chromium (as Cr) | APHA 3111 B 23rd edition 2017 | mg/l  | 12.53   | BDL (MDL 0.02)  | 0.05-No relaxation  |
| 9.  | Nickel (as Ni)   | APHA 3111 B 23rd edition 2017 | mg/l  | 13.72 : | BDL (MDL 0.02)  | 0.02-No relaxation  |
| 10. | Cobalt (Co)      | APHA 3111 B 23rd edition 2017 | mg/l  | 28.33   | BDL (MDL 0.03)  | -                   |

\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as | IS 10500; 2021  |
|-----------------------|---|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit.   |
| Env. Condition of Lab | Leboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
| ero 11. N             | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
|                       | The liability of the laboratory is limited to the invoiced amount.  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample compiles with prescribed limits.   |

Sample Drawn By

Angad Munda

Tested By

Shivani Kumari Singh (Lab Analyst)

| B0000 100 100 100 100 100 100 100 100 10 | 33131323          |
|--|-------------------|
| Verified by                              | Issued by         |
| Brij Nandan Kumar                        | Umesh Das         |
| Section In-Charge                        | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environment 1 Eng. Fing Laboratory

Technical Manager Yugantar Bharati Analytical & Environmental Engineering Laboratory



Branch Office : - Jamshedpur

Dhanbad

Hazaribag

Pakur



Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





Certified by:-

Jharkhand State Pollution Control Board (JSPCB)

An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline               | Chemical                                       | Group  | Water               | Sample Descrip            | otion | Residue & Cont            | aminants in Water |
|--------------------------|--|--|---------------------|---------------------------|-------|---------------------------|-------------------|
| Report Release Date      |  | 31st March, 2022   |                     | Report ID                 |       | YBAEEL-220322-183133- GW0 |                   |
| W. Order/ JSPCB App. No. |  | 3030005781   |                     | Work Order Date           |       | 18.12.2021                |                   |
| Type of Ind              | ustry(If any)                                  | Thermal Pow  | er Plant            | Job code/ Ref.            | no.   | YBAEEL/WA/L               | /R/Mar-22/06      |
| Report Issue to          |  | M/s Adhunik Power & Natural Resources Ltd. VillPadampur, PGCILS, Kandra-832402, Seraikela-Kharsawan, Jharkhand |                     |                           |       |                           |                   |
| Sampling D               |  | 24/03/2022   |                     | Mode of sample collection |       | By YBAEEL To              |                   |
| Sampling P               | rotocol  | IS : 3025 (Par   | rt-1) 1987, R-2003  | Sample Code               |       | 220324-GW-A01             |                   |
| Sampling L               | ocation  | Srirampur Borewell   |                     | Sampling Source           |       | Ground Water              |                   |
| Sample pkg. Condition    |  | Sealed Pack in PP Bottle   |                     | Sample Quantity           |       | 3000 ml                   |                   |
| Meteorolog               | eorological Cond. of Field W.C Clear RH % - 45 |  |                     | Temp 31°C                 | TV.   |                           |                   |
| Sample rec               | eint Date                                      | 24/03/2022   | Analysis Started on | n 24/03/2022 Analysis     |       | completed on              | 30/03/2022        |

| SI | Parameter         | Test Method         | Units | MU %   | Results        | Limits   |
|----|-------------------|---------------------|-------|--------|----------------|----------|
| 1. | Aluminium (as Al) | IS 3025 (P-55):2003 | mg/l  | 3.7/ m | BDL (MDL 0.02) | 0.03-0.2 |

\*\*End of Report\*\*\*\*\*

| Limit is specified as  | IS 10500: 2021  |
|--|---|
| Abbreviation   | MDL : Minimum detection limit, BDL : Below detection limit.   |
| Env. Condition of Lab  | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual   | All values are expressed in as unit and results fisted refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes  | This report, in full or in part, shall not be used for advertising or as evidence in any court of law                                       |
|  | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|  | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
|  | The liability of the laboratory is limited to the invoiced amount.  |
| The second secon | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks  | Sample complies with prescribed limits.   |

Sample Drawn By

Angad Munda

Tested By

Shivani Kumari Singh (Lab Analyst)

| Palus 202012      | 72732             |
|-------------------|-------------------|
| · Verified by     | issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory Chemical Section Yugantar Bharati Analytical & Environmental Engil ring Laboratory

Technical Manager Yugantar Bharati Analytical & **Environmental Engineering Laboratory** 

Hazaribag

Branch Office : -Jamshedpur Dhanbad

Pakur

150 45001:2018

Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 098351-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: -Certified by:-

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB) ISO 9001:2015 & ISO 45001:2018



#### Test Certificate

| ULR (Unique Lab Report) No.                    |   | T                   | C     | 4     | 0                  | 3                         | 2               | 2    | 2      | 0      | 0      | 0                          | 0                 | 0      | 4    | 7     | 4           | F                |  |
|--|---|---------------------|-------|-------|--------------------|---------------------------|-----------------|------|--------|--------|--------|----------------------------|-------------------|--------|------|-------|-------------|------------------|--|
| Discipline Biological                          | Group                                     |                     | Wat   | er    | Sample Description |                           |                 |      |        |        |        | Ground Water               |                   |        |      |       |             |                  |  |
| Report Release Date                            | 31st March, 20                            | 22                  |       | \     | 240                |                           | Report ID       |      |        |        |        | YBAEEL-220322-183133- GW01 |                   |        |      |       |             |                  |  |
| W. Order/ JSPCB App. No.                       | 3030005781                                | 030005781           |       |       |                    |                           | Work Order Date |      |        |        |        | 18.12                      | .2021             | 101    |      |       |             |                  |  |
| Type of Industry(If any)                       | Thermal Powe                              | Thermal Power Plant |       |       |                    |                           | Job             | cod  | el Ref | . no.  |        | YBAI                       | EELM              | IAILII | //Ma | r-22/ | 05          |                  |  |
| Report Issue to                                | M/s Adhunik<br>VillPadamp<br>Seraikela-Kh | ur, P               | GCIL  | S, Ka | andra-<br>khand    | 832                       | 402,            |      | 56     |        |        | 119                        | nh <sup>27A</sup> | unité  | - '  |       | <u>, (3</u> | v n <sup>2</sup> |  |
| Sampling Date                                  | 24/03/2022                                |                     |       | 100   |                    | Mode of sample collection |                 |      |        |        |        | By YBAEEL Team             |                   |        |      |       |             |                  |  |
| Sampling Protocol                              | IS: 1622:1982                             | , R - 2             | 2019  |       |                    | Sam                       | ple Co          | de   |        | III.QI |        | 220324-GW-A01              |                   |        |      |       |             |                  |  |
| Sampling Location                              | Srirampur Bor                             | e we                | 11    |       |                    | Sam                       | pling           | Sour | ce     |        |        | - Ground Water             |                   |        |      |       |             |                  |  |
| Sample pkg. Condition Sealed Pack in PP Bottle |   |                     |       | 1     | Sample Quantity    |                           |                 |      |        |        | 250 ml |                            |                   |        |      |       |             |                  |  |
| Meteorological Cond. of Field                  | W.C Clear                                 |                     |       | 97.5  | R                  | Н%                        | - 45            |      |        |        |        | Te                         | mp                | 31ºC   |      |       |             |                  |  |
| Sample receipt Date                            | 24/03/2022                                | A                   | nalys | is St | arted o            | n                         | 25/03/2022 Ana  |      |        |        |        | ysis c                     | omple             | eted c | n    | 27/0  | 3/202       | 2                |  |

#### \*\*\*\*\*\*Test Results \*\*\*\*\*\*

| SI | Parameter      | Test Method                   | Units      | Results       | Limits            |
|----|----------------|-------------------------------|------------|---------------|-------------------|
| 1. | Total coliform | APHA 9221B 23rd Edition 2017  | MPN/100 ml | BDL (MDL 1.1) | Shall not to be   |
| 2. | Fecal coliform | APHA 9221E 23rd Edition 2017  | MPN/100 ml | BDL (MDL 1.1) | Detectable in any |
| 3. | E coli         | APHA 9221-F 22nd Edition 2012 | MPN/100 ml | BDL (MDL 1.1) | 100 ml sample     |

\*\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as | IS 10500: 2012   |
|-----------------------|--|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,  |
|                       | <1.8 / < 1.1 MPN/100 ml denotes that the presence probability of bacteria is absent in the tested sample.                                    |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                   |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility. |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                       |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.  |
|                       | The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise                   |
|                       | The liability of the laboratory is limited to the invoiced amount.   |
|                       | All disputes are subjected to the Ranchi Jurisdiction.   |
| Remarks               | Sample complies with prescribed limit.   |

Sample Drawn By

**Angad Munda** 

Tested By

Control Board

Madhuri Sinha (Lab Analyst)

Umesh Das Technical Managerical & Technical Manageanial Engineering Laboratory

Ranklymental Engineering Laboratory

arkhand Verified by uthorized Signatory

Mukesh Kurhar Coblorogical Analytical

Section In-Charge to Bharatt Analytical Jamshaganental Engineering Laboratory

n Office . . . Hazaribag Branch Office : -Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand State Pollution

Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in



#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY



NABL accredited testing laboratory vide certificate Number TC-4032

Jharkhand State Pollution Control Board (JSPCB) ISO 9001:2015 & ISO 45001:2018



#### Test Certificate

| ULR (Unique Lab Report) No.                       | ore result in the second | T  | C       | 4     | 0     | 3               | 2                                | 2    | 1 2  |    | O | 0       | 0             | 0                          | 0     | 4     | 9      | 2    | F |  |
|---|--------------------------|--|---------|-------|-------|-----------------|----------------------------------|------|------|----|---|---------|---------------|----------------------------|-------|-------|--------|------|---|--|
| Discipline Chemical                               | Group                    |  | Water   | 57.1  |       | S               | Sample Description               |      |      |    |   |         |               | Ground Water               |       |       |        |      |   |  |
| Report Release Date                               | 31st March, 20           | 22   |         |       |       | R               | eport                            | ID   | dist |    |   |         | YE            | YBAEEL-220322-183133- GW02 |       |       |        |      |   |  |
| W. Order/ JSPCB App. No.                          | 3030005781               |  |         |       |       | W               | ork C                            | rder | Da   | te |   | 1       | 18.12.2021    |                            |       |       |        |      |   |  |
| Type of Industry(If any)                          | Thermal Pow              | er Pla   | nt      | 100.5 |       | J               | Job code/ Ref. no.               |      |      |    |   |         |               | AEE                        | JWA   | L/C/N | /lar-2 | 2/16 |   |  |
| Sampling Date                                     |                          | VillPadampur, PGCILS, Kandra-832402, Seraikela-Kharsawan, Jharkhand  24/03/2022 Mode of sample collection By YBAEEL Te |         |       |       |                 |                                  |      |      |    |   |         | ream .        | - V - T - :                | 1416  | Ϋ́    |        |      |   |  |
| Sampling Protocol                                 | IS : 3025 (Par           | (-1) 1   | 987, R- | 2003  |       |                 | Sample Code                      |      |      |    |   |         | 220324-GW-A02 |                            |       |       |        |      |   |  |
| Sampling Location                                 | Padampur Bo              | rewe   | 11      |       |       | S               | Sampling Source                  |      |      |    |   |         | Ground Water  |                            |       |       |        |      |   |  |
| Sample pkg. Condition Sealed Pack in PP Bottle    |                          |  |         |       | S     | Sample Quantity |                                  |      |      |    |   | 3000 ml |               |                            |       |       |        |      |   |  |
| Meteorological Cond. of Field                     | W.C Clear                | 1782   |         |       |       | R               | RH % - 45                        |      |      |    |   |         | Temp 31°C     |                            |       |       |        |      |   |  |
| Sample receipt Date 24/03/2022 Analysis Started o |                          |  |         |       | ed on | 2               | 24/03/2022 Analysis completed on |      |      |    |   |         |               | 30                         | 103/2 | 2022  |        |      |   |  |

\*\*\*\*\*\*Test Results \*\*\*\*\*

| SI  | Parameter                                | Test Method                                      | Units | MU %  | Results        | Limits           |
|-----|--|--|-------|-------|----------------|------------------|
| 1.  | pH value                                 | IS 3025 (P-11):2002                              | рН    | 1.77  | 6.79           | 6.5-8.5          |
| 2,  | Colour                                   | IS 3025 (P-04):1983                              | Hazen |       | 5              | 5-15             |
| 3.  | Conductivity                             | IS 3025 (P-14):2013                              | µs/cm | 1,90  | 520.0          |                  |
| 4.  | Total Alkalinity (as CaCO <sub>3</sub> ) | IS 3025 (P-23):2003                              | mg/l  | 3.68  | 104.0          | 200-600          |
| 5.  | Total Hardness (as CaCO <sub>3</sub> )   | IS 3025 (P-21):2009                              | mg/l  | 1.35  | 170.0          | 200-600          |
| 6.  | Total dissolved solids                   | IS 3025 (P-16):2006                              | mg/l  | 2.85  | 252.0          | 500-2000         |
| 7.  | Chlorine Residual                        | IS 3025 (P-26):2003                              | mg/l  | 30.64 | BDL (MDL 0.07) | 0.2-1            |
| 8.  | Chloride (as CI)                         | IS 3025 (P-32):2003                              | mg/l  | 3.41  | 44.5           | 250-1000         |
| 9.  | Fluoride (as F-)                         | APHA 4500 F-C 23rd edition 2017                  | mg/l  | 12.22 | 0.4            | 1.0-1.5          |
| 10. | Nitrate (as NO <sub>3</sub> -)           | APHA 4500 NO <sub>3</sub> - (B) 23rdedition 2017 | mg/I  | 11.33 | 12.48          | 45-No relaxation |
| 11. | Calcium (as Ca <sup>2+</sup> )           | IS 3025 (P-40): 2003                             | mg/l  | 4.19  | 48.0           | 75-200           |
| 12. | Magnesium (as Mg2+)                      | APHA 3500 Mg B : 2017                            | mg/l  | 1,90  | 12.15          | 30-100           |
| 13. | Sulphate (as SO <sub>4</sub> 2-)         | IS 3025 (P-24):2003                              | mg/l  | 5,42  | 40.1           | 200-400          |
| 14. | Sodium (as Na+)                          | APHA 3111 B 23rd edition 2017                    | mg/I  | 16.98 | 24.0           | TO ME A          |
| 15. | Potassium (as K+)                        | APHA 3111 B 23rd edition 2017                    | mg/l  | 9.21  | 2.8            | BURNEY 2 DAY     |

\*\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as | IS 10500: 2021  |
|-----------------------|---|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,   |
| Env. Condition of Lab | Laboratory is maintaining. Temperature 27 ± 2 °C and Relative Humidity 65 ± 5% in all testing areas as per IS 196;1966 (C).                 |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tosted sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
|                       | The liability of the laboratory is limited to the invoiced amount,  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample compiles with prescribed limits.   |

Sample Drawn By Tested By Angad Munda

Prem Kumar (Lab Analyst)

|                   | - 3-3-            |
|-------------------|-------------------|
| H2 2705/201       | 3313              |
| . Verified by     | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environmental Enginitaring Laboratory

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory



Branch Office : - Jamshedpur

Dhanbad

Hazaribag

Pakur

State No.

ISO 9001:2015

Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in







#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: - Jharkhand Certified by: - An ISO 900

Jharkhand State Pollution Control Board (JSPCB)
An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline Chemical      | Group           | Water   | Sample Description | n Ground Water                   |
|--------------------------|-----------------|---|--------------------|----------------------------------|
| Report Release Date      | 31** March, 2   | 022   | Report ID          | YBAEEL-220322-183133- GW02       |
| W. Order/ JSPCB App. N   | o. 3030005781   |   | Work Order Date    | 18.12.2021                       |
| Type of Industry(If any) | Thermal Pow     | er Plant  | Job code/ Ref. no. | YBAEEL/WA/L/C/Mar-22/16          |
| Report Issue to          | VIIIPadam       | k Power & Natural Res<br>pur, PGCILS, Kandra-8<br>harsawan, Jharkhand |                    | PENILLING N                      |
| Sampling Date            | 24/03/2022      | 7/11/3  | Mode of sample co  | ollection By YBAEEL Team         |
| Sampling Protocol        | IS : 3025 (Par  | rt-1) 1987, R-2003  | Sample Code        | 220324-GW-A02                    |
| Sampling Location        | Padampur Bo     | prewell   | Sampling Source    | Ground Water                     |
| Sample pkg. Condition    |                 |   | Sample Quantity    | 3000 ml                          |
| Meteorological Cond. of  | Field W.C Clear |   | RH % - 45          | Temp 31°C                        |
| Sample receipt Date      | 24/03/2022      | Analysis Started on   | 24/03/2022         | Analysis completed on 30/03/2022 |

#### \*\*\*\*\*\*Tact Daculte \*\*\*\*

| SI | Parameter Test Method |                     | Units | MU %   | Results       | Limits             |
|----|-----------------------|---------------------|-------|--------|---------------|--------------------|
| 1. | Odour                 | IS 3025 (P-05):2002 | 915   | N 12   | Agree.        | Agreeable          |
| 2. | Taste                 | IS 3025 (P-07):2002 |       | (35/4) | Agree.        | Agreeable          |
| 3. | Cyanide (as CN)       | IS 3025 (P-27)      | mg/l  | (1)15. | BDL (MDL 1.0) | 0.05-No relaxation |

\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as | IS 10500: 2021  |
|-----------------------|---|
| Abbreviation          | MDL : Minimum detection limit, BDL : Below detection limit,   |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 198:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced except when in full, without the written permission of the CEO.  |
|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
|                       | The liability of the laboratory is limited to the invoiced amount.  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample compiles with prescribed limits.   |

Sample Drawn By

Angad Munda

Tested By

ISO 45001:2018

Prem Kumar (Lah Analyst)

| - has             | and the same      |
|-------------------|-------------------|
| H22103 200        | 7313122           |
| . Verified by     | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environmental Engin-sering Laboratory

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Branch Office : - Jamshedpur Dhanbad Hazaribag Pakur







#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by:

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018



#### Test Certificate

| ULR (Unique Lab Report) No.   |  | T                   | C                         | 4    | 0                  | 3         | 2                   | 2 | 1 2 | T              | 0  | 0         | 0               | 0                               | 0     | 4     | 9   | 14 | TF |  |
|-------------------------------|--|---------------------|---------------------------|------|--------------------|-----------|---------------------|---|-----|----------------|----|-----------|-----------------|---------------------------------|-------|-------|-----|----|----|--|
| Discipline Chemical           | Group                                    |                     | Wate                      |      |                    | S         | Sample Description  |   |     |                |    |           |                 | Residue & Contaminants in Water |       |       |     |    |    |  |
| Report Release Date           | 31st March, 20                           | 22                  |                           |      | GOVERNO.           | R         | Report ID           |   |     |                |    |           |                 | YBAEEL-220322-183133- GW02      |       |       |     |    |    |  |
| W. Order/ JSPCB App. No.      | 3030005781                               |                     |                           |      |                    | W         | Work Order Date     |   |     |                |    |           | 18.12.2021      |                                 |       |       |     |    |    |  |
| Type of Industry(if any)      | Thermal Power Plant                      |                     |                           | Jo   | Job code/ Ref. no. |           |                     |   |     |                | YE | BAEE      | _/WA/           | LIRIN                           | lar-2 | 2/06  |     |    |    |  |
| Sampling Date                 | VillPadamp<br>Seraikela-Kh<br>24/03/2022 |                     | Mode of sample collection |      |                    |           |                     |   |     | By YBAEEL Team |    |           |                 |                                 |       |       |     |    |    |  |
| Sampling Protocol             | IS : 3025 (Par                           | t-1) 1              | 987, R                    | 2003 |                    | _         | Sample Code         |   |     |                |    |           | - 220324-GW-A02 |                                 |       |       |     |    | No |  |
| Sampling Location             | Padampur Bo                              | rewe                | 11                        | ļ    | CT TANAMA          | _         | Sampling Source     |   |     |                |    |           | Ground Water    |                                 |       |       |     |    |    |  |
| Sample pkg. Condition         |  |                     |                           |      |                    | 110       | Sample Quantity     |   |     |                |    |           | 3000 ml         |                                 |       |       |     |    |    |  |
| Meteorological Cond. of Field | Cond. of Field W.C Clear                 |                     |                           |      |                    | RH % - 45 |                     |   |     |                |    | Temp 31°C |                 |                                 |       |       |     |    |    |  |
| Sample receipt Date           | 24/03/2022                               | Analysis Started on |                           |      |                    | 24        | 24/03/2022 Analysis |   |     |                |    | -         | -               | -                               | 20    | /03/2 | 022 | -  |    |  |

\*\*\*\*\*Test Results \*\*\*\*\*

| SI  | Parameter        | Test Method                   | Units | MU %  | Results         | Limits              |
|-----|------------------|-------------------------------|-------|-------|-----------------|---------------------|
| 1.  | Arsenic (as As)  | APHA 3114 B 23rd edition 2017 | mg/l  | 10.34 | BDL (MDL 0.003) | 0.01-No relaxation  |
| 2.  | Copper (as Cu)   | APHA 3111 B 23rd edition 2017 | mg/l  | 11.11 | BDL (MDL 0.01)  | 0.05-1.5            |
| 3.  | Iron (as Fe)     | APHA 3111 B 23rd edition 2017 | mg/l  | 2.34  | 0.72            | 1.0-No relaxation   |
| 4.  | Lead (as Pb)     | APHA 3111 B 23rd edition 2017 | mg/l  | 10,64 | BDL (MDL 0.02)  | 0.01-No relaxation  |
| 5.  | Zinc (as Zn)     | APHA 3111 B 23rd edition 2017 | mg/l  | 15.35 | 0.19            | 5-15                |
| 6.  | Cadmium (as Cd)  | APHA 3111 B 23rd edition 2017 | mg/l  | 5.0   | BDL (MDL 0.02)  | 0.003-No relaxation |
| 7.  | Mercury (as Hg)  | APHA 3112 B 23rd edition 2017 | mg/l  | 8.47  | BDL (MDL 0.003) | 0.001-No relaxation |
| 8.  | Chromium (as Cr) | APHA 3111 B 23rd edition 2017 | mg/l  | 12.53 | 0.16            | 0.05-No relaxation  |
| 9.  | Nickel (as Ni)   | APHA 3111 B 23rd edition 2017 | mg/l  | 13.72 | BDL (MDL 0.02)  | 0.02-No relaxation  |
| 10. | Cobalt (Co)      | APHA 3111 B 23rd edition 2017 | mg/l  | 28.33 | BDL (MDL 0.03)  |                     |

\*\*\*\*\*\*End of Report\*\*\*\*\*\*

| Limit is specified as | IS 10500: 2021  |
|-----------------------|---|
| Abbreviation          | MDL: Minimum detection limit. BDL: Below detection limit.   |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |
|                       | The liability of the laboratory is limited to the invoiced amount.  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.  |
| Remarks               | Sample compiles with prescribed limits,   |

Sample Drawn By

Angad Munda

Tested By

Shivani Kumari Singh (Lab Analyst)

| Britus 183/2012   | 3113150           |
|-------------------|-------------------|
| Verified by       | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory



Branch Office : - | Jamshedpur

Dhanbad

Hazaribag

Pakur

Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com; Web - https://ybaeel.in







Accredited by: -

Jharkhand State Pollution Control Board (JSPCB)

An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline          | Chemical            | Group                      | Water   | Sample Descript   | tion                  | Residue & Cont            | aminants in Water |  |  |
|---------------------|---------------------|----------------------------|---|-------------------|-----------------------|---------------------------|-------------------|--|--|
| Report Rele         | ase Date            | 31st March, 20             | 022   |                   | YBAEEL-220322-183133- |                           |                   |  |  |
| W. Order/ J         | SPCB App. No.       | 3030005781                 |   | Work Order Date   | 9                     | 18.12.2021                |                   |  |  |
| Type of Ind         | ustry(if any)       | Thermal Pow                | er Plant  | Job code/ Ref. n  | 10.                   | YBAEEL/WA/L               | /R/Mar-22/06      |  |  |
| Report Issu         |                     | VillPadamp<br>Seraikela-Ki | Power & Natural Resour, PGCILS, Kandra-8<br>narsawan, Jharkhand | 32402,            |                       | ou i realisede i          | , £15             |  |  |
| Sampling D          | ate                 | 24/03/2022                 |   | Mode of sample    | collection            | By YBAEEL To              | eam               |  |  |
| Sampling P          | rotocol             | IS: 3025 (Par              | t-1) 1987, R-2003   | Sample Code       |                       | 220324-GW-A               | 02                |  |  |
| Sampling L          | ocation             | Padampur Bo                | rewell  | Sampling Source   | e                     | Ground Water              | -1 DC- A          |  |  |
| Sample pkg          | . Condition         | Sealed Pack i              | n PP Bottle   | Sample Quantity   | <b>y</b>              | 3000 ml                   |                   |  |  |
| Meteorolog          | ical Cond. of Field | W.C Clear                  |   | RH % - 45         |                       | Temp 31°C                 |                   |  |  |
| Sample receipt Date |                     | 24/03/2022                 | Analysis Started on   | 24/03/2022 Analys |                       | s completed on 30/03/2022 |                   |  |  |

#### \*\*\*\*\*Test Results \*\*\*\*\*

| SI | Parameter         | Test Method         | Units | MU % | Results        | Limits   |
|----|-------------------|---------------------|-------|------|----------------|----------|
| 1. | Aluminium (as Al) | IS 3025 (P-55):2003 | mg/l  | 7 (A | BDL (MDL 0.02) | 0.03-0.2 |

\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as | IS 10500: 2021  |  |  |  |  |  |  |
|-----------------------|---|--|--|--|--|--|--|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,   |  |  |  |  |  |  |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |  |  |  |  |  |  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |  |  |  |  |  |  |
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|                       | The samples collected shall be destroyed after 15 days from the date of issue of the certificate unless specified otherwise                 |  |  |  |  |  |  |
|                       | The liability of the laboratory is limited to the invoiced amount.  |  |  |  |  |  |  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.  |  |  |  |  |  |  |
| Remarks               | Sample complies with prescribed limits.   |  |  |  |  |  |  |

Sample Drawn By

Angad Munda

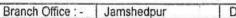
Tested By

Shivani Kumari Singh (Lab Analyst)

|                   | 7040              |
|-------------------|-------------------|
| 3110 2022         | 313               |
| Verified by       | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Chemical Section
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

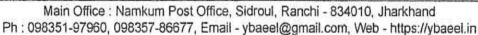
Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory



Dhanbad Hazaribag

Pakur









#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: Certified by:-

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018



Test Certificate

| ULR (Unique Lab Repor  | t) No.      |  | T        | C      | 4      | 0              | 3     | 2                  | 2             | 2     | 0      | 0          | 0                         | 0     | 0              | 4  | 7    | 5     | F |  |
|------------------------|-------------|--|----------|--------|--------|----------------|-------|--------------------|---------------|-------|--------|------------|---------------------------|-------|----------------|----|------|-------|---|--|
| Discipline Biologi     | ical        | Group Water                            |          |        |        |                |       | Sample Description |               |       |        |            | Ground Water              |       |                |    |      |       |   |  |
| Report Release Date    |             | 31st March, 2                          | 022      |        |        |                |       | Report ID          |               |       |        |            | YBAEEL-220322-183133 GW02 |       |                |    |      |       |   |  |
| W. Order/ JSPCB Ap     | p. No.      | 3030005781                             |          |        |        |                |       | Wor                | k Or          | der D | ate    | 18.12.2021 |                           |       |                |    |      |       |   |  |
| Type of Industry(If an | у)          | Thermal Pov                            | rer Plan | nt     |        |                | mark. | Job                | cod           | el Re | . no.  |            | YBAEEL/WA/L/M/Mar-22/05   |       |                |    |      | (A)   |   |  |
| Report Issue to        | 10 P 10     | M/s Adhuni<br>VIIIPadam<br>Seraikela-K | pur, P   | GCIL   | S, Ka  | ndra-<br>chand | 8324  | 402,               | 11 N<br>1916. |       | 41     | - 1        | D. V                      | DAFE  | LToo           |    | -    |       |   |  |
| Sampling Date          |             | 24/03/2022                             |          |        |        | -              | -     | e of sa            |               | e cor | ection | 1          | By Y                      |       |                | -  |      |       |   |  |
| Sampling Protocol      |             | IS: 1622:198                           | 2, R - 2 | 2019   |        | 5              | Sam   | ple Co             | de            |       | 3.1    |            | 2203                      | 24-GV | V-A02          |    |      |       |   |  |
| Sampling Location      |             | Hariharpur E                           | ore we   | ell    |        | 1              | Samp  | pling !            | Sour          | ce    |        |            | -Ground Water             |       |                |    |      |       |   |  |
| Sample pkg. Conditi    | on          | Sealed Pack                            | in PP    | Bottle |        | 1              | am    | ple Qu             | ıanti         | ty    | 11/2   |            | 250 r                     | nl    | Albert Edit of | 16 |      |       |   |  |
| Meteorological Cond    | d. of Field | W.C Clear RH                           |          |        |        |                |       | H % - 45           |               |       |        |            | Te                        | mp    | 31°C           |    |      |       |   |  |
| Sample receipt Date    | 10          | 24/03/2022                             | Α        | nalvs  | is Sta | rted o         | n     | 25/03              | 1202          | 2     | 1      | nah        | sis c                     | omple | eted o         | n  | 27/0 | 3/202 | 2 |  |

#### \*\*\*\*\*\*Test Results \*\*\*\*\*

| SI | Parameter      | Test Method                   | Units      | Results       | Limits            |
|----|----------------|-------------------------------|------------|---------------|-------------------|
| 1. | Total coliform | APHA 9221B 23rd Edition 2017  | MPN/100 ml | BDL (MDL 1.1) | Shall not to be   |
| 2. | Fecal coliform | APHA 9221E 23rd Edition 2017  | MPN/100 ml | BDL (MDL 1.1) | Detectable in any |
| 3. | E coli         | APHA 9221-F 22nd Edition 2012 | MPN/100 ml | BDL (MDL 1.1) | 100 mi sample     |

| Limit is specified as | IS 10500: 2012   |  |  |  |  |  |  |
|-----------------------|--|--|--|--|--|--|--|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,  |  |  |  |  |  |  |
|                       | <1.8 / < 1.1 MPN/100 ml denotes that the presence probability of bacteria is absent in the tested sample.                                    |  |  |  |  |  |  |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                   |  |  |  |  |  |  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility. |  |  |  |  |  |  |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                       |  |  |  |  |  |  |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.  |  |  |  |  |  |  |
|                       | The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise                   |  |  |  |  |  |  |
|                       | The liability of the laboratory is limited to the invoiced amount.   |  |  |  |  |  |  |
|                       | All disputes are subjected to the Ranchi Jurisdiction.   |  |  |  |  |  |  |
| Remarks               | Sample complies with prescribed limit.   |  |  |  |  |  |  |

Sample Drawn By

Angad Munda

**Tested By** 

Medhuri Sinha (Lab Analyst)

Umesh Das
Technical Managerical & Analytical Parkur

Harkhand

https:// Verified by Authorized Signation ukesh Kumb Jamshedamental Engineering Laborat
ain Office Branch Office : -Hazaribag ISO 9001:2015 ISO 45001:2018

Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in



## ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

YUGANTAR BHARATI

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB) ISO 9001:2015 & ISO 45001:2018



AnnexuaxII (2

#### Test Certificate

Certified by : -

| ULR (Unique Lab Report) No.   |  | T       | C      | 4     | 0       | 3     | 2                    | 2   | 1    | 5 1                  | 0     | 0              | Ιń                                      | To    | 10    | 1              | 7     | T 6 | TE  |  |
|-------------------------------|--|---------|--------|-------|---------|-------|----------------------|-----|------|----------------------|-------|----------------|---|-------|-------|----------------|-------|-----|-----|--|
| Discipline Chemical           | Group                                  | Atmo    | osphe  | ric P | ollutio | on    | Sar                  | nol | e De | scr                  | intio | n              | Wor                                     | k Zor | e Noi | 9              | 1_/_  | 9   | 1 - |  |
| Report Release Date           | 31st March, 2                          |         |        |       |         |       | Rep                  |     |      | -                    | pero  | -              |   | -     |       | -              | 2422  | Not |     |  |
| W. Order / JSPCB App. No.     | 3030005781                             | -       |        |       |         |       | Work Order Date      |     |      |                      |       |                | YBAEEL-220322-183133- N01<br>18.12.2021 |       |       |                |       |     |     |  |
| Type of Industry(if any)      | Thermal Power Plant                    |         |        |       |         |       |                      | -   | -    | Ref. no. YBAEEL/WA/L |       |                |   |       | -     | IA IBSnr 22/20 |       |     |     |  |
| Report Issue to               | M/s Adhuni<br>VillPadam<br>Seraikela-K | pur, Po | CIL    | S, Ka | ndra    | 8324  |                      | Ltd |      |                      |       |                |   |       |       |                |       |     |     |  |
| Sampling Period               | 21/03/2022 -                           | 22/03/2 | 022    |       | IN      | ode o | of sample collection |     |      |                      |       | By YBAEEL Team |   |       |       |                |       |     |     |  |
| Sampling Protocol             | IS: 9989:198                           | 1 (RA 2 | 020),  | CPCE  |         |       |                      |     |      |                      |       |                |   | , , , |       | r Carr         |       |     |     |  |
| Meteorological Cond. of Field | W.C Clear                              |         |        |       | -       | H % - |                      | -   |      |                      |       |                | T                                       | mn    | 33°C  |                | 1000  | -   |     |  |
| Sample receipt Date           | 23/03/2022                             | Anal    | ysis S | tarte |         |       | 3/03/2               | 202 | 2    |                      | An    | alvsi          | s con                                   | -     | _     |                | /03/2 | 022 |     |  |

\*\*\*\*\*\*Test Results \*\*\*\*\*

| SI | Locations        | Parameters | Units  | MU %  | Day Time | Night Time | Limit  |  |
|----|------------------|------------|--------|-------|----------|------------|--------|--|
| 1. | Near CHP Area    | Leq        | dB (A) | 1.003 | 64.1     | 63.1       | La ci  |  |
| 2. | Cooling Tower    | Leq        | dB (A) | 1.003 | 83.2     | 81.1       | NEWS T |  |
| 3. | Turbine Floor    | Leq        | dB (A) | 1.003 | 82.3     | 80.9       | 85     |  |
| 4. | Pump House       | Leq        | dB (A) | 1.003 | 79.5     | 77.6       | N I I  |  |
| 5. | Compressor House | Leq        | dB (A) | 1.003 | 84.7     | 84.2       | 1      |  |

Limit is specified as Factory Act. 1948 (8 hrs.) Abbreviation MDL: Minimum detection limit. BDL Env. Condition of Lab Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 195:1966 (C). Specific contractual All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility This report, in full or in part, shall not be used for advertising or as evidence in any court of law notes This report cannot be reproduced, except when in full, without the written permission of the CEO The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise The liability of the laboratory is limited to the invoiced amount All disputes are subjected to the Ranchi Jurisdiction Remarks Samples comply with prescribed limit

Sample Drawn By

- Angad Munda

Tested By

- Amit Kumar Sinha (Lab Analyst)

| D 4402002                              | 38/3-             |
|--|-------------------|
| 0023 To312                             | 0313              |
| Verified by                            | Issued by         |
| Brij Nandan Kumar<br>Section In-Charge | Úmesh Das         |
|  | Technical Manager |

**Authorized Signatory** Atmospharic Pollution Yugantar Bharati Analytical & **Environmental Engineering Laboratory** 

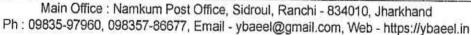
Technical Manager Yugantar Bharati Analytical & Environmental Engineering Laboratory

Branch Office : -Jamshedpur Dhanbad

Hazaribag

Pakur









Accredited by:

Certified by: -

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB) ISO 9001:2015 & ISO 45001:2018

TC-4032

#### Test Certificate

| ULR (Unique  | Lab Report) No.    |  | T                                      | C                     | 4      | 0      | 3                        | 2                  | 2      | 2     | 0     | 0                           | 0             | 0    | 0      | 4     | 8     | 0   | F    |
|--------------|--------------------|--|--|-----------------------|--------|--------|--------------------------|--------------------|--------|-------|-------|-----------------------------|---------------|------|--------|-------|-------|-----|------|
| Discipline   | Chemical           | Group                                  | Atmo                                   | Atmospheric Pollution |        |        | n                        | Sample Description |        |       |       |                             | Ambient Noise |      |        |       |       |     |      |
| Report Rele  | ase Date           | 31st March, 2                          | 022                                    |                       |        |        |                          | Repo               | ort ID |       |       |                             | YBA           | EEL- | 22032  | 2-183 | 3133- | N02 |      |
| W. Order / J | SPCB App. No.      | 3030005781                             | 3030005781 Work Or                     |                       |        |        | rk Order Date 18.12.2021 |                    |        |       |       | *********                   | MI P          | -    |        |       |       |     |      |
| Type of Indi | ustry(If any)      | Thermal Pow                            | Thermal Power Plant Job code/ Ref. no. |                       |        |        |                          |                    | YBA    | EELA  | NA/L/ | A/Ma                        | r-22          | 41   |        |       |       |     |      |
| Report Issu  | e to               | M/s Adhuni<br>VillPadam<br>Seraikela-K | pur, Po                                | GCIL                  | s, Ka  | ındra- | 832                      |                    | .td.   | 10.65 |       |                             |               |      |        |       |       |     |      |
| Sampling P   | erlod              | 22/03/2022 -                           | 23/03/2                                | 2022                  |        | M      | ode                      | of sam             | ple o  | olle  | ction | Ñ.,                         | B             | YBA  | EEL    | Team  | 1     |     |      |
| Sampling P   | rotocol            | IS 9989:1981                           | (RA 20                                 | 20) &                 | CPC    | B Met  | hod                      | S.O.5              | 0 (E)  | date  | d 11/ | 01/2                        | 010           |      |        |       |       |     | DUE: |
| Meteorologi  | cal Cond. of Field | W.C Cloud                              | y                                      | DIX R                 |        | R      | Н%                       | - 41               |        |       | 11    | CI                          | To            | mp.  | - 28°C | L.W.  | 4     |     |      |
| Sample rec   | elpt Date          | 24/03/2022                             | Anal                                   | ysis S                | Starte | d on   | 2                        | 24/03/2022 Analys  |        |       | alysi | sis completed on 28/03/2022 |               |      |        |       | -     |     |      |
|              |                    |  |  |                       |        |        |                          |                    |        |       |       |                             |               |      |        |       |       |     |      |

\*\*\*\*\*Test Results \*\*\*\*\*\*

| SI | Locations                  | Parameters | Units  | MU % | Day Time<br>(6.00 a.m. to 10.00 p.m.) | Night Time<br>(10.00 p.m. to 6.00 a.m.) | Limits     |
|----|----------------------------|------------|--------|------|---------------------------------------|---|------------|
| 1. | Sati Steel                 | Leq        | dB (A) | 1.32 | 56.3                                  | 53.7                                    | 311.015    |
| 2. | Reservoir                  | Leq        | dB (A) | 1,32 | 55.1                                  | 52.1                                    | Day - 75   |
| 3. | Occupational Health Centre | Leq        | dB (A) | 1.32 | 58.7                                  | 55.1                                    | Night – 70 |
| 4. | Near Main Gate             | Leq        | dB (A) | 1.32 | 63.3                                  | 54.2                                    |            |

\*\*\*\*\*\*End of Report\*\*\*\*\*

| • | Silence zone is an area comprising not less than 100 meters around  |   | Area             | Unit   | Day Time  | Night time |
|---|---|---|------------------|--------|-----------|------------|
|   | hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority. | Α | Industrial Area  | dB (A) | N( ○ 75.0 | 70.0       |
| • | Mixed categories of areas may be declared as one of the four above  | В | Commercial Area  | dB (A) | 65.0      | 55.0       |
|   | mentioned categories by the competent authority.<br>B(A) Leg denotes the time weighted average of the level of sound in               | С | Residential Area | dB (A) | 55.0      | 45.0       |
|   | decibels on scale(A) which is relatable to human hearing.   | D | Silence Zone     | dB (A) | 50.0      | 40.0       |

| imit is specified as  | Noise pollution (Regulation & Control) Rules, 2000,   |
|-----------------------|---|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,   |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                      |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.   |
|                       | The samples collected shall be destroyed after 7 days from the date of Issue of the cartificate unless specified otherwise                  |
|                       | The liability of the laboratory is limited to the invoiced amount.  |
| N                     | All disputes are subjected to the Ranchi Jurisdiction   |
| Remarks               | Samples comply with prescribed limit.   |

| Remarks                      | Samples comply with prescribed limit.             | -CARLES                 | Medical   |
|------------------------------|---|-------------------------|---|
| Sample Drawn By<br>Tested By | – Angad Munda<br>– Amit Kumar Sinha (Lab Analyst) | A STATE OF THE PARTY OF | i marin da sa |
|                              | Dalum 1202  | <br>23                  | 3122  |
|                              | Verified by                                       | Issued by               | 15 A T L  |
|                              | Brij Nandan Kumar                                 | Umesh Das               |   |
|                              | Section In-Charge                                 | Technical Manager       |   |

Authorized Signatory Atmospharic Pollution Yugantar L. - "ti Analytical &

Technical Manager Yugantar Bharati Analytical & **Environmental Engineering Laboratory** 

Environmental Engineering Laboratory Branch Office : - | Jamshedpur

Dhanbad

Hazaribag

Pakur



Main Office: Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand Ph: 09835-97960, 098357-86677, Email - ybaeel@gmail.com, Web - https://ybaeel.in





Accredited by: -

NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018

#### Test Certificate

| ULR (Unique Lab Report) No.   |                                      | T   | C                   | 4      | 0       | 3               | 2                      | 2                    | 2    | 0     | (                          | 0                         | 0                               | 0       | 4    | 8     | 3    | F  |
|-------------------------------|--------------------------------------|---|---------------------|--------|---------|-----------------|------------------------|----------------------|------|-------|----------------------------|---------------------------|---------------------------------|---------|------|-------|------|----|
| Discipline Chemical           | Group                                | Atm   | osphe               | ric Po | llution |                 | San                    | Sample Description A |      |       |                            | Am                        | Ambient Air Quality (Core Zone) |         |      |       |      |    |
| Report Release Date           | 31st March,                          | 2022  |                     |        |         |                 | Rep                    | ort I                | D    |       |                            | YBAEEL-220322-183133- A01 |                                 |         |      |       |      |    |
| W. Order/ JSPCB App. No.      | 3030005781                           |   |                     | H      | Wor     | Work Order Date |                        |                      |      |       | 2,202                      | 1                         |                                 |         |      | NT.   |      |    |
| Type of Industry(if any)      | Thermal Po                           | Thermal Power Plant Job code/ Ref. no. YBAEEL/WA/L/A/Mar- |                     |        |         |                 | ar-22                  | /38                  |      |       |                            |                           |                                 |         |      |       |      |    |
| Report Issue to               | M/s Adhui<br>VillPadai<br>Seraikela- | mpur,   | PGCI                | LS, K  | (andra  | -83             |                        |                      |      | a Bit | in the                     | 3911                      | dill.                           |         |      | ends. | v ti | JY |
| Sampling Period               | 21/03/2022                           | - 22/0  | 3/2022              | !      | N       | lode            | e of sample collection |                      |      |       |                            |                           | By YBAEEL Team                  |         |      |       |      |    |
| Sampling Protocol             | IS:5182 and                          | d CPC   | B Air I             | Manua  | I Volu  | ne-             | 1(NAA                  | QM                   | 36/2 | 012-  | 13)                        | 10.                       | 0.000                           |         |      |       |      | 19 |
| Sampling Locations            | Α                                    | Bache   | lor Ho              | stel   | E       |                 | Sw                     | tch                  | Yard |       | 57                         | 10-16                     | j. (                            | Sati Si | teel | (CHP  | Area | )  |
| Meteorological Cond. of Field | W.C Clea                             | r   | 71104050            | RH     | % - 40  |                 | - NO.112               | bliv                 | Te   | mp.   | - 330                      | C W.D West-East           |                                 |         | East |       |      |    |
| Sample receipt Date           | 23/03/2022                           |   | Analysis Started on |        |         | . [             | 23/03/2022 Analysis    |                      |      | -1    | is completed on 26/03/2022 |                           |                                 |         |      |       |      |    |

#### \*\*\*\*\*\*Test Results \*\*\*\*\*

| Parameters                              | Test Methods                 | Units             | MU %   | Sa               | Limits           |                  |            |
|---|------------------------------|-------------------|--------|------------------|------------------|------------------|------------|
| rarameters                              | rest wethous                 | Units             | WIO 76 | Site A           | Site B           | Site C           | Limits     |
| Particulate matter (PM10)               | IS:5182 (P-23) 2006, RA 2017 | µg/m³             | 2.68   | 83.1             | 93.6             | 87.6             | 100        |
| Particulate matter (PM <sub>2.5</sub> ) | IS:5182 (P-24) 2019          | µg/m³             | 2.60   | 53.3             | 57.1             | 51.2             | 60         |
| Sulphure Dioxide (SO <sub>2</sub> )     | IS:5182 (P-2) 2001 RA 2017   | µg/m³             | 7.84   | 22.3             | 28.5             | 25.4             | 80         |
| Nitrogen Dioxide (NO <sub>2</sub> )     | IS:5182 (P-6) 2006 RA 2017   | hā/w <sub>3</sub> | 4.17   | 48.6             | 50.8             | 55.1             | 80         |
| Ammonia (NH₃)                           | IS:5182 (P-25) 2018          | hg/m <sup>3</sup> | 3.7    | 21.2             | 27.1             | 23,5             | 400        |
| Ozone (O3)                              | IS:5182 (P-09) 2019          | µg/m³             | 9.09   | 21,4             | 25.0             | 23.2             | 180 (1 hr. |
| Lead (Pb)                               | IS:5182 (P-22) 2004, RA 2019 | µg/m³             | 7.95   | 0.096            | 0.222            | 0.182            | 1          |
| Nickel (Ni)                             | IS:5182 (P-26) 2020          | ng/m³             | 14.71  | BDL<br>(MDL-4)   | BDL<br>(MDL- 4)  | BDL<br>(MDL-4)   | Y-Y2       |
| Arsenic (As)                            | USEPA - 10 3.2               | ng/m³             | 2.05   | BDL<br>(MDL -02) | BDL<br>(MDL -02) | BDL<br>(MDL -02) | ,          |

Limit is specified as Environmental (Protection) Rule - 1986 Abbreviation MDL: Minimum detection limit, BDL: Below detection limit, Env. Condition of Lab Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C). Specific contractual All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility notes This report, in full or in part, shall not be used for advertising or as evidence in any court of law This report cannot be reproduced, except when in full, without the written permission of the CEO The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise The liability of the laboratory is limited to the invoiced amount. All disputes are subjected to the Ranchi Jurisdiction. Remarks Samples comply with prescribed limits.

Sample Drawn By

- Angad Munda

Tested By

- Amit Kumar Sinha (Lab Analyst)

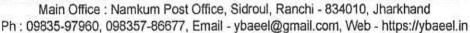
| Only of 202       | 23/42             |
|-------------------|-------------------|
| Verified by       | lssued by         |
| BrijNandan Kumar  | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Atmospharic Pollution
Yuganta History Analytical &
Environmental Environmental

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory



Branch Office : - Jamshedpur Dhanbad Hazaribag Pakur









Accredited by: -

Jharkhand State Pollution Control Board (JSPCB)

An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline   C                  | Chemical    | Group                    | Atmospheric Pollu                                     | ion Sample Des  | cription A | Ambient Air Qu          | uality (Core Zone)      |  |  |
|---------------------------------|-------------|--------------------------|---|---|------------|-------------------------|-------------------------|--|--|
| Report Release                  | e Date      | 31st March,              | 2022  | Report ID   | )          | BAEEL-22032             | 22-183133- A01          |  |  |
| W. Order/ JSP(                  | CB App. No. | 303000578                | 1   | Work Order  | Date 1     | 18.12.2021              |                         |  |  |
| Type of Indust                  | ry(If any)  | Thermal Po               | ower Plant  | Job code/ F   | Ref. no.   | YBAEEL/WA/L/A/Mar-22/38 |                         |  |  |
| Report Issue to                 |             | VillPada                 | nik Power & Natura<br>mpur, PGCILS, Kan               | dra-832402,   |            |                         |                         |  |  |
| Sampling Darie                  |             |                          | Kharsawan, Jharkh                                     |   | Unadlan.   | D. VDAEEL               | T                       |  |  |
| Sampling Perio                  |             | 21/03/2022               | - 22/03/2022  | Mode of sample co   |            | By YBAEEL               | . Team                  |  |  |
|                                 |             | 21/03/2022               |   | Mode of sample co   |            | By YBAEEL               | _Team                   |  |  |
| Sampling Prote                  | ocol        | 21/03/2022<br>IS:5182 an | - 22/03/2022  | Mode of sample co   |            | 111011                  | - Team<br>el (CHP Area) |  |  |
| Sampling Prote<br>Sampling Loca | ocol        | 21/03/2022<br>IS:5182 an | – 22/03/2022<br>d CPCB Air Manual V<br>achelor Hostel | Mode of sample co<br>olume-1(NAAQM/36/2<br>B. Switch Yard |            | C. Sati Stee            |                         |  |  |

#### \*\*\*\*\*Test Results \*\*\*\*\*

| Parameters Test Methods Units MU%                 | Toot Mathada              | Unite  | 3/11/0/ | Si                | 1 tootes            |                   |            |
|---|---------------------------|--------|---------|-------------------|---------------------|-------------------|------------|
|   | Site A                    | Site B | Site C  | Limits            |                     |                   |            |
| Carbon Monoxide (CO)                              | SOP No. YBAEEL/SOP/AIR/01 | mg/m³  |         | 1.8               | 1.8                 | BDL<br>(MDL 1.8)  | LILE PARTY |
| Benzene (C₅H₅)                                    | IS:5182 (P-11) 2006       | µg/m³  | 10.94   | BDL<br>(MDL 0.06) | · BDL<br>(MDL 0.06) | BDL<br>(MDL 0.06) | -          |
| Benzo (a)pyrene (BaP)<br>(Particulate Phase Only) | IS:5182 (P-12) 2004       | ng/m³  |         | BDL<br>(MDL 0.2)  | BDL<br>(MDL 0.2)    | BDL<br>(MDL 0.2)  | o sperie   |

\*\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as |  |
|-----------------------|--|
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit,  |
| Env. Condition of Lab | Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196: 1966 (C).                  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility. |
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.                                       |
|                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.  |
|                       | The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise.                  |
|                       | The liability of the laboratory is limited to the invoiced amount.   |
|                       | All disputes are subjected to the Ranchi Jurisdiction.   |
| Remarks               |  |

Sample Drawn By

- Angad Munda

Tested By

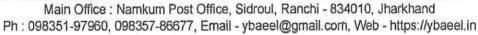
- Amit Kumar Sinha (Lab Analyst)

| - 10/022          | delignorm         |
|-------------------|-------------------|
| Br. 37 1631       | 8313122           |
| Verified by       | Issued by         |
| Brij Nandan Kumar | *Umesh Das        |
| Section In-Charge | Technical Manager |

Authorized Signatory
Atmospharic Pollution
Yugantar Eneralt Analytical &
Environmental Engineering Laboratory

Technical Manager
Yugantar Bharati Analytical &
Environmental Engineering Laboratory

Branch Office : - Jamshedpur Dhanbad Hazaribag Pakur









#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY



NABL accredited testing laboratory vide certificate Number TC-4032 Jharkhand State Pollution Control Board (JSPCB)

ISO 9001:2015 & ISO 45001:2018



#### Test Certificate

| ULR (Unique Lab Report) No.   |                                      |       | T             | С    | 4        | 0              | 3          | 2                      | 1                         | 2    | 2     | 0              |      | 0   | 0     | 0    | 0      | I    | 4       | 8     | 4     | F   |
|-------------------------------|--------------------------------------|-------|---------------|------|----------|----------------|------------|------------------------|---------------------------|------|-------|----------------|------|-----|-------|------|--------|------|---------|-------|-------|-----|
| Discipline Chemical           | Group                                | Atn   | nosp          | her  | ic Po    | llutio         | n          | Sai                    | mp                        | le D | esc   | ripti          | on   |     | Amb   | ient | Air Q  | lual | lity (B | Suffe | er Zo | ne) |
| Report Release Date           | 31st March,                          | 2022  | ?             |      | occirci. |                |            | Re                     | por                       | t ID |       |                |      |     | YBA   | EEL  | -2203  | 22-  | 1831    | 33- / | A02   |     |
| W. Order/ JSPCB App. No.      | 3030005781                           |       | ALINIA DE SAL |      |          |                |            | Wo                     | Work Order Date 18.12.202 |      |       |                | 21   |     |       |      |        |      |         |       |       |     |
| Type of Industry(If any)      | Thermal Po                           | wer   | Plan          | t    | 7        |                |            | Jol                    | 0 00                      | ode  | Re    | f. no          | ٥.   |     | YBA   | EEL  | /WA/L  | JA   | /Mar-   | 22/4  | 1     | # E |
| Report Issue to               | M/s Adhur<br>VillPadar<br>Seraikela- | npui  | r, PC         | CII  | _S, F    | (andı<br>ırkha | a-83<br>nd | 2402                   | ,                         |      | -00   | (15°           | 2    |     |       |      |        |      |         |       | 7     |     |
| Sampling Period               | 22/03/2022                           | - 23/ | 03/2          | 022  |          |                | Mod        | e of sample collection |                           |      |       | By YBAEEL Team |      |     |       |      |        |      |         |       |       |     |
| Sampling Protocol             | IS:5182 and                          | CP    | CB A          | ir N | lanu     | al Vol         | ume        | 1(NA                   | AQI                       | M/3  | 6/20  | 112-1          | 3)   |     | Ç.    |      |        |      |         |       |       |     |
| Sampling Locations            | A. Pi                                | ndra  | bera          | Vil  | lage     |                | B.         | Sri                    | ram                       | pu   | · Vil | lage           | 11   |     | 10    |      | Pada   | mp   | ur Vil  | lage  | 0     |     |
| Meteorological Cond. of Field | W.C Clou                             | dy    |               |      | RH       | 1% - 4         | 1          |                        |                           |      | Ter   | mp.            | - 28 | oC. |       | 2    | W.     | .D   | - NE-   | \$W   |       |     |
| Sample receipt Date           | 24/03/2022                           |       | Ana           | lvsl | s Sta    | rted           | on         | 24/0                   | 3/20                      | 022  |       | A              | nal  | vsl | s coi | nple | ted or | n    | 28/0    | 3/2   | 022   |     |

#### \*\*\*\*\*Test Results \*\*\*\*\*

| Parameters                          | Test Methods                 | Unite             | MU %  | Sa               | 11-14-           |                  |             |
|-------------------------------------|------------------------------|-------------------|-------|------------------|------------------|------------------|-------------|
| rarameters                          | rest methods                 | Units             | MO %  | Site A           | Site B           | Site C           | Limits      |
| Particulate matter (PM10)           | IS:5182 (P-23) 2006, RA 2017 | µg/m³             | 2.68  | 90.0             | 88.6             | 77.9             | 100         |
| Particulate matter (PM2.5)          | IS:5182 (P-24) 2019          | hā/w <sub>3</sub> | 2.60  | 58.8             | 50.4             | 47.0             | 60          |
| Sulphure Dioxide (SO <sub>2</sub> ) | IS:5182 (P-2) 2001 RA 2017   | hã/m³             | 7.84  | 23.1             | 26.9             | 23.1             | 80          |
| Nitrogen Dioxide (NO <sub>2</sub> ) | IS:5182 (P-6) 2006 RA 2017   | hā/m <sub>3</sub> | 4.17  | 51.8             | 48.6             | 51.8             | 80          |
| Ammonia (NH <sub>3</sub> )          | IS:5182 (P-25) 2018          | hay.              | 3.7   | 25.1             | 28.0             | 21.9             | 400         |
| Ozone (O3)                          | IS:5182 (P-09) 2019          | + µg/m³           | 9.09  | 23.4             | 31.0             | 22.4             | 180 (1 hr.) |
| Lead (Pb)                           | IS:5182 (P-22) 2004, RA 2019 | µg/m³             | 7.95  | 0.177            | 0.151            | 0.202            | 1           |
| Nickel (Ni)                         | IS:5182 (P-26) 2020          | ng/m³             | 14.71 | BDL<br>(MDL- 4)  | BDL<br>(MDL-4)   | BDL<br>(MDL-4)   |             |
| Arsenic (As)                        | USEPA - IO 3.2               | ng/m <sup>3</sup> | 2.05  | BDL<br>(MDL -02) | BDL<br>(MDL -02) | BDL<br>(MDL -02) | -           |

\*\*\*\*\*\*End of Report\*\*\*\*\*

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|-----------------------|---|--|--|--|--|--|
| notes                 | This report, in full or in part, shall not be used for advertising or as evidence in any court of law.  |  |  |  |  |  |
| Specific contractual  | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility.  |  |  |  |  |  |
| Env. Condition of Lab | Laboratory is maintaining. Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1956 (C).  |  |  |  |  |  |
| Abbreviation          | MDL: Minimum detection limit, BDL: Below detection limit.   |  |  |  |  |  |
| Limit is specified as | Environmental (Protection) Rule – 1986.   |  |  |  |  |  |

| Sample Drawn By | – Angad Munda                    |     | (e)  | c Mb          |
|-----------------|----------------------------------|-----|--|---------------|
| Tested By       | - Amit Kumar Sinha (Lab Analyst) |     | 3 ST 18 ST 1 |               |
|                 | 0 M. 02 -22                      | >   |  | i<br>eo a and |
| S 1 1/4 123     | (M) 31 (03) 200                  | 110 | 331313   | 1001          |
|                 | Verified by                      |     | issued by  |               |
|                 | BrijNandan Kumar                 |     | Umesh Das  |               |
|                 | Section In-Charge                |     | Technical Manager  | 1             |

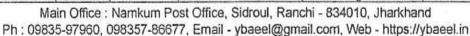
Authorized Signatory Atmospharic Pollution Yuganta. . ti Analytical &

**Technical Manager** Yugantar Bharati Analytical & Environmental Engineering Laboratory

**Environmental Engineering Laboratory** Branch Office : - Jamshedpur

Dhanbad Hazaribag Pakur













#### ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

Accredited by: -Certified by:- Jharkhand State Pollution Control Board (JSPCB)

An ISO 9001:2015 & ISO 45001:2018

Test Certificate

| Discipline Chemical           | Group /                      | Atmospheric Pol                                  | lution Sa                             | mple Description   | Ambien                       | t Air Qua | ility (Buffer Zone) |
|-------------------------------|------------------------------|--|---------------------------------------|--|------------------------------|-----------|---------------------|
| Report Release Date           | 31st March, 20               | )22  | Re                                    | port ID  | YBAEEL                       | -220322   | -183133- A02        |
| W. Order/ JSPCB App. No.      | 3030005781                   | Manager 1  | W                                     | ork Order Date   | 18,12.20                     | 21        |                     |
| Type of Industry (If any)     | Thermal Pow                  | er Plant   | Jo                                    | b code/ Ref. no.   | YBAEEI                       | JWAILIA   | /Mar-22/41          |
| Report Issue to               | Vill,-Padamp<br>Seraikela-Kh | Power & Natu<br>our, PGCILS, K<br>narsawan, Jhar | andra-832402<br>khand                 | i<br>Maren a v sa  | CONTRACTOR                   | more o    | EALTH               |
| Sampling Period               | 22/03/2022 - 2               | 23/03/2022                                       | Mode of s                             | ample collection   | Ву Ү                         | BAEELT    | eam                 |
| Sampling Protocol             | IS:5182 and C                | PCB Air Manua                                    | Volume-1(NA                           | AQM/36/2012-13)  |                              |           |                     |
| Sampling Locations            | A. Pinc                      | Irabera Village                                  | B. Srir                               | ampur Village  | C.                           | Padar     | npur Village        |
|                               |                              |  | personal for the first and the second | Commence of the Commence of th | Average of the second second | 1         |                     |
| Meteorological Cond. of Field | W.C Cloudy                   | RH   | % - 41                                | Temp 28  | loC                          | W.D.      | - NE-SW             |

#### \*\*\*\*\*Test Results \*\*\*\*\*

| Parameters                                      | Test Methods              | Uņits             | MU %  | Sa                | 1.1               |                   |          |
|---|---------------------------|-------------------|-------|-------------------|-------------------|-------------------|----------|
|   |                           |                   |       | Site A            | Site B            | Site C            | Limits   |
| Carbon Monoxide (CO)                            | SOP No. YBAEEL/SOP/AIR/01 | mg/m <sup>3</sup> | **    | 1.8               | BDL<br>(MDL 1.8)  | BDL<br>(MDL 1.8)  | u Strike |
| Benzene (C <sub>6</sub> H <sub>6</sub> )        | IS:5182 (P-11) 2006       | µg/m³             | 10.94 | BDL<br>(MDL 0.06) | BDL<br>(MDL 0.06) | BDL<br>(MDL 0.06) | 723      |
| Benzo (a)pyrene (BaP)<br>Particulate Phase Only | IS:5182 (P-12) 2004       | ng/m³             |       | BDL<br>(MDL 0.2)  | BDL<br>(MDL 0.2)  | BDL<br>(MDL 0.2)  | UP PI    |

\*\*\*\*\*\*End of Report\*\*\*\*\*

| Limit is specified as      | And the second s |
|----------------------------|--|
| Abbreviation               | MDL: Minimum detection limit, BDL: Below detection limit,  |
| Env. Condition of Lab      | Laboratory is maintaining, Temperature 27°± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).   |
| Specific contractual notes | All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility  |
|                            | This report, in full or in part, shall not be used for advertising or as evidence in any court of law  |
| 0140                       | This report cannot be reproduced, except when in full, without the written permission of the CEO.  |
|                            | The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise   |
|                            | The liability of the laboratory is limited to the invoiced amount.   |
|                            | All disputes are subjected to the Ranchi Jurisdiction.   |
| Remarks                    |  |

Sample Drawn By

- Angad Munda

Tested By

- Amit Kumar Sinha (Lab Analyst)

| 0 100000          | 7.28.63           |
|-------------------|-------------------|
| 000 gr 100        | 31131             |
| · Verified by     | Issued by         |
| Brij Nandan Kumar | Umesh Das         |
| Section In-Charge | Technical Manager |

Authorized Signatory
Atmospharic Pollution
Yugantar 2000 att Analytical &
Environmental Engineering Laboratory

Technical Manager Yugantar Bharati Analytical & Environmental Engineering Laboratory

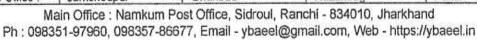


Branch Office : - Jamshedpur

Dhanbad

Hazaribag

Pakur







WORKS: Village - Padampur, Behind P.G.C.I.L. Substation, Adityapur - Kandra Road, Saraikela - Kharsawan, PIN - 832402 Jharkhand Phone: +91 - 657 - 6628400, Fax: +91 - 657 - 6628440

CIN - U40101WB2005PLC102935

APNRL/HR/Office Order/10 5<sup>th</sup> August'2016

#### Office Order

As per the directions of the Ministry of Environment & Forest, Government of India while granting the Environment Clearances vide letter no J-13011/8/2009-IA.II(T), dated 29th Aug 2009 (Unit I) & Letter No :J13012/8/2009-IA .II (T) dtd 9th May 2011 to our 2x270 MW Power Plant, the Management considering the importance of Environmental concerns and set up the Environment Cell under the chair of Plant In charge who is directly reporting the Managing Director of Organization. The Cell is functional since 2009 and is equipped with qualified professionals of the fields.

#### Roles & Responsibility of Environment Cell

Following the broad scope of the Cell

- Understanding Environment issues in Adhunik power & Natural Resources Ltd during Construction & Operation and Maintenance Phase.
- Framing appropriate scope of work for requisite environment management, EIA & various other complex issues to address those with tailor made solutions,
- Awarding the consultancy tasks for environmental management & EIAs, Modeling, Monitoring etc & other complex studies to the appropriate agency and also sometimes In-house work of Monitoring,
- Dealing with JSPCB/CPCB/MoEF &CC for various aspects including obtaining clearances for Plant and Plant led development and policy makings at State and National level,
- The meeting of the management of M/s APNRL shall be conducted in which the budgetary allocation for the EMP shall be discussed and finalized and comprehensive EMP shall be prepared as per the guidelines of CPCB.
- Preparation of Environmental Management Plans- Basically Assisting Engineering Section for preparation
   Master Plan for existing plant to address policy regulations issued by MOEF& CC from time to time,
- Operating and upgrading the existing Hazardous Waste Management Facilities for Plant Area as per latest regulations.- (Development and Operation of TSDF at APNRL),
- Initiating dialogs, meeting & developing participatory approach with the key stakeholders for solving any typical pollution related problems.
- Review of EMP for various sections of plant and suggest modifications if any for better Env Management,
- Representing APNRL at the State and National level platform for Environment Management
- Comments & advice on draft amendment, notifications on Environmental Laws.
- Imparting knowledge and raising awareness for Environment Protections among APNRL key officers and other related stakeholders,
- The Plant Incharge will be responsible for environmental issues at plant.

The responsibilities of the various members of the environment management cell are enclosed as

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Website

: www.adhunikgroup.com





WORKS: Village - Padampur, Behind P.G.C.I.L. Substation, Adityapur - Kandra Road, Saraikela - Kharsawan, PIN - 832402 Jharkhand Phone: +91 - 657 - 6628400, Fax: +91 - 657 - 6628440

CIN - U40101WB2005PLC102935

05.08.2016

Annexure I

#### Responsibilities of the members of the environment management cell

| S.<br>No. | Designation            | Responsibility  | Reporting to        |
|-----------|------------------------|---|---------------------|
| 01        | Managing Director      | Environmental policy and directions   |                     |
| 02        | Plant Incharge         | Overall responsibility for environmental management and decision making for all environmental issues  | Managing Director   |
| 03        | Environment<br>Manager | Overall in-charge of operation of environmental management facilities of respective sections.  Ensure environmental monitoring as per appropriate procedures,  Ensure correct records of generation, handling, storage, transportation and disposal of solid hazardous wastes.  Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same and arranging awareness programme among the workers. | Plant Incharge      |
| 04        | CSR Manager            | Responsibility to implement social impact improvement /mitigation measures.   | Plant Incharge      |
| os        | Safety Manager         | Participating in workplace safety and health planning meetings. Ensuring managers and supervisors have the appropriate safety and health; Accident prevention; and investigation & training Ensure safety and health hazards are corrected, eliminated or guarded.  | Plant Incharge      |
| 06        | Medical Officer        | Attend all types of OPD and Emergency Patients. First Aid Treatment to all Cases. Routine Medical Examination of Company Employees. Performing & Conducting various training & awareness programs in company.   | Plant Incharge      |
| 06        | Chemist                | To initiate environmental monitoring as per approved schedule.  Prepare & Submit the monitored results and corrective measures in case monitored results are above the specified limit.   | Environment Manager |
| 07        | Horticulture officer   | Responsible for development of Green belt & Land<br>Scape on vacant land of Plant premises.   | Environment Manager |

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Ref: MOE&F, RNC/HYC/KKJ/271121/01

Dated: 27.11.2021

To.

Regional Office (ECZ), Ministry of Environment, Forest and Climate Change, Bungalow No. A-2, Shyamali Colony, Ranchi – 834002

Sub:- Submission of Half yearly compliance status report (Unit I) for the period – April 2021 to September 2021 -Reg.

Ref:- MoEF letter No.J-13011/8/2009-IA.II(T), dated 29th Aug 2009.

Sir.

With reference to the above referred Environmental Clearance, we are pleased to submit herewith the half yearly compliance status report (Unit I) for the period of April 2021 to September 2021.

This is for your reference and record, please.

Thanking you,

For Adhunik Power & Natural resources Limited

(Authorized Signatory)

Encl: As Above

Copy to:

1. Central Pollution Control Board, Kolkata

2. Member Secretary, Jharkhand State Pollution Control Board, Jharkhand

3. Regional Officer, JSPCB, Jamshedpur







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Ref No APNRL/JSPCB/ES/2020-21/01

Date: 20th Sep 2021

Member Secretary
Jharkhand State Pollution Control Board,
HEC Campus, Dhurva,
Ranchi, Jharkhand.

Sub- Submission of Environmental Statement (Form V) for Unit I (1 x 270 MW) of M/s Adhunik Power & Natural Resources Limited, Village-Padampur, Dist-Saraikela-Kharswan, Jharkhand.

Ref: Environmental Clearance letter No J-13011/8/2009-IA.II(T), Dated 29<sup>th</sup> Aug 2009.

In line with compliance of above referred EC letter point No XXX of general condition, Please find attached herewith Environmental statement (Form V) for the financial year 2020-21.

This is for your kind information & record please.

Thanking You

Your's faithfully

Kamlesh Kumak

Manager (Environment)

Encl: As mentioned above

CC: 1. Regional Office (ECZ),

Ministry of Environment, Forest and Climate Change, Bungalow No. A-2, Shyamali Colony, Ranchi – 834002

2. Regional Officer

Jharkhand Pollution Control Board

Jamshedpur, Jharkhand

Boat 10 23/9/2020

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