



Power

Ref: APL/APJL/EMD/EC/MoEFCC/206/05/23

Date- 20/05/2023

To,

Additional Principal Chief Conservator of Forest

Ministry of Environment, Forest and Climate Change

Integrated Regional Office, East Central Region

Second Floor, Headquarter-Jharkhand State Housing Board,

Harmu Chowk, Ranchi- 834 002, Jharkhand

Sub: Six Monthly Compliance Status of Environment Clearances for Godda Thermal Power Plant at Motia, Patwa & Adjacent Villages. Godda Tehsil, Godda District in Jharkhand.

Ref: Environment Clearance Letter no: **J-13012/01/2016-IA.I (T)**, Dated: **31.08.2017** & Amendment dated 03.09.2019 & 27.02.2020.

Dear Sir,

With reference to above subject, please find enclosed herewith Six-Monthly Environment Clearances (EC) compliance status report along with Environmental monitoring results like Ambient Air Quality, Noise level, Water Quality & CSR report etc. for the period of **October'2022 to March'2023** in soft (**e-mail**).

This is for your kind information & record please.

Thanking You,

Yours faithfully,

for **Adani Power (Jharkhand) Limited**

(Santosh Kumar Singh)

Head - AESG

Encl: as above

cc:

Member Secretary

Central Pollution control Board

Parivesh Bhavan, East Arjun Nagar

New Delhi- 110 032.

Member Secretary,

Jharkhand Pollution Control Board

TA Division Building (Ground Floor), HEC,

Dhurwa, Ranchi-834 004 (JH)

The Regional Officer,

Jharkhand Pollution Control Board,

Dumka, Jharkhand

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**SIX MONTHLY COMPLIANCE REPORT OF
ENVIRONMENTAL CLEARANCE (EC)**

1600 (2×800) MW THERMAL POWER PLANT

At

**GODDA TALUKA, GODDA DISTRICT
JHARKHAND**

Submitted to:

**Integrated Regional Office, Ranchi
Ministry of Environment, Forest & Climate Change,
Central Pollution Control Board, New Delhi &
Jharkhand State Pollution Control Board, Ranchi**



Submitted By:

**Environment Management Department
Adani Power (Jharkhand) Limited
Motia, Patwa & Adjacent Village,
Godda Taluka, Godda District
Jharkhand**

PERIOD: October'2022 – March'2023

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ADANI POWER (JHARKHAND) LIMITED

Introduction

Adani Power (Jharkhand) Ltd. AP(J)L, a wholly owned company of Adani Power Limited, is developing 1600 (2x800) MW Coal-based Ultra Supercritical Thermal Power Plant at Village Motia, Patwa and adjacent villages of Godda & Poraiyahaat Blocks of Godda District in Jharkhand. The power plant is based on ultra-supercritical, energy efficient & environment friendly technology.

AP(J)L has been granted Environmental Clearances & Consent to Establish by Ministry of Environment & Forest and Jharkhand state Pollution Control Board and AP(J)L has also obtained all necessary statutory / mandatory clearance respectively.

India and Bangladesh desire to enhance traditional ties of friendship, through economic cooperation. Realizing the ever-increasing demand of electricity for the socio-economic development and progress, the Government of India (GoI) and Government of Bangladesh (GoB) have signed a Memorandum of Understanding (MoU) on 11 January 2010.

As provided in the MoU, GoB and GoI shall inter-alia undertake to encourage and facilitate joint co-operation between the parties in Power generation, transmission, energy efficiency and development of various types of renewable energy.

Accordingly, Adani Power Limited (APL) on 11.08.2015 signed a MoU with Bangladesh Power Development Board (BPDB), to develop a 2X800 MW thermal power plant on BOO basis in India and supply the entire power generated to Bangladesh Power Development Board (BPDB) through a dedicated Transmission Line.

Status of the Project:

AP(J)L has been granted Environment Clearances (EC) vide Letter no: J13012/01/2016-IA.I (T) dated: 31.08.2017 and amendment in EC vide letter dated 03.09.2019 for changing the source of water form Chir River to Ganga River. AP(J)L has also been granted amended EC vide Letter No: J-13012/01/2016-IA.I (T) dated 27.02.2020 to incorporate sector specific Special Economic Zone for Power under SL.No.7(C) of Schedule as mentioned in EIA Notification, 2006.

AP(J)L has been obtained "Consent to Operate" (CTO) from Jharkhand State Pollution Control Board vide letter no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated 27.10.2022.

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Compliance status of Environmental Clearance

1600 MW (2×800 MW) Godda Thermal Power Plant

Environment Clearance Letter no: J-13012/01/2016-IA.I (T) dated: 31.08.2017 & Subsequent Amendment Letter no. J-13012/01/2016-IA.I (T) dated 03.09.2019 and 27.02.2020.

Si. No.	Specific Conditions	Compliance Status
(i)	Total Ash and Sulphur content in the imported coal shall not exceed 25% and 0.5% respectively.	Information regarding change in Coal Source is already submitted to MoEFCC, CPCB & JSPCB for the same. Intimation letter is enclosed as Annexure-V . COD of 1 st Unit (800 MW) achieved on 00:00 Hrs of 6th April 2023 (mid night of 5th April 2023).
(ii)	Land acquisition shall be carried out by the State Govt. in accordance with Santhal Pargana Tenancy Act, 1949, Right of Fair Compensation and Transparency in the Land Acquisition, Rehabilitation Act, 2013 and other prevailing laws. Documents in support of land acquisition after completion acquisition process shall be submitted to this Ministry as well as concerned Regional Office.	Complied. Land already acquired & Land possession documents has already been submitted along with EC compliance report.
(iii)	As per the Revised Tariff Policy notified by Minister of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage treatment plant of Municipality / local / similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.	There are no STPs of municipality/local bodies within 50 KM radius from the plant site.
(iv)	Compliance of EC conditions, E(P) Act 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a qualified environment officer to be nominated by the Project Head of the company who shall be responsible for implementation and necessary compliance.	Being Complied We have already established Environment Management Department with Senior Management at Corporate level as well as at Site.
(v)	MoEF&CC Notification S.O. 3305 (E) dated 07.12.2015 and subsequent notifications issued time to time shall be implemented with respect to specific water consumption, zero liquid discharge and revised emission standards. The PM, SO ₂ , NO _x and Hg emissions shall not exceed 30 mg/Nm ³ , 100 mg/Nm ³ , 100 mg/Nm ³ and 0.03 mg/Nm ³ respectively. The specific water consumption exceed shall not exceed 2.5 m ³ /MWh and zero wastewater discharge shall be achieved.	Being complied. High efficiency Electrostatic Precipitators (ESP) are installed to meet revised emission standard of <30 mg/ Nm ³ for PM. We have already installed Wet limestone based FGD system and also provided SCR to meet standard of SO ₂ & NO _x Emission. as per MoEF&CC Notification S.O. 3305 (E) dated 07.12.2015 and subsequent notifications.

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		TPP has been designed to meet the Specific Water consumption of less than 2.5 m ³ /MW and Zero Wastewater/Zero Liquid discharge (ZLD) concept.
(vi)	MoEF&CC Notifications on Fly ash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804 (E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments shall be complied with.	Compliance assured. COD of 1 st Unit (800 MW) is achieved on 00:00 Hrs of 6th April 2023 (mid night of 5th April 2023). Compliance w.r.t Fly Ash Notification, Half yearly & Annual Ash generation and utilization will be submitted to MoEF&CC, CPCB & JSPCB along with coming reporting cycle i.e., April'2023 – September'23 and will be submitted as & when required to the concerned authorities.
(vii)	Separate Environmental Clearance may be obtained for the proposed Township as applicable under EIA notification 2006.	Separate Environment Clearance has been granted by SEIAA, Jharkhand for Residential Township vide letter No. EC/SEIAA/2017-18/2070/2017/207 dated 31/08/2018.
(viii)	Solar rooftops shall be installed in the surrounding villages as part of CSR activities.	Being complied. Solar lights being installed in surrounding villages wherever feasible through Adani Foundation as part of CSR activity. Fifteen (15) Nos. of Solar Street Lights installed in 12 remotest villages and road side points in 3 blocks namely Borio, Mandro and Sahebganj which benefiting more than 10,000 rural population.
(ix)	Skill mapping of the Project affected people (PAF) be carried out on a long-term basis for their livelihood generation. A report is to be submitted within 3 months to the Ministry from the date of issuance of environmental clearance.	Complied. Skill Mapping Report was prepared by M/s Indian Institute of Social Welfare & Business Management (IISWBM) Kolkata has already been submitted to your good office along with compliance report. Skill Development Centre's are operational and total 4600 candidates are trained under different trades viz. Welder, Fitter, Mason and Bar bender, General Duty assistant, Hospitality, Electrical, industrial Sewing Machine Operator, and Digital Literacy classes. This year i.e., F.Y 22- 23, 716 no. of trainee enrolled and benefited in various trades. Detailed CSR report is attached as Annexure – II.
(x)	Modern methods of agriculture organic forming, compost / vermiculture making and utilization, drip/direct to root irrigation to be promoted in and around the Project area.	Noted & being complied. Village level training (Theoretical & On-Field Demonstration) on Vermicomposting was conducted in 7 core, railway line and pipeline villages of Godda & Sahebganj district.

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		Adani Foundation supported farming communities by promoting production of organic manure by installation of Vermi-Compost Bag/Vermibed across the core and pipeline village. So far 700 small & marginal farmers were supported to install 457 Vermicompost units. Detailed CSR report is enclosed as Annexure- II .
(xi)	<p>While implementing CSR,</p> <ul style="list-style-type: none"> • Women empowerment is important. Therefore, proper skill based training/long term livelihood revenue generation be created for all of them. • Computer facilities may be provided in the school along with a trained computer teacher to inculcate computer skill among the youths. • Water supply provisions shall be made for all the bio-toilets under Swachh Bharat Abhiyan. • Preventive health programme may be preferred than the curative health programme such as nutrition development of small children and around the project. 	<p>Being Complied.</p> <ul style="list-style-type: none"> • Adani Foundation supported the Women Self Group- Phoolo Jhano Saksham Sakhi Mandal (PJSASM) in accomplishment of 1,16,713 Flags assigned by district administration under the National Campaign "Har Ghar Tiranga". More than 200 women earned income from Flag stitching work. • Adani Foundation in partnership with District Administration launched Gyanodaya project to promote e-learning through Smart Classes. Gyanodaya bagged "Indian Chamber Of Commerce (ICC) Social Impact Award - Promoting Education" for providing quality education in remotest and untapped villages of Godda district through smart learning among more than 8000 students of 316 government schools. • Digital Literacy classes are operational which benefited 2338 candidates. • We have constructed model bathrooms with soak pit in various villages towards creating awareness for cleanliness and hygiene by our program named "SWACCHAGRIH". • Curative health program being taken care under "SuPoshan" program. <p>Detailed CSR report is attached as Annexure - II.</p>
(xii)	Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within six months.	<p>Complied.</p> <p>Vision document has already been submitted along with compliance report.</p>
(xiii)	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and the status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	<p>Compliance assured.</p> <p>APJL is proposed to utilize the roof tops of buildings which are feasible for installation of solar panels.</p>
(xiv)	A long-term study of radio activity and heavy metals content on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity	<p>Compliance assured.</p> <p>Radioactivity testing result/report of two Coal samples (testing done by Board of Radiation and Isotope technology, Mumbai) from the source area already submitted along with EIA Report.</p>

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	and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	<p>Further, Radioactivity Test and Heavy Metal study report will be submitted during the plant operation.</p> <p>APJL have successfully completed COD of 1st Unit on 00:00 Hrs of 6th April 2023 (mid night of 5th April 2023) and so APJL proposed to long term study of radio activity and heavy metals content on coal through a reputed institute as BARC report will be submitted along with coming EC compliance report.</p> <p>The technology and monitoring instruments for an in-built continuous monitoring is not available with the suppliers in the country and is not feasible to continuous monitoring for radio activity and heavy metals in coal and fly ash.</p> <p>There is no proven technology to monitor radioactivity at plant level on continuous basis. Periodic test report will be submitted. APJL will be amend in EC condition.</p>
(xv)	Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.	<p>Complied.</p> <p>AP(J)L has already installed Online Continuous Emission Monitoring (CEMS) System (both stack) to monitor Stack Emission, & Continuous Ambient Air Quality Monitoring Stations (CAAQMS) – 3 Nos. in three directions of plant at three different locations within the plant premises (close the boundary wall) and Effluent Quality monitoring System.</p>
(xvi)	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that a particulate emission does not exceed 30 mg/Nm ³ as would be notified by the Ministry, whichever is stringent. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.	<p>Complied.</p> <p>High efficiency Electrostatic Precipitators (ESP) has been installed in each boiler to meet PM emission of less than 30 mg/Nm³.</p> <p>Dust extraction system (Cyclone followed by bag filters) in coal crusher and coal transfer area (JNTs), rain gun type dust suppression system in coal yard and dry fog type dust suppression system in belt conveyor have been installed.</p>
(xvii)	Adequate dust extraction system such as cyclones / bag filters and water spray system in dusty areas in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	<p>Complied</p> <p>Dust extraction system with Bag filter in Crusher House and wagon tippler has been installed. Pneumatic ash handling system with bag filters for ash handling & rain gun type water sprinkling system provided in Coal yard.</p>
(xviii)	Monitoring of surface water quantity and quality shall be regularly conducted and records maintained shall be submitted to the Ministry regularly. Further, monitoring system shall be	<p>Being complied.</p> <p>Baseline data was collected during EIA study & Regular monitoring of Air, Water (surface & ground) is being carried out. Environmental</p>

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	placed between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	Parameters monitoring results (including monitoring of Heavy Metals in Ground water) are being submitted periodically to RO, MoEFCC Ranchi, MS JSPCB, Ranchi & RO JSPCB, Dumka. Environmental monitoring reports are enclosed as Annexure - I .
(xix)	A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed report kept of the quantity of water harvested every year and its use.	Complied Rain Water Harvesting (RWH) implemented and photographic evidence of the same submitted to Jharkhand State Pollution Control Board vide letter no. APJL/ENV/JSPCB/CTO/22 dated 31.10.2022.
(xx)	No water bodies including natural drainage system in the area shall be distributed due to activities associated with the setting up/operation of the power plant.	Noted & compliance assured. There are some first order streams, which is altered. The drainage profile maintained from SE to NW direction along the natural drainage profile. There is an unlined (kachcha) canal passing through the site, which is diverted along the Project boundary without disturbing flow and natural drainage pattern.
(xxi)	Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Noted & agreed. Excavated Soil being utilized within the plant site to the extent possible for levelling and horticulture activities.
(xxii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.	Compliance Assured Monitoring of Mercury and other heavy metals in bottom ash is proposed during operational phase of the plant. As COD of 1 st Unit (800 MW) achieved on 00:00 Hrs of 6th April 2023 (mid night of 5th April 2023). Dry Ash collection, pneumatic conveying system and storage (silos) facilities are established. Unutilized ash will be disposed off in the ash dyke through HCSD.
(xxiii)	No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the state pollution control board and implementation done in close co-ordinate with the State Pollution Control Board.	Noted & agreed. In case of mine void filling option undertaken during operational phase of the plant, detailed study from reputed institute shall be undertaken, adequate lining will be done, and pollution control board shall be consulted.

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(xxiv)	Fugitive emission of fly ash (dry and wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided with the local Panchayats.	Compliance assured during operational phase of the plant. To control fugitive emission, Bag filters are installed at Silo. Conditioned (moist) ash loading provision is available in fly ash silo. TPP will provide suitable compensation, if any damage in future.
(xxv)	Green belt consisting of three tiers of plantation of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80%.	Being Complied. Green belt development / plantation and landscaping completed in more than 18 acre and rest area is under progress in the available areas along with project construction. In addition to plant area, over 363 households of more than 67 villages and Forest Office, Godda & Mahagama, were supported with fruit bearing saplings of Mango (3311), Lemon (330) and Guava (135) to conserve biodiversity and ecological restoration. Apart from above, avenue plantation (outside the plant premises) being done to improve the aesthetic look and environmental conservation. Our efforts are being made to develop more greenery in & around the plant with survival rate of more than 80%.
(xxvi)	Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.	Being complied
(xxvii)	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Corporate HSE policy is already placed & signed by the Chairman. IMS implementation & certification for the project will be implemented during plant operation.
(xxviii)	CSR schemes identified based on need assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.	Being Complied CSR activities are implemented in consultation and collaboration with the community & community leaders as well as District Administration. Regular community meetings are organized in all the villages to understand the issues of community. Social development activities have been carried out for Need Based families under the CSR activities by Adani Foundation .

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		Need Based Assessment Study and Development of CSR report has already been submitted along with compliance report. Detailed CSR progress report is enclosed as Annexure- II .
(xxix)	For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable external agency shall be appointed. CSR activities shall be evaluated by an independent external agency. This evaluation shall be both concurrent and final.	Social development activities have been carried out for Need Based families under the CSR activities by Adani Foundation . Evaluation of CSR activities will be done during plant operation by external agency in every three years. However, an Annual Audit Plan is in place in the company which is conducted at all the sites. An internal Audit team undertakes review of the systems, process and also verifies on ground implementation of CSR activities as well as the systems. CSR report is enclosed as Annexure- II .
S.N	General Conditions:	Compliance Status
(i)	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.	Complied. Generated effluent is being treated in ETP and treated effluent conforming to meet prescribed standard being reused within the plant. Separate Storm Water Drainage has been established.
(ii)	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.	Complied. Sewage Treatment Plants having capacity 2 x 10 m ³ /h provided and treated water is being re-use suitably within the plant premises for green belt development.
(iii)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in 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 the Regional Office of the Ministry.	Complied Fire Safety Management Plan is prepared and implemented. Fire Safety Management Plan already submitted with compliance report of October 2018 to March 2019.
(iv)	Storage facilities for auxiliary liquid fuel such as LDO/ HFO /LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	Complied. LDO has been properly stored within plant premises and license for storage of LDO has been obtained from Petroleum and Explosive Organization (PESO). DMP already submitted with compliance report of October 2018 to March 2019.
(v)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied. First aid facilities, drinking water facility, Sanitation facility, Waste water disposal, solid wastes management and primary health facilities are being ensured at site.

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(vi)	Noise levels emanating from turbine shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs / ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Necessary action/prevention measures have been taken care in design to maintain noise level within 85 dBA at source. High Noise areas are identified. Safety signage Boards has been provided with mandatory Personnel Protective Equipment (PPE's) at designated locations. A complete medical check-up with audiometric test of workers & employees is being carried out prior their joining in the organization.
(vii)	Regular monitoring of ambient air ground level concentration of SO ₂ , NO _x , PM _{2.5} and PM ₁₀ 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 limit, 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 the regional office of this ministry. The data shall also be put on the website of the company.	Being complied. Regular monitoring of ground level concentration of Ambient Air for SO ₂ , NO _x , PM _{2.5} and PM ₁₀ and Hg is being carried out and monthly reports are being submitted to the MS, SEIAA & JSPCB Ranchi & RO JSPCB, Dumka. For selection of monitoring location and monitoring frequency in consultation with JSPCB, intimation letter also been submitted to the board vide our letter no. APJL/ENV/JSPCB/RO/0308 dated 31.08.2022. Monitoring frequencies are as below: <ul style="list-style-type: none"> • Ambient Air Quality twice in a week, • Water, wastewater quality & Noise once in Month and • Soil Quality once in a season (Except Monsoon). Periodic Environmental monitoring report is enclosed, Please refer Annexure- I . EC compliance report is uploaded on the company's website, www.adanipower.com
(viii)	Utilization of 100 % Fly ash generated shall be made from 4 th year of operation. Status of implementation shall be reported to the regional office of the Ministry from time to time.	Noted & Compliance assured. Ash utilization plan/schedule has been incorporated in the EIA report. COD of 1 st Unit (800 MW) achieved on 00:00 Hrs of 6 th April 2023 (mid night of 5 th April 2023). Compliance w.r.t Fly Ash Notification will be achieve & submitted to regional office of MoEFCC, CPCB & JSPCB along with coming EC compliance report.
(ix)	Provision shall be made for housing of the construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets. Mobile STPs, safe drinking water, medical health care, crèche etc. The housing may be in the form of	Complied Required hutment, drinking water, Mobile Toilets. Mobile STPs, Safe Drinking Water & Medical health care facilities, Medical health care facilities, Fuel for cooking and other infrastructure has been arranged on temporary basis during plant construction

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	temporary structures to be removed after the construction of the project.	Local manpower is preferred during Construction phase & hence, less necessity to build housing for the construction labour.
(x)	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 environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in	Complied. Advertisement in 10 Local News Papers was published in Hindi & English. Copy of News Paper cutting already submitted along with October'2017 to March'2018 compliance report.
(xi)	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied. A copy of the Environment Clearance letter was provided to Panchayats, Zila Parisad and local Body. Acknowledgement already submitted along with compliance report. The clearance letter has been uploaded on the company website http://www.adanipower.com/
(xii)	The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutants levels namely SPM, RSPM (PM _{2.5} & PM ₁₀), SO ₂ , NO _x (ambient levels as well as stack emissions shall be displayed at a convenient location near the main gate of the company in the public domain photographs.	Being complied. Six monthly compliance status reports are being submitted to MoEF&CC, CPCB & JSPCB. Last Compliance report submitted for the period of April 2022 to September 2022 vide letter no. APL/APJL/EMD/EC/MoEFCC/214/11/22. dated; 22/11/2022. Compliance status uploaded on Company's website. Digital display board is already installed at the main gate of the power plant to display environmental monitoring parameters. Environmental monitoring report is enclosed, please refer Annexure- I and display board photograph enclosed as Annexure - III .
(xiii)	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Minister by e-mail.	Noted. Consent to Operate issued by Jharkhand State Pollution Control Board vide letter no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated 27.10.2022. 1 st Environment statement for the FY 2022 – 23, shall be submitted on or before 30 th September 2023 as per statutory time frame.

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(xiv)	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project: proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.	Being Compiled Six monthly compliance status reports are regularly submitted to MoEF&CC, CPCB & JSPCB by email. Six monthly compliance report for the period of April'2022 to September'2022 submitted to your good office vide our letter no. APL/APJL/EMD/EC/MoEF/214/11/22 dated 22.11.2022. Compliance status updated on Company's website. https://www.adanipower.com
(xv)	The progress of the project shall be submitted to CEA on six monthly basis.	Report Submission to CEA is not applicable as Project is dedicated to Bangladesh Govt. and it is not connected to Indian Grid.
(xvi)	Regional Office of the MoEF&CC will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their reference during monitoring. Criteria pollutants levels including NO _x (from stack & ambient air) shall be displayed at the main gate of the power plant.	Being Complied Copies of Environment Impact Assessment report (EIA) with Environment Management Plan already sent to Regional Office, Ranchi, vide our letter no. APJL/ENV/EC/SMR/175 /05/2018, dated-14.05.2018. Digital display board is already installed at the main gate of the power plant to display environmental monitoring parameters.
(xvii)	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These 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.	Complied Separate budget has been already allocated for Environmental protection measures. Fund for Environment management: Capital Cost: Rs. 2,225.68 Crores
(xviii)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Financial closures have been achieved and disclosed. Construction work for Site development, Boundary wall, Site office, Store and other facilities are completed. COD of 1 st Unit (800 MW) achieved on 00:00 Hrs of 6th April 2023 (mid night of 5th April 2023). Consent to Operate issued by Jharkhand State Pollution Control Board vide letter no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated 27.10.2022
(xix)	Full cooperation shall be extended to the Scientists / Officers from the Ministry / Regional Office of the Ministry at Bangalore / CPCB / SPCB who would be monitoring the compliance of environmental status.	Noted. Full co-operation shall be extended all time.

ADANI POWER (JHARKHAND) LIMITED

Conditions of EC Amendment		
(i)	Stage-I Forest Clearance for diversion of 13.3293 ha for laying pipeline shall be submitted. As per Ministry's guidelines, a formal amendment will be issued after furnishing the Stage-I Clearance.	The copy of stage -I submitted before amendment. This condition stands deleted as per amended EC Vide No. J -13012/01/2016-I.A.I (T) dated 27.02.2020.
(ii)	In line with Ministry's OM dated 11.3.2010 in regard to Oil and Gas pipelines, in a similar manner, 10 trees to be planted for every tree cut in the non-forest area.	Noted. We have consulted Divisional Forest Officer (DFO), Godda vide our letter no. AP(J)L/FC/ENV/227/05/20 date 28.05.2020 to provide plantation scheme with demand note for proposed plantation. Compliance of Stage - I has already been submitted and verified by nodal officer, MoEFCC and also issued the Stage - II FC approval on 29.01.2021.
(iii)	There will be storage reservoirs for storing 15 MCM water to cater during lean season.	Noted and agreed. Compliance assured.
(iv)	Daily quantity (Average, minimum and maximum) of fresh water withdrawn from Ganga River near Sahebganj for the Power Plant shall be recorded and data base be preserved to ensure permissible drawl of fresh water from Ganga River. The source sustainability reports for withdrawal of water from Chir River and from the Ganga River shall be placed in the public domain by the proponent, either by uploading to the PARIVESH portal or its own website.	Noted & being followed. Source sustainability reports for withdrawal of water from Chir River and from the Ganga River has been uploaded and is already available on https://parivesh.nic.in/
(v)	As per the original EC, 33% greenbelt of plant area shall be developed. In case of any shortage of land, additional land shall be acquired to meet the condition.	Noted & compliance assured. Green belt development / plantation and landscaping completed in more than 18 acre and rest area is under progress in the available spaces along with project construction. In addition to plant area, over 363 households and Forest Office, Godda & Mahagama, were supported with fruit bearing saplings of Mango (331), Lemon (330) and Guava (135) to conserve biodiversity and ecological restoration. Apart from above, avenue plantation (outside the plant premises) being done to improve the aesthetic look and environmental conservation. Our efforts are being made to develop more greenery in & around the plant with survival rate of more than 80%.
(vi)	The conditions specified in the In-Principle (Stage-I) Forest Clearance dated 28.6.2019 shall be complied with. A compliance to these conditions shall also be submitted along with Six monthly compliance report.	Compliance of conditions mentioned in the In-Principle approval (Stage-I) Forest Clearance

ADANI POWER (JHARKHAND) LIMITED

	Further, copy of Formal (Stage-II) Approval shall be submitted as and when it is obtained.	dated 28.06.2019 has been uploaded on https://parivesh.nic.in/ . Compliance report of Stage – I Forest Clearance submitted along with EC compliance report for the period of October'2019 to March'2020. Stage II has been granted vide letter no. FP/JH/Others/32772/2018/4489 dated 29.01.2021. Copy of the same already submitted vide our previous compliance report for the period of October'2020 – March'2021.
(vii)	The total project area has now been reduced to 558 acres from 1255 acres. The remaining area (if acquired) shall be developed as greenbelt.	Noted. Power plant facilities have been reworked and total project area has now been optimized to 558 acres from 1255 acres.
(viii)	All the conditions prescribed in the permission granted by National Mission for Clean Ganga (NMCG), Ministry of Water Resources, River Development & Ganga Rejuvenation vide their letters dated 8.8.2018 and 16.11.2018 for withdrawal of 36 MCM of water from River Ganga during June to December, shall be complied with.	Noted and will be complied.
Additional Conditions (EC Amendment)		
(i)	The area of 7.7 acres (originally proposed 558 acres & Notified SEZ land: 550.23 acres) shall be developed with greenbelt. Demarcation of this land with co-ordinates and progress of greenbelt is to be submitted in the compliance report.	Noted and agreed. Green belt development / plantation and landscaping started in the available spaces along with project construction and efforts will be made to develop more greenery in & around the plant with survival rate of more than 80%.
(ii)	In para 5 of amended EC dated 03.09.2019, the period of '6 months' be read as '07 months'.	Noted.

ADANI POWER (JHARKHAND) LTD.

2*800 MW Godda Thermal Power Project

Village: Motia, Dist: Godda, Jharkhand

ENVIRONMENTAL MONITORING REPORT
PERIOD: October'22 – December'22



Go Green Mechanisms Pvt. Ltd.

Head Office & Lab: Dayal Estate, National Highway
No. 8, Opp. APMC Market Gate – 1, Jetalpur,
Ahmedabad – 382426

Contact: 7069072008/10

Email: lab@gogreenmechanisms.com



REPORT TITLE

COMPANY NAME:	Adani Power (Jharkhand) Ltd.
SITE LOCATION:	2*800 MW Godda Thermal Power Plant Village: Motia, Dist: Godda, Jharkhand
MONITORING PERIOD:	October'22 to December'22
REPORT DATE:	10.01.2023
ORIGINATED BY:	Environmental Monitoring and Analytical Team Go Green Mechanisms Pvt. Ltd.
REVIEWED BY:	Amit Badlani Director, Go Green Mechanisms Pvt. Ltd.
PREPARED BY:	Go Green Mechanisms Pvt. Ltd (GGMPL) Dayal Estate, Opp AMPC Market Gate No.1, Jetalpur-382426 Ahmedabad

Disclaimer: This report has been produced by Go Green Mechanisms Pvt. Ltd with skill and care ordinarily exercised by us as Environmental Monitoring and Testing Laboratory at the time the services were performed.

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SECTION 1: FOREWORD

The protection of environment plays a crucial role in maintain the local environment quality for any industry, throughout their production. Hence compliance of the statutory requirements becomes very important to conserve the ecological balance within and surrounding the plant area. Therefore, environment protection is becoming a prerequisite for sustainable development. In line with this requirement, the management of Adani Power (Jharkhand) Ltd. has adopted a corporate responsibility of development and top priority is given for environment protection.

In order to comply with the Environment protection act, to fulfil statutory requirement and to be in tune with Environmental Preservation and sustainable development Adani Power (Jharkhand) Ltd., has retained M/S. Go Green Mechanisms Pvt. Ltd. As Environment Consultants and for various Environmental issues related to their Power Plant.

Environmental Quality Monitoring Report for the Month of October'22 to December'22 has been collected by Go Green Mechanisms Pvt. Ltd.

Note: Environmental Quality Monitoring Report for the Month of December'22 has been collected by Envirotech East Pvt. Limited.

We are thankful to Adani Power (Jharkhand) Ltd. for the opportunity provided to be associated in this endeavour.

SECTION 2: LIST OF EQUIPMENTS

The list of Equipments used in the project is delineated in the following table.

Sr. No.	Name of Equipments	Make/Model
1	Respirable Dust Sampler	Ecotech Instruments / AAS 217BL
2	PM _{2.5} Sampler	Ecotech Instruments & Eonair Technologies/AAS 127 & AQS 235
3	Gaseous Attachment with RDS	Ecotech Instruments / AAS 217BL
4	Sound Level Meter	Hemsun / HDB 2202
5	Weather Monitoring Station	Ambient Weather Station
6	Weighing Balance	Shimadzu /AUW220D
7	UV Visible Spectrophotometer	Systronics
8	Hot Air Oven	Patel Scientific Instruments
9	Filtration Assembly	Labline
10	Water Analysis Kit	Systronics
11	Bacteriological Incubator	Labline
12	Centi-micro Balance	Shimadzu /ATX224
13	Dissolved Oxygen Test Kit	Lutron
14	Autoclave	Patel Scientific Instruments
15	Laminar Air Flow	Labline
16	Muffle Furnace	Patel Scientific Instruments
17	Flame Photometer	Systronics /128
18	Digital colony counter	Labline
19	Microscope	Patel Scientific Instruments
20	Orbital Shaker	Labline
21	Centrifuge	Bio Lab
22	Simple Distillation Assembly	Labline
23	ICP-OES/AES	Thermo Fisher Scientific /iCAP 7400 SERIES
24	AAS	Thermo Fisher Scientific / AA 303
25	Ion Chromatography	Metrohm Herisau / 1.925.0020

SECTION 3: LIST OF PROJECT PERSONNEL

Sr. No.	Name	Qualification	Experience (Yrs)	Designation
1.	Amit Badlani	B.E. (Chemical) M.S.(Energy & Environmental Technology) M.S. (Pollution Control)	17 Yrs	Managing Director
2.	R.K.Pandey	B.Sc. Biology	16 Yrs	Project In-charge
3.	Payal Patel	M Sc. (Env. Sci.)	06 Yrs	Lab Manager
4.	Yash Goswami	Dip. Env. Engineer	11 Yrs	Field Operation - Manger
5.	Tantan Kumar	M Sc. (Env. Mgmt)	04 Yrs	Sr. Chemist
6.	Pooja Parekh	B.Sc. (Microbiology) & DMLT	01 Yr 08 Month	Lab Chemist
7.	Chandan Kumar	B.Sc. Chemistry	02 Yrs	Field Assistant

SECTION 4: EXECUTIVE SUMMARY

Adani Power (Jharkhand) Limited has undertaken the task of preparing EMP report for its 1600 (2x800) MW Godda Thermal Power Plant & Residential Township which is within the premises of TPP.

M/s. Go Green Mechanisms Private Limited, got the opportunity to prepare the Environmental monitoring Data on the basis of actual field monitoring with respect to Group I Parameters I.e. Air, Water, Soil, Noise & Meteorological on behalf of HTG Engineering Pvt. Ltd.

A Meteorological station was set up on the terrace of "Hostel Block" & Micrometeorological parameters like Ambient Temperature, Relative Humidity, Wind direction, Wind Speed, Rain fall & Barometric Pressure etc. were recorded on hourly basis during the study period.

On the basis of wind direction pattern, the three locations of AAQM were selected. The concentration of gaseous pollutants, PM_{2.5} were sampled and analysed for compliance to GSR 826(E) vide Notification Dated 16/11/2009.

Four numbers of Ground water samples, two numbers of Effluent water samples, one number of Surface water sample were collected to understand the overall water quality of the project area. The water parameters were sampled and analysed to check for compliance to the specifications of (IS 10500:2012 & I 2296:1982 Inland surface water Class C).

The noise level was monitored at 10 locations on Day & Night time basis, monthly as per IS 9989: RA 2001.

SECTION 5: CONCEPTS & METHODOLOGY

5.1 METHODOLOGY

In the present study the following are the standard methods used for collection, analysis & interpretation of data:

AAQM Sampling & analysis: "Indian Standards (IS 5182)", "Guidelines for the measurement of Ambient Air Pollutants, Vol-I, CPCB" & "USEPA" methods were used for Ambient Air sampling and analysis to study the present pollution load around the Proposed Project location.

Parameters of AAQM	Standard Methods	Analytical Instruments
PM ₁₀	IS 5182 (P-23): RL 2012	Weighing Balance
PM _{2.5}	GGMPL/SOP/AA/60	Weighing Balance
Oxides of Nitrogen(NO _x)	IS 5182 (P-6):2006	Spectrophotometer
Oxides of Sulphur(SO ₂)	IS 5182 (P-2):2009	Spectrophotometer
Mercury	Method IO 3.4:1999	ICP-OES (Hydride Generator)

Water Sampling & analysis: Similarly, "Indian Standards (IS 3025)", "USEPA" and "APHA 23rd Edition were used for water sample collection and analysis.

Parameters of Water Samples	Standard Methods	Analytical Instruments
Taste	IS 3025 (Pt 08): RA 2006	-
Turbidity	APHA 23rd Edn 2017 2130 B	Turbidity Meter
Total Dissolve Solid	APHA 23rd Edn 2017 2540 C	Hot air Oven
Boron(B)	APHA 23rd Edn 2017 3120 B	ICP-OES
Calcium(Ca)	APHA 23rd Edn 2017 3500 Ca B	-
Chloride(Cl)	IS 3025 (Pt 32): RA 2007	-
Fluoride(F)	APHA 23rd Edn 2017 4500 F D	Spectrophotometer
Residual Chlorine	APHA 23rd Edn 2017 4500 Cl B	Chlorine kit
Nitrate (NO ₃)	IS 3025 (Pt 34): RA 2009	Spectrophotometer
Phenolic Compounds	IS 3025 (Pt 43): RA 2003	Spectrophotometer
Sulphate (SO ₄)	APHA 23rd Edn 2017 4500 SO ₄ E	Spectrophotometer
Total hardness (CaCO ₃)	APHA 23rd Edn 2017 2340 C	-
Cyanide (CN)	GGMPL/SOP/W/43: 2020	Ion Chromatography
Selenium (Se)	APHA 23 rd Edn 2017 3120 B	ICP-OES
pH	IS 3025 (Pt 11): RA 2006	pH Meter
Colour	IS 3025 (Pt 04): RA 2002	-
Odour	IS 3025 (Pt 05): RA 2006	-
Alkalinity	APHA 23rd Edn 2017 2320 B	-
Temperature	APHA 23rd Edn 2017 2550 B	Thermometer
Magnesium (Mg)	APHA 23rd Edn 2017 3500 Mg B	ICP-OES
Copper (Cu)	APHA 23rd Edn 2017 3120 B	ICP-OES
Iron (Fe)	APHA 23rd Edn 2017 3120 Fe B	ICP-OES

Manganese (Mn)	APHA 23rd Edn 2017 3120 B	ICP-OES
Mercury (Hg)	APHA 23rd Edn 2017 3112 B	ICP-OES (Hydride Generator)
Lead (Pb)	APHA 23rd Edn 2017 3120 B	ICP-OES
Arsenic (As)	APHA 23rd Edn 2017 3120 B	ICP-OES (Hydride Generator)
Cadmium (Cd)	APHA 23rd Edn 2017 3120 B	ICP-OES
Zinc (Zn)	APHA 23rd Edn 2017 3120B	ICP-OES
Hexavalent Chromium	APHA 23rd Edn 2017 3500 Cr B	Spectrophotometer
Detergent	Annex K of IS 13428	Gas Stripping apparatus/ Spectrophotometer
Aluminum	IS 3025 (Pt 55): RA 2009	ICP-OES
E. Coli	IS 1622-1981: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow
Total Coliform	IS 1622: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow

Noise Level Monitoring: "Protocol for Ambient Level Noise Monitoring, IS 9989: RA 2001" was followed to monitor the Ambient Noise level surrounding the Project Site.

Parameters	Standard Methods	Analytical Instruments
Leq	IS 9989: RA 2001	Noise Level Meter

Weather Monitoring: "EPA-454/R-99-005, February 2000" was followed for micro-meteorological data collection result interpretation.

Parameters	Standard Methods	Analytical Instruments	Make/Model
Air Temperature	GGMPL/SOP/MP/01:2020	Digital sensor	Ambient Weather Station
Relative Humidity	GGMPL/SOP/MP/01:2020	Digital Sensor(Hygrometer)	
Wind Speed	GGMPL/SOP/MP/01:2020	3 Cup anemometer	
Wind Direction	GGMPL/SOP/MP/01:2020	Hall Effect (Wind Vane)	
Rain Fall	GGMPL/SOP/MP/01:2020	Tipping Bucket	

A brief account of the methodologies and matrices followed in the present study is given under different headings. All the methods were structured for the identification, collection and organization of environmental impacts data. The information, thus gathered, had been analyzed and presented in the form of a number of visual formats for easy interpretation and Marision making.

SECTION 6: PLAN FOR SAMPLING LOCATIONS

Site selection criteria play an important role in the initiation of “baseline data generation” as it provides an outlook on the type of environmental compliance and management to be adopted by the project proponent. The locations were selected on the basis of “joint site survey”, “examination of toposheet of the project area”, “secondary micro-meteorological data analysis” and “availability of resources” for ambient air quality monitoring & micro-meteorological monitoring.

A synopsis about the locations is as follows:

AAQM Locations	
Code	Name of Location
A1	Nr. Motia Village
A2	Nr. Mali Village
A3	Nr. Nayabad Village

Met Data Station	
Code	Name of Location
M1	Hostel Block

Water Samples	
Code	Name of Location
G/W-1	Motia Village
G/W-2	Mali Village
G/W-3	Nayabad Village
G/W-4	Patwa Village
E/W-1	STP Outlet plant
E/W-2	STP Outlet township
S/W-1	Ganga river

Noise Monitoring Locations	
Code	Name of Location
N1	At Motia Village
N2	At Mali Village
N3	At Nayabad Village
N4	At Patwa Village
N5	Nr. Adani Office
N6	Nr. BTG Area (U/C)
N7	Nr. CT Area (U/C)
N8	Nr. RW Reservoir (U/C)
N9	Nr. STP (In township)
N10	Nr. Temple (In township)

SECTION 7: METEOROLOGICAL DATA

Weather monitoring would help in keeping track of different parameters like temperature, humidity, rainfall, wind direction, wind speed & barometric pressure. Real time meteorological data is used to support a number of programs including public aviation, agricultural activity, disaster management etc.

In the present study we monitored the "ambient temperature, relative humidity, wind speed, wind direction, barometric pressure, rainfall etc.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.



Figure 1: Weather Monitoring Station at Hostel B

ADANI POWER (JHARKHAND) LIMITED
2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand
Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

October'-:2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg) (Average)	Rainfall(mm) Total
	Max	Min	Avg	Max	Min	Avg	Max	Avg			
01.10.2022	34.2	25.7	29.6	89.0	56.0	77.5	6.1	1.2	SE	745.0	0.0
02.10.2022	32.4	23.1	27.6	93.0	64.0	83.8	8.7	1.4	SE	744.7	23.6
03.10.2022	26.3	26.0	26.2	88.0	86.0	86.7	1.0	0.7	SE	745.1	0.0
04.10.2022	30.2	23.9	26.7	92.0	76.0	87.1	7.7	1.7	NE	747.1	19.3
05.10.2022	32.3	24.5	27.3	93.0	62.0	82.0	10.2	1.8	N	749.1	1.0
06.10.2022	31.1	25.2	27.7	91.0	65.0	81.7	6.6	1.9	ESE	749.3	4.6
07.10.2022	33.1	24.9	29.3	91.0	59.0	75.1	5.6	2.1	ESE	749.1	0.0
08.10.2022	33.7	25.6	28.9	91.0	61.0	77.8	8.2	1.6	E	749.3	0.5
09.10.2022	34.0	25.4	29.2	89.0	57.0	74.7	9.7	2.7	SSE	7450.1	0.0
10.10.2022	34.9	23.4	29.3	91.0	57.0	75.0	7.1	2.1	SE	7450.2	11.2
11.10.2022	32.2	22.5	26.2	94.0	66.0	84.9	9.2	1.7	ENE	748.8	47.0
12.10.2022	29.4	23.4	25.6	93.0	73.0	87.3	4.6	1.0	SE	749.2	5.8
13.10.2022	28.6	24.1	25.9	93.0	76.0	87.2	2.6	0.8	ESE	749.6	0.0
14.10.2022	31.0	23.9	26.1	93.0	63.0	84.5	3.1	0.9	ESE	749.6	0.0
15.10.2022	31.1	23.7	26.3	90.0	58.0	77.6	4.6	1.0	SE	749.8	0.0
16.10.2022	30.5	24.0	27.0	88.0	47.0	70.8	8.7	1.5	E	750.9	0.0
17.10.2022	29.9	22.6	25.5	84.0	58.0	74.2	4.6	1.4	ESE	751.3	0.0
18.10.2022	30.2	23.7	26.2	84.0	60.0	47.4	2	0.9	SE	750.0	0.0
19.10.2022	30.6	23.0	25.7	86.0	52.0	47.7	5.6	0.9	ENE	750.7	0.0
20.10.2022	30.3	21.4	26.4	88.0	60.0	72.3	3.6	0.9	SE	751.4	0.0
21.10.2022	30.6	22.2	25.1	89.0	57.0	78.2	5.1	1.0	E	752.5	0.0
22.10.2022	30.5	21.3	25.9	88.0	59.0	73.7	4.1	1.2	ESE	751.9	0.0
23.10.2022	31.3	22.1	25.7	84.0	57.0	71.5	7.1	1.3	NNE	750.9	0.0
24.10.2022	30.1	22.0	25.4	89.0	59.0	73.8	9.2	2.3	NNE	746.0	0.0
25.10.2022	30.6	19.8	23.6	90.0	58.0	77.1	9.2	2.2	SW	747.1	0.0
26.10.2022	30.4	20.6	24.7	82.0	49.0	68.2	5.1	1.6	SE	750.8	0.0
27.10.2022	31.3	20.0	24.4	83.0	37.0	67.1	3.6	1.1	SE	751.2	0.0
28.10.2022	30.2	21.4	25.0	88.0	51.0	76.5	4.8	1.2	SE	750.4	0.0
29.10.2022	28.9	22.6	24.6	78.0	63.0	73.5	2.6	1.1	SE	750.9	0.0
30.10.2022	26.6	20.0	22.5	86.0	67.0	78.1	2.0	0.7	ESE	750.6	0.0
31.10.2022	23.1	21.3	22	80.0	77.0	77.9	1.5	0.9	ESE	751.0	0

Total Rainfall in mm	113.0
Rainfall From 01.01.2022	823.0
Rainfall From 01.06.2022	646.5

ADANI POWER (JHARKHAND) LIMITED
2 x 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand
Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

November'-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm)
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.11.2022	30.5	22.3	26.5	74.0	51.0	62.9	5.1	1.8	WSW	751.1	0.0
02.11.2022	30.8	20.1	24.6	80.0	43.0	65.8	4.1	1.2	SE	750.2	0.0
03.11.2022	30.4	19.3	24.6	81.0	42.0	63.8	5.6	1.4	SE	750.1	0.0
04.11.2022	30.7	18.5	25.7	85.0	48.0	62.8	3.6	1.1	SE	751.3	0.0
05.11.2022	30.7	17.8	24.0	88.0	50.0	71.3	6.1	1.4	ESE	752.5	0.0
06.11.2022	30.3	19.0	24.2	88.0	51.0	71.5	3.6	1.0	SE	752.4	0.0
07.11.2022	30.8	19.5	24.3	86.0	53.0	71.0	5.1	1.2	SE	752.2	0.0
08.11.2022	30.5	19.9	25.7	85.0	47.0	67.2	3.6	0.9	ESE	752.2	0.0
09.11.2022	30.5	19.6	24.7	90.0	42.0	69.6	3.6	0.8	E	752.4	0.0
10.11.2022	29.9	18.3	24.5	88.0	55.0	64.6	5.1	1.3	SE	752.2	0.0
11.11.2022	29.2	19.3	23.8	85.0	41.0	71.6	6.1	1.3	SSE	752.2	0.0
12.11.2022	28.4	19.0	22.3	83.0	38.0	63.6	9.7	2.3	SE	752.1	0.0
13.11.2022	27.7	16.8	21.5	77.0	39.0	59.7	6.1	1.6	SSE	752.1	0.0
14.11.2022	28.0	15.0	21.0	80.0	33.0	61.8	4.1	1.3	SE	752.6	0.0
15.11.2022	28.3	15.5	22.7	78.0	48.0	57.5	4.6	1.4	SE	751.3	0.0
16.11.2022	28.1	15.5	21.8	80.0	44.0	64.6	4.1	1.2	SE	750.8	0.0
17.11.2022	28.5	16.4	23.8	75.0	36.0	59.6	5.1	1.5	SSE	750.8	0.0
18.11.2022	27.6	17.0	21.4	80.0	36.0	60.5	5.6	1.3	ESE	752.4	0.0
19.11.2022	26.8	15.0	20.5	75.0	45.0	60.2	5.1	1.6	SE	752.4	0.0
20.11.2022	26.4	15.5	20.4	79.0	50.0	66.4	4.1	1.5	SE	751.0	0.0
21.11.2022	27.6	15.1	20.9	83.0	45.0	64.9	4.1	1.3	SE	750.5	0.0
22.11.2022	27.1	14.8	21.9	79.0	47.0	62.4	4.1	1.5	SSE	750.8	0.0
23.11.2022	27.5	15.9	20.9	77.0	41.0	63.2	6.1	1.8	SSE	751.3	0.0
24.11.2022	26.8	15.4	20.5	77.0	42.0	62.5	4.6	1.0	SE	752.7	0.0
25.11.2022	27.3	14.6	20.6	81.0	51.0	67.4	4.1	1.6	SE	753.2	0.0
26.11.2022	27.6	15.8	21.4	81.0	51.0	64.6	4.1	1.4	ESE	752.1	0.0
27.11.2022	26.6	16.0	20.8	86.0	53.0	72.1	2.6	1.1	E	750.8	0.0
28.11.2022	27.3	15.8	21.1	89.0	50.0	71.3	4.1	1.2	ESE	751.7	0.0
29.11.2022	27.7	15.9	20.4	91.0	53.0	76.3	5.1	1.6	SE	753.1	0.0
30.11.2022	26.7	15.3	20.4	87.0	56.0	73.7	4.6	1.3	SE	752.1	0.0

Total Rainfall in mm	0.0
Rainfall From 01.01.2022	823.0
Rainfall From 01.06.2022	646.5

ADANI POWER (JHARKHAND) LIMITED
2 x 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand
Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

December'-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg) (Average)	Rainfall(mm) Total
	Max	Min	Avg	Max	Min	Avg	Max	Avg			
01.12.2022											
02.12.2022	26.0	16.6	22	76.0	40.0	57.1	5.1	1.4	W	753.2	0.0
03.12.2022	26.5	13.4	20.6	86.0	44.0	60.8	3.1	1.1	ESE	753.1	0.0
04.12.2022	25.4	13.4	18.9	85.0	43.0	65.9	4.1	1.3	ESE	753.8	0.0
05.12.2022	26.0	13.5	17.5	85.0	55.0	74.3	5.6	1.4	ESE	754.5	0.0
06.12.2022	25.3	14.2	20.3	87.0	52.0	67.8	5.6	1.7	SSW	753.2	0.0
07.12.2022	24.7	14.0	18.6	84.0	47.0	69.1	5.1	1.4	ESE	753.2	0.0
08.12.2022	23.6	13.0	16.5	84.0	56.0	73.8	3.1	1.2	ESE	753.9	0.0
09.12.2022	25.9	13.0	20.6	83.0	50.0	66.5	4.6	1.1	NNE	752.9	0.0
10.12.2022	25.1	14.1	19.2	88.0	56.0	72.2	3.6	1.1	ESE	753.3	0.0
11.12.2022	25.8	14.6	17.7	85.0	55.0	74.9	3.6	1.4	ESE	753.7	0.0
12.12.2022	26.5	14.1	21.5	89.0	55.0	70.3	4.1	1.0	ESE	752.4	0.0
13.12.2022	27.2	14.9	20.3	88.0	43.0	68.4	7.1	1.7	ESE	752.7	0.0
14.12.2022	25.8	15.1	19.5	80.0	41.0	64.1	5.6	1.7	ESE	753.3	0.0
15.12.2022	24.2	13.4	16.7	80.0	39.0	67.6	6.6	1.8	SE	752.3	0.0
16.12.2022	23.7	12.2	18.7	73.0	40.0	55.5	4.1	1.4	SE	752.7	0.0
17.12.2022	22.8	11.3	14.8	81.0	57.0	73.7	3.6	1.4	ESE	753.8	0.0
18.12.2022	24.6	14.0	20.0	84.0	62.0	73.0	5.1	1.5	ESE	753.1	0.0
19.12.2022	24.4	14.6	19.2	84.0	62.0	74.1	5.6	1.4	SE	752.6	0.0
20.12.2022	24.2	14.5	17.3	85.0	61.0	76.6	2.6	1.4	SE	752.6	0.0
21.12.2022	24.5	13.5	20.0	87.0	52.0	70.6	5.6	1.4	ESE	752.7	0.0
22.12.2022	24.7	13.4	17.7	91.0	44.0	73.6	4.6	1.4	ESE	752.7	0.0
23.12.2022	26.2	11.7	18.2	86.0	42.0	66.5	6.1	1.4	SE	752.9	0.0
24.12.2022	26.4	12.9	18.6	87.0	39.0	66.9	4.1	0.9	ESE	752.9	0.0
25.12.2022	25.4	14.4	19.4	81.0	45.0	67.4	4.1	0.7	N	753.4	0.0
26.12.2022	24.7	15.9	18.4	90.0	58.0	75.9	3.1	0.5	NE	755.0	4.3
27.12.2022	24.0	15.4	19.7	92.0	54.0	70.5	4.6	0.9	ENE	753.9	0.0
28.12.2022	21.0	11.6	16.0	87.0	52.0	72.4	6.1	1.1	SE	755.6	0.0
29.12.2022	22.2	9.1	15.3	91.0	51.0	74.7	3.1	0.7	NNE	756.8	0.0
30.12.2022	21.4	10.1	15.5	90.0	57.0	75.9	3.6	0.7	ESE	757.1	0.0
31.12.2022	23.1	11.1	16.4	90	59	77.6	3.1	0.9	ESE	756.3	0
Total Rainfall in mm											4.3
Rainfall From 01.01.2022											827.3
Rainfall From 01.06.2022											650.8

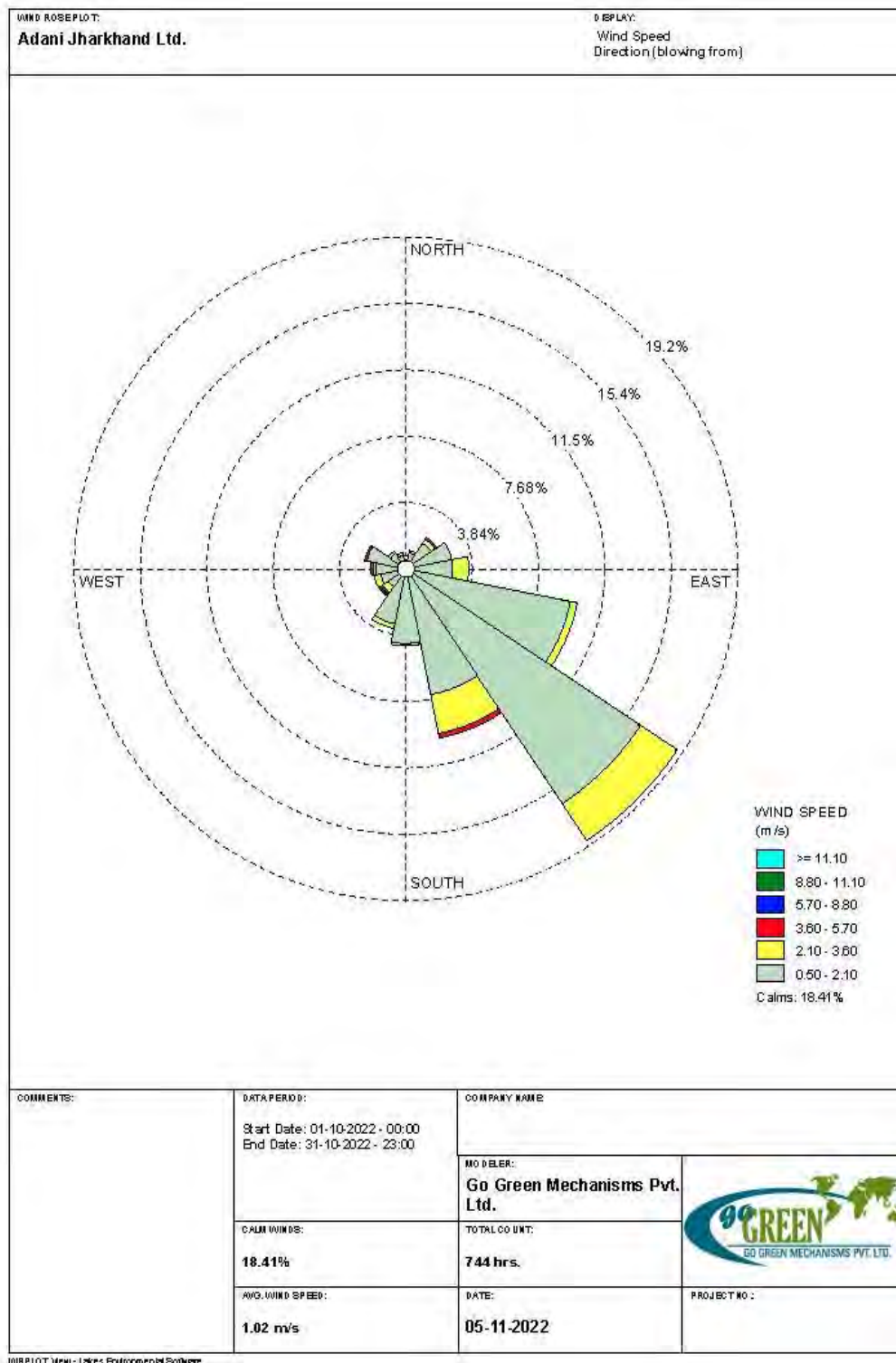


Figure 2: Windrose diagram for the month of Oct'22

It is observed from the windrose diagram for the month of Oct'22 the predominant wind direction is SE.

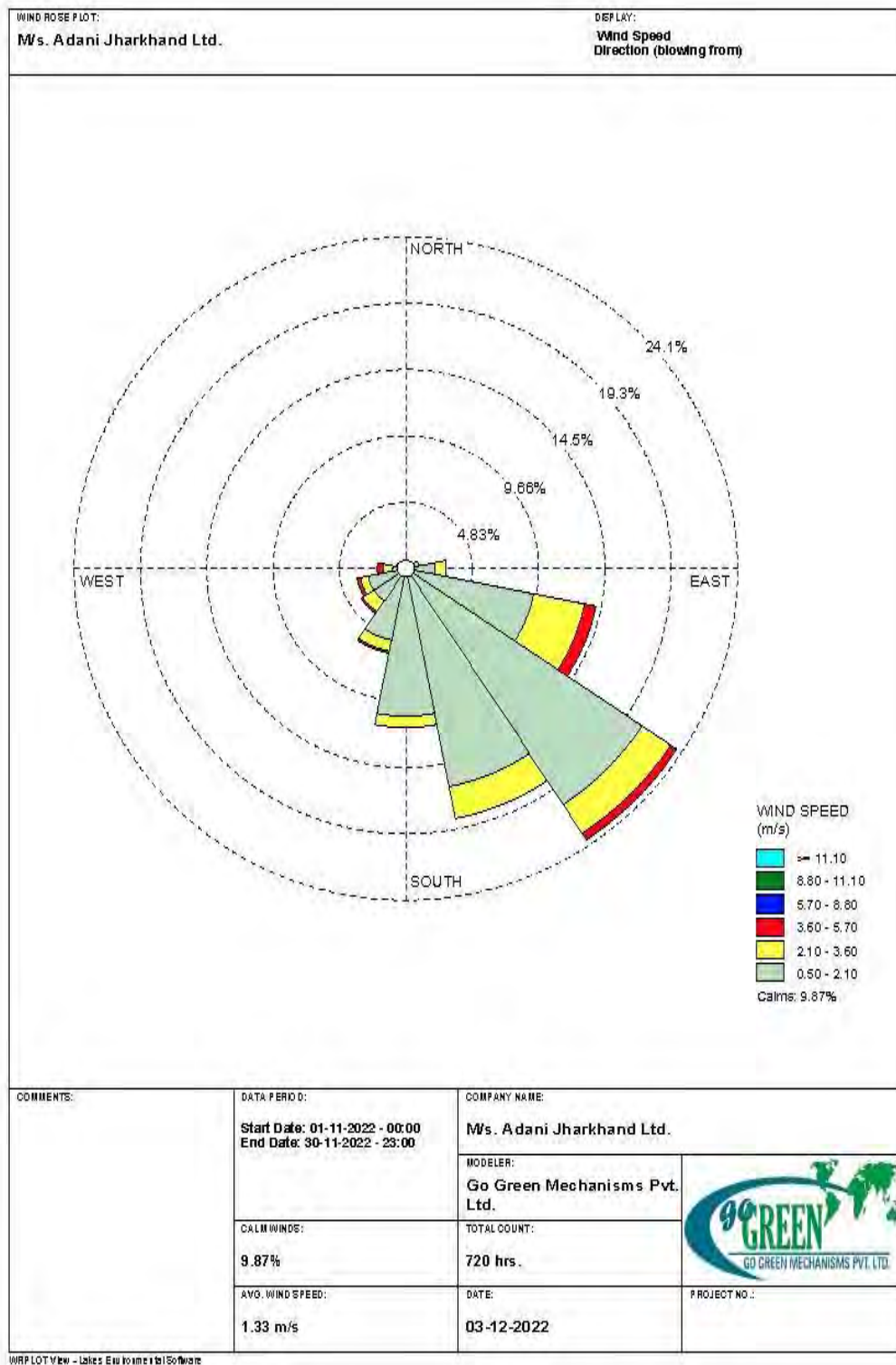


Figure 3: Windrose diagram for the month of Nov'22

It is observed from the Windrose diagram for the month of Nov'22 the predominant wind direction is SE.

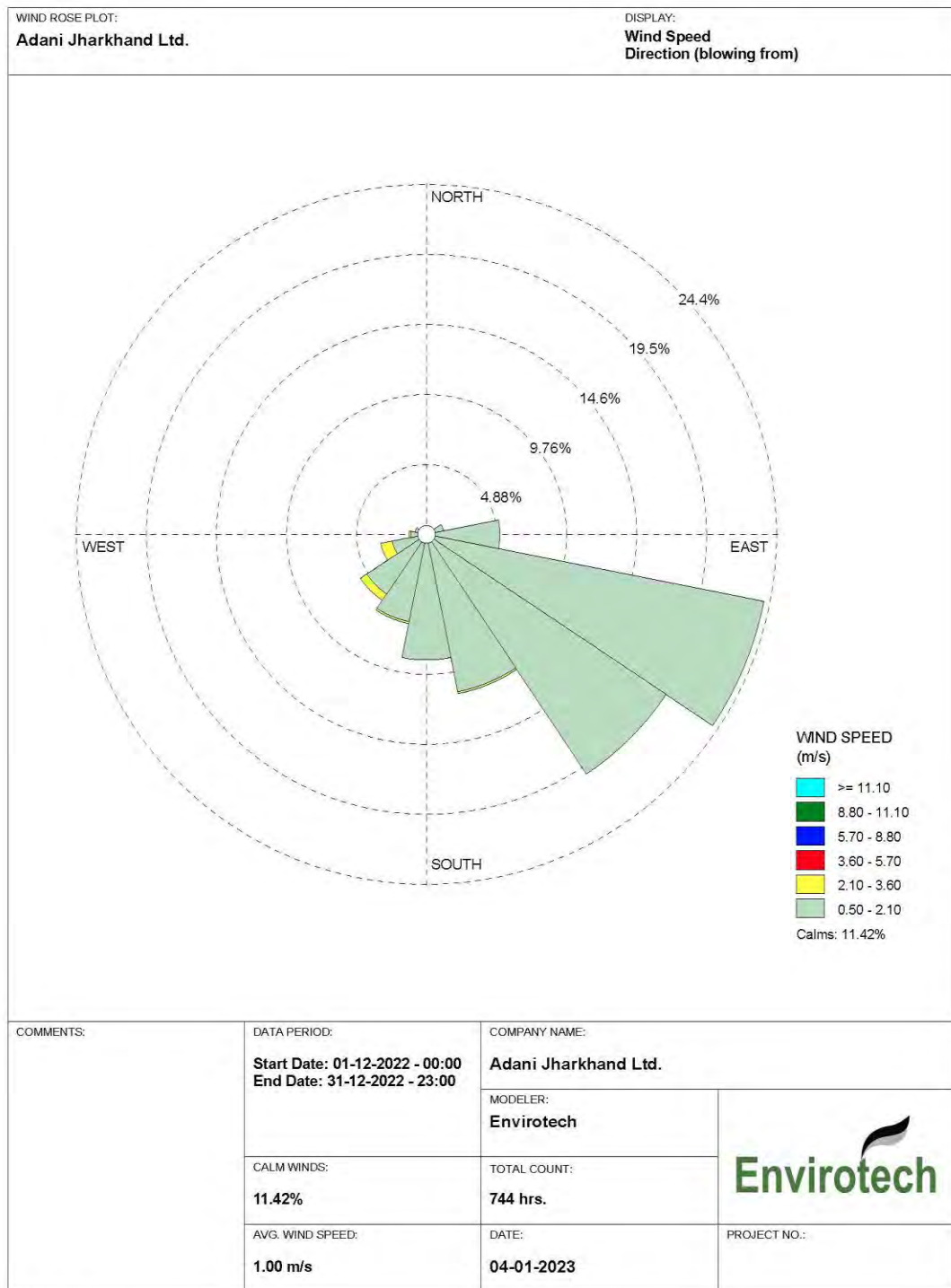


Figure 4: Windrose diagram for the month of Dec'22

It is observed from the windrose diagram for the month of Dec'22 the predominant wind direction is ESE.

SECTION 8: AMBIENT AIR MONITORING REPORT

8.1 CONCEPT & SCOPE

The Ambient Air monitoring encompasses the results and statistical evaluation of the data monitored at three different locations.

Different parameters like PM₁₀, PM_{2.5}, Oxides of Sulphur, Oxides of Nitrogen and Mercury are monitored for representing the ambient air quality within the study area.

8.2 FREQUENCY OF SAMPLING

The frequency of the sampling for AAQM was as follows:

PARAMETERS	FREQUENCY OF EACH LOCATION
PM ₁₀ , PM _{2.5} , Oxides of Sulphur, Oxides of Nitrogen	Twice in a week
Mercury	Once in a month

8.3 SAMPLING DURATION AS PER NAAQMs 2009

Sr. No.	Parameters	Sampling Duration (Hr.)
1	Particulate Matter (PM ₁₀)	24
2	Particulate Matter (PM _{2.5})	24
3	Oxides of Sulphur (SO ₂)	24
4	Oxides of Nitrogen (NO _x)	24
5	Mercury	-

8.4 AAQM METHODOLOGY

PARAMETERS	METHODOLOGY/PRINCIPLE
Particulate Matter (PM ₁₀)	<p>Air is drawn through a size-selective inlet and through a 20.3 X 25.4 cm (8 X 10 in) filter at a flow rate, which is typically 1132 L/min. Particles with aerodynamic diameter less than the cut-point of the inlet are collected, by the filter. The mass of these particles is determined by the difference in filter weights prior to and after sampling. The concentration of PM₁₀ in the designated size range is calculated by dividing the weight gain of the filter by the volume of air sampled.</p>
Particulate Matter (PM _{2.5})	<p>An electrically powered air sampler draws ambient air at a constant volumetric flow rate (16.7 lpm) maintained by a mass flow / volumetric flow controller coupled to a microprocessor into specially designed inertial particle-size separator (i.e. cyclones or impactors) where the suspended particulate matter in the PM_{2.5} size ranges is separated for collection on a 47 mm polytetrafluoroethylene (PTFE) filter over a specified sampling period. Each filter is weighed before and after sample collection to determine the net gain due to the particulate matter. The mass concentration in the ambient air is computed as the total mass of collected particles in the PM_{2.5} size ranges divided by the actual volume of air sampled, and is expressed in $\mu\text{g}/\text{m}^3$. The microprocessor reads averages and stores five-minute averages of ambient temperature, ambient pressure, filter temperature and volumetric flow rate.</p>
Sulphur Dioxide (SO ₂)	<p>Sulphur dioxide from air is absorbed in a solution of potassium tetrachloromercurate (TCM). The impingers setup for the absorbance of Sulphur Dioxide from air is shown in Figure 15. A dichlorosulphitomercurate complex, which resists oxidation by the oxygen in the air, is formed. Once formed, this complex is stable to strong oxidants such as ozone and oxides of nitrogen and therefore, the absorber solution may be stored for some time prior to analysis. The complex is made to react with para-rosaniline and formaldehyde to form the intensely coloured pararosaniline methylsulphonic acid. The absorbance of the solution is measured by means of a suitable spectrophotometer.</p>
Nitrogen Dioxide	<p>Ambient nitrogen dioxide (NO₂) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO₂) produced during sampling is determined colorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine dihydrochloride (NEDA) and measuring the absorbance of the highly coloured azo-dye at 540 nm.</p>



Figure 5: Ambient air Monitoring Nr. Mali Village



Figure 6: Ambient air Monitoring Nr. Motia Village

8.5 ANALYTICAL RESULTS

Results & statistical calculations for Location- A1:

Name of Location (A1)		Nr. Motia Village			
Sr. No.	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³
GSR 826 (E)		100	60	80	80
1.	03.10.2022	36.7	17.5	7.0	10.1
2.	06.10.2022	57.2	27.1	7.6	11.3
3.	10.10.2022	27.2	14.2	5.1	7.2
4.	13.10.2022	63.3	30.0	8.4	12.1
5.	17.10.2022	65.3	29.6	7.7	11.9
6.	20.10.2022	56.8	26.2	6.8	9.5
7.	25.10.2022	64.2	31.2	8.3	12.6
8.	28.10.2022	59.4	27.9	8.0	13.1
9.	01.11.2022	63.7	31.7	7.8	12.1
10.	04.11.2022	60.2	28.3	7.2	11.3
11.	07.11.2022	67.2	32.5	9.2	13.3
12.	10.11.2022	59.4	29.6	7.1	10.3
13.	14.11.2022	61.8	30.4	7.9	11.9
14.	17.11.2022	63.8	31.2	8.6	13.6
15.	21.11.2022	68.4	33.7	8.9	13.9
16.	24.11.2022	71.0	35.4	8.5	12.4
17.	28.11.2022	65.1	30.0	7.4	11.0
18.	02.12.2022	62.3	30.2	9.4	12.3
19.	06.12.2022	68.3	33.7	8.0	13.2
20.	09.12.2022	68.2	33.2	8.3	14.0
21.	13.12.2022	61.2	30.0	8.5	12.4
22.	16.12.2022	66.3	30.5	7.1	11.5
23.	20.12.2022	64.2	31.7	9.0	13.4
24.	23.12.2022	70.1	34.2	10.0	15.1
25.	27.12.2022	53.5	26.1	8.2	14.3
26.	30.12.2022	67.3	27.4	7.9	13.6

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	27.2	14.2	5.1	7.2
Max Concentration	71.0	35.4	10.0	15.1
Average	61.2	29.4	8.0	12.2

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Results & statistical calculations for Location- A2:

Name of Location (A2)		Nr. Mali Village			
Sr. No.	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³
GSR 826 (E)		100	60	80	80
1.	03.10.2022	40.1	18.7	6.9	9.8
2.	06.10.2022	58.1	26.7	8.1	11.6
3.	10.10.2022	23.4	11.7	5.0	7.5
4.	13.10.2022	65.2	31.7	8.7	12.9
5.	17.10.2022	60.9	28.3	9.1	13.6
6.	20.10.2022	57.0	25.8	7.3	10.6
7.	25.10.2022	67.0	32.1	8.5	11.5
8.	28.10.2022	61.2	28.7	75.0	10.8
9.	01.11.2022	59.1	29.2	7.0	10.5
10.	04.11.2022	64.7	30.4	7.3	11.1
11.	07.11.2022	65.2	31.6	8.1	12.2
12.	10.11.2022	62.3	28.7	8.2	13.0
13.	14.11.2022	57.8	26.7	6.8	10.2
14.	17.11.2022	67.9	32.9	9.1	14.0
15.	21.11.2022	66.5	30.5	9.3	13.7
16.	24.11.2022	63.2	31.9	8.0	12.6
17.	28.11.2022	59.5	27.5	6.8	10.8
18.	02.12.2022	65.3	32.3	8.1	12.5
19.	06.12.2022	60.2	29.4	7.7	11.6
20.	09.12.2022	63.8	31.4	8.4	13.0
21.	13.12.2022	59.7	28.6	6.8	10.9
22.	16.12.2022	66.8	35.0	10.1	15.4
23.	20.12.2022	61.7	30.8	9.3	14.8
24.	23.12.2022	64.3	32.4	8.7	13.7
25.	27.12.2022	53.2	25.4	6.9	12.1
26.	30.12.2022	66.7	32.0	9.8	14.5

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	23.4	11.7	5.0	7.5
Max Concentration	67.9	35.0	75.0	15.4
Average	60.0	28.9	10.6	12.0

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

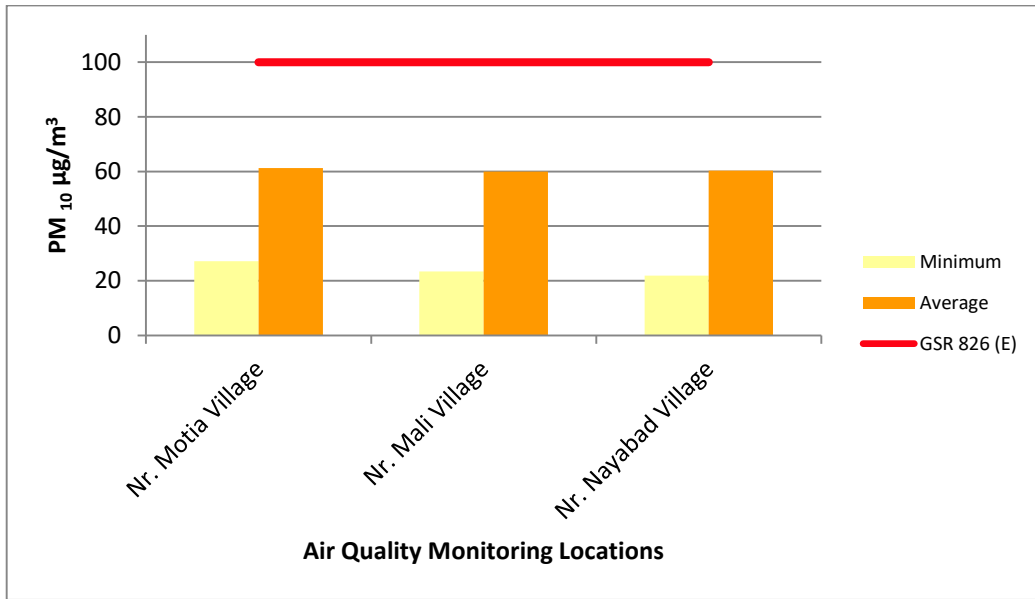
Results & statistical calculations for Location- A3:

Name of Location (A3)		Nr. Nayabad Village			
Sr. No.	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³
GSR 826 (E)		100	60	80	80
1.	03.10.2022	38.5	18.5	7.1	10.5
2.	06.10.2022	51.3	25.0	7.4	10.7
3.	10.10.2022	21.9	12.7	5.4	6.8
4.	13.10.2022	59.3	28.4	8.0	12.4
5.	17.10.2022	67.2	31.9	8.2	12.3
6.	20.10.2022	63.7	30.9	7.8	13.3
7.	25.10.2022	68.2	32.7	8.8	13.8
8.	28.10.2022	59.8	28.1	8.6	14.0
9.	01.11.2022	59.1	29.2	7.0	10.5
10.	04.11.2022	64.7	30.4	7.3	11.1
11.	07.11.2022	65.2	31.6	8.1	12.2
12.	10.11.2022	62.3	28.7	8.2	13.0
13.	14.11.2022	57.8	26.7	6.8	10.2
14.	17.11.2022	67.9	32.9	9.1	14.0
15.	21.11.2022	66.5	30.5	9.3	13.7
16.	24.11.2022	63.2	31.9	8.0	12.6
17.	28.11.2022	59.5	27.5	6.8	10.8
18.	02.12.2022	71.2	35.1	10.3	15.0
19.	06.12.2022	60.3	30.4	7.0	13.1
20.	09.12.2022	64.1	31.6	7.2	12.6
21.	13.12.2022	58.3	28.9	6.7	11.7
22.	16.12.2022	72.3	35.8	9.9	14.6
23.	20.12.2022	60.9	29.8	7.3	12.7
24.	23.12.2022	66.6	33.0	10.2	15.9
25.	27.12.2022	54.0	25.6	7.4	13.8
26.	30.12.2022	65.7	31.8	9.1	14.7

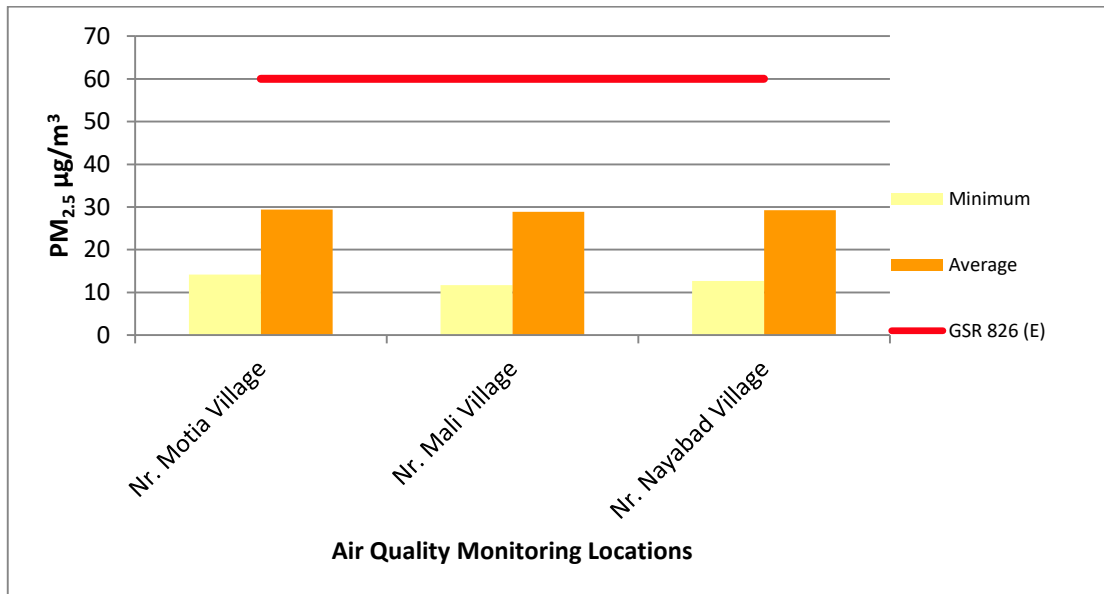
RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	21.9	12.7	5.4	6.8
Max Concentration	72.3	35.8	10.3	15.9
Average	60.4	29.2	7.9	12.5

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

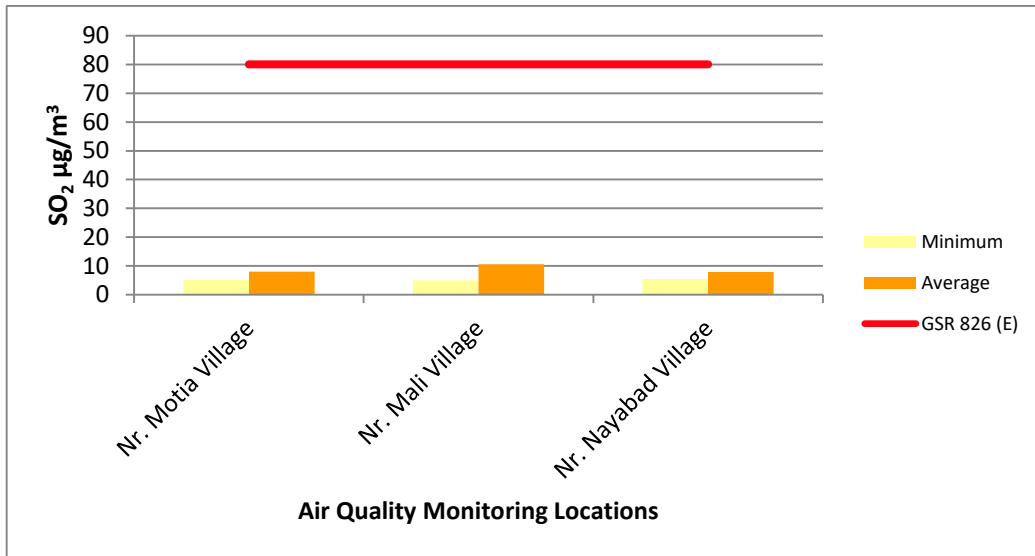
8.6 GRAPHICAL REPRESENTATION OF THE RESULTS



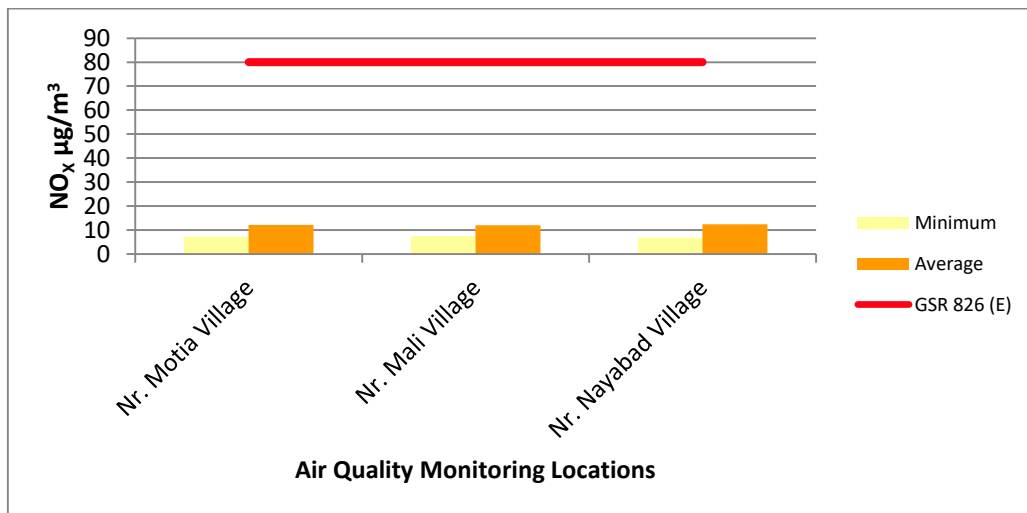
Graph 1: Particulate Matter (PM₁₀)



Graph 2: Particulate Matter (PM_{2.5})



Graph 3: Sulphur Dioxide (SO₂)



Graph 4: Oxides of Nitrogen (NO_x)

8.7 EXECUTIVE SUMMARY OF AAQM RESULTS

Particulate Matter (PM₁₀)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	27.2	71.0	61.2	100
Nr. Mali Village	23.4	67.9	60.0	100
Nr. Nayabad Village	21.9	72.3	60.4	100

Particulate Matter (PM_{2.5})				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	14.2	35.4	29.4	60
Nr. Mali Village	11.7	35.0	28.9	60
Nr. Nayabad Village	12.7	35.8	29.2	60

Sulphur Dioxide (SO₂)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	5.1	10.0	8.0	80
Nr. Mali Village	5.0	75.0	10.6	80
Nr. Nayabad Village	5.4	10.3	7.9	80

Oxides of Nitrogen (NO_x)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	7.2	15.1	12.2	80
Nr. Mali Village	7.5	15.4	12.0	80
Nr. Nayabad Village	6.8	15.9	12.5	80

From all the above graphical representation it is clearly interpreted that all the values of PM₁₀, PM_{2.5}, SO₂ and NO_x were lower than the prescribed limits for all the stated locations.

8.8 ANALYTICAL RESULTS OF MERCURY

In this study, we also monitored some other critical pollutants like Mercury to assess the existing levels of air pollutants as well as the regional background concentration of the cluster area. Beside these, some Heavy metal concentration in the ambient air were also monitored in and around the project area. The following tabulated pollutants were monitored once in a month.

Location	Sampling Month	Mercury (Hg)
Unit		$\mu\text{g}/\text{m}^3$
Limits as per GSR 826 Standard		NS
Nr. Motia Village	Oct'22	BQL (QL=1)
	Nov'22	BQL (QL=1)
	Dec'22	BQL (QL=1)
Nr. Mali Village	Oct'22	BQL (QL=1)
	Nov'22	BQL (QL=1)
	Dec'22	BQL (QL=1)
Nr. Nayabad Village	Oct'22	BQL (QL=1)
	Nov'22	BQL (QL=1)
	Dec'22	BQL (QL=1)

Note: NS= Not Specified

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

SECTION 9: WATER ANALYSIS REPORT**9.1 CONCEPT & SCOPE**

Water quality of the project area plays an important role on the socio economy of the Project. The higher concentrations of the water pollutants have serious impacts on the environment. Hence, it becomes important to assess the water quality periodically in the project vicinity.

Thus to assess the water quality of the project area, 04 locations were selected for Ground water sampling, 02 locations were selected for Effluent water sampling and 01 location was selected for surface water sampling.

The quality of Ground water samples were compared with respect to IS 3025/APHA specification, the concentration of the target analytes are within the prescribed limits.

Bacterial examination was also carried out to find out the E-Coli & Total Coliform contamination in water sources.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

9.2 METHODOLOGY

PARAMETER	PRINCIPLE OF METHODOLOGY
PH	Measurement of pH is one of the most important and frequently used test in water chemistry. Practically every phase of water supply and wastewater treatment, e.g., acid-base neutralization, Water softening, precipitation, coagulation, disinfection and corrosion control, is pH dependent. pH is used in alkalinity and carbon dioxide measurements and many other acid-base equilibria. At a given temperature the intensity of the acid or basic character of a solution is indicated by pH or hydrogen ion activity. Alkalinity and acidity are the acid and base neutralizing capacities of a water and usually expressed in mole per liter, needed to change the pH value of a 1-L sample by 1 unit. pH as defined by Sorenson is $-\log [H^+]$; it is the "intensity" factor of acidity
Turbidity	The method is based on a comparison of the intensity of light scattered by a standard reference suspension under the same condition. Higher the intensity of scattered light, the higher the turbidity of particular sample. Formazin polymer is used as the primary standard reference suspension. The turbidity of a specify concentration of formalin suspension is defined as 4000 NTU.
Chloride	In a neutral or slightly alkaline solution, potassium chromate can indicate the endpoint of the silver nitrate titration of chloride. Silver chloride is precipitated quantitatively before red silver chromate is formed.
Fluoride	The SPANDS colorimetric method is based on the reaction between fluoride and a zirconium-dye lake. Fluoride reacts with the dye lake, dissociating a portion of it into a colorless complex anion (ZrF_6^{2-}) and the dye. As the amount of fluoride increase, the color produced becomes progressively lighter. The reaction rate between fluoride and zirconium ions is influenced greatly by the acidity of the reaction mixture. If the proportion of acid in the reagent is increased, the reaction can be made almost instantaneous. Under such condition, however, the effect of various ions differs from that in the conventional alizarin methods. The selection of dye for this rapid fluoride method is governed largely by the resulting tolerance to these ions.
Sulphate	Sulphate ion (SO_4^{2-}) is precipitated in an acetic acid medium with barium chloride ($BaCl_2$) so as to form barium sulphate ($BaSO_4$) crystals of uniform size. Light absorbance of the $BaSO_4$ suspension is measured by a photometer and the SO_4^{2-} concentration is determined by comparison of the reading with a standard curve SO_4^{2-} . The absorbance of the barium sulphate formed is measured by a spectrophotometer at 450 nm.
Cd, Cu, As, Pb, Hg, Zn, Mn, Fe, B	The multi-element determination of trace elements by ICP-OES. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. The prepared samples are nebulized and the aerosols that is produced is transported to the plasma torch where excitation occurs characteristic atomic-line emission spectra are produced by a radio-frequency inductively coupled plasma. The spectra are dispersed by a grating spectrometer and the intensities of the lines are monitored by detectors.
Hexavalent Chromium (As Cr^{+6})	This procedure measures only hexavalent chromium, Cr^{+6} . For total chromium, Determination, acid-digest the sample and follow with a suitable instrumental analysis technique. The hexavalent chromium is determined calorimetrically by reaction with diphenylcarbazide in acid solution. A red-violet colored complex of unknown composition is produced which is measured at 540 nm.
Calcium (As Ca)	When EDTA is added to water containing both calcium and magnesium it combines first with the calcium. Calcium can be determined directly with EDTA, when the pH is made sufficiently high that the magnesium is largely precipitated as the hydroxide and an indicator is used that combines with calcium only. Several indicators give a

Colour change when all of the calcium has been complexed by the EDTA at a pH of 12 to 13.

Total Hardness
(As CaCO_3)

This method depends on ability of EDTA or its disodium salt to form stable complexes with calcium and magnesium ions. When the dye Eriochrome black T (EBT) is added to a solution containing calcium and magnesium ions at pH 10.0 a wine red complex is formed. This solution is titrated with standard solution of disodium salt of EDTA, which extracts calcium and magnesium from the dye complex and the dye is changed back to its original blue Colour. Eriochrome black T is used to indicate the end-point for the titration of calcium and magnesium together.

Residual Chloride

Chlorine will liberate free iodine from potassium iodide (KI) solution at pH 8 or less. The liberated iodine is titrated with a standard solution of sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) with starch as the indicator. Titrate at pH 3 to 4 because the reaction is not stoichiometric at neutral pH due to partial oxidation of thiosulfate to sulfate.

Total Dissolved Solids

A well-mixed sample is filtered through a standard filter and the filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180°C . The increase in dish weight represents the total dissolved solids.

Nitrate

Two moles of nitrate nitrogen react with one mole of chromotropic acid to form a yellow reaction product having maximum absorbance at 410 nm.

Alkalinity (As CaCO_3)

Hydroxyl ions present in a sample as a result of dissociation or hydrolysis of solutes react with addition of standard acid. Alkalinity thus depends on the end point pH used. For method of determining inflection points from titration curves and the rationale for titrating to fixed pH endpoints.



Figure 7: Water Sampling Motia Village, Hand pump



Figure 8: Water Sampling Mali Village, Hand pump



Figure 9: Water Sampling Nayabad Village, Hand pump



Figure 10: Water Sampling Patwa Village Hand pump



Figure 11: Water Sampling at STP Outlet plant



Figure 12: Water Sampling at STP Outlet township

9.3 ANALYTICAL RESULTS

Date of Sampling: 07.10.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.22	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL (QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	292	500	2000
4.	Total Hardness as CaCO ₃	mg/L	168	200	600
5.	Alkalinity as CaCO ₃	mg/L	128.00	200	600
6.	Calcium as Ca	mg/L	36.8	75	200
7.	Chloride	mg/L	49.5	250	1000
8.	Sulphate	mg/L	42.2	200	400
9.	Nitrate	mg/L	3.7	45	No Relaxation
10.	Iron	mg/L	0.20	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.47	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	27.4	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.40	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.10.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.14	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	232	500	2000
4.	Total Hardness as CaCO ₃	mg/L	158.9	200	600
5.	Alkalinity as CaCO ₃	mg/L	85.00	200	600
6.	Calcium as Ca	mg/L	36.1	75	200
7.	Chloride	mg/L	34.1	250	1000
8.	Sulphate	mg/L	36.4	200	400
9.	Nitrate	mg/L	2.2	45	No Relaxation
10.	Iron	mg/L	0.19	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.7	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	28.2	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.4	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.10.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.24	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	267	500	2000
4.	Total Hardness as CaCO ₃	mg/L	182	200	600
5.	Alkalinity as CaCO ₃	mg/L	99	200	600
6.	Calcium as Ca	mg/L	44.2	75	200
7.	Chloride	mg/L	38.98	250	1000
8.	Sulphate	mg/L	42.6	200	400
9.	Nitrate	mg/L	3.65	45	No Relaxation
10.	Iron	mg/L	0.24	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	17.4	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	27.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	Mg/L	7.20	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.10.2022

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.15		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	248		500	2000
4.	Total Hardness as CaCO ₃	mg/L	162.0		200	600
5.	Alkalinity as CaCO ₃	mg/L	98.00		200	600
6.	Calcium as Ca	mg/L	42.5		75	200
7.	Chloride	mg/L	30.1		250	1000
8.	Sulphate	mg/L	46.8		200	400
9.	Nitrate	mg/L	4.56		45	No Relaxation
10.	Iron	mg/L	0.21		0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)		1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)		-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)		5	15
14.	Magnesium (Mg)	mg/L	13.5		30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)		0.2	1
16.	Colour	Hazen	BQL(QL=1)		5	15
17.	Odour	...	Agreeable		Agreeable	Agreeable
18.	Temperature °C	°C	26.7		-	-
19.	Taste	...	Agreeable		Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)		0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)		0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)		0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)		0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)		0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)		0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)		0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)		0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)		0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
31.	Silica (Si)	mg/L	9.00		NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)		0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent		Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent		-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.10.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.30
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	54.00
4.	Total Dissolved Solids	mg/L	425.00
5.	BOD at 27°C – 3 Days	mg/L	24.30
6.	Chemical Oxygen Demand	mg/L	90.00
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	105.00
9.	Sulphate as SO ₄	mg/L	145.20
10.	Ammonical Nitrogen as NH ₃	mg/L	3.10
11.	Total Kjheldal Nitrogen as TKN	mg/L	11.30
12.	Dissolved Phosphate	mg/L	1.50
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.10.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.65
2.	Colour	CU	BOL(QL=1)
3.	Total Suspended Solids	mg/L	58.00
4.	Total Dissolved Solids	mg/L	394.00
5.	BOD at 27°C – 3 Days	mg/L	13.64
6.	Chemical Oxygen Demand	mg/L	50.00
7.	Oil & Grease	mg/L	BOL(QL=2)
8.	Chloride	mg/L	52.98
9.	Sulphate as SO ₄	mg/L	126.10
10.	Ammonical Nitrogen as NH ₃	mg/L	3.58
11.	Total Kjheldal Nitrogen as TKN	mg/L	12.88
12.	Dissolved Phosphate	mg/L	1.78
13.	Aluminium (Al)	mg/L	BOL(QL=0.1)
14.	Arsenic (As)	mg/L	BOL(QL=0.02)
15.	Boron (B)	mg/L	BOL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BOL(QL=0.01)
17.	Copper (Cu)	mg/L	BOL(QL=0.1)
18.	Lead (Pb)	mg/L	BOL(QL=0.02)
19.	Manganese (Mn)	mg/L	BOL(QL=0.1)
20.	Mercury (Hg)	mg/L	BOL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 08.10.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.21
2.	Turbidity	NTU	2.1
3.	Total Dissolved Solids @ 180 °C	mg/L	215
4.	Total Suspended Solids	mg/L	43
5.	Dissolved Oxygen	mg/L	5.3
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	34.7
8.	Sulphate	mg/L	42.3
9.	Nitrate	mg/L	5.0
10.	Fluoride	mg/L	0.38
11.	BOD at 27°C – 3 Days	mg/L	4.6
12.	Chemical Oxygen Demand	mg/L	15.00
13.	Residual Chlorine	mg/L	BQL(QL=0.02)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	26.9
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.22
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica	mg/L	6.73

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.11.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.26	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	305.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	160.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	112.0	200	600
6.	Calcium as Ca	mg/L	33.6	75	200
7.	Chloride	mg/L	51.2	250	1000
8.	Sulphate	mg/L	46.0	200	400
9.	Nitrate	mg/L	5.4	45	No Relaxation
10.	Iron	mg/L	0.17	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.47	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	26.4	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.70	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 04.11.2022

Sr. No.	Parameter	Unit	location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.25	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	268	500	2000
4.	Total Hardness as CaCO ₃	mg/L	165.1	200	600
5.	Alkalinity as CaCO ₃	mg/L	91.0	200	600
6.	Calcium as Ca	mg/L	38.1	75	200
7.	Chloride	mg/L	35.6	250	1000
8.	Sulphate	mg/L	40.2	200	400
9.	Nitrate	mg/L	3.0	45	No Relaxation
10.	Iron	mg/L	0.21	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	17	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	25.5	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.8	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 04.11.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.16	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	288	500	2000
4.	Total Hardness as CaCO ₃	mg/L	177.2	200	600
5.	Alkalinity as CaCO ₃	mg/L	98.0	200	600
6.	Calcium as Ca	mg/L	43.1	75	200
7.	Chloride	mg/L	36.8	250	1000
8.	Sulphate	mg/L	46.2	200	400
9.	Nitrate	mg/L	3.7	45	No Relaxation
10.	Iron	mg/L	0.16	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.9	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	25.7	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.00	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 04.11.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.09	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	273	500	2000
4.	Total Hardness as CaCO ₃	mg/L	163.7	200	600
5.	Alkalinity as CaCO ₃	mg/L	106.0	200	600
6.	Calcium as Ca	mg/L	41.5	75	200
7.	Chloride	mg/L	33.4	250	1000
8.	Sulphate	mg/L	43.4	200	400
9.	Nitrate	mg/L	4.1	45	No Relaxation
10.	Iron	mg/L	0.23	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.6	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	25.0	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.30	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 04.11.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.42
2.	Colour	CU	BOL(QL=1)
3.	Total Suspended Solids	mg/L	49
4.	Total Dissolved Solids	mg/L	404
5.	BOD at 27°C – 3 Days	mg/L	20.6
6.	Chemical Oxygen Demand	mg/L	83
7.	Oil & Grease	mg/L	BOL(QL=2)
8.	Chloride	mg/L	103
9.	Sulphate as SO ₄	mg/L	139.8
10.	Ammonical Nitrogen as NH ₃	mg/L	3.8
11.	Total Kjheldal Nitrogen as TKN	mg/L	10.6
12.	Dissolved Phosphate	mg/L	1.45
13.	Aluminum (Al)	mg/L	BOL(QL=0.1)
14.	Arsenic (As)	mg/L	BOL(QL=0.02)
15.	Boron (B)	mg/L	BOL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BOL(QL=0.01)
17.	Copper (Cu)	mg/L	BOL(QL=0.1)
18.	Lead (Pb)	mg/L	BOL(QL=0.02)
19.	Manganese (Mn)	mg/L	BOL(QL=0.1)
20.	Mercury (Hg)	mg/L	BOL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.11.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.48
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	57
4.	Total Dissolved Solids	mg/L	415
5.	BOD at 27°C – 3 Days	mg/L	17
6.	Chemical Oxygen Demand	mg/L	61
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	93
9.	Sulphate as SO ₄	mg/L	156.2
10.	Ammonical Nitrogen as NH ₃	mg/L	4.08
11.	Total Kjheldal Nitrogen as TKN	mg/L	15.5
12.	Dissolved Phosphate	mg/L	2.04
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 05.11.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.15
2.	Turbidity	NTU	1.85
3.	Total Dissolved Solids @ 180 °C	mg/L	226
4.	Total Suspended Solids	mg/L	42.0
5.	Dissolved Oxygen	mg/L	5.4
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	33.7
8.	Sulphate	mg/L	30.2
9.	Nitrate	mg/L	4.6
10.	Fluoride	mg/L	0.41
11.	BOD at 27°C – 3 Days	mg/L	4.9
12.	Chemical Oxygen Demand	mg/L	14.60
13.	Residual Chlorine	mg/L	BQL(QL=0.02)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	24.3
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.19
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica (Si)	mg/L	5.80

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 12.12.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.20	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	293.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	190	200	600
5.	Alkalinity as CaCO ₃	mg/L	127.0	200	600
6.	Calcium as Ca	mg/L	48.0	75	200
7.	Chloride	mg/L	56.0	250	1000
8.	Sulphate	mg/L	53.3	200	400
9.	Nitrate	mg/L	8.5	45	No Relaxation
10.	Iron	mg/L	0.25	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	17.01	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	mg/L	24.6	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.80	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 12.12.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.17	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	262.00	500	2000
4.	Total Hardness as CaCO ₃	mg/L	161.00	200	600
5.	Alkalinity as CaCO ₃	mg/L	94.00	200	600
6.	Calcium as Ca	mg/L	40.50	75	200
7.	Chloride	mg/L	36.70	250	1000
8.	Sulphate	mg/L	52.10	200	400
9.	Nitrate	mg/L	2.80	45	No Relaxation
10.	Iron	mg/L	0.19	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.6	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	24.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.0	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 12.12.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.22	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	232.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	174.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	86.0	200	600
6.	Calcium as Ca	mg/L	42.7	75	200
7.	Chloride	mg/L	37.2	250	1000
8.	Sulphate	mg/L	49.9	200	400
9.	Nitrate	mg/L	4.0	45	No Relaxation
10.	Iron	mg/L	0.21	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	17.3	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	26.3	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.10	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 12.12.2022

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.18		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	209.0		500	2000
4.	Total Hardness as CaCO ₃	mg/L	151.0		200	600
5.	Alkalinity as CaCO ₃	mg/L	98.0		200	600
6.	Calcium as Ca	mg/L	39.1		75	200
7.	Chloride	mg/L	31.4		250	1000
8.	Sulphate	mg/L	48.2		200	400
9.	Nitrate	mg/L	3.8		45	No Relaxation
10.	Iron	mg/L	0.18		0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)		1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)		-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)		5	15
14.	Magnesium (Mg)	mg/L	13.0		30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)		0.2	1
16.	Colour	Hazen	BQL(QL=1)		5	15
17.	Odour	...	Agreeable		Agreeable	Agreeable
18.	Temperature °C	°C	25.3		-	-
19.	Taste	...	Agreeable		Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)		0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)		0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)		0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)		0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)		0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)		0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)		0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)		0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)		0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
31.	Silica (Si)	mg/L	8.0		NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)		0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent		Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent		-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 12.12.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.51
2.	Colour	CU	BOL(QL=1)
3.	Total Suspended Solids	mg/L	52.0
4.	Total Dissolved Solids	mg/L	416.0
5.	BOD at 27°C – 3 Days	mg/L	23.0
6.	Chemical Oxygen Demand	mg/L	80.0
7.	Oil & Grease	mg/L	BOL(QL=2)
8.	Chloride	mg/L	105.0
9.	Sulphate as SO ₄	mg/L	143.2
10.	Ammonical Nitrogen as NH ₃	mg/L	4.1
11.	Total Kjheldal Nitrogen as TKN	mg/L	11.6
12.	Dissolved Phosphate	mg/L	1.5
13.	Aluminum (Al)	mg/L	BOL(QL=0.1)
14.	Arsenic (As)	mg/L	BOL(QL=0.02)
15.	Boron (B)	mg/L	BOL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BOL(QL=0.01)
17.	Copper (Cu)	mg/L	BOL(QL=0.1)
18.	Lead (Pb)	mg/L	BOL(QL=0.02)
19.	Manganese (Mn)	mg/L	BOL(QL=0.1)
20.	Mercury (Hg)	mg/L	BOL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 12.12.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.41
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	59.0
4.	Total Dissolved Solids	mg/L	408.0
5.	BOD at 27°C – 3 Days	mg/L	15.0
6.	Chemical Oxygen Demand	mg/L	60.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	97.0
9.	Sulphate as SO ₄	mg/L	161.2
10.	Ammonical Nitrogen as NH ₃	mg/L	3.9
11.	Total Kjheldal Nitrogen as TKN	mg/L	16.0
12.	Dissolved Phosphate	mg/L	1.9
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 13.12.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.21
2.	Turbidity	NTU	2.06
3.	Total Dissolved Solids @ 180 °C	mg/L	207
4.	Total Suspended Solids	mg/L	40
5.	Dissolved Oxygen	mg/L	4.9
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	32.7
8.	Sulphate	mg/L	28.8
9.	Nitrate	mg/L	4.8
10.	Fluoride	mg/L	0.39
11.	BOD at 27°C – 3 Days	mg/L	5.1
12.	Chemical Oxygen Demand	mg/L	12.7
13.	Residual Chlorine	mg/L	BQL(QL=0.02)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	25.9
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.22
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica(Si)	mg/L	6.9

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION: OPEN WELL

MONTH: OCTOBER'22

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	1.8	3.4	2.15	-
MALI VILLAGE	0.50	6.20	5.7	2.85	2.85	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	2.82	2.88	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	2.9	2.9	2.5	-

All values are in Meter(m)

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION: OPEN WELL

MONTH: NOVEMBER'22

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	2.0	3.2	2.15	-
MALI VILLAGE	0.50	6.20	5.7	3.15	2.55	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	3.05	2.65	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	3.1	2.9	2.5	-

All values are in Meter(m)

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION: OPEN WELL

MONTH: DECEMBER'22

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	2.45	2.75	2.15	-
MALI VILLAGE	0.50	6.20	5.7	3.6	2.1	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	3.5	2.2	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	3.55	2.25	2.5	-

All values are in Meter(m)

SECTION 10: NOISE LEVEL MONITORING

To know the background ambient noise level at the project and surrounding environment, noise level were measured at all the ambient air monitoring stations for baseline study.

The Day time & Night time average noise level data are given in tabular formats as well as in graphical form for easy interpretation.

Here, the day time means time from 06:00 am to 10:00 pm & night time means time from 10:00 pm to 06:00 am.

$$Leq = \frac{10 \log_{10} (t_1 \times 10^{\frac{L_1}{10}} + t_2 \times 10^{\frac{L_2}{10}} + t_3 \times 10^{\frac{L_3}{10}} + \dots)}{T}$$

Where Leq = Equivalent continuous noise level (dB) (A)

t1 = time at L1 (Hours)

t2 = time at L2 (Hours)

L1 = sound pressure level dB (A) at time 1

T = total time over which the Leq is required (Hours)

(N1) At Motia Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	17.10.2022	54.8	41.3	49.3	41.6	33.7	35.5
2	10.11.2022	53.9	40.7	48.5	40.3	32.8	36.5
3	20.12.2022	54.9	42.1	49.0	41.2	33.1	37.0

(N2) At Mali Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	18.10.2022	55.0	42.8	50.0	41.9	31.8	35.7
2	11.11.2022	54.8	41.1	49.7	42.5	32.9	36.3
3	21.12.2022	53.7	40.8	47.6	41.8	33.0	36.7

(N3) At Nayabad Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	18.10.2022	53.4	39.4	49.1	42.2	34.0	36.7
2	11.11.2022	55.0	42.1	50.1	41.7	33.1	35.4
3	21.12.2022	54.7	42.6	49.5	42.0	32.6	36.2

(N4) At Patwa Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
Unit		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	17.10.2022	52.9	40.8	48.2	41.0	32.7	39.6
2	10.11.2022	54.7	42.0	49.4	43.2	31.8	36.1
3	20.12.2022	53.9	41.3	47.7	42.2	32.0	37.2

(N5) Nr. Adani Office

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
Unit		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.10.2022	53.9	42.7	47.5	43.7	34.2	36.1
2	15.11.2022	54.9	41.0	48.0	42.3	33.4	37.5
3	23.12.2022	54.5	42.4	49.1	44.1	32.7	38.0

(N6) Nr. BTG Area (U/C)

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
Unit		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	19.10.2022	73.8	55.1	65.9	56.3	45.8	50.1
2	14.11.2022	74.3	54.1	66.8	58.1	43.4	49.6
3	22.12.2022	73.7	56.8	67.5	57.6	44.5	50.2

(N7) Nr. CT Area

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
Unit		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	19.10.2022	74.2	55.2	66.5	58.6	43.5	52.2
2	14.11.2022	73.8	52.2	67.2	56.7	42.2	51.6
3	22.12.2022	74.1	55.3	65.7	57.8	44.0	50.9

(N8) Nr. RW Reservoir (U/C)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.10.2022	74.0	53.8	65.2	57.0	46.6	53.0
2	15.11.2022	74.6	54.3	63.7	56.4	45.2	51.4
3	23.12.2022	73.5	55.1	65.4	58.2	43.7	50.1

(N9) Nr. STP (In township)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.10.2022	54.9	41.5	47.8	43.0	33.0	35.6
2	16.11.2022	54.6	39.1	50.0	41.9	32.4	37.0
3	24.12.2022	55.0	42.3	49.3	42.9	33.5	36.9

(N10) Nr. Temple (In township)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	21.10.2022	52.7	43.2	49.4	44.0	34.7	36.2
2	16.11.2022	54.2	39.4	46.5	42.9	33.5	35.8
3	24.12.2022	52.8	40.1	47.5	43.1	32.9	36.8

From above tabulated results it can be concluded that the noise level was within the prescribed limits throughout the monitoring period at the stated locations.

Note: Environmental Quality Monitoring Report for the Month of Dec'22 has been collected by Envirotech East Pvt. Limited.

SECTION 11: SOIL ANALYSIS**11.1 CONCEPT & SCOPE**

Soil is fundamental & ultimate natural resources that full fill a number of functions & provide various services like agriculture, industrial construction & ecological habitat development etc. Some of the most significant impacts on this resource occur as a result of activities associated with the use of chemical fertilizers, unscientific construction activities, unplanned city design, unscientific land use pattern and land filling by toxic materials.

Soil analysis can determine the fertility or the expected growth potential and the nutrient deficiency and potential toxicity which help in taking cost effective Marision for the better soil management.

Location Code	Name of Location
S-1	Nr. Mali Village
S-2	Nr. Nayabad Village
S-3	Nr. Patwa Village

11.2 SOIL ANALYTICAL RESULTS

Date of Sampling: 25.10.2022

Location: Nr. Mali Village				
Date of Sampling: 25.10.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.54	NS
2.	Calcium as Ca	%	1.02	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.67	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.034	NS
7.	Chloride as Cl	%	0.079	NS
8.	Zinc as Zn	mg/kg	5.53	NS
9.	Nitrogen as N	%	0.081	NS
10.	Phosphorous as P	%	0.0021	NS
11.	Potassium as K	%	0.042	NS
12.	Iron as Fe	%	0.054	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.84	NS
15.	Organic Carbon	%	0.49	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	61	NS
18.	Silt	%	25	NS
19.	Clay	%	14	NS

Location: Nr. Nayabad Village				
Date of Sampling: 25.10.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.75	NS
2.	Calcium as Ca	%	1.03	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.53	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.065	NS
7.	Chloride as Cl	%	0.085	NS
8.	Zinc as Zn	mg/kg	4.24	NS
9.	Nitrogen as N	%	0.067	NS
10.	Phosphorous as P	%	0.0028	NS
11.	Potassium as K	%	0.045	NS
12.	Iron as Fe	%	0.055	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.76	NS
15.	Organic Carbon	%	0.44	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	55	NS
18.	Silt	%	30	NS
19.	Clay	%	15	NS

Location: Nr. Patwa Village				
Date of Sampling: 25.10.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.66	NS
2.	Calcium as Ca	%	0.98	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.55	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.083	NS
7.	Chloride as Cl	%	0.082	NS
8.	Zinc as Zn	mg/kg	3.55	NS
9.	Nitrogen as N	%	0.088	NS
10.	Phosphorous as P	%	0.0024	NS
11.	Potassium as K	%	0.056	NS
12.	Iron as Fe	%	0.046	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.67	NS
15.	Organic Carbon	%	0.39	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	59	NS
18.	Silt	%	29	NS
19.	Clay	%	12	NS

Note: NS= Not Specified

ADANI POWER (JHARKHAND) LTD.

2*800 MW Godda Thermal Power Project

Village: Motia, Dist: Godda, Jharkhand

ENVIRONMENTAL MONITORING REPORT PERIOD: Jan'23 – Mar'23



Go Green Mechanisms Pvt. Ltd.

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REPORT TITLE

COMPANY NAME:	Adani Power (Jharkhand) Ltd.
SITE LOCATION:	2*800 MW Godda Thermal Power Plant Village: Motia, Dist: Godda, Jharkhand
MONITORING PERIOD:	Jan'23 to Mar'23
REPORT DATE:	15.04.2023
ORIGINATED BY:	Environmental Monitoring and Analytical Team Go Green Mechanisms Pvt. Ltd.
REVIEWED BY:	Amit Badlani Director, Go Green Mechanisms Pvt. Ltd.
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SECTION 1: FOREWORD

The protection of environment plays a crucial role in maintain the local environment quality for any industry, throughout their production. Hence compliance of the statutory requirements becomes very important to conserve the ecological balance within and surrounding the plant area. Therefore, environment protection is becoming a prerequisite for sustainable development. In line with this requirement, the management of Adani Power (Jharkhand) Ltd. has adopted a corporate responsibility of development and top priority is given for environment protection.

In order to comply with the Environment protection act, to fulfil statutory requirement and to be in tune with Environmental Preservation and sustainable development Adani Power (Jharkhand) Ltd., has retained M/S. Go Green Mechanisms Pvt. Ltd. As Environment Consultants and for various Environmental issues related to their Power Plant.

Environmental Quality Monitoring Report for the Month of Jan'23 to Mar'23 has been collected by Go Green Mechanisms Pvt. Ltd.

We are thankful to Adani Power (Jharkhand) Ltd. for the opportunity provided to be associated in this endeavour.

SECTION 2: LIST OF EQUIPMENTS

The list of Equipments used in the project is delineated in the following table.

Sr. No.	Name of Equipments	Make/Model
1	Respirable Dust Sampler	Ecotech Instruments / AAS 217BL
2	PM _{2.5} Sampler	Ecotech Instruments & Eonair Technologies/AAS 127 & AQS 235
3	Gaseous Attachment with RDS	Ecotech Instruments / AAS 217BL
4	Sound Level Meter	Hemsun / HDB 2202
5	Weather Monitoring Station	Ambient Weather Station
6	Weighing Balance	Shimadzu /AUW220D
7	UV Visible Spectrophotometer	Systronics
8	Hot Air Oven	Patel Scientific Instruments
9	Filtration Assembly	Labline
10	Water Analysis Kit	Systronics
11	Bacteriological Incubator	Labline
12	Centi-micro Balance	Shimadzu /ATX224
13	Dissolved Oxygen Test Kit	Lutron
14	Autoclave	Patel Scientific Instruments
15	Laminar Air Flow	Labline
16	Muffle Furnace	Patel Scientific Instruments
17	Flame Photometer	Systronics /128
18	Digital colony counter	Labline
19	Microscope	Patel Scientific Instruments
20	Orbital Shaker	Labline
21	Centrifuge	Bio Lab
22	Simple Distillation Assembly	Labline
23	ICP-OES/AES	Thermo Fisher Scientific /iCAP 7400 SERIES
24	Ion Chromatography	Metrohm Herisau / 1.925.0020

SECTION 3: LIST OF PROJECT PERSONNEL

Sr. No.	Name	Qualification	Experience (Yrs)	Designation
1.	Amit Badlani	B.E. (Chemical) M.S.(Energy & Environmental Technology) M.S. (Pollution Control)	17 Yrs	Managing Director
2.	R.K.Pandey	B.Sc. Biology	16 Yrs	Project In-charge
3.	Payal Patel	M Sc. (Env. Sci.)	06 Yrs	Lab Manager
4.	Yash Goswami	Dip. Env. Engineer	11 Yrs	Field Operation - Manger
5.	Tantan Kumar	M Sc. (Env. Mgmt)	04 Yrs	Sr. Chemist
6.	Pooja Parekh	B.Sc. (Microbiology) & DMLT	01 Yr 08 Month	Lab Chemist
7.	Chandan Kumar	B.Sc. Chemistry	02 Yrs	Field Assistant

SECTION 4: EXECUTIVE SUMMARY

Adani Power (Jharkhand) Limited has undertaken the task of preparing EMP report for its 1600 (2x800) MW Godda Thermal Power Plant & Residential Township which is within the premises of TPP.

M/s. Go Green Mechanisms Private Limited, got the opportunity to prepare the Environmental monitoring Data on the basis of actual field monitoring with respect to Group I Parameters I.e. Air, Water, Soil, Noise & Meteorological on behalf of HTG Engineering Pvt. Ltd.

A Meteorological station was set up on the terrace of "Hostel Block" & Micrometeorological parameters like Ambient Temperature, Relative Humidity, Wind direction, Wind Speed, Rain fall & Barometric Pressure etc. were recorded on hourly basis during the study period.

On the basis of wind direction pattern, the three locations of AAQM were selected. The concentration of gaseous pollutants, PM_{2.5} were sampled and analysed for compliance to GSR 826(E) vide Notification Dated 16/11/2009.

Four numbers of Ground water samples, two numbers of Effluent water samples, one number of Surface water sample were collected to understand the overall water quality of the project area. The water parameters were sampled and analysed to check for compliance to the specifications of (IS 10500:2012 & I 2296:1982 Inland surface water Class C).

The noise level was monitored at 10 locations on Day & Night time basis, monthly as per IS 9989: RA 2001.

SECTION 5: CONCEPTS & METHODOLOGY

5.1 METHODOLOGY

In the present study the following are the standard methods used for collection, analysis & interpretation of data:

AAQM Sampling & analysis: "Indian Standards (IS 5182)", "Guidelines for the measurement of Ambient Air Pollutants, Vol-I, CPCB" & "USEPA" methods were used for Ambient Air sampling and analysis to study the present pollution load around the Proposed Project location.

Parameters of AAQM	Standard Methods	Analytical Instruments
PM ₁₀	IS 5182 (P-23): RL 2012	Weighing Balance
PM _{2.5}	GGMPL/SOP/AA/60	Weighing Balance
Oxides of Nitrogen(NO _x)	IS 5182 (P-6):2006	Spectrophotometer
Oxides of Sulphur(SO ₂)	IS 5182 (P-2):2009	Spectrophotometer
Mercury	Method IO 3.4:1999	ICP-OES (Hydride Generator)

Water Sampling & analysis: Similarly "Indian Standards (IS 3025)", "USEPA" and "APHA 23rd Edition" were used for water sample collection and analysis.

Parameters of Water Samples	Standard Methods	Analytical Instruments
Taste	IS 3025 (Pt 08): RA 2006	-
Turbidity	APHA 23rd Edn 2017 2130 B	Turbidity Meter
Total Dissolve Solid	APHA 23rd Edn 2017 2540 C	Hot air Oven
Boron(B)	APHA 23rd Edn 2017 3120 B	ICP-OES
Calcium(Ca)	APHA 23rd Edn 2017 3500 Ca B	-
Chloride(Cl)	IS 3025 (Pt 32): RA 2007	-
Fluoride(F)	APHA 23rd Edn 2017 4500 F D	Spectrophotometer
Residual Chlorine	APHA 23rd Edn 2017 4500 Cl B	Chlorine kit
Nitrate (NO ₃)	IS 3025 (Pt 34): RA 2009	Spectrophotometer
Phenolic Compounds	IS 3025 (Pt 43): RA 2003	Spectrophotometer
Sulphate (SO ₄)	APHA 23rd Edn 2017 4500 SO ₄ E	Spectrophotometer
Total hardness (CaCO ₃)	APHA 23rd Edn 2017 2340 C	-
Cyanide (CN)	GGMPL/SOP/W/43: 2020	Ion Chromatography
Selenium (Se)	APHA 23 rd Edn 2017 3120 B	ICP-OES
pH	IS 3025 (Pt 11): RA 2006	pH Meter
Colour	IS 3025 (Pt 04): RA 2002	-
Odour	IS 3025 (Pt 05): RA 2006	-
Alkalinity	APHA 23rd Edn 2017 2320 B	-
Temperature	APHA 23rd Edn 2017 2550 B	Thermometer
Magnesium (Mg)	APHA 23rd Edn 2017 3500 Mg B	ICP-OES
Copper (Cu)	APHA 23rd Edn 2017 3120 B	ICP-OES
Iron (Fe)	APHA 23rd Edn 2017 3120 Fe B	ICP-OES

Manganese (Mn)	APHA 23rd Edn 2017 3120 B	ICP-OES
Mercury (Hg)	APHA 23rd Edn 2017 3112 B	ICP-OES (Hydride Generator)
Lead (Pb)	APHA 23rd Edn 2017 3120 B	ICP-OES
Arsenic (As)	APHA 23rd Edn 2017 3120 B	ICP-OES (Hydride Generator)
Cadmium (Cd)	APHA 23rd Edn 2017 3120 B	ICP-OES
Zinc (Zn)	APHA 23rd Edn 2017 3120B	ICP-OES
Hexavalent Chromium	APHA 23rd Edn 2017 3500 Cr B	Spectrophotometer
Detergent	Annex K of IS 13428	Gas Stripping apparatus/ Spectrophotometer
Aluminum	IS 3025 (Pt 55): RA 2009	ICP-OES
E. Coli	IS 1622-1981: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow
Total Coliform	IS 1622: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow

Noise Level Monitoring: "Protocol for Ambient Level Noise Monitoring, IS 9989: RA 2001" was followed to monitor the Ambient Noise level surrounding the Project Site.

Parameters	Standard Methods	Analytical Instruments
Leq	IS 9989: RA 2001	Noise Level Meter

Weather Monitoring: "EPA-454/R-99-005, February 2000" was followed for micro-meteorological data collection result interpretation.

Parameters	Standard Methods	Analytical Instruments	Make/Model
Air Temperature	GGMPL/SOP/MP/01:2020	Digital sensor	Ambient Weather Station
Relative Humidity	GGMPL/SOP/MP/01:2020	Digital Sensor(Hygrometer)	
Wind Speed	GGMPL/SOP/MP/01:2020	3 Cup anemometer	
Wind Direction	GGMPL/SOP/MP/01:2020	Hall Effect (Wind Vane)	
Rain Fall	GGMPL/SOP/MP/01:2020	Tipping Bucket	

A brief account of the methodologies and matrices followed in the present study is given under different headings. All the methods were structured for the identification, collection and organization of environmental impacts data. The information, thus gathered, had been analyzed and presented in the form of a number of visual formats for easy interpretation and Marision making.

SECTION 6: PLAN FOR SAMPLING LOCATIONS

Site selection criteria play an important role in the initiation of “baseline data generation” as it provides an outlook on the type of environmental compliance and management to be adopted by the project proponent. The locations were selected on the basis of “joint site survey”, “examination of toposheet of the project area”, “secondary micro-meteorological data analysis” and “availability of resources” for ambient air quality monitoring & micro-meteorological monitoring.

A synopsis about the locations is as follows:

AAQM Locations	
Code	Name of Location
A1	Nr. Motia Village
A2	Nr. Mali Village
A3	Nr. Nayabad Village
Met Data Station	
Code	Name of Location
M1	Hostel Block
Water Samples	
Code	Name of Location
G/W-1	Motia Village
G/W-2	Mali Village
G/W-3	Nayabad Village
G/W-4	Patwa Village
E/W-1	STP Outlet plant
E/W-2	STP Outlet township
S/W-1	Ganga river
Noise Monitoring Locations	
Code	Name of Location
N1	At Motia Village
N2	At Mali Village
N3	At Nayabad Village
N4	At Patwa Village
N5	Nr. Adani Office
N6	Nr. BTG Area (U/C)
N7	Nr. CT Area (U/C)
N8	Nr. RW Reservoir (U/C)
N9	Nr. STP (In township)
N10	Nr. Temple (In township)

SECTION 7: METEOROLOGICAL DATA

Weather monitoring would help in keeping track of different parameters like temperature, humidity, rainfall, wind direction, wind speed & barometric pressure. Real time meteorological data is used to support a number of programs including public aviation, agricultural activity, disaster management etc.

In the present study we monitored the "ambient temperature, relative humidity, wind speed, wind direction, barometric pressure, rainfall etc.

Note: Environmental Quality Monitoring Report for the Month of March'22 has been collected by Envirotech East Pvt. Limited.



Figure 1: Weather Monitoring Station at Hostel B

ADANI POWER (JHARKHAND) LIMITED
2 x 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand
Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

MARCH':-2023

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm)
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.03.2023	32.7	16.9	25.0	76.0	30.0	54.3	6.1	1.3	ESE	756.0	0.0
02.03.2023	32.8	18.2	25.5	74.0	33.0	54.8	7.1	1.6	ESE	755.6	0.0
03.03.2023	32.6	19.6	25.9	68.0	34.0	51.0	7.1	1.8	SE	755.6	0.0
04.03.2023	32.1	20.5	26.0	65.0	41.0	54.0	7.7	1.7	SE	755.3	0.0
05.03.2023	32.1	20.4	25.7	68.0	38.0	53.9	8.7	2.6	SW	754.7	0.0
06.03.2023	32.3	20.8	26	66.0	30.0	49.1	10.7	3.0	SW	753.8	0.0
07.03.2023	32.1	19.6	25.8	69.0	29.0	47.8	7.1	2.0	SE	754.3	0.0
08.03.2023	29.7	19.1	23.2	79.0	40.0	61.4	10.7	1.9	ESE	755.6	0.8
09.03.2023	31.7	17.8	24.5	82.0	41.0	61.8	8.2	1.6	ESE	754.5	0.0
10.03.2023	32.0	20.0	25.8	74.0	36.0	57.3	7.1	1.9	SE	754.0	0.0
11.03.2023	33.3	20.0	25.9	72.0	36.0	55.5	6.1	1.7	ESE	754.0	0.0
12.03.2023	32.2	20.3	26.6	77.0	38.0	57.9	4.6	1.3	E	753.6	0.0
13.05.2023	34.0	20.5	27.2	81.0	33.0	55.6	5.6	1.4	ESE	752.3	0.0
14.03.2023	33.7	20.6	27.3	79.0	39.0	57.5	5.6	1.4	ESE	750.2	0.0
15.03.2023	33.7	21.1	27.7	78.0	36.0	53.9	6.1	1.5	SE	749.8	0.0
16.03.2023	31.8	21.8	26.4	74.0	40.0	59.9	8.2	8.2	ESE	751.6	0.0
17.03.2023	32.1	20.6	24.4	85.0	45.0	68.5	7.7	1.4	NE	752.5	1.3
18.03.2023	31.2	19.5	24.1	90.0	52.0	73.0	10.2	1.9	ENE	751.3	0.5
19.03.2023	28.5	18.9	21.9	95.0	56.0	80.3	7.7	1.7	NNW	750.3	11.2
20.03.2023	23.7	18.5	20.8	96.0	67.0	84.7	6.1	1.5	E	749.5	0.3
21.03.2023	27.5	17.7	22.1	94.0	61.0	79.1	4.6	1.1	NE	750.2	0.0
22.03.2023	31.3	18.2	24.1	84.0	43.0	63.8	9.2	2.1	ESE	749.5	0.0
23.03.2023	31.5	19.8	25.6	77.0	35.0	55.6	10.2	3.0	SE	749.4	0.0
24.03.2023	33.7	20.4	27.2	74.0	35.0	52.9	6.6	1.8	ESE	750.2	0.0
25.03.2023	34.0	21.3	27.8	75.0	42.0	59.0	5.6	1.5	ESE	750.6	0.0
26.03.2023	35.8	21.8	28.8	82.0	29.0	54.6	10.2	2.0	ESE	749.1	0.0
27.03.2023	34.8	22.6	28.4	74.0	27.0	48.4	11.2	2.7	SW	749.1	0.0
28.03.2023	34.6	23.6	28.8	64.0	31.0	44.4	7.7	2.1	SE	749.8	0.0
29.03.2023	35.3	22.3	29.1	69.0	27.0	43.2	11.2	2.0	ESE	750.4	0.0
30.03.2023	36.5	21.7	28.7	84.0	26.0	56.2	6.6	2.3	ESE	748.9	0.0
31.03.2023	30.2	23.1	26.1	85.0	51.0	67.6	5.6	2.2	SE	749.8	0.2
											14.3

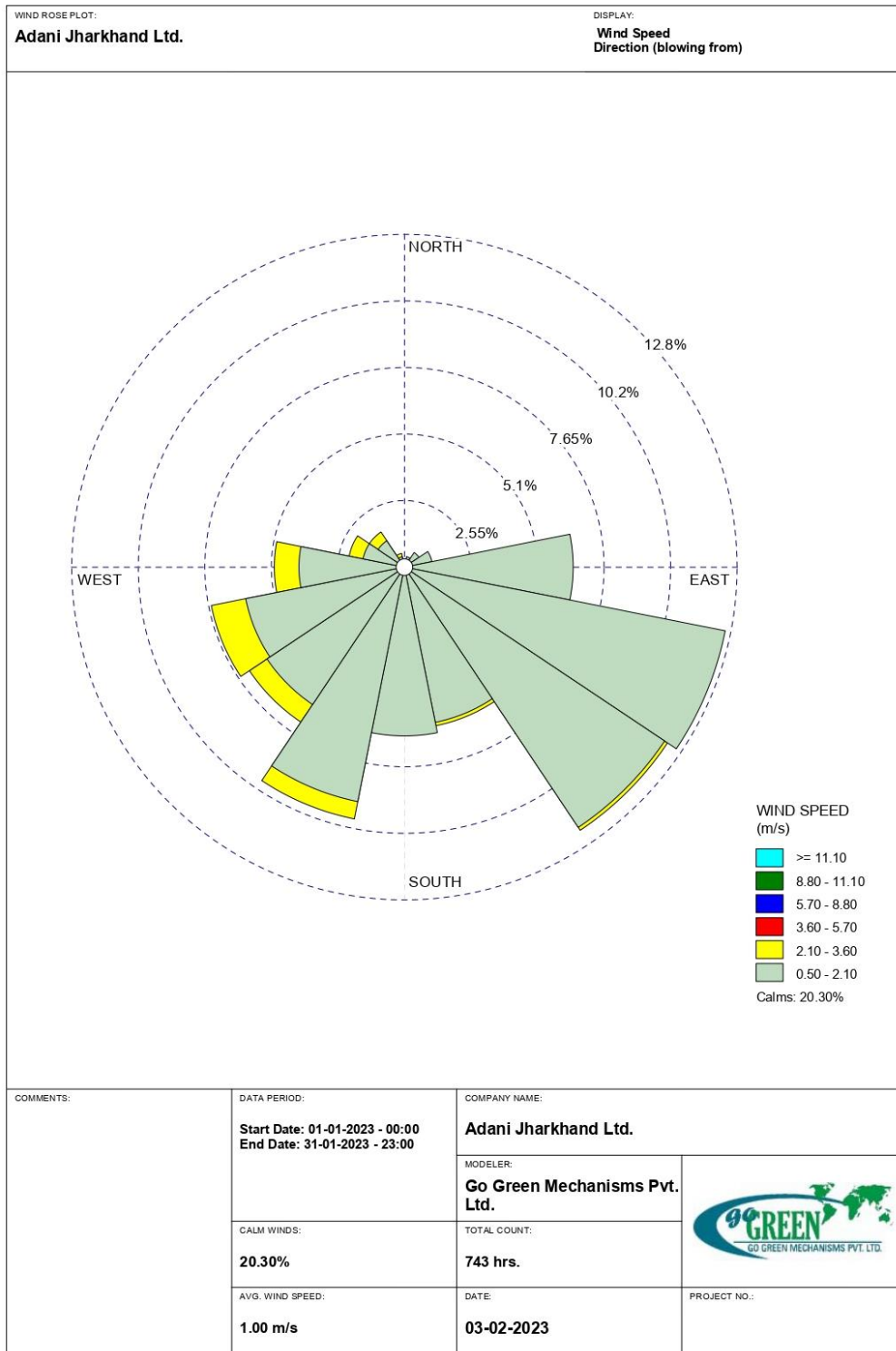


Figure 2: Windrose diagram for the month of Jan'23

It is observed from the windrose diagram for the month of Jan'23 the predominant wind direction is SSE.

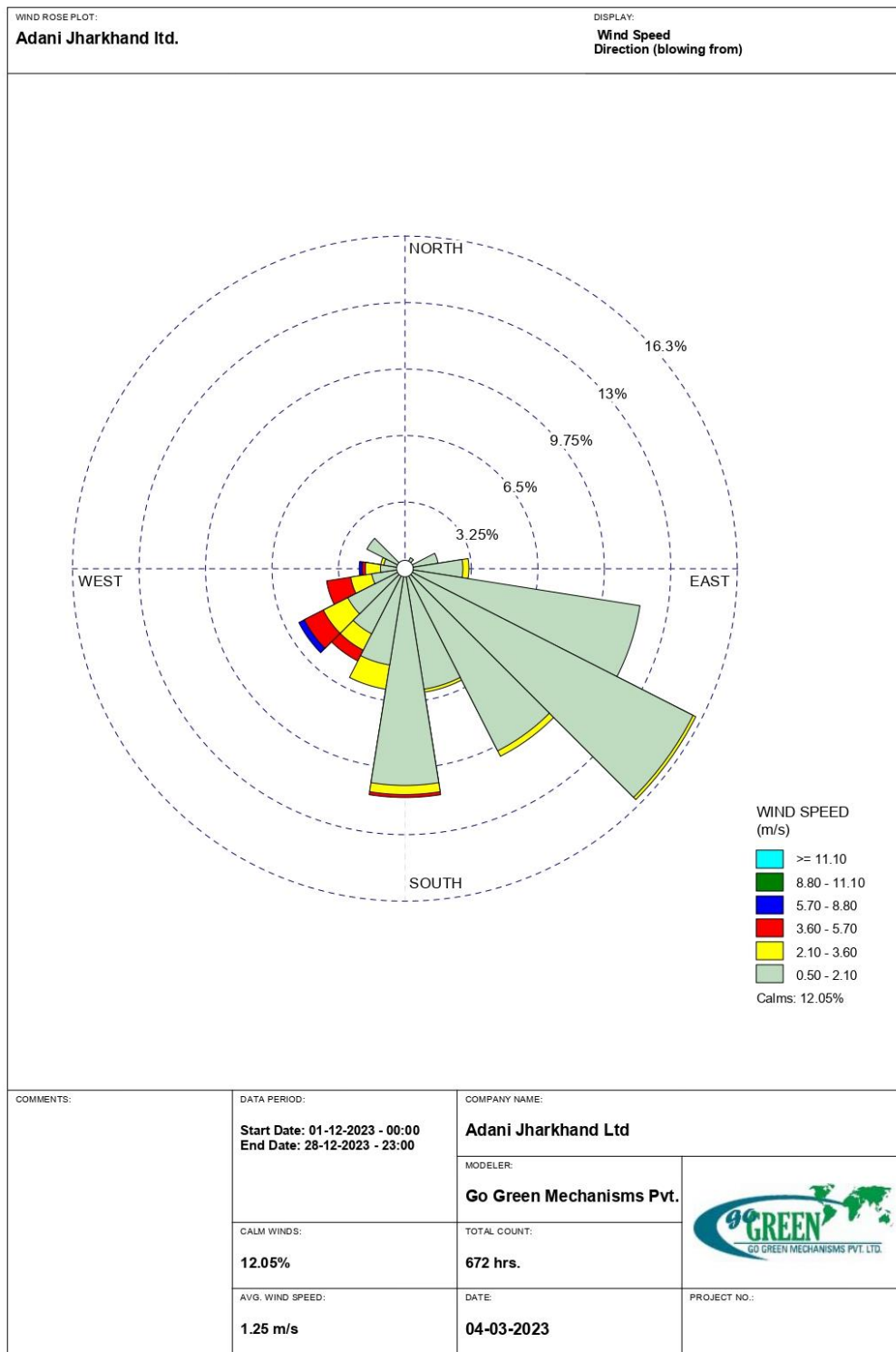


Figure 3: Windrose diagram for the month of Feb'23

It is observed from the Windrose diagram for the month of Feb'23 the predominant wind direction is SE.

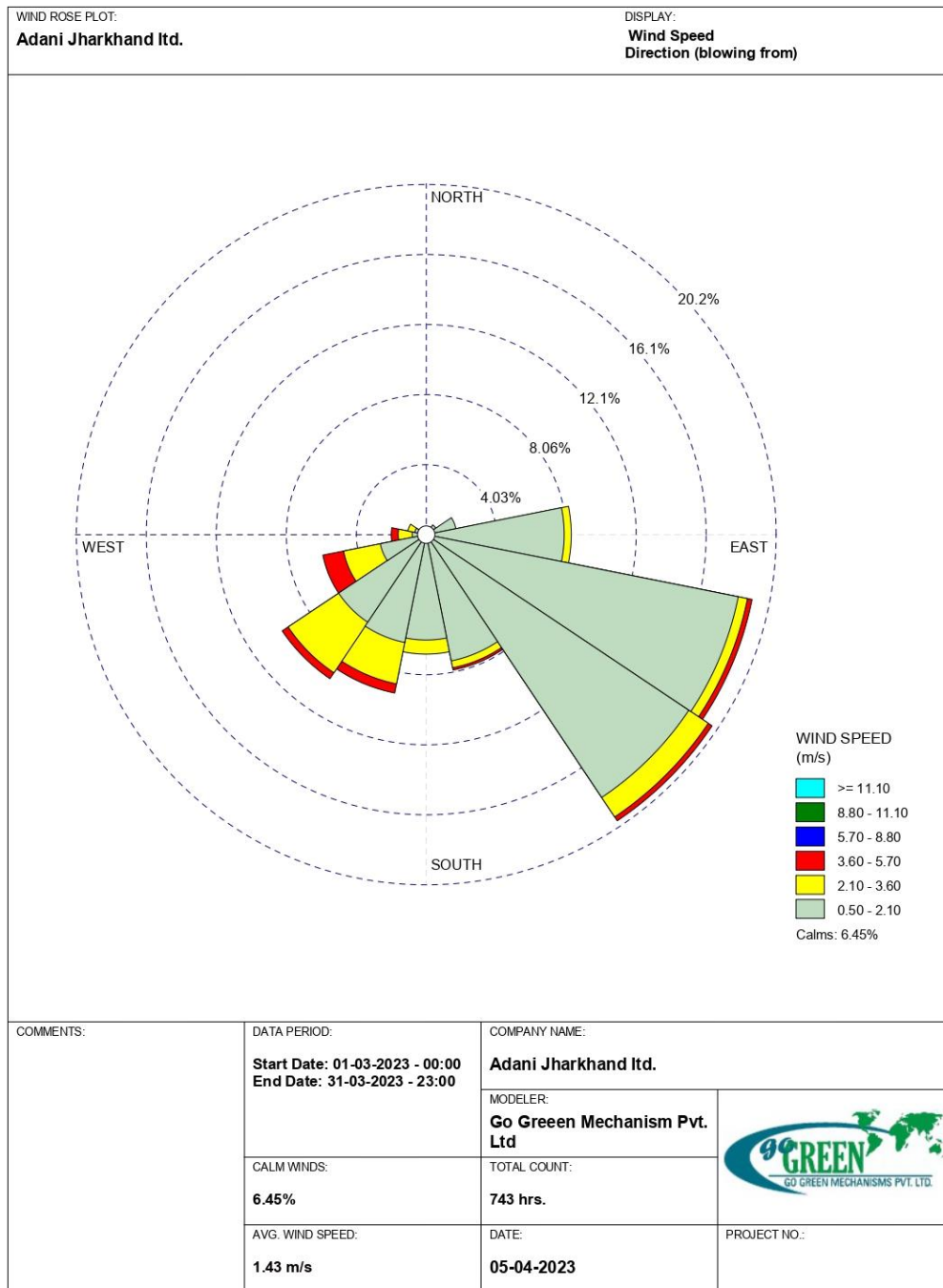


Figure 4: Windrose diagram for the month of Mar’23

It is observed from the windrose diagram for the month of Mar’23 the predominant wind direction is SE.

SECTION 8: AMBIENT AIR MONITORING REPORT

8.1 CONCEPT & SCOPE

The Ambient Air monitoring encompasses the results and statistical evaluation of the data monitored at three different locations.

Different parameters like PM₁₀, PM_{2.5}, Oxides of Sulphur, Oxides of Nitrogen and Mercury are monitored for representing the ambient air quality within the study area.

8.2 FREQUENCY OF SAMPLING

The frequency of the sampling for AAQM was as follows:

PARAMETERS	FREQUENCY OF EACH LOCATION
PM ₁₀ , PM _{2.5} , Oxides of Sulphur, Oxides of Nitrogen	Twice in a week
Mercury	Once in a month

8.3 SAMPLING DURATION AS PER NAAQMs 2009

Sr. No.	Parameters	Sampling Duration (Hr.)
1	Particulate Matter (PM ₁₀)	24
2	Particulate Matter (PM _{2.5})	24
3	Oxides of Sulphur (SO ₂)	24
4	Oxides of Nitrogen (NO _x)	24
5	Mercury	-

8.4 AAQM METHODOLOGY

PARAMETERS	METHODOLOGY/PRINCIPLE
Particulate Matter (PM ₁₀)	<p>Air is drawn through a size-selective inlet and through a 20.3 X 25.4 cm (8 X 10 in) filter at a flow rate, which is typically 1132 L/min. Particles with aerodynamic diameter less than the cut-point of the inlet are collected, by the filter. The mass of these particles is determined by the difference in filter weights prior to and after sampling. The concentration of PM₁₀ in the designated size range is calculated by dividing the weight gain of the filter by the volume of air sampled.</p>
Particulate Matter (PM _{2.5})	<p>An electrically powered air sampler draws ambient air at a constant volumetric flow rate (16.7 lpm) maintained by a mass flow / volumetric flow controller coupled to a microprocessor into specially designed inertial particle-size separator (i.e. cyclones or impactors) where the suspended particulate matter in the PM_{2.5} size ranges is separated for collection on a 47 mm polytetrafluoroethylene (PTFE) filter over a specified sampling period. Each filter is weighed before and after sample collection to determine the net gain due to the particulate matter. The mass concentration in the ambient air is computed as the total mass of collected particles in the PM_{2.5} size ranges divided by the actual volume of air sampled, and is expressed in µg/m³. The microprocessor reads averages and stores five-minute averages of ambient temperature, ambient pressure, filter temperature and volumetric flow rate.</p>
Sulphur Dioxide (SO ₂)	<p>Sulphur dioxide from air is absorbed in a solution of potassium tetrachloromercurate (TCM). The impingers setup for the absorbance of Sulphur Dioxide from air is shown in Figure 15. A dichlorosulphitomercurate complex, which resists oxidation by the oxygen in the air, is formed. Once formed, this complex is stable to strong oxidants such as ozone and oxides of nitrogen and therefore, the absorber solution may be stored for some time prior to analysis. The complex is made to react with para-rosaniline and formaldehyde to form the intensely coloured pararosaniline methylsulphonic acid. The absorbance of the solution is measured by means of a suitable spectrophotometer.</p>
Nitrogen Dioxide	<p>Ambient nitrogen dioxide (NO₂) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO₂) produced during sampling is determined colorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine dihydrochloride (NEDA) and measuring the absorbance of the highly coloured azo-dye at 540 nm.</p>



Figure 5: Ambient air Monitoring Nr. Mali Village



Figure 6: Ambient air Monitoring Nr. Motia Village

8.5 ANALYTICAL RESULTS

Results & statistical calculations for Location- A1:

Name of Location (A1)		Nr. Motia Village			
Sr. No.	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³
GSR 826 (E)		100	60	80	80
1.	02.01.2023	59.8	29.1	7.6	12.3
2.	05.01.2023	66.2	30.6	8.0	13.4
3.	09.01.2023	62.7	30.7	8.3	14.2
4.	12.01.2023	70.2	34.1	9.5	15.1
5.	16.01.2023	55.7	26.9	7.5	12.6
6.	19.01.2023	60.1	30.0	7.1	11.8
7.	23.01.2023	56.0	26.6	8.1	13.8
8.	26.01.2023	65.2	31.8	8.4	14.4
9.	30.01.2023	57.2	28.7	6.8	13.7
10.	02.02.2023	61.2	30.2	7.9	12.2
11.	06.02.2023	55.8	25.9	8.2	12.0
12.	09.02.2023	64.3	31.2	9.0	13.7
13.	13.02.2023	58.9	27.5	7.6	11.7
14.	16.02.2023	56.9	26.4	8.1	10.6
15.	20.02.2023	59.6	26.3	7.4	11.2
16.	23.02.2023	61.0	27.1	8.0	12.4
17.	27.02.2023	58.1	28.6	7.7	10.8
18.	02.03.2023	62.3	30.2	8.2	12.3
19.	06.03.2023	58.6	26.8	7.1	11.7
20.	09.03.2023	59.7	29.4	7.2	12.2
21.	13.03.2023	68.1	34.1	10.2	14.2
22.	16.03.2023	55.3	25.6	6.9	11.2
23.	20.03.2023	57.6	27.6	8.1	13.4
24.	23.03.2023	62.2	30.1	8.3	14.6
25.	27.03.2023	64.3	32.5	7.6	12.7
26.	30.03.2023	60.4	28.6	7.8	13.0

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	55.3	25.6	6.8	10.6
Max Concentration	70.2	34.1	10.2	15.1
Average	60.7	29.1	7.9	12.7

Results & statistical calculations for Location- A2:

Name of Location (A2)		Nr. Mali Village			
Sr. No.	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³
GSR 826 (E)		100	60	80	80
1.	02.01.2023	64.5	31.4	8.2	12.7
2.	05.01.2023	61.2	30.2	7.8	11.6
3.	09.01.2023	68.9	35.4	10	15
4.	12.01.2023	61.7	29.4	9.1	14.3
5.	16.01.2023	63.8	32	9	13.9
6.	19.01.2023	54.6	25.9	7.9	12.5
7.	23.01.2023	68.4	34.4	9.2	13.5
8.	26.01.2023	60.2	28.6	9.3	14.5
9.	30.01.2023	63.7	32.7	8.5	14
10.	02.02.2023	56.8	26.7	7.5	11.8
11.	06.02.2023	62.1	30.2	8.3	12.7
12.	09.02.2023	59.3	28.7	7.8	11.6
13.	13.02.2023	58.7	27.2	7.4	11.4
14.	16.02.2023	57.6	29.6	8.1	12.2
15.	20.02.2023	56.3	28.2	7.3	11.9
16.	23.02.2023	61.4	30.9	9.1	12.4
17.	27.02.2023	58.2	27.8	7.2	11.7
18.	02.03.2023	58.3	26.9	7.7	12.0
19.	06.03.2023	56.1	28.3	7.9	12.4
20.	09.03.2023	67.6	33.4	10.0	15.2
21.	13.03.2023	60.2	28.4	9.4	14.5
22.	16.03.2023	57.9	27.9	8.8	13.6
23.	20.03.2023	61.8	30.3	8.4	13.7
24.	23.03.2023	64.6	32.1	8.0	12.5
25.	27.03.2023	63.8	30.8	8.5	13.5
26.	30.03.2023	56.9	26.7	7.5	12.6

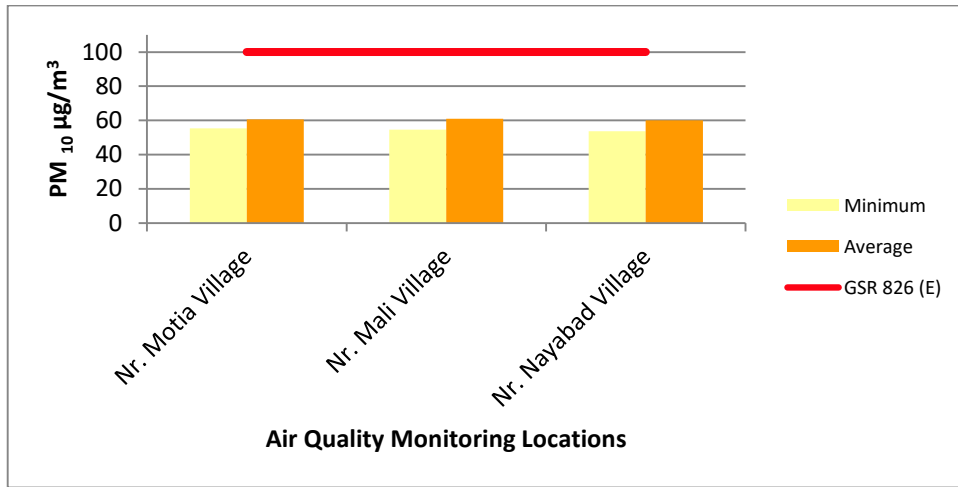
RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	54.6	25.9	7.2	11.4
Max Concentration	68.9	35.4	10.0	15.2
Average	60.9	29.8	8.4	13.0

Results & statistical calculations for Location- A3:

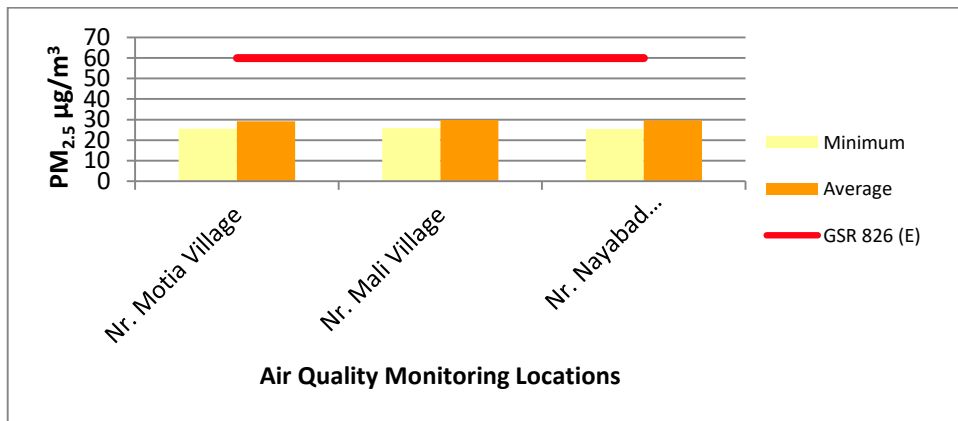
Name of Location (A3)		Nr. Nayabad Village			
Sr. No.	Date of Sampling	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³
GSR 826 (E)		100	60	80	80
1.	02.01.2023	62.3	29.6	8.1	13.6
2.	05.01.2023	60.1	32.5	9.6	13.9
3.	09.01.2023	58.2	27.5	6.9	10.2
4.	12.01.2023	64.8	31.9	9.4	14.1
5.	16.01.2023	60.3	29.7	7.2	12.2
6.	19.01.2023	60.2	34.2	8.8	12.9
7.	23.01.2023	55.2	31.6	8.6	12.8
8.	26.01.2023	58.9	28.9	7.4	11.5
9.	30.01.2023	62.2	31.2	9.7	14.2
10.	02.02.2023	58.8	30.3	8.0	13.2
11.	06.02.2023	58.7	26.4	7.7	11.9
12.	09.02.2023	61.2	32.1	9.1	14.1
13.	13.02.2023	60.2	25.4	7.3	12.4
14.	16.02.2023	57.1	31.6	7.6	11.7
15.	20.02.2023	58.1	28.9	8.2	13.1
16.	23.02.2023	61.6	30.1	8.6	12.8
17.	27.02.2023	59.4	29.4	7.9	11.4
18.	02.03.2023	63.1	30.0	7.4	12.8
19.	06.03.2023	60.1	28.9	8.6	14.0
20.	09.03.2023	56.4	25.9	7.0	12.1
21.	13.03.2023	63.7	31.2	9.1	14.1
22.	16.03.2023	53.7	26.1	6.8	10.5
23.	20.03.2023	65.6	32.0	9.7	14.4
24.	23.03.2023	61.7	29.7	8.7	12.9
25.	27.03.2023	58.4	27.4	7.9	11.8
26.	30.03.2023	60.0	29.6	8.9	14.7

	RESULT INTERPRETATION			
No. of Observations	26	26	26	26
Min Concentration	53.7	25.4	6.8	10.2
Max Concentration	65.6	34.2	9.7	14.7
Average	60.0	29.7	8.2	12.8

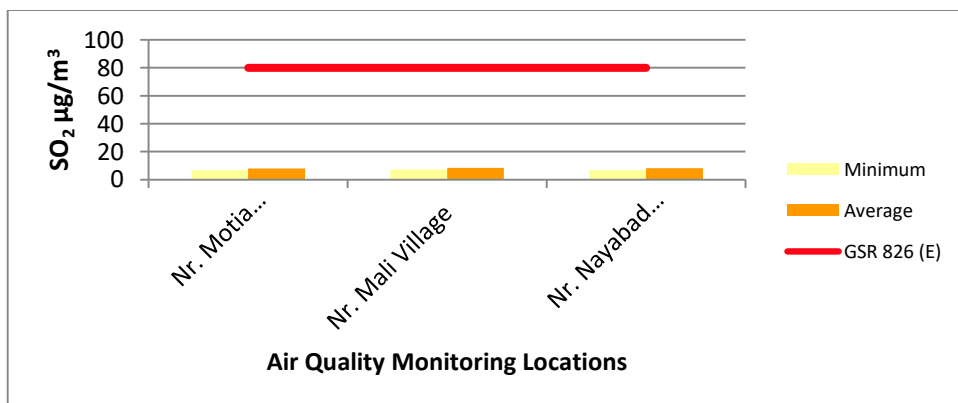
8.6 GRAPHICAL REPRESENTATION OF THE RESULTS



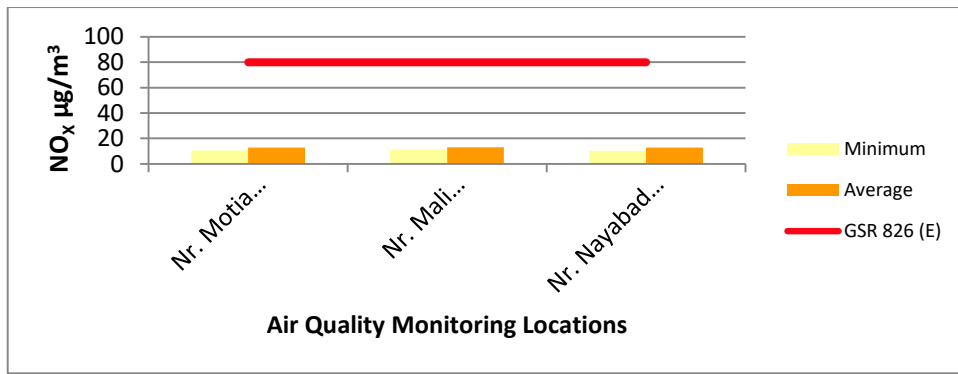
Graph 1: Particulate Matter (PM₁₀)



Graph 2: Particulate Matter (PM_{2.5})



Graph 3: Sulphur Dioxide (SO₂)



Graph 4: Oxides of Nitrogen (NO_x)

8.7 EXECUTIVE SUMMARY OF AAQM RESULTS

Particulate Matter (PM₁₀)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	55.3	70.2	60.7	100
Nr. Mali Village	54.6	68.9	60.9	100
Nr. Nayabad Village	53.7	65.6	60.0	100

Particulate Matter (PM_{2.5})				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	25.6	34.1	29.1	60
Nr. Mali Village	25.9	35.4	29.8	60
Nr. Nayabad Village	25.4	34.2	29.7	60

Sulphur Dioxide (SO₂)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	6.8	10.2	7.9	80
Nr. Mali Village	7.2	10.0	8.4	80
Nr. Nayabad Village	6.8	9.7	8.2	80

Oxides of Nitrogen (NO_x)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	10.6	15.1	12.7	80
Nr. Mali Village	11.4	15.2	13.0	80
Nr. Nayabad Village	10.2	14.7	12.8	80

From all the above graphical representation it is clearly interpreted that all the values of PM₁₀, PM_{2.5}, SO₂ and NO_x were lower than the prescribed limits for all the stated locations.

8.8 ANALYTICAL RESULTS OF MERCURY

In this study, we also monitored some other critical pollutants like Mercury to assess the existing levels of air pollutants as well as the regional background concentration of the cluster area. Beside these, some Heavy metal concentration in the ambient air were also monitored in and around the project area. The following tabulated pollutants were monitored once in a month.

Location	Sampling Month	Mercury (Hg)
Unit		$\mu\text{g}/\text{m}^3$
Limits as per GSR 826 Standard		NS
Nr. Motia Village	Jan'23	BQL(QL=1)
	Feb'23	BQL(QL=1)
	Mar'23	BQL(QL=1)
Nr. Mali Village	Jan'23	BQL(QL=1)
	Feb'23	BQL(QL=1)
	Mar'23	BQL(QL=1)
Nr. Nayabad Village	Jan'23	BQL(QL=1)
	Feb'23	BQL(QL=1)
	Mar'23	BQL(QL=1)

Note: NS= Not Specified

SECTION 9: WATER ANALYSIS REPORT**9.1 CONCEPT & SCOPE**

Water quality of the project area plays an important role on the socio economy of the Project. The higher concentrations of the water pollutants have serious impacts on the environment. Hence, it becomes important to assess the water quality periodically in the project vicinity.

Thus to assess the water quality of the project area, 04 locations were selected for Ground water sampling, 02 locations were selected for Effluent water sampling and 01 location was selected for surface water sampling.

The quality of Ground water samples were compared with respect to IS 3025/APHA specification, the concentration of the target analysts are within the prescribed limits.

Bacterial examination was also carried out to find out the E-Coli & Total Coliform contamination in water sources.

9.2 METHODOLOGY

PARAMETER	PRINCIPLE OF METHODOLOGY
PH	Measurement of pH is one of the most important and frequently used test in water chemistry. Practically every phase of water supply and wastewater treatment, e.g., acid-base neutralization, Water softening, precipitation, coagulation, disinfection and corrosion control, is pH dependent. pH is used in alkalinity and carbon dioxide measurements and many other acid-base equilibria. At a given temperature the intensity of the acid or basic character of a solution is indicated by pH or hydrogen ion activity. Alkalinity and acidity are the acid and base neutralizing capacities of a water and usually expressed in mole per liter, needed to change the pH value of a 1-L sample by 1 unit. pH as defined by Sorenson is $-\log [H^+]$; it is the "intensity" factor of acidity
Turbidity	The method is based on a comparison of the intensity of light scattered by a standard reference suspension under the same condition. Higher the intensity of scattered light, the higher the turbidity of particular sample. Formazin polymer is used as the primary standard reference suspension. The turbidity of a specify concentration of formalin suspension is defined as 4000 NTU.
Chloride	In a neutral or slightly alkaline solution, potassium chromate can indicate the endpoint of the silver nitrate titration of chloride. Silver chloride is precipitated quantitatively before red silver chromate is formed.
Fluoride	The SPANDS colorimetric method is based on the reaction between fluoride and a zirconium-dye lake. Fluoride reacts with the dye lake, dissociating a portion of it into a colorless complex anion (ZrF_6^{2-}) and the dye. As the amount of fluoride increase, the color produced becomes progressively lighter. The reaction rate between fluoride and zirconium ions is influenced greatly by the acidity of the reaction mixture. If the proportion of acid in the reagent is increased, the reaction can be made almost instantaneous. Under such condition, however, the effect of various ions differs from that in the conventional alizarin methods. The selection of dye for this rapid fluoride method is governed largely by the resulting tolerance to these ions.
Sulphate	Sulphate ion (SO_4^{2-}) is precipitated in an acetic acid medium with barium chloride ($BaCl_2$) so as to form barium sulphate ($BaSO_4$) crystals of uniform size. Light absorbance of the $BaSO_4$ suspension is measured by a photometer and the SO_4^{2-} concentration is determined by comparison of the reading with a standard curve SO_4^{2-} . The absorbance of the barium sulphate formed is measured by a spectrophotometer at 450 nm.
Cd, Cu, As, Pb, Hg, Zn, Mn, Fe, B	The multi-element determination of trace elements by ICP-OES. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. The prepared samples are nebulized and the aerosols that is produced is transported to the plasma torch where excitation occurs characteristic atomic-line emission spectra are produced by a radio-frequency inductively coupled plasma. The spectra are dispersed by a grating spectrometer and the intensities of the lines are monitored by detectors.
Hexavalent Chromium (As Cr^{+6})	This procedure measures only hexavalent chromium, Cr^{+6} . For total chromium, Determination, acid-digest the sample and follow with a suitable instrumental analysis technique. The hexavalent chromium is determined calorimetrically by reaction with diphenylcarbazide in acid solution. A red-violet colored complex of unknown composition is produced which is measured at 540 nm.
Calcium (As Ca)	When EDTA is added to water containing both calcium and magnesium it combines first with the calcium. Calcium can be determined directly with EDTA, when the pH is made sufficiently high that the magnesium is largely precipitated as the hydroxide and an indicator is used that combines with calcium only. Several indicators give a

Colour change when all of the calcium has been complexed by the EDTA at a pH of 12 to 13.

Total Hardness
(As CaCO_3)

This method depends on ability of EDTA or its disodium salt to form stable complexes with calcium and magnesium ions. When the dye Eriochrome black T (EBT) is added to a solution containing calcium and magnesium ions at pH 10.0 a wine red complex is formed. This solution is titrated with standard solution of disodium salt of EDTA, which extracts calcium and magnesium from the dye complex and the dye is changed back to its original blue Colour. Eriochrome black T is used to indicate the end-point for the titration of calcium and magnesium together.

Residual Chloride

Chlorine will liberate free iodine from potassium iodide (KI) solution at pH 8 or less. The liberated iodine is titrated with a standard solution of sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) with starch as the indicator. Titrate at pH 3 to 4 because the reaction is not stoichiometric at neutral pH due to partial oxidation of thiosulfate to sulfate.

Total Dissolved Solids

A well-mixed sample is filtered through a standard filter and the filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180°C . The increase in dish weight represents the total dissolved solids.

Nitrate

Two moles of nitrate nitrogen react with one mole of chromotropic acid to form a yellow reaction product having maximum absorbance at 410 nm.

Alkalinity (As CaCO_3)

Hydroxyl ions present in a sample as a result of dissociation or hydrolysis of solutes react with addition of standard acid. Alkalinity thus depends on the end point pH used. For method of determining inflection points from titration curves and the rationale for titrating to fixed pH endpoints.



Figure 7: Water Sampling Motia Village, Hand pump



Figure 8: Water Sampling Mali Village, Hand pump



Figure 9: Water Sampling Nayabad Village, Hand pump



Figure 10: Water Sampling Patwa Village Hand pump



Figure 11: Water Sampling at STP Outlet plant



Figure 12: Water Sampling at STP Outlet township

9.3 ANALYTICAL RESULTS

Date of Sampling: 04.01.2023

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.16	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	324	500	2000
4.	Total Hardness as CaCO ₃	mg/L	167	200	600
5.	Alkalinity as CaCO ₃	mg/L	125	200	600
6.	Calcium as Ca	mg/L	37.6	75	200
7.	Chloride	mg/L	51.9	250	1000
8.	Sulphate	mg/L	48.6	200	400
9.	Nitrate	mg/L	5.9	45	No Relaxation
10.	Iron	mg/L	0.21	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	17.74	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	23.7	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.00	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.01.2023

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.22	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	266	500	2000
4.	Total Hardness as CaCO ₃	mg/L	160	200	600
5.	Alkalinity as CaCO ₃	mg/L	97	200	600
6.	Calcium as Ca	mg/L	39.4	75	200
7.	Chloride	mg/L	37.2	250	1000
8.	Sulphate	mg/L	38.4	200	400
9.	Nitrate	mg/L	3.1	45	No Relaxation
10.	Iron	mg/L	0.20	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	15.00	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	21.4	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.70	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.01.2023

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.17	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	287	500	2000
4.	Total Hardness as CaCO ₃	mg/L	180.1	200	600
5.	Alkalinity as CaCO ₃	mg/L	88	200	600
6.	Calcium as Ca	mg/L	42.1	75	200
7.	Chloride	mg/L	38.4	250	1000
8.	Sulphate	mg/L	43.1	200	400
9.	Nitrate	mg/L	3.4	45	No Relaxation
10.	Iron	mg/L	0.18	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.20	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	23.4	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	Mg/L	6.70	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.01.2023

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.21		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	264		500	2000
4.	Total Hardness as CaCO ₃	mg/L	162		200	600
5.	Alkalinity as CaCO ₃	mg/L	104		200	600
6.	Calcium as Ca	mg/L	41.2		75	200
7.	Chloride	mg/L	31.8		250	1000
8.	Sulphate	mg/L	41.9		200	400
9.	Nitrate	mg/L	4		45	No Relaxation
10.	Iron	mg/L	0.24		0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)		1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)		-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)		5	15
14.	Magnesium (Mg)	mg/L	14.34		30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)		0.2	1
16.	Colour	Hazen	BQL(QL=1)		5	15
17.	Odour	...	Agreeable		Agreeable	Agreeable
18.	Temperature °C	°C	22.7		-	-
19.	Taste	...	Agreeable		Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)		0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)		0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)		0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)		0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)		0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)		0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)		0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)		0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)		0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
31.	Silica (Si)	mg/L	7.50		NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)		0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent		Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent		-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.01.2023

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.69
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	49
4.	Total Dissolved Solids	mg/L	395
5.	BOD at 27°C – 3 Days	mg/L	25
6.	Chemical Oxygen Demand	mg/L	80
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	102
9.	Sulphate as SO ₄	mg/L	145.8
10.	Ammonical Nitrogen as NH ₃	mg/L	3.50
11.	Total Kjheldal Nitrogen as TKN	mg/L	10.10
12.	Dissolved Phosphate	mg/L	1.41
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 04.01.2023

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.95
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	53
4.	Total Dissolved Solids	mg/L	378
5.	BOD at 27°C – 3 Days	mg/L	17
6.	Chemical Oxygen Demand	mg/L	60
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	84
9.	Sulphate as SO ₄	mg/L	155.1
10.	Ammonical Nitrogen as NH ₃	mg/L	4.02
11.	Total Kjheldal Nitrogen as TKN	mg/L	14.80
12.	Dissolved Phosphate	mg/L	1.76
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 05.01.2023

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.27
2.	Turbidity	NTU	1.14
3.	Total Dissolved Solids @ 180 °C	mg/L	214
4.	Total Suspended Solids	mg/L	44
5.	Dissolved Oxygen	mg/L	6.1
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	33.7
8.	Sulphate	mg/L	30.4
9.	Nitrate	mg/L	5.1
10.	Fluoride	mg/L	0.37
11.	BOD at 27°C – 3 Days	mg/L	3.9
12.	Chemical Oxygen Demand	mg/L	15.4
13.	Residual Chlorine	mg/L	BQL(QL=0.02)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	23.6
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.18
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica	mg/L	7.20

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 06.02.2023

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.20	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	305.00	500	2000
4.	Total Hardness as CaCO ₃	mg/L	162.00	200	600
5.	Alkalinity as CaCO ₃	mg/L	128.00	200	600
6.	Calcium as Ca	mg/L	34.00	75	200
7.	Chloride	mg/L	56.00	250	1000
8.	Sulphate	mg/L	49.60	200	400
9.	Nitrate	mg/L	6.30	45	No Relaxation
10.	Iron	mg/L	0.18	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.71	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	24.2	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.50	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 06.02.2023

Sr. No.	Parameter	Unit	location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.16	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	267.00	500	2000
4.	Total Hardness as CaCO ₃	mg/L	155.00	200	600
5.	Alkalinity as CaCO ₃	mg/L	92.00	200	600
6.	Calcium as Ca	mg/L	37.60	75	200
7.	Chloride	mg/L	36.50	250	1000
8.	Sulphate	mg/L	40.80	200	400
9.	Nitrate	mg/L	2.70	45	No Relaxation
10.	Iron	mg/L	0.19	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.82	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	24.4	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.1	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 06.02.2023

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.22	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	295	500	2000
4.	Total Hardness as CaCO ₃	mg/L	173.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	93	200	600
6.	Calcium as Ca	mg/L	41.6	75	200
7.	Chloride	mg/L	38.98	250	1000
8.	Sulphate	mg/L	44.5	200	400
9.	Nitrate	mg/L	4.9	45	No Relaxation
10.	Iron	mg/L	0.22	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.77	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	25.5	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.0	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 06.02.2023

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.16	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	280	500	2000
4.	Total Hardness as CaCO ₃	mg/L	174.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	103	200	600
6.	Calcium as Ca	mg/L	43.2	75	200
7.	Chloride	mg/L	32.7	250	1000
8.	Sulphate	mg/L	40.8	200	400
9.	Nitrate	mg/L	3.9	45	No Relaxation
10.	Iron	mg/L	0.18	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.0	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	23.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.9	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 06.02.2023

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.61
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	50.00
4.	Total Dissolved Solids	mg/L	425.00
5.	BOD at 27°C – 3 Days	mg/L	23.00
6.	Chemical Oxygen Demand	mg/L	70.00
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	105.00
9.	Sulphate as SO ₄	mg/L	142.80
10.	Ammonical Nitrogen as NH ₃	mg/L	3.10
11.	Total Kjheldal Nitrogen as TKN	mg/L	9.60
12.	Dissolved Phosphate	mg/L	1.49
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 06.02.2023

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.47
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	55.00
4.	Total Dissolved Solids	mg/L	419.00
5.	BOD at 27°C – 3 Days	mg/L	16.00
6.	Chemical Oxygen Demand	mg/L	60.00
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	88.98
9.	Sulphate as SO ₄	mg/L	152.80
10.	Ammonical Nitrogen as NH ₃	mg/L	3.40
11.	Total Kjheldal Nitrogen as TKN	mg/L	11.30
12.	Dissolved Phosphate	mg/L	1.30
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.02.2023

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.16
2.	Turbidity	NTU	2.03
3.	Total Dissolved Solids @ 180 °C	mg/L	218.00
4.	Total Suspended Solids	mg/L	38.00
5.	Dissolved Oxygen	mg/L	5.70
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	32.00
8.	Sulphate	mg/L	31.80
9.	Nitrate	mg/L	4.70
10.	Fluoride	mg/L	0.38
11.	BOD at 27°C – 3 Days	mg/L	4.10
12.	Chemical Oxygen Demand	mg/L	18.00
13.	Residual Chlorine	mg/L	BQL(QL=0.02)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	24.9
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.21
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica (Si)	mg/L	5.90

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 17.03.2023

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.14	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	297.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	145.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	93.0	200	600
6.	Calcium as Ca	mg/L	32.0	75	200
7.	Chloride	mg/L	51.2	250	1000
8.	Sulphate	mg/L	40.7	200	400
9.	Nitrate	mg/L	2.9	45	No Relaxation
10.	Iron	mg/L	0.2	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	15.8	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	mg/L	26.1	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.9	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS – Not Specified

Date of Sampling: 17.03.2023

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.2	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	278	500	2000
4.	Total Hardness as CaCO ₃	mg/L	165.2	200	600
5.	Alkalinity as CaCO ₃	mg/L	86.3	200	600
6.	Calcium as Ca	mg/L	40.1	75	200
7.	Chloride	mg/L	38.2	250	1000
8.	Sulphate	mg/L	39.7	200	400
9.	Nitrate	mg/L	3.1	45	No Relaxation
10.	Iron	mg/L	0.17	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	15.8	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	25.9	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.7	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS – Not Specified

Date of Sampling: 17.03.2023

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.16	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	294	500	2000
4.	Total Hardness as CaCO ₃	mg/L	175.5	200	600
5.	Alkalinity as CaCO ₃	mg/L	85.3	200	600
6.	Calcium as Ca	mg/L	42.1	75	200
7.	Chloride	mg/L	38.3	250	1000
8.	Sulphate	mg/L	43.7	200	400
9.	Nitrate	mg/L	3.1	45	No Relaxation
10.	Iron	mg/L	0.19	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	17.1	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature °C	°C	27.5	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.1	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS – Not Specified

Date of Sampling: 17.03.2023

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.08		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	269		500	2000
4.	Total Hardness as CaCO ₃	mg/L	170.4		200	600
5.	Alkalinity as CaCO ₃	mg/L	95		200	600
6.	Calcium as Ca	mg/L	42.2		75	200
7.	Chloride	mg/L	30.2		250	1000
8.	Sulphate	mg/L	41.2		200	400
9.	Nitrate	mg/L	3.2		45	No Relaxation
10.	Iron	mg/L	0.16		0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)		1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)		-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)		5	15
14.	Magnesium (Mg)	mg/L	15.8		30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)		0.2	1
16.	Colour	Hazen	BQL(QL=1)		5	15
17.	Odour	...	Agreeable		Agreeable	Agreeable
18.	Temperature °C	°C	25.1		-	-
19.	Taste	...	Agreeable		Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)		0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)		0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)		0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)		0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)		0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)		0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)		0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)		0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)		0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)		0.01	No Relaxation
31.	Silica (Si)	mg/L	7.2		NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)		0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent		Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent		-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS – Not Specified

Date of Sampling: 17.03.2023

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.51
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	50.0
4.	Total Dissolved Solids	mg/L	431.0
5.	BOD at 27°C – 3 Days	mg/L	26.0
6.	Chemical Oxygen Demand	mg/L	85.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	103.0
9.	Sulphate as SO ₄	mg/L	146.8
10.	Ammonical Nitrogen as NH ₃	mg/L	4.0
11.	Total Kjheldal Nitrogen as TKN	mg/L	10.7
12.	Dissolved Phosphate	mg/L	1.4
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 17.03.2023

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.25
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	46.0
4.	Total Dissolved Solids	mg/L	397.0
5.	BOD at 27°C – 3 Days	mg/L	15.0
6.	Chemical Oxygen Demand	mg/L	63.7
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	88.3
9.	Sulphate as SO ₄	mg/L	158.9
10.	Ammonical Nitrogen as NH ₃	mg/L	3.9
11.	Total Kjheldal Nitrogen as TKN	mg/L	14.2
12.	Dissolved Phosphate	mg/L	2.1
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 21.03.2023

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.37
2.	Turbidity	NTU	1.75
3.	Total Dissolved Solids @ 180 °C	mg/L	212.0
4.	Total Suspended Solids	mg/L	40.0
5.	Dissolved Oxygen	mg/L	4.8
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	35.2
8.	Sulphate	mg/L	32.1
9.	Nitrate	mg/L	5.1
10.	Fluoride	mg/L	0.41
11.	BOD at 27°C – 3 Days	mg/L	5.0
12.	Chemical Oxygen Demand	mg/L	15.2
13.	Residual Chlorine	mg/L	BQL(QL=0.02)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	25.8
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.17
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica(Si)	mg/L	6.20

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS – Not Specified

SECTION 10: NOISE LEVEL MONITORING

To know the background ambient noise level at the project and surrounding environment, noise level were measured at all the ambient air monitoring stations for baseline study.

The Day time & Night time average noise level data are given in tabular formats as well as in graphical form for easy interpretation.

Here, the day time means time from 06:00 am to 10:00 pm & night time means time from 10:00 pm to 06:00 am.

$$Leq = \frac{10 \log_{10} (t_1 \times 10^{\frac{L_1}{10}} + t_2 \times 10^{\frac{L_2}{10}} + t_3 \times 10^{\frac{L_3}{10}} + \dots)}{T}$$

Where Leq = Equivalent continuous noise level (dB) (A)

t1 = time at L1 (Hours)

t2 = time at L2 (Hours)

L1 = sound pressure level dB (A) at time 1

T = total time over which the Leq is required (Hours)

(N1) At Motia Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
	CPCB Standard for Residential Area	55	55	55	45	45	45
1	16.01.2023	53.1	41.2	48.1	42.0	32.5	35.8
2	09.02.2023	55.0	42.2	50.0	43.1	31.9	37.4
3	20.03.2023	52.1	40.3	49.3	41.2	33.7	35.5

(N2) At Mali Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
	CPCB Standard for Residential Area	55	55	55	45	45	45
1	17.01.2023	54.6	39.1	49.1	42.1	32.8	37.1
2	10.02.2023	52.7	40.3	48.3	43.2	33.4	36.1
3	20.03.2023	54.7	39.4	47.8	42.4	32.7	42.4

(N3) At Nayabad Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
	CPCB Standard for Residential Area	55	55	55	45	45	45
1	17.01.2023	53.9	40.4	48.5	43.7	31.9	35.9
2	10.02.2023	54.1	42.3	49.3	42.5	32.2	36.8
3	22.03.2023	53.4	40.8	48.2	41.1	33.4	35.6

(N4) At Patwa Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	16.01.2023	54.2	40.1	48.6	41.1	33.2	36.5
2	09.02.2023	54.6	39.7	47.6	40.5	32.7	35.5
3	22.03.2023	52.1	40.3	49.3	41.2	33.7	35.5

(N5) Nr. Adani Office

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.01.2023	55.0	43.1	47.1	44.1	33.3	39.0
2	14.02.2023	54.2	42.0	48.2	42.8	32.9	40.2
3	24.03.2023	55.0	43.2	49.5	43.1	33.0	37.9

(N6) Nr. BTG Area (U/C)

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	19.01.2023	72.8	53.7	64.8	56.8	43.2	48.7
2	13.02.2023	73.1	54.8	65.7	58.1	43.7	51.2
3	23.03.2023	74.2	56.1	63.4	57.1	41.3	50.7

(N7) Nr. CT Area

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	19.01.2023	73.8	52.8	66.7	55.9	43.8	49.7
2	13.02.2023	72.9	55.2	64.3	56.2	44.4	48.9
3	23.03.2023	74.8	57.2	66.1	58.7	45.1	48.5

(N8) Nr. RW Reservoir (U/C)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.01.2023	72.7	52.5	66.1	57.2	44.0	49.8
2	14.02.2023	74.3	53.8	67.2	58.2	43.9	50.5
3	24.03.2023	73.8	54.3	64.9	55.7	43.0	49.7

(N9) Nr. STP (In township)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	21.01.2023	53.8	40.7	48.3	42.7	34.0	35.6
2	15.02.2023	54.7	41.5	47.8	43.5	33.8	37.1
3	25.03.2023	53.9	42.2	46.7	42.6	32.2	36.4

(N10) Nr. Temple (In township)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	21.01.2023	54.9	41.7	48.2	44.2	33.1	36.1
2	15.02.2023	53.9	42.4	49.0	42.9	32.8	37.5
3	25.03.2023	54.6	41.9	48.3	43.5	31.8	35.8

From above tabulated results it can be concluded that the noise level was within the prescribed limits throughout the monitoring period at the stated locations.

SECTION 11: SOIL ANALYSIS**11.1 CONCEPT & SCOPE**

Soil is fundamental & ultimate natural resources that full fill a number of functions & provide various services like agriculture, industrial construction & ecological habitat development etc. Some of the most significant impacts on this resource occur as a result of activities associated with the use of chemical fertilizers, unscientific construction activities, unplanned city design, unscientific land use pattern and land filling by toxic materials.

Soil analysis can determine the fertility or the expected growth potential and the nutrient deficiency and potential toxicity which help in taking cost effective Marision for the better soil management.

Location Code	Name of Location
S-1	Nr. Mali Village
S-2	Nr. Nayabad Village
S-3	Nr. Patwa Village

11.2 SOIL ANALYTICAL RESULTS

Date of Sampling: 06.01.2023

Location: Nr. Mali Village				
Date of Sampling: 06.01.2023				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.46	NS
2.	Calcium as Ca	%	1.05	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.61	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.041	NS
7.	Chloride as Cl	%	0.081	NS
8.	Zinc as Zn	mg/kg	7.53	NS
9.	Nitrogen as N	%	0.065	NS
10.	Phosphorous as P	%	0.0029	NS
11.	Potassium as K	%	0.045	NS
12.	Iron as Fe	%	0.056	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.88	NS
15.	Organic Carbon	%	0.51	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	55	NS
18.	Silt	%	30	NS
19.	Clay	%	15	NS

Location: Nr. Nayabad Village				
Date of Sampling: 06.01.2023				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.64	NS
2.	Calcium as Ca	%	1.12	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.58	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.056	NS
7.	Chloride as Cl	%	0.091	NS
8.	Zinc as Zn	mg/kg	3.54	NS
9.	Nitrogen as N	%	0.061	NS
10.	Phosphorous as P	%	0.0024	NS
11.	Potassium as K	%	0.039	NS
12.	Iron as Fe	%	0.061	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.66	NS
15.	Organic Carbon	%	0.38	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	65	NS
18.	Silt	%	25	NS
19.	Clay	%	10	NS

Location: Nr. Patwa Village				
Date of Sampling: 06.01.2023				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.81	NS
2.	Calcium as Ca	%	1.07	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.59	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.068	NS
7.	Chloride as Cl	%	0.077	NS
8.	Zinc as Zn	mg/kg	6.55	NS
9.	Nitrogen as N	%	0.055	NS
10.	Phosphorous as P	%	0.0019	NS
11.	Potassium as K	%	0.059	NS
12.	Iron as Fe	%	0.041	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.74	NS
15.	Organic Carbon	%	0.43	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	60	NS
18.	Silt	%	25	NS
19.	Clay	%	15	NS

Note: NS= Not Specified

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(APRIL 2022- MARCH 2023)

INTRODUCTION

The Adani Foundation, the CSR arm of Adani Group of Companies, executes Corporate Social Responsibility projects for Thermal Power Plant, Motia in four main core areas— Education, Community Health, Sustainable Livelihood Development and Community Infrastructure Development. With a people centric approach, the Foundation responds towards the emerging needs at the grass roots level aligning its activities with the Sustainable Development Goals (SDGs) with a vision to end poverty, protect and preserve planet and bring solidarity and peace among all individuals and society. Adani Foundation aims to walk with the communities, empower people to look ahead by making the right choices and securing a bright and beautiful future, together. The total population of Godda district is 13.13 lakhs, out of which population of our intervention villages is 80000 approximately. We have been able to benefit 5 lakhs people directly and 13.77 lakhs people indirectly across the stretch of 91 Kms ranged from Godda district to Sahebganj district passing through more than hundreds of projects affected villages by organizing various community development activities in Education, Community Health, Sustainable Livelihood and Rural Infrastructure Development verticals.

Gyanodaya, a digital learning program swiftly met the needs of spreading the light of education which facilitated over 90,000 students of 316 schools of Godda district to continue building their career in a new normal. The testament of program impact is showcased by exemplary performance of State topper of 10th Board Exam, Ms. Tanu Kumari, a student of Gyanodaya smart class of Godda district. Under Samagra Shiksha Abhiyan, 1854 government schools in all aspirational districts of Jharkhand have been started with ICT labs and 1000 smart classes based on Godda Gyanodaya model. Gyanodaya program was also selected to showcase the milestones on Digital India Day event on July 2022 at Gandhinagar, Gujarat.

In health program, Adani was felicitated with 'Certificate of Appreciation' from Central TB Division, Ministry of Health & Family Welfare, Govt. of India, and District administration acknowledging valuable contribution to the country's fight against Tuberculosis People with TB by providing Nutritional support to 353 TB patients.

Similarly, it was endeavored to uplift and enhance the standard of living of rural dwellers through Sustainable Livelihood Development Programme and several Health & Rural infrastructure interventions to upgrade the infrastructure of education and health institutions.

The robust team of Adani Foundation at Jharkhand comprises of dedicated professionals including Unit CSR Head, Project Officers, Assistant Suposhan Officer and a Medical team comprises of a doctor and four Para medicos.

The progress of CSR projects/interventions from **April 2022 to March 2023** is described in detail as under:

DETAILED DESCRIPTION OF CSR ACTIVITIES

EDUCATION & RURAL SPORTS

Gyan Jyoti Tuition Programme (Providing Quality Education in Society)

1. 'Apna School' initiative to provide coaching classes for students: This initiative is operational in villages falling under poor socio- economic condition namely Nayabad, Gangta, Baliakitta, Parasi, Amrakanoli, Kauribihar, Kaithartikar of core, and railway line area and Jiyajori, Maniamore, and Baniadih village of pipeline area to provide coaching classes to the students till 8th standard and provide access to formal education to the poor and enthusiastic children.

The total number of students getting benefitted is **537**. The local teachers from the community have been engaged in the teaching. This initiative has led to improvement in learning and education of children. This coaching class is also useful to interact with the community.

The initiative has mainly been taken in areas with low literacy level i.e., below 50% literacy among Santhal and Yadav Community (Scheduled Tribes and Other Backward Classes).

SN	PROGRAM LOCATION	BLOCK	CLASS	STUDENTS
1	Nayabad	Godda	I to VIII	17
2	Gangta	Godda	I to V	14
3	Baliakitta	Podaiyahat	I to V	28
4	Parasi	Podaiyahat	I to V	28

5	Amrakanoli	Poreyahat	I to V	53
6	Kauribihar	Podaiyahat	I to V	49
7	Kaithatkar	Podaiyahat	I to V	20
8	UMS Jiyajori	Mahagama	I to V	12
	UMS Jiyajori	Mahagama	VI to VIII	18
9	Karnu (Maniamore)	Mahagama	III to VI	41
10	MS Baniadih	Thakur Gangti	V to VIII	257
TOTAL				537

2. Adani Gyan Jyoti Yojana (Group 30): - Education plays a vital role in development of society economically, socially, and financially, it also helps to them strengthen, so Adani Gyan Jyoti Yojana was initiated in Motia Village in which 30 students each of 8th, 9th & 10th standard studies at the centre for their concept building.

- **Enrollment in Session 2022-23:** In this year, **58 children** are enrolled from class 9th- 10th standard in Super 30 coaching program in Motia village. They are able to prepare for their upcoming examination through concept building and remedial classes provided in Gyan Jyoti Kendra

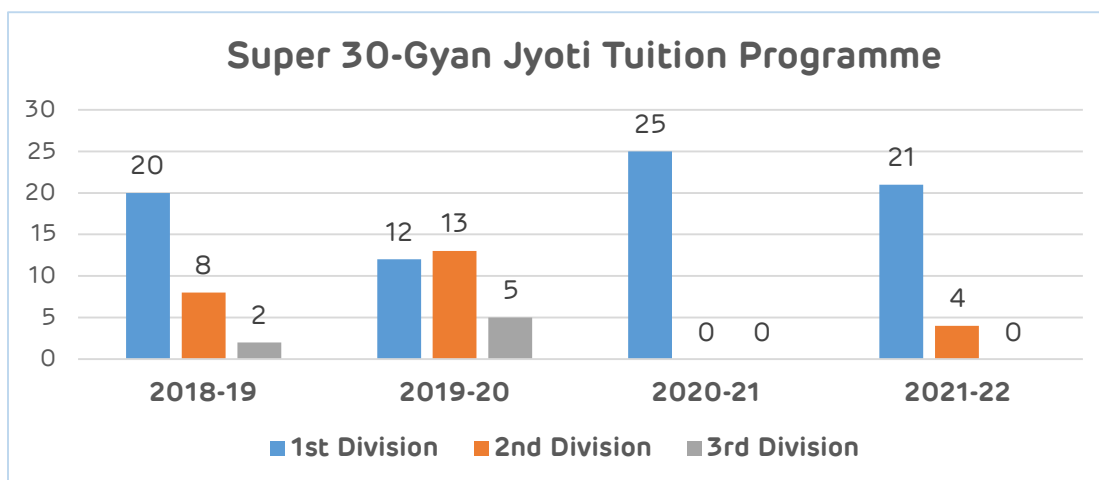
SN	PROGRAM LOCATION	BLOCK	CLASS	STUDENTS (2022-23)		
				Boys	Girls	Total
1	Motia	Godda	IX	12	18	30
2			X	20	8	28
TOTAL				32	26	58

Programme Outcome

- **Enrollment in Super 30- Class 10th:** During the last year 2021-22, a total of 50 students were screened after doing assessment of their performance based on their abilities and awareness after taking examination. Out of which, 25 students of Class 10th were selected and enrolled in Gyan Jyoti Tuition Programme- Super 30 from Motia village.
- **Academic Performance (Session 2021-22):** The students learning under Super 30 program in Gyan Jyoti Kendra, Motia have performed extremely well and passed with high grades of Academic Session 2021-22. The students succeeded with improved marks and passed with flying colours in their 10th board examination. All 25 students have passed the exam **(100% passing)**

percent). **7 students** have passed with **distinction marks above 75%**. Out of total 25 students, 21 (84%) students have passed the examination with **1st division marks** and 4 (16%) students with second division marks.

Super 30- Class 10 th Results- Gyan Jyoti Tuition Programme								
Academic Session	Gyan Jyoti Kendra	Students			Students			Overall Passing %
		Enrolled	Appeared	Passed	1 st Division	2 nd Division	3 rd Division	
2018-19	Motia	30	30	30	20	8	2	100
2019-20	Motia	30	30	30	12	13	5	100
2020-21	Motia	25	25	25	25	0	0	100
2021-22	Motia	25	25	25	21	4	0	100



- **Support for Board exam preparation:** Distribution of School Bags, Copy and Last 10 Year Model set papers based on class 10th JAC board syllabus to the students of class 10th at **Super 30 Coaching Centre, Motia**.
- **Questions Bank Distribution:** Last 10 years model set paper booklet based on class 10th JAC board exam is distributed among all students at Schools are: -
 1. Plus 2 High School Baksara,
 2. Plus 2 High School Sondiha
 3. High School Motia
 4. Super 30 Coaching Centre, Motia. Around 200 students benefited.

3.Gyanodaya Project: GYANODAYA, 'Mera Mobile, Mera Vidyalaya', a step towards enlightening the human lives', was launched by Adani Foundation in partnership with District Administration in August 2018 to promote e-learning through Smart Classes in Middle and Higher Secondary Government Schools for students of 6th-12th standard of Godda district. Gyanodaya project has abled to create its learning space and improved the diverse spectrum of education through digital learning in **316 Govt. Schools** with its outreach in more than **230 remote and untapped villages** of **9 blocks** of Godda district of Jharkhand.

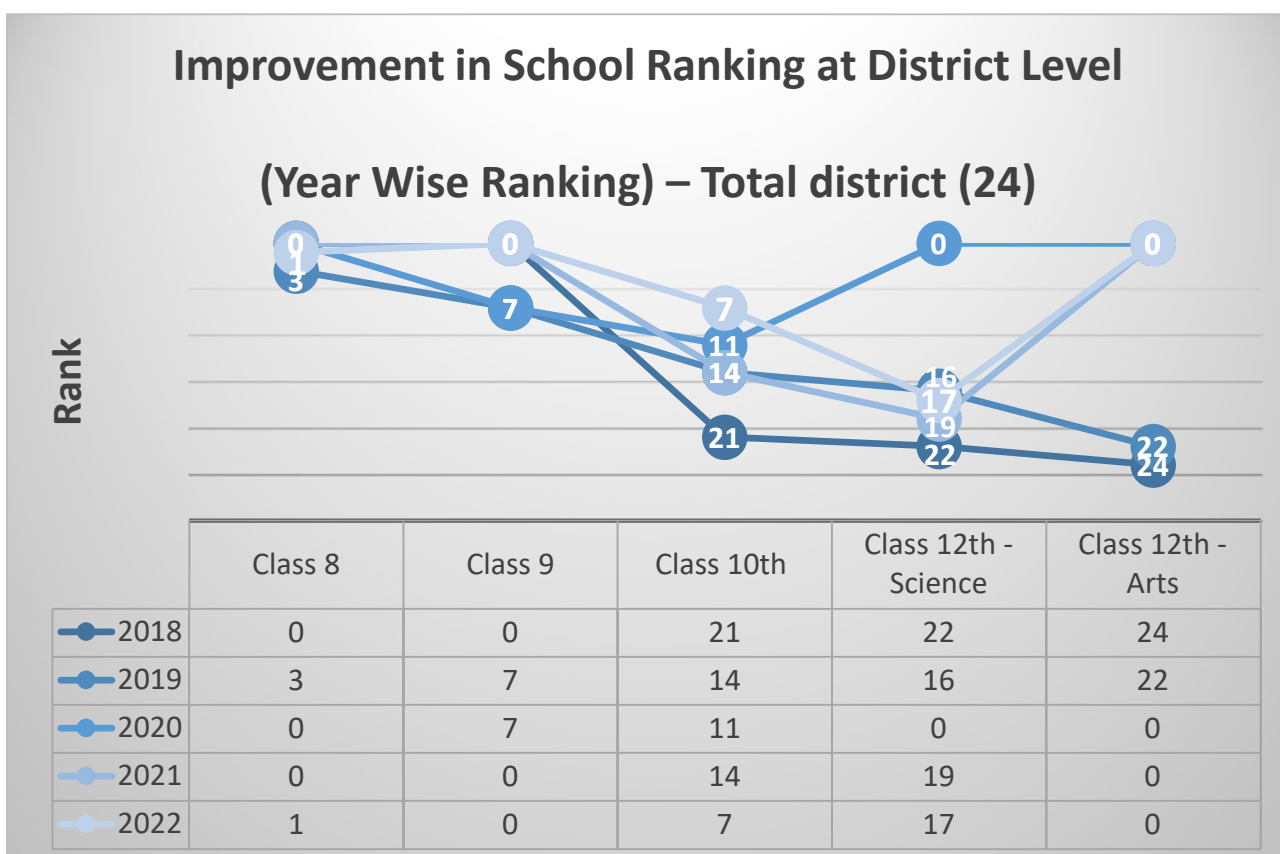
In the tenure of less than 4.8 years, the program has leveraged its services facilitated by over **1872 skilled teachers** and benefiting more than **90,000 students directly**. Transformation in their lives has been observed through multiple benefits of digital learning such as - digital skills, decision making capabilities, visual learning, cultural awareness, improved academic performance and creativity. Gyanodaya model is filling the gap of teachers' shortage by enabling students to access smart classes with a simple touch of TV remote.

Outreach of Gyanodaya: Gyanodaya program has created its impact in **167** Middle Schools, **109** High Schools, **10** Plus 2 Schools, **17** KGBVs, **7** Welfare Association Schools, and **6** JEE/NEET Centres, respectively.

Block	Middle schools	High Schools	Plus2 Schools	KGBVs	Welfares	JEE/NEET Centres	Aggregate
Godda	52	26	3	2	0	3	86
Sunderpahari	3	5	0	2	3	NA	13
Podaiyahat	30	16	3	2	0	NA	51
Pathargama	32	7	1	2	0	1	43
Basantrai	14	5	0	1	0	NA	20
Mahagama	13	17	2	2	0	1	35
Boarijore	5	10	0	2	4	1	22
Mehrma	10	12	0	2	0	NA	24
Thakurgangti	8	11	1	2	0	NA	22
Total	167	109	10	17	7	6	316

Programme Outcome

- Improvement in School Ranking at District Level:** The magnificent attempt of Gyanodaya program has improved the education system of Godda district and created an ecosystem of education by tapping up the government schools and strengthening the institutions as model school through operation of Digital learning program. Similarly, the intervention has enhanced the learning outcomes in the district significantly as compared to the baseline statistics of education since year 2018. Gyanodaya- E- Learning program has left remarkable footprint with significant increase in the school rankings at district level in the **year 2022** as compared to preceding four consecutive years' performance.



* Source- Education department, Godda

*No Examination held of Class 8th and Class 9th in 2018

*No Examination held of Class 8th due to COVID 19 in 2020 & 2021

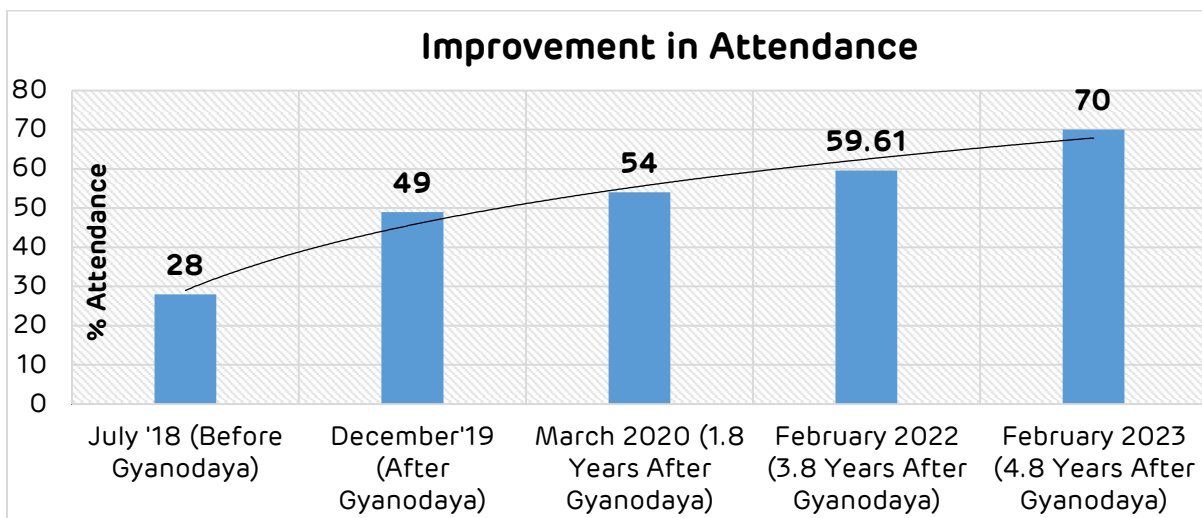
- Class 8th stands at 1st rank (2022) as compared to 3rd rank (2019) among 24 districts of Jharkhand state.**

- b) Class 9th standard upholds **7th** rank position in the year 2019 & **2020** as compared to **21st** position in the year 2018-19
- c) The ranking position of Class 10th has improved from 21st rank (2018) to 14th rank (2019) to **11th** rank (2020) to **14th** rank (2021) to a significant achievement by securing **7th rank position in the year 2022**.
- d) 22nd rank (2018) to 16th rank (**2019**) to 19th rank (2021) to **17th rank in 2022** in class 12th (Science) and
- e) 24th rank (2018) to **22nd rank (2019)** in class 12th (Arts)

2. Increase in Attendance Rate of Students: The visually appealing, easy-to-grasp and retainable concepts covered in the study materials has led to **increase** in the class-wise attendance comparing the figures of past years (**July 18**) from **20% low attendance rate** to a rise in **54%** in March 2020 to **59.61%** in February 2022 to an exemplary growth to **70% in February 2023**.

A significant reduction in dependency on tuition classes has been observed across the blocks which will thereby increase the faith of students and parents likewise on government schools. The growth in the class-wise attendance has been a result of making learning engaged and interactive using conceptualized and animated concept videos being taught under the Gyanodaya model.

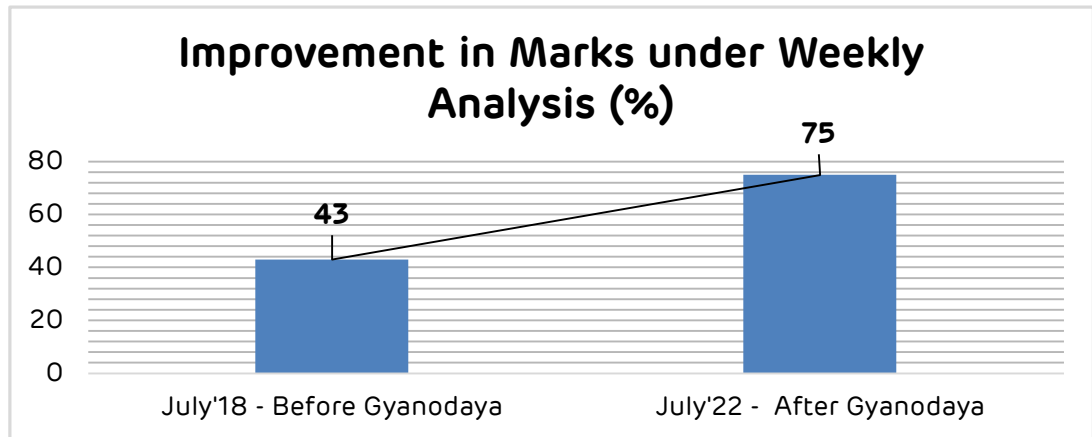
Improvement in Attendance after implementation of Gyanodaya			
July-18 (Before Gyanodaya)	March 2020 (1.8 Years After Gyanodaya)	February 2022 (3.8 Years After Gyanodaya)	February 2023 (After 4.8 Year after Gyanodaya)
20-30%	54%	59.61%	70%



3. Improvement in Marks of Students: Prior to educational initiative of Gyanodaya, the students used to fall under 30-40% marks bracket which has now shifted to **70-75%** marks bracket on an average due to better understanding and retention of basic concepts and a daily quiz after every video.

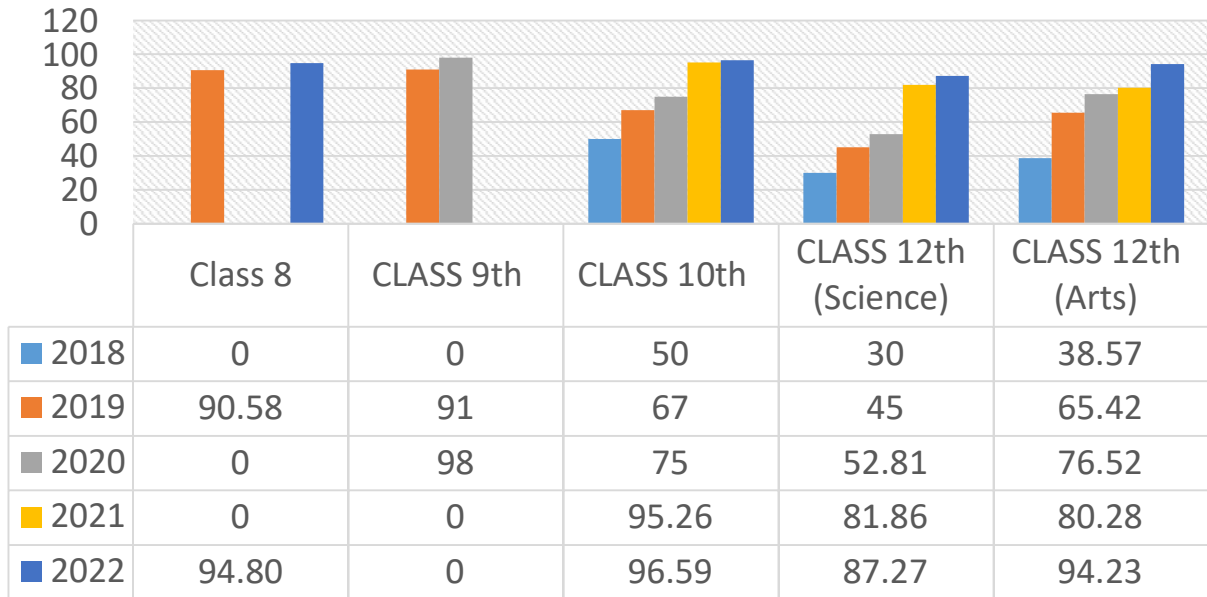
Impact of Gyanodaya project on Results is as given below:

July-18 (Before Gyanodaya)	July-22 (After Gyanodaya)
Improvement in Marks under Weekly Analysis	
30% - 40%	70-75 %



4. Increase in Passing Percentages: With the advent of Gyanodaya, the passing percentage of students of Class 8th, Class 10th and Class 12th has increased progressively in the year 2022 as compared to previous four consecutive years 2021, 2020, 2019 and 2018.

Passing Percentage – Year 2018 - 2022



**Year Wise Passing %*

- i. **Class 10th:** The passing percentage of Class 10th students has increased in **2022 (96.59%)** as compared to status of 2021 (95.26%), 2020 (75%), 2019 (67%) & 2018 (50%).
- ii. **Class 12th (Science):** The passing % of Intermediate students has improved significantly as compared to figures of 30% in the year 2018, 45% (2019), 52.81% (2020), 81.86% (2021) to major improvement of **87.27% (2022)** in Intermediate (Science)
- iii. **Class 12th (Arts):** The passing % has also improved from 38.57% (2018) to 65.42% (2019) to 76.52% (2020) to 80.28% (2021) to **94.23% (2022)** in Intermediate (Arts) Stream.
- iv. **Class 9th:** Passing percentage increased from 91% (2019) to **98%** in the year **2020**.

v. Similarly, the passing percentage of **JAC 8th Board** students has improved from **90.58%** in the year 2019 to **94.80%** in the year 2022.

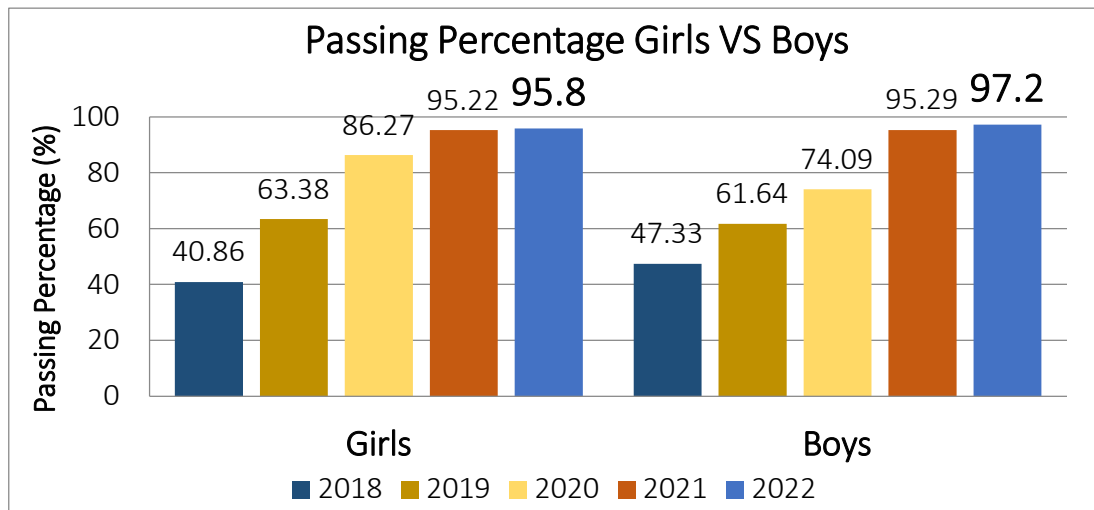
Class-wise Improvement in Passing Percentages					
Academic Year	Class 8 th	Class 9 th	Class 10 th	Class 12 th Science	Class 12 th Arts
2017-2018	0	0	50	30	38.57
2018-2019	90.58	91	67	45	65.42
2019-2020	NA	98	75	52.81	76.52
2020-2021	NA	NA	95.25	81.95	80.28
2021-2022	94.80	NA	96.59	87.27	94.23
% Increase	4.65	7.69	93.18	190.9	144.3

**Exams were not conducted of class 8th & 9th in 2018*

***% increase figure from 2018 to 2021 of class 9, 10, 11 & 12*

****% increase figure from 2019 to 2022 of class 8*

5. Passing Percentages of Girls Vs Boys: The graph presents a sharp increase in the passing percentage of girls and boys as compared with the last 4 years. In the session 2017-18, girls passing percent was 40.86% which increases to **95.8% in the session 2021-22**. Simultaneously, boys passing percentage in the session 2017-18 was 47.33% which increases to **97.2% in the session 2021-22**.



Source: Education department of Godda district

- **Gyanodaya YouTube Channel: Gyanodaya YouTube Live class** for the students studying in class 10th and 12th. Live class benefits can be availed by the students of any district of Jharkhand state. The syllabus of live class is based on Jharkhand Board. So far, **125024 views from April 2022 to March 2023**.

- **Delivery of Gyanodaya Equipment & Handholding to New Gyanodaya Schools:** During the year 22-23, Gyanodaya Smart Class equipment was delivered to 26 Schools of 5 blocks of Godda district namely, Godda, Basantra, Boarijore, Pathargama, and Mehrama. A detailed Handholding session was also conducted in each new Gyanodaya school to operate Smart Classes properly. On the day of handholding, Gyanodaya team makes the teachers and students familiar with technology.

In addition, teachers are being trained for the proper use of the content to ensure that the students can utilize it in the best possible manner. A nodal teacher is appointed with the help of Headmaster of the school. With help of other teacher at the school, nodal teacher keeps the record of various activities like total class conducted, student's attendance, daily test, and analysis test marks. The parents of the students are also involved, and they are made aware of the Gyanodaya Smart Class and the benefits of attending the Gyanodaya Class for their children.

Gyanodaya Initiatives for Capacity building:

- **Model test paper** released by the Jharkhand Board is being provided to each Government High Schools (134 High School) of Godda district to prepare students for the exam in a better way.
- **Mock Test Exam:** Mock tests were conducted for the preparation of upcoming board exams in all high schools of Godda district where students were made to practice model test papers of all subjects. **Around 1,30,000+ students** from all the government high schools will appear in the mock test. **Around 14000+ students** from all the government high schools appeared in the mock test.
- **IIT JEE-Centre:** Registration for IIT-JEE classes session 2022-23 was done in JNV Lalmatia, Inter College Pathargama and Inter College Mahagama. The aspiring students of IIT JEE have filed the form, and orientation were also done in all three centres.

- ❑ **Parents Teacher Meeting:** Gyanodaya team participated and conducted PTMs in all 9 blocks and discussed the importance and value of education and made them aware about Gyanodaya simulation and how the initiative is helping and will be helpful for their children. Over **200** Parents Teacher Meetings (PTMs) were conducted, and **5000 Parents** participated.
- ❑ **Career counselling** sessions for students of class 10th and 12th were organized by Gyanodaya team in all 9 KGBV of Godda district and 75 High School of Godda since April 2022. The main objective of the session was to help students choose an appropriate career based on their interests, skills, and abilities. A total of **8000 students** took advantage of career counseling.
- ❑ **Back to School Campaign:** Gyanodaya Godda is organizing a "Back to School" campaign under the aegis of District Administration, Godda and Adani Foundation. Aimed at retention and enrollment of dropouts, immigrants and not yet enrolled children and children with special needs. The Gyanodaya team visited village Karudih, Jamua, Indrachak, Pipra, etc. and met parents and students and raised awareness about the importance of going to school. **A total of 50 Villages & 500 HHs covered** and interacted with **1000 students**.
- ❑ **Teachers Training: 1560 Teachers** have been trained under the initiative to conduct smart classes independently & efficiently.

Red Zone School Visit- Schools having an average passing percentage less than 65% in the last 4 years are kept under Special attention and focus (Red Zone Schools). **46 Schools** in Red Zone. The Gyanodaya team visited red zone schools and asked the students about all kinds of doubts before the examination. Students were encouraged to study; important topics of all subjects were discussed along with the correct way of filling OMR sheets to reduce marks deduction.

GUEST VISIT

- **Azim Premji Foundation:** Prof. Shanta Kumar and Prof. Subrata Mishra from Azim Premji Foundation visited Godda in July 2022 to do assessment on Gyanodaya Project and found it as a great tool that can Empower Teachers and Improve Educational Achievements.
- **Adani Head Office team visit:** Gyanodaya Godda program was introduced to the visiting team from Adani HO to Adani office at Godda in September 2022. The team visited KGBV Pathargama and HS Motia, while the visiting

team found a very positive environment in the Gyanodaya classroom and very energetic students taking benefits of Gyanodaya class. The team also interacted with the school teachers, mukhiyas and local people. Overall, it was a great experience and a matter of honor for them that Gyanodaya is providing quality education in the remotest areas of Godda, Jharkhand.

- **Gyanodaya Godda documentary shoot** by ABP News in February 2023.

Showcasing Gyanodaya in Digital India Week

Digital India Week was organized by **Ministry of Electronics and Information Technology (MeitY) from July 1-7, 2022**, to celebrate India's digital transformation journey, at Gandhinagar, Gujarat. Digital India Day on July 1, 2022, was graced by Hon'ble Prime Minister with participation of Tech Startups and Digital India beneficiaries from all over India.

The aim of Digital India Week was to celebrate and showcase India's technological prowess to the world, explore collaboration and business opportunities for Tech Startups and inspire the NextGen citizens by presenting a techade of opportunities for them. The over- arching theme for Digital India week was **"Digital India: Catalyzing New India's Techade"**. Digital Expo- 'Digital Mela' was setup from July 1-3 at the Gandhinagar, Gujrat Showcasing the best of eGov and digital solutions from Startups, Central and State Governments, Academia, and Industry Partners.

The grand exhibition had pavilions for emerging technologies such as AI, Blockchain, AR/VR etc. In addition, four-day training/orientation program- Digital India Knowledge Exchange: Showcasing India Stack and India's Digital Products & Services was organized in virtual mode from July 4-7, 2022. The platform brought together practitioners and Digital Transformation leaders, who shared their experience of implementing transformational projects at population scale.

The stellar role of Adani Foundation in "Gyanodaya eLearning Platform" project was selected to participate and showcase the milestones on Digital India Day event from **4th to 9th July 2022**.

Awards & Accolades

1. **Replication of Gyanodaya Godda Model:** Under Samagra Shiksha Abhiyan, 1854 government schools in all aspirational districts of Jharkhand have been

started with ICT labs and 1000 smart classes based on Godda Gyanodaya model.

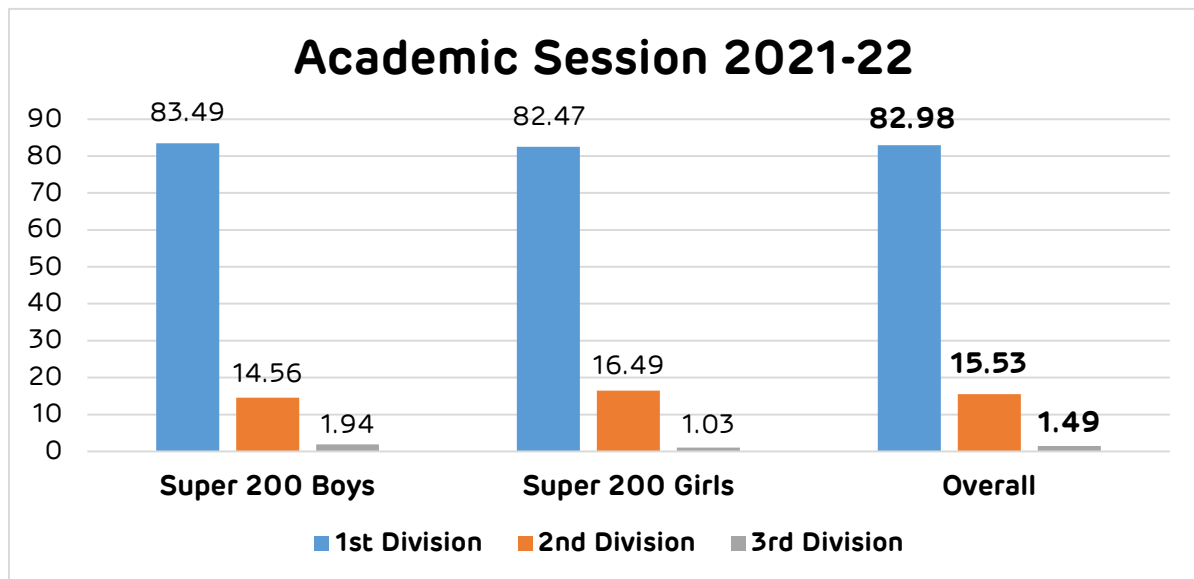
2. **Article on Gyanodaya Godda** is published in the booklet of Excellence in e-Governance 2021
3. Godda's daughter Tanu Kumari became the State topper in 10th Board Exam by securing **490 Marks (98%)** from Plus Two High School Boarjor, Godda.

4. Super 200 Program: Online Super 200 class was operational for the preparation of 10th board examination of **200 meritorious students (103 boys and 97 girls)** of Godda District studying in class 10th. Online Classes was conducted under Gyanodaya program facilitated by **20+ best teachers** of Godda. The students got the opportunity to join online live class, and availed the facilities like daily assessment, one to one interaction with teachers, study materials etc.

Performance of Students of Academic Session 2021-2022

- **Super 200 Girls:** During the Academic Session, 2021-22, 97 girls had appeared in 10th Board exams. Out of which, **80 girls (82.47%)** secured **1st division marks**, 16 students (16.49%) got 2nd division marks, and 1 student got 3rd division marks.
- **Super 200 Boys:** 103 boys had appeared in the board exam, out of which **86 boys (83.49%)** of Super 200 programme got **1st division marks**, 15 students (14.56%) got 2nd division marks, while 2 students fallen under 3rd division. District Administration, District Education Officer (DEO) and whole team of Gyanodaya, Godda, Super 200 Program and Adani Foundation were applauded for their endeavour in changing the scenario of education in Godda district.

Academic Session 21-22 (Passing Results in %)							
Super 200 Students	Total Appeared	1st Division		2nd Division		3rd Division	
		Students	%	Students	%	Students	%
Super 200 Boys	103	86	83.49	15	14.56	2	1.94
Super 200 Girls	97	80	82.47	16	16.49	1	1.03
Overall	200	166	82.98	31	15.53	3	1.49



5. Coaching Program for Jawahar Navodaya Vidyalaya (JNV)- Class 6 Entrance Examination, an initiative of Utthan program of Adani Foundation was begun in January 2020 with an objective to address educational needs of poorer, rural, and tribal children, provide opportunities to bring them at par with others in the development of conducive environment and build their bright and secured career from right schooling by qualifying Navodaya entrance examination.

Methodology Adopted

- a. Identification of students studying in govt schools for securing selection from rural quota (Enrolment Policy of JNV-75% rural quota, 25% urban quota, Total number of seats -80)
- b. Enrollment of students for preparation of entrance examination in coaching centres followed by registration of students for appearing in entrance examination.
- c. Special coaching classes by teachers (Offline mode) are conducted at different locations at village level and online access to learning materials by students (self-study and smart classes) are adhered.
- d. The preparation of the examination includes arrangement of learning materials, stationery items and miscellaneous items.
- e. Weekly Grand tests are conducted by teachers for evaluation of students' performance and proper follow-up of students is done for improvement area.

Enrollment for Session 2023-24: An initiative of Adani Foundation was operational in **nine-coaching centres** located in 9 core and pipeline villages of Godda district benefitting over **128 students (60 Boys, 68 Girls)** for preparation and qualifying the examination of Navodaya entrance examination for Academic Session 2023-24. The program is facilitated by **nine skilled Utthan Sahayaks (teachers)**, adequate infrastructure and educational resources for Academic Session 2023-24.

Navodaya Coaching centre detail					
S.I	Name of Centre	Block Name	Number of Boys	Number of Girl	Total
1	Dumariya	Godda	6	7	13
2	Motiya	Godda	7	7	14
3	Sondiha	Poreyahat	8	6	14
4	Baksara	Poreyahat	6	8	14
5	Birniya	Poreyahat	10	11	21
6	Parasi	Godda	5	6	11
7	Karnu	Mahagama	8	10	18
8	Baniyadih	Thakur Gangti	4	6	10
9	Kauribahiyar	Godda	6	7	13
Total			60	68	128

- **Selection of Student (Session 2022-23) in JNV Class 6:** The Navodaya entrance examination for session 2022-23 was conducted on 30th April 2022 in which all 147 students had appeared in the examination. Out of 147 students, 1 student (Sakshi Kumari from Sondiha village- Sondiha center) has cleared the examination and was selected for the admission in JNV for Academic Session 2022-23.
- **Support of Stationary Materials for JNV Coaching Program:** AF provided support of Stationary materials to Navodaya Coaching students in various AF run Navodaya Coaching centres. Over 100 students benefitted from this program, and they were extremely happy in getting stationary materials including bags, books, etc.

6. School Education Sponsorship Program

Context

Jitpur coal block is in the north-western part of Chuperbita Basin of Rajmahal coal field in Godda district of Jharkhand. Around 70 % of the population are PVTGs

including Santhal and Paharia tribes who reside in outskirts area in rural Godda depending upon traditional culture and lifestyles for their survival. Rain fed farming, NTFPs collection, and wage labor in coal mines during drought period is their only source of earning and substantial number of people falls below poverty lines. Due to lack of income, illiteracy, agriculture debt; lack of awareness about their rights and basic provisions, alcoholism and superstitions enters them in vicious circle of poverty.

Also, the tribal children cannot access to basic education due to poor socio and economic condition of their families. They are rather engaged in agriculture, labor, livestock grazing, and monotonous work of households. In times of nurturing with education and constructive environment, their childhood is lost in solitude and despair with chain of hardships and labor. Also, due to the lack of availability of adequate school and school teachers, there was 100% incidence of dropout in schools.

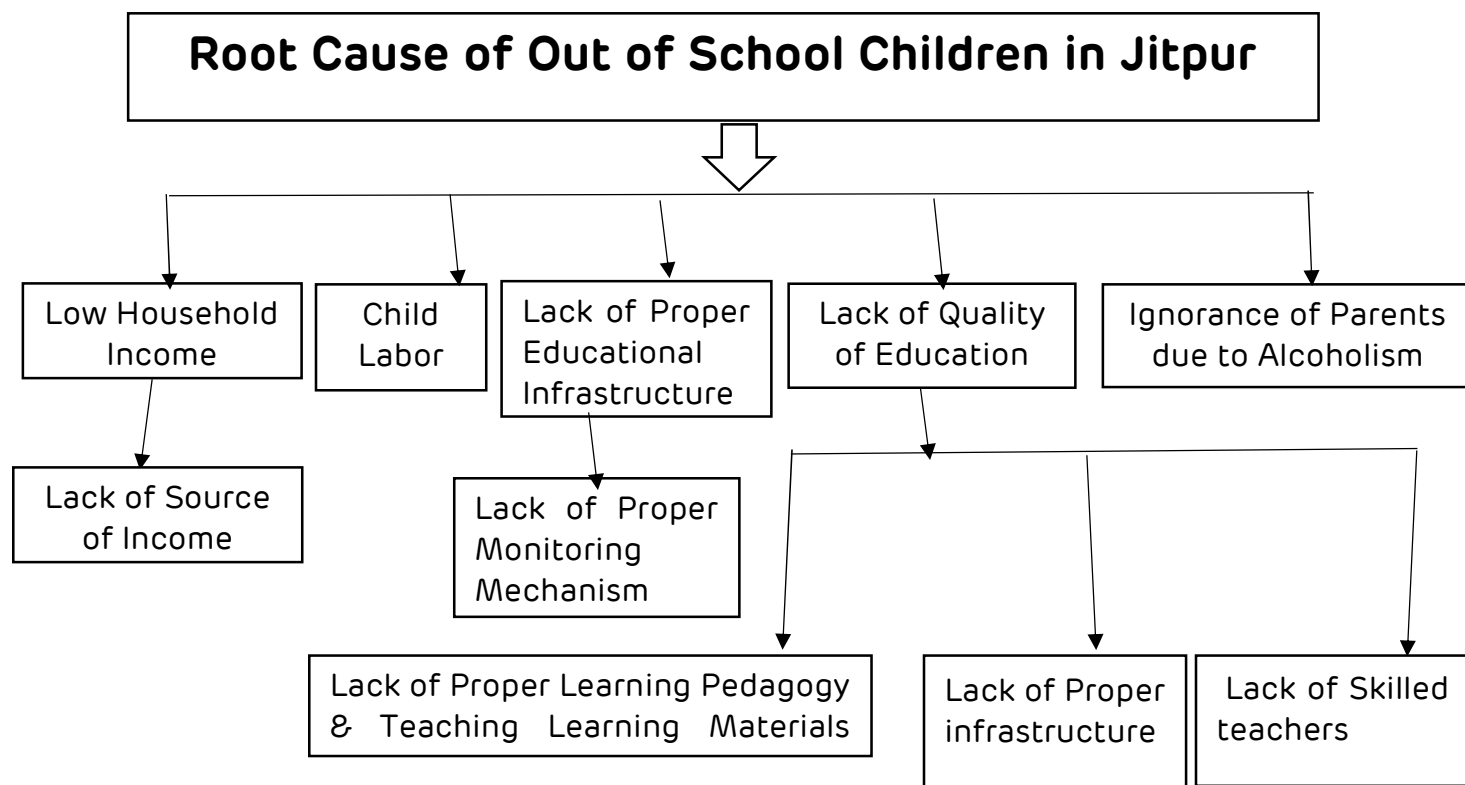


Fig. 1 Root Causes of Drop out of Children in Jitpur coal mines area.

C. Intervention

To reduce the plight of families and overcome difficulties, and reduce dropout rate of tribal children, Adani Foundation team launched *School Education Sponsorship*

Program in the year 2016 to provide 100% Education Support for one ward each from 275 Project Affected Families of Jitpur mines to reduce dropout by focusing on quality education and thereby regular attendance of students and ensure 100% literacy in new generation.

C.1 Services under Umbrella of Education Sponsorship Program

Under this programme, 100% Educational support is provided which comprises of (a) School Fees, (b) Books, (c) Stationary items, (d) Accommodation facilities, and (e) Fooding and Logistic facilities.

- i. **School Fees:** The School fees of each child are paid by the Adani Foundation under Financial Support for the education of children.
- ii. **Accommodation facilities:** The students are provided residential facilities on an annual basis for the duration of the regular academic session.
- iii. **Fooding and Logistic facilities:** The fooding and conveyance facilities are also provided for the children to gain access to schools coming from remote villages. Children are provided three times nutritious and healthy food keeping in safety and security as utmost priority.
- iv. **Teaching Learning Tools and Materials** such as Books, Stationary items, and related needs are taken care of each child going to school under umbrella of Education Sponsorship Program.
- v. **Skilled Teachers:** Highly qualified and well-versed teachers in nutshell of teaching sector grooms' students towards their better and bright future.

D. Annual Investment on Building Bright Future of Children

The annual expenses for each child are borne by the Adani Foundation. The unit cost of each child ranges from 1500 to 2000 per month i.e., investment of Rs. 24000 annual expenses on each child. During the preceding two consecutive financial years 2020-21, and 2021-22, a total of thirty-three lakhs for 275 tribal children was supported by Adani Foundation (Negotiated rate due to COVID 19).

Table 1 Financial Investment on Education of Children			
Year	Enrolled Students	Expenses per month/ward	Total Expenditure (in Lakhs)
2016-17	155	1500	27.90
2017-18	275	1750	57.75
2018-19	275	2000	66.00
2019-20	275	2000	66.00

2020-21	275	1000	33.00
2021-22	275	1000	33.00

C.2 Triggers of Adani Foundation

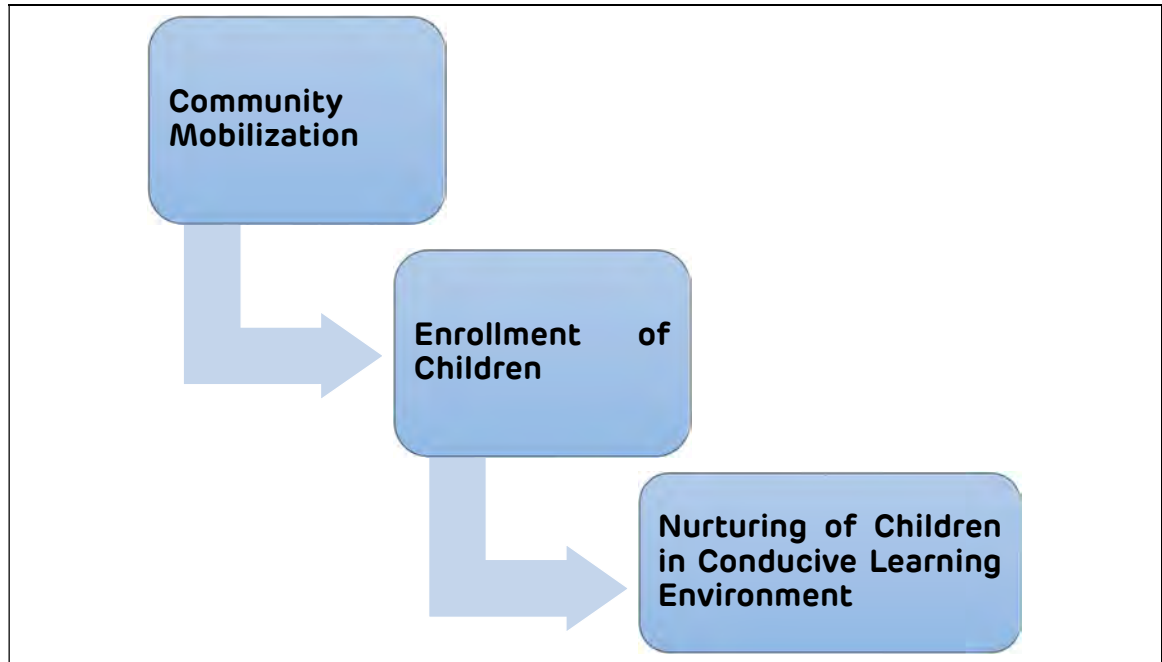


Fig. 2 Process of Intervention

- I. Community Mobilization:** The families were approached to inform, educate, and sensitize on provisions and importance of Residential School Facility under this programme. The community were mobilized with support of Village Resource Person, Community Leaders and active persons which helped disseminate knowledge regarding the services.
- II. Enrolment:** On June 2016, the parents of 155 wards were convinced in each family to enrol their children in educational institutions who were further, admitted in reputed private schools fulfilling all amenities (Table 3). In the first year, it was challenging to retain the enrolled students and attend regular classes, AF team put dire efforts to stabilize and continue the regular course.

Table 2 VILLAGE WISE ENROLLED CHILDREN FROM PROJECT AFFECTED FAMILIES (PAF)					
SN	Village	Enrolled (2020-21)	Total No. of Wards	Enrolled (2021-22)	Total No. of Wards
1	Dahubera	29	29	31	31
2	Pakeri	13	13	13	13
3	Dandagora	20	20	22	22
4	Dumarpalam	29	29	29	29
5	Jitpur	84	84	81	81
6	Kairajori	22	22	23	23
7	Paharpur	64	64	65	65
8	Sunder Pahari	07	07	07	07
9	Telvita	07	07	04	04
Total		275	275	275	275

Gradually, with quality learning pedagogy used by teachers and facilities provided to the students helped retain children who attended classes with their own interest, effortlessly. This resulted in streamline a greater number of children in the succeeding years with enrolment of total 275 children from 275 families in current duration (Table 2 & 3).

Table 3 YEAR WISE PROGRESS IN ENROLLMENT OF TRIBAL CHILDREN UNDER EDUCATION SPONSORSHIP PROGRAM					
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
155	275	275	275	275	275

II.1 Enrolment of Children in Schools: The children are enrolled in different Private Schools as per their interest, suitability, and convenience from respective villages. 132 students are learning in Veena Bharti Residential School, 73 students are learning in Viswa Bharti Mission School, 21 students in Nav Prabhat Mission School, and 49 students in Evergreen Bhartiya Charitable Trust (Table 4).

SN	School	Location	No. of Students
1	Evergreen Bhartiya Charitable Trust	Tiyodih, Sunderpahari Road, Godda	49
2	Viswa Bharti Mission School	Hanuman Nagar, Pakur Road, Godda	73
3	Veena Bharti Residential School	Gunghasa, Poriyahat, Godda	132
4	Nav Prabhat Mission School	Godda	21
Total Students			275

II.2 Students Enrolled in Elementary, Primary and Middle Schools: The objective of mainstreaming the poorer tribal children in formal education system has been reached by admitting children in reputed and qualified Private Schools in Godda district of Jharkhand. The commitment to link the tribal children of unheard and marginalized families are fulfilled keeping assuring *"Equal Right of Education for Every Child"*.

S N	School/Class	Number of Students											Total
		Nursery	L.K. G	U.K. G	I	II	III	IV	V	VI	VII	VIII	
1	Evergreen Bhartiya Charitable Trust	0	0	15	18	5	4	4	3	0	0	0	49
2	Viswa Bharti Mission School	0	10	6	14	18	17	3	4	1	0	0	73
3	Veena Bharti Residential School	0	0	21	31	29	22	14	5	5	4	1	132
4	Nav Prabhat Mission School	0	0	6	4	11	0	0	0	0	0	0	21
Total		0	10	48	67	63	43	21	12	6	4	1	275

Class Wise Enrolment of Children: Out of total 275 children studying under Residential Education /Sponsorship Programme, in the year 2021-22, 10 students studied in L.K.G., 48 students in class U.K.G., 67 students in class 1, 63 students in Class 2, 43 students in class 3, 21 students in class 4, 12 students in class 5, 6

students in class 6th, 4 students in class 7th and 1 student studied in class 8th standard (Table 5).

E. Project Outcome & Impact

- i. **Reduction in Drop Out Rate & Attendance rate of students:** Dropout rate of students studying in schools sponsored by Adani Foundation for the development of children has reduced to 0%. For the last six years of intervention, since 2016-17, the program has effectively retained the 275 tribal students in schools with 100% attendance rate. In the last two consecutive years, 2020-21, & 2021-22, the program was facilitated through online coaching by teachers for students having smart phones due to COVID 19. On the other hand, the children with no access of smart phones were provided coaching and needful preparation at village level (Table 6).

Table 6 Details of Dropout & Attendance Rate of Students				
SN	Academic Session	Total Students	Dropout Rate (%)	Attendance Rate (%)
1	2016-17	155	0	100
2	2017-18	275	0	100
3	2018-19	275	0	100
4	2019-20	275	0	100
5	2020-21	275	0	100
6	2021-22	275	0	100

- ii. **Average Marks of Students:** The average marks scored by each student in the year **2019-20 and 2020-21** was **74.31% and 59.74%** respectively. On the other hand, the highest average mark 78.62% (2019-20), 72.30% (2020-21) and 67% (2021-22) was attained by students of Nav Prabhat Mission School. Relatively, the average marks scored by each student in the last year **2021-22** was **55.75%** (Table 7).
- iii. **Overall Passing % of Students:** All 275 enrolled children under Sponsorship Programme had appeared in the examination for the previous four consecutive years and all the students had passed the examination with 100% passing percentage. Their parents are no longer forcing their wards to engage them in farming and other activities. The children have also become a social agent who passes the message for development of conditions of other children living in their villages and debarring the culture of alcoholism by people in the community for betterment of their society (Table 8).

Table 7 Academic Performance of Students of Session				
SN	School	Average Marks of Students (%)		
		2019-20	2020-21	2021-22
1	Evergreen Bhartiya Charitable Trust	74	43.34	46
2	Viswa Bharti Mission School	72.78	64.93	51
3	Veena Bharti Residential School	71.85	58.37	59
4	Nav Prabhat Mission School	78.62	72.30	67
Average Marks		74.31	59.74	55.75

Table 8 Year Wise Overall Passing % of Students					
Academic Session	Total Students	Students			Overall Passing %
		Enrolled	Appeared	Passed	
2016-17	155	155	155	155	100%
2017-18	275	275	275	275	100%
2018-19	275	275	275	275	100%
2019-20	275	275	275	275	100%
2020-21	275	275	275	275	100%
2021-22	275	275	275	275	100%

iv. Academic Performance (2021-22): The academic performance of students in the year 2021-22 came out in range of medium to moderate range with slight improvement in marks secured by students under the category of 1st division, 2nd division and 3rd division marks. Out of total 275 children, 106 students (38.55%) achieved 1st Division marks, 84 students (30.55%) secured 2nd division marks and 85 students (30.91%) secured 3rd division marks respectively (Table 9).

Table 9 Academic Performance of Students- 2021-22								
S N	SCHOOL	Total Students	1 st Division (Students)		2 nd Division (Students)		3 rd Division (Students)	
			Number	%	Number	%	Number	%
1	Evergreen Bhartiya Charitable Trust	49	5	10.20	8	16.33	36	73.47
2	Viswa Bharti Mission School	73	16	21.92	14	19.18	43	58.90
3	Veena Bharti Residential School	132	64	48.48	62	46.97	6	4.55
4	Nav Prabhat Mission School	21	21	100.00	0	0.00	0	0.00
TOTAL		275	106	38.55	84	30.55	85	30.91

7. Education Support to Palni

- **Story of Palni Kumari:** Palni Kumari of Simdega, Jharkhand is a teenager nurtured by her only mother in family. At her minor age of 1.5 years, she lost her father. However, Palni and her mother did not lose the courage and showed remarkable resilience in dealing with the difficult situations. It is rightly said, age is just a number if we envision to achieve our ambitions debarring all the obstacles and hurdles in the path.

Her perseverance and tenacity, led to pass the class 6th examination with 75% distinction marks and currently studying in 7th class standard. With a dream to fly high, she aspires to become Nurse and serve the poorer people along with the responsibilities of her mother in her shoulder. Together, Palni and her mother earn their bread and butter and paying school fees by selling chickpeas at the roadside of her locality.

- **Adani Foundation Support for Palni's Education:** The Chairman of Adani Group, Hon'ble, Shri Gautam Adani has taken up the Noble work by taking the responsibilities of educating Palni, girl from a small town, Simdega to fulfil her dream of becoming a Nurse. For five years of duration, Adani Foundation will

discharge the duty of Educating Palni Kumari and nurture her in a healthy environment.

8. Distribution of Science Book in core villages: Adani Foundation initiated 'Science Book Distribution Drive' in 14 schools of core area namely, Middle School, Patwa Samarua (83), Middle School, Karikado (115), High School, Gumma (511), Middle School, Dumaria (248), Middle School, Kauribahiyar (281), Middle School, Motia (637), Middle School, Baksara (293), High School, Motia (329), Middle School, Basantpur (331), Middle School, Rangania (112), High School, Sondiha (243), Middle School, Parasi (274), Middle School, Birniya (257), +2 High School, Baksara (633), benefitting over **4300 students**. The objective of the program is to strengthen the educational standard and improve the quality of education among rural and poorer children by bridging the gap of learning resources and materials.

Five types of Science Book {(Vigyan Ke Prayog (Part-1), Vigyan Ke Prayog (Part-2), Vigyan Ke Prayog (Part-3), Eyes & Visual Perception and Chemistry Experiments} of 3 unit each was delivered to School Management Committees (SMCs) for making effective school libraries and enable access to variants of science books for knowledge enhancement, concept building and practical implementation of subjective knowledge of students in the fields of science and technology.

Moreover, it will motivate the rural children to actively attend the classes without failing attendance strength and making the learning more meaningful, interactive, and effective.

9. Support to Improve School Infrastructure of Middle School, Motia: Adani provided support of **20 Ceiling fans** to Middle School, Motia benefitting over **640 students**. It will encompass upgradation of classrooms enabling space for the education of students with adequate and conducive learning environment. It will also facilitate the School Management Committee to plan and execute school development related activities for the growth and bright future of deprived and secluded rural children.

10. Support to a Poor Athlete from Jharkhand: Adani Foundation has supported **Ms. Supriti Kachhap, a National 5000 meters athlete from Jharkhand** to bridge the gap of sports materials for preparation of World Under-20 Athletics Championship 2022 held in Columbia from 2nd to 7th August 2022.

Name- Ms. Supriti Kachhap, Father- Late Ram Sewak, Mother- Balmati Devi, Village- Burhu, Block- Ghaghra, District- Gumla, State- Jharkhand.

Supriti Kachhap, a National 5000 meters athlete, hails from Burhu village of Ghaghra block of Gumla district, located in range of 95 km from Ranchi district of Jharkhand. She was born and raised in economically weak family with her 5 siblings. She lost her father (farmer from occupation) early in her life (in Maoist violence) at

the age of eight months. She and her siblings are now survived by her mother, an only bread winner in the family.

She has won **14 National Tournament** and **13 medals in National games** so far. She has been a record breaker in past four years by making record in 3000-meter race by defeating her opponent, Ms. Sima from Himachal in just 9.46 minutes. She had also performed for **Under-20 World Championship which held in Colombia in August '22**. She was provided support from Adani Foundation with amount in tune of **Rs 50,000** for getting sports materials for preparation of her training along with a monthly stipend in tune of **Rs. 15,000** for a year.

Recently, Supriti has won **2nd prize- bronze medal in 37th National Junior Athletics Championship 2022 (5000 meters)** which held from dated **11th November 2022- 15th November 2022 in SAI Athletics Stadium Guwahati, (Assam)**. On winning the championship, Supriti had expressed her heartfelt gratitude and acknowledged the support provided by Adani Foundation and shaping her passion, making the Nation proud!

11. Support of Sports Kit to Badminton Player- Mr. Prince Kumar for National Championship: Prince Kumar is a 10-year-old boy who hails from Godda district. He studies in Class 5th standard in DON BOSCO school located in Godda. The young lad is a sports driven passionate and talented, an emerging National Badminton player. Due to his great interest and inclination in Badminton sports, since his childhood, he decided to join a Sports Academy named '*Fit India Youth Club, Godda (Jharkhand)*' under which he got a platform to get training and groom his skills in Badminton sports and prepare for various tournaments at District, State and National level.

Since his nascent stage in Badminton sports, he has participated in several State level Badminton Championship and got several medals and prizes in his name by winning the State tournament. Recently, he has been selected to perform in National Championship- Badminton sports for which basic sports gears, sports uniform, shoes, and logistics support were required from the end of concerned Youth Club.

Adani bridged the gap of sports kit and materials with an objective of '*Youth and Sports Development*' and '*harness the potential*' of budding National players from the district. Little champ, Mr. Prince was obliged to Adani after availing the playing materials on 10th November 2022 for preparation and upcoming trial in Noida for National Championship. He has been supported with Badminton kit of Yonex brand including 2 set of Shuttlecocks, 1 set of Racquet, along with sports uniform (T- Shirt, Shorts, Track Suit) and 1 pair of Shoes and supported with amount in tune of Rs 15,000 for fooding, travelling and logistics from Godda to Noida. He expressed his heartfelt gratitude to Adani for giving him the privilege to prepare and participate in National Championship.

12. Educational Support (Books) for Needy Children: The district administration has intervened in an Education Sponsorship Programme by adopting 200 children belonging to economically backward families including tribals, scheduled castes and OBCs. Under the initiative Education learning materials and amenities will be provided for continuation and completion of their studies with good academic grades and development of personality.

At this juncture, Adani provided support with respect to Academic Books of different streams namely, Science, Arts, and Commerce during an event at Maulana Abul Kalam Aazad College, Basantra. Total 24 categories of Books were provided to 168 girl students of Intermediate for the betterment of their studies and learning.

13. Tablets for felicitation of Toppers 2022 of Class 10th & 12th: A Talent Award cum felicitation ceremony was organized by Adani Foundation under aegis of Gyanodaya team and District Administration on 26th August 2022 at SDO office, Godda to honour and felicitate champions (matric & intermediate toppers) of district by providing Tablets as a token of appreciation and boost the morale of 15 rank holders & meritorious students for building their bright career.

During the event, renowned dignitaries had graced and honoured the students, namely, Sh. Rituraj (I.A.S.), SDM & SDO Godda, Jharkhand, Mr. Sushil Kumar, District Education Officer (DEO), Premnandan Mandal, Social Activist, and Principal of Plus 2 School.

14. Support of Basic facilities for Strengthening Anganwadi Centre:

Adani Foundation endeavor to combat malnutrition & state of hunger in particularly of children and community in more than 25 villages of core, railway line and pipeline area. The project goal includes to make Community Managed Sustainable Model of Anganwadi to ensure health & wellness and cognitive development for holistic development of 'Mother & Child' through improved infrastructure and availability of resources in Anganwadi Centres.

During the year 22-23, basic Anganwadi materials (kitchen items, chairs, Stationary materials and Almirah) was delivered in **six AWCs** for Model Anganwadi program and 1 set of Uniform was provided to ICDS functionaries in **22 Anganwadi centres** of core area benefitting around **500 children (3-6 years)**. The program objective is to transform the state of target groups comprising of children (0-5 years), adolescents, pregnant women, lactating mother, and community with advanced tools for their holistic development. The project aims to provide a caring environment that addresses the educative, health and nutritive requirements of rural children.

Basic Materials Distribution details			
SN	Month	Beneficiary Institutions	Material Support
1	Sep-2022	AWC, Motia (Kahar tola)	Chairs+ Almirah+ Kitchen items
2	Sep-2022	AWC, Patwa	Chairs+ Almirah+ Kitchen items
3	12 th October 2022	AWC, Gangta	Chairs+ Almirah+ Kitchen items
4	14 th October 2022	AWC, Motia (Harijan tola)	Chairs+ Almirah
5	17 th October 2022	AWC, Dumaria	Chairs+ Almirah+ Kitchen items
6	October 2022	AWC, Patwa	Uniforms for Children
7	14 th November 2022	AWC Patwa, AWC Gangta, AWC Dumaria	Stationary materials (Books, Colors)
8	16 th November 2022	AWC Motia, Kahar tola, AWC Motia Chapota tola	Stationary materials (Books, Colors)
9	17 th November 2022	AWC Motia, Yadav tola	Stationary materials (Books, Colors)
10	18 th November 2022	AWC Motia, Harijan tola	Stationary materials (Books, Colors)

Anganwadi Uniform Distribution details					
S. I	Delivery Date	Name of Centre	Number of Girls	Number Of Boys	Total
1	13/9/2022	Patwa	15	15	30
2	28/2/2023	Gangta	16	5	21
3	28/2/2023	Kahar Tola Motia	9	10	19
4	1/3/2023	Chapota Tola Motia	13	6	19
5	2/3/2023	Yadav Tola Motia	17	15	32
6	2/3/2023	Harijan Tola Motia	17	12	29
7	1/3/2023	Rampur Dumaria	8	8	16
8	2/3/2023	Harijan Tola Dumaria	13	10	23
9	2/3/2023	Sondiha	6	7	13
10	2/3/2023	Laiya Tola Choti Baksara	10	11	21
11	2/3/2023	Laiya Tola Bari Baksara	7	11	18
12	2/3/2023	Laiya Tola Bari Baksara	10	13	23

13	2/3/2023	Purwedih	8	6	14
14	3/3/2023	Baliakitta	9	9	18
15	3/3/2023	Basantpur Kachhua Tikar	16	17	33
16	4/3/2023	Basantpur Uttri Tola	21	14	35
17	13/3/2023	Petbi	11	16	27
18	13/3/2023	Gumma Santhali	10	10	20
19	14/3/2023	Gumma Laiya Tola	9	9	18
20	14/3/2023	Kauribahiyar Tetaria	9	8	17
21	14/3/2023	Kauribahiyar Harijan Tola	9	8	17
22	14/3/2023	Kanhadih Santhali	7	10	17
		TOTAL	250	230	480

15. School Development and Inauguration Ceremony of High School, Motia

- School Development- High School, Motia:** The responsibility of development of High School, Motia project was entrusted to Adani Foundation which was successfully accomplished in the year 22-23. With an objective of building bright future of rural children with availability of adequate and standard school infrastructure for learning space, improved learning, enrolment, and retention of school going children in higher education to benefit more than **6000+ rural children** in the coming years. The components of High School Motia development includes Six Classroom, sanitation facilities (Washroom for Boys and Girls), drinking facilities (installation of borewell, Tap water connection), flooring, plumbing, tiles, painting, beautification work of the classrooms and electrical work.
- Inauguration Ceremony:** An Inauguration Ceremony was organized by Adani Foundation on 24th February 2023 at High School, Motia in participation with Chief dignitaries from District administration, District Education department, School Management committee members, social activist, PRI members, village leaders, along with school children, villagers, and community. During the program several cultural activities were organized, and speeches were delivered by school children, headmasters and community on one aspiration of upliftment of marginalized, meritorious, and poorer children from Motia village. During the program, rituals of Lighting of Lamp were performed, followed by felicitation of renowned chief guests with Shawls and Flower bouquet.

The chief dignitaries delivered speech on varied scope of village development with regards to better access to school facilities to the children for building and grooming the rural children to become proficient in every discipline of education and profession for their bright career and living. The program was attended by more than 500 participants from Motia and other adjacent core, and periphery villages. The chief guests, school management committee, PRI members and the community acknowledged the contribution of Adani in social development sector and extended their heartfelt gratitude on building High School, Motia.

Capacity Building & Awareness Programme

- 1. Students' Farewell (Class 10th)- Gyan Jyoti Tuition Programme:** Adani Foundation had organized Farewell Ceremonial for Class 10th students of Gyan Jyoti Tuition Programme- Super 30 to acknowledge and praise them for their hard work and dedication in studies and wishing good luck for their future assignments and bright career.
- 2. Back to School Campaign-** Adani Foundation has triggered for bringing back the children to the school who lost/excluded/dropout from school due to COVID 19 in **13 core & railway line villages**. After the schools were closed and lockdown was imposed in the district, the students were habituated of learning through online/digital based curriculum. Back to School Campaign attempts to reinvigorate the thinking process and reform the education status by educating and mobilizing the wards and their parents to send their children to schools.

Adani teachers have actively joined in the campaign through door-to-door household visit in core villages, informing the parents about the campaign and its objectives, listing details of students and follow-up of parents & children in regular manner. This initiative will play a major role in retention and enrolment of the students (class 1-12), students from Covid affected families, drop- out, migrated, un-enrolled and Children with Special needs. Over **500 families benefited**.

- 3. Monthly Parents-Teacher Meeting** was organized under chairmanship of Adani teachers, School Principal, Headmaster in 12 schools and coaching centres of core villages with participation of **500+ parents and community**. The objective of PTM was to review and share status of learnings and performance of students to the parents followed by recommendation on follow-up of their wards, motivation for going to school, ensure 100% attendance in coaching centres and schools, information on JNV Class 6 entrance examination, Netarhat, Model School, Kendriya Vidyalaya, etc., Mid-Day Meal Programme. The session was also

instrumental in doubt clearance and development of tools for improvement of academic performance of students.

- 4. Celebration of International Yoga Day 2022:** International Yoga Day was celebrated on 21st June 2022 at Officer Club, Shantivihar Township and community level in core and railway line villages. Over 200 members including employees and their family members had attended the yoga workshop organized at APJL site. Similarly, more than 100 students of Gyan Jyoti Tuition Programme had actively participated during the occasion and inculcated various Yoga asanas and their benefits to keep healthy and understand the importance of Yoga in life.
- 5. Medhavi Chhatra Samman Samaroh:** Medhavi Chhatra Samman Samaroh was celebrated at Block office, Thakurgangti managed by Rastradharm organization E.D., Thakurgangti team with participation of over 300 Guardian, Youths, Students, and community from across the block of Thakurgangti for felicitation of students in August 2022. During the event, 40 rank holders of Class 10th & 12th standard from Thakurgangti block of Godda district were felicitated for doing outstanding performance in fields of education.
- 6. Celebration of Children's Day** on 14th November 2022 in all schools, coaching centres and AWCs in core villages with participation of 2000 people. Several cultural activities were conducted to raise awareness about the significance of Children's Day.

Supporting Sports & Cultural Events

- 1. Sports Kit Distribution: 28 Sports kits** were distributed to **23 Youth groups** comprising of football kit, carrom kit, cricket kit, volleyball kit along with Prizes (Winner Cups and Medals) under rural youth engagement program to promote recreational activity and sports events in **18** core, periphery, and pipeline villages of **6 blocks** of Godda and Sahebganj district. Over 300 players benefited from the support which helped them to practice regularly and participate in several local level and district level sports tournaments. It also acts as a means of recreation for the sportsperson and aspirational players. The distribution of kit helped youth to be more engaged in constructive activity.

Sports Kit Distribution					
Particulars	Date	Village	Block	Quantity	No. Of Team
Carrom Kit	May 2022	Maniyamore	Boarigor	1	1
Carrom Kit	May-22	Dakaita	Boarigor	1	1
Cricket Kit	27.09.22	Petbi	Podaiyahat	2	2
Cricket Kit	14.09.22	Dhobi Jharna (Muk Baghir Vidyalaya)	Borio	1	1
Football kit	23.11.22	Ambadiha	Mandro (Sahebganj)	1	1
1 set of Football uniform	23.11.22	Gangta	Godda	1	1
1 set of Volleyball uniform	28.11.22	High School, Motia	Godda	1	1
Football kit (Jersey, Boot)	03.12.22	Kusumtola, Hariyali Maidan (Makhani)	Godda	1	1
Football sports- T-Shirt	14.01.2023	Mahada, Birniya	Podaiyahat	2	2
Football sports- T-Shirt, Football, Prizes	17.01.2023	Kerwar	Pathargama	2	2
Cricket Kit, Uniform, Prizes	21.01.2023	Basantpur (Dudhia than)	Podaiyahat	2	1
Cricket kit, Badminton kit, Football kit, Prizes	26.01.2023	Kakna	Godda	3	1
Cricket kit, Badminton kit, Football kit, Carrom, Prizes	27.01.2023	High School, Godda	Godda	4	2
Set of Boots	Feb-23	Jhirli	Boarigore	1	1
Set of Boots	Feb-23	Bhagwanpur	Boarigore	1	1
T-Shirt-30 piece,	25.02.2023	Bargachchha	Poreyahat	2	2
Winner cup, Runner up cup		(Sikati)			
Cricket Kit	Mar-23	Madhuri	Godda	2	2
Total				28	23

2. Sports Tournament: 86 sports tournament including Football (52), Badminton (3), Cricket (8), Netball (1), Volleyball (1) and general sports event (21) were organized with coverage of 40+ villages of core, and pipeline areas of Godda and Sahebganj district involving children & rural youths to instill them with confidence, develop their personality and motivate them for shaping bright future and development of youths in athletes. More than **18000 players** and **150000+** audience members had participated and cheered their favorite team from nearby villages, maintaining safety protocols.

Sports Tournament						
SN	Sports	Date/Month/Year	No of Villages/locations	No. of Participants	No. of Players	Average Audience Size
1	Badminton tournament- National Sports Day in Mahagama	29.08.22	1	32 teams	32	400
2	13 th Senior Netball Competition, 5 th Sub-Junior Netball Competition	29.08.22, 30.08.22, 31.08.22	1	10 teams	1300	1000
3	Football Tournament in Jhirli	15.09.22	1	2 teams	30	80
4	Football Tournament in Dhamani Simariya	28.09.22-29.09.22	1	16 teams	240	450
5	Cricket Tournament in Petbi	27.09.22-07.10.22	1	16 teams	176	350
6	Cricket Tournament in Deobandha	30.09.22-06.10.22	1	15 teams	165	300
7	General Sports Tournament at Gandhi Maidan, Godda	28.09.22	1	20 teams	300	1550
8	Football Tournament in Jamani	24-Oct-22	1	2 teams	30	330
9	Football Tournament in Petbi	October'22	1	2 teams	30	330
10	Cricket Tournament in Petbi	24-Oct-22	1	4 teams	44	484
11	Football Tournament in Motia	25-Oct-22	1	2 teams	30	80
12	Football Tournament in Gangarampur, Pathargama	25-Oct-22	1	16 teams	240	1500
13	Badminton Tournament in Godda	9-Nov-22	1	2 teams	5	55
14	Football Tournament in Bargama (Barmasia)	14.11.22	1	16 teams	240	2100
15	Football Tournament in Nunbatta (Pathargama)	15.11.22	1	16 teams	240	1800
16	Football Tournament in Telgama	15-Nov-22	1	16 teams	240	1750
17	Football Tournament in Ambadiha	23.11.22	1	16 teams	240	2120
18	Football Tournament in Gangta	23.11.22-24.11.22	1	2 teams	30	330
19	District level sports event in Godda	25-Nov-22	1	10 teams	200	2200
20	Volleyball Tournament in Motia	29.11.22	1	2 teams	12	132
21	2 Days' Football tournament in Harkatta	03.12.22-04.12.22	1	8 teams	120	1320
22	2 Days' Football tournament in Kusumtola, Hariyali Maidan (Makhani)	03.12.22-04.12.22	1	16 teams	240	1750
23	3 Days' Jharkhand State Junior Boys & Girls (U-	09.12.22-11.12.22	1	10 teams	60	660

	19) Badminton Championship cum Selection Trial 2022					
24	2 Days' Football tournament in Kauribahiyar (Tetariya Santhali tola)	10.12.22	1	16 teams	240	900
25	Sports on the occasion of Sohray at Godda College	23/12/2022	1	8 teams	120	1320
26	Sports on the occasion of Christmas - Jitpur	23/12/2022	1	4 teams	70	770
27	Sports on the occasion of Christmas - Manik Bathan	23/12/2022	1	5 teams	85	935
28	Hand Ball Competition at SBSSPS college, Pathargama	20.12.2022	1	5 teams	40	440
29	Football Tournament in Gumma	26.12.22	1	16 teams	240	1000
30	Sports on the occasion of Gadiyal Mela in Jolo Bairagi	28/12/2022	1	5 teams	70	770
31	Sports on the occasion of Sohray at Godda College	8/1/2023	1	10 teams	300	3300
32	Sports on Sohray at Jolo	14/01/2023	1	16 teams	400	4400
33	2 Days' Football Tournament at Bara Lohanda, Borio Block	Jan-23	1	16 teams	240	1200
34	Football tournament in Mahada, Birniya	14.01.2023	1	16 teams	240	1250
35	Football tournament (Sidhu Kanhu Mela) in Kerwar	17.01.2023	1	16 teams	240	1400
36	Sports on Sohray Gangta at Govindpur	19/01/2023	1	8 teams	120	1320
37	Sports on Sohray at Bahadurchak	19/01/2023	1	8 teams	120	1320
38	Sports on Sohray at Bhagwanpur	19/01/2023	1	15 teams	360	3960
39	Sports on Sohray at Pathargama	19/01/2023	1	9 teams	150	1650
40	Sports on Sohray at Gudiya	19/01/2023	1	8 teams	120	1320
41	Sports on Sohray at Talamahada	19/01/2023	1	12 teams	340	3740
42	Football Tournament in Samda	19/01/2023	1	16 teams	240	1600
43	Football Tournament in Bada lohanda	19/01/2023	1	16 teams	240	2640
44	Football Tournament in Jhirli	19/01/2023	1	16 teams	240	650
45	Football Tournament in Kerwar	19/01/2023	1	16 teams	240	850
46	Football Tournament in Chitrakothi	21/01/2023	1	16 teams	240	1150

47	Cricket tournament in Basantpur (Dudhiya than)	21.01.23	1	15 teams	165	1815
48	Cricket tournament in Deobandha (Dumaria)	21.01.23	1	15 teams	165	1815
49	Football Tournament in Ratanpur	22/01/2023	1	16 teams	240	350
50	Cricket Tournament in Basantpur	23/01/2023	1	15 teams	165	1815
51	Football tournament in Gopla Dih (Pardih)	25.01.2023	1	16 teams	240	1340
52	Sports Competition in Basantpur (Utari Tola)	26.01.2023	1	5 teams	250	2750
53	Cricket tournament in Kakna	26.01.2023	1	15 teams	165	1815
54	Football Tournament in Nirjhar	26/01/2023	1	16 teams	240	2640
55	Sports on Sohray & Sarswati Puja Nayabad	26/01/2023	1	8 teams	120	1320
56	Football Tournament in Dhankol	26/01/2023	1	16 teams	240	2640
57	Football Tournament in Pardih	26/01/2023	1	16 teams	240	2640
58	Sports Activity in Deobandha	26/01/2023	1	6 teams	90	990
59	Students' Program- Sports event in High School, Godda	27.01.2023	1	10 teams	300	3300
60	Sports on Sohray at Deobandha	27/01/2023	1	8 teams	120	1320
61	Football Tournament in Beldiha	28/01/2023	1	16 teams	240	2640
62	Football Tournament in Bande	29/01/2023	1	16 teams	240	2640
63	Football Tournament in Rajabhitha	30/01/2023	1	16 teams	240	2640
64	Football Tournament in Aura tand	31/01/2023	1	16 teams	240	2640
65	Football Tournament in Chajora	2/2/2023	1	16 teams	240	2640
66	Football Tournament in Sripur	2/2/2023	1	16 teams	240	2640
67	Football Tournament in Tukka- Lobandha	6/2/2023	1	16 teams	240	2640
68	Football Tournament in Dhankunda	7/2/2023	1	16 teams	240	2640
69	Football Tournament - Goradih, Deobandha	8/2/2023	1	16 teams	240	2640
70	Football Tournament in Basua	8/2/2023	1	16 teams	240	2210
71	Football Tournament in Bhagwanpur	18/02/2023	1	16 teams	240	2640
72	Football Tournament in Siktiya	26 /02/2023	1	16 teams	240	2640
73	Football tournament (on occasion of Sidhu-Kanho Mela) in Beldiha, Rupiayama	28.01.2023	1	16 teams	240	2640

74	Football tournament in Tukka (Lobandha)	05.02.2023	1	16 teams	240	2640
75	Football tournament in Goradih (Santhali Tola)	07.02.2023	1	16 teams	240	2640
76	Tilka Manjhi Mela & Football tournament in Siktia	12.02.2023	1	16 teams	240	2640
77	Football tournament in Bargachchha (Sikati)	25.02.2023	1	16 teams	240	2640
78	Football tournament in Karnu	Feb-23	1	16 teams	240	2640
79	Football tournament in Jhirli	17/02/2023	1	16 teams	240	2640
80	GPL Cricket tournament in Gandhi Maidan, Godda	05.02.2023-26.02.2023	1	8 teams	88	968
81	Sports on Baijal Soren Birth Anniversary in Kalhajor	1/3/2023	1	20 teams	540	5940
82	Football Tournament in Goradih	6/3/2023	1	16 teams	240	1750
83	Football Tournament in Karnu	9/3/2023	1	16 teams	240	1440
84	Football Tournament in Pathargama	10/3/2023	1	16 teams	240	2200
85	Football Tournament in Bishaha	11/3/2023	1	16 teams	240	800
86	Football Tournament in Maniyamore	13/03/2023	1	16 teams	240	2640
Total			86		18067	150974

3. Memorial Ceremony celebration of freedom fighters and martyrs

- **Celebration of Memorial Ceremony at Baksara village:** Memorial Ceremony was held to pay patriotic tribute to great 'freedom fighter, Vishwanath Mandal' on his eight-death anniversary on 6th October 2022 in Baksara village. During the occasion of Baksara Mahotsava, several activities were conducted to discharge services to the needy and poorer in Baksara village. The program commenced at 9:30 a.m. with flower offerings by Chief dignitaries and conduction of Santmant Satsang with participation of rural youths and community. Further, it was followed by conduction of Mega Health Camp (by Helpage, Dr. N Kumar- Cardio & Dr K. N. Choudhary- Pediatric and Dr. Reddy team (Pathology) at 11 a.m. to deliver primary healthcare services for rural population in Baksara village. Also, various sports & cultural activities were organized including Welcome Song, Patriotic Song, and conduction of Memorial Football tournament for youth.
- **Celebration of Birth Anniversary of "Freedom Fighter- Maulana Abul Kalam Azad":** On Birth Anniversary of Freedom Fighter- Maulana Abul Kalam Azad, Adani provided support to organize the ceremony in Moulana Abul Kalam Azad Inter College, Basantrai, Godda on 11th November 2022 and became part

of this noble association. On the auspicious occasion of celebrating Birth Anniversary of Freedom Fighter and India's first Education Minister, Sh. Maulana Abul Kalam Azad, Adani became a part in discharging services to organize the event successfully and felicitate the tribal communities and family members of Freedom Fighters, Martyrs, and Sidhu Kanhu.

During the event around 2600 people participated and witnessed the program including students, tribals, family members of Martyrs and freedom fighters, District officials, authorities of Adani, Committee members and the public. The chief guests of the program were Sh. Zeeshan Qamar, Deputy Commissioner (DC), Godda, Sh. Nathu Singh Meena, Superintendent of Police (SP), Godda, and esteemed dignitaries from district were present who graced the event and motivated the participants. Adani had felicitated 500 tribals including 200 tribal children and 300 tribal leaders with Lungi & Panchi, shawls were given to 120 family members and National achievers/Respected person, whereas 8 NEET passed students and 22 family members of Freedom Fighter, Martyrs and Sidhu Kanhu were given a dinner set and supported for event management on the occasion on 11th November 2022.

- **Anniversary Celebration (Punyatithi) in Korka:** In Korka village of TPP intervention area, one day Mega event was organized on 3rd January 2023 celebrating Punyatithi of Ex MLA Late Raghunandan Mandal. During the occasion, several sports and cultural activities took place, along with distribution of 500 blankets, and 200 Sarees to the poorer and needy people from Korka village. During the occasion Mega Health Camp was also conducted in Korka village to serve the poorer people of the village with free check-up and health care services. More than 2000 participants including village persons, PRI members, youths, and community had participated in this program.
- **Sports & Cultural Program on Memorial Ceremony of Tilka Manjhi:** Adani Foundation supported the tribal community to organize 3-days Sports & Cultural Program cum Memorial Ceremony on 27th Remembrance Day of Indian Freedom Fighter, Tilka Manjhi from 11th February 2023 to 13th February 2023 at Siktia village of Godda district. Tilka Manjhi was an Indian freedom fighter the first Adivasi leader from Paharia (Hill Peoples) Community. He took up arms against the British in the 1784, around 70 years before Mangal Pandey. He organized the Adivasis to form an armed group to fight against the resource grabbing and exploitation of British.

During the event, several Santhali cultural program was organized like archery, musical chair, tribal dance, and songs with engagement of villagers and final match of football tournament was concluded during the event

followed by honor of participants and winning teams with prizes, trophy, and mementos. The tournament was presided by dignitaries of Adani Foundation and PRI members who graced the sports tournament and applauded the team for better performance. More than 10000 spectators witnessed the event with huge zeal and enthusiasm from nearby villages during the event.

- 4. 20th Book Fair at Deoghar:** Adani in association with Mahavidya had organized a 20th Book Fair at Deoghar from 12th January to 23rd January 2023 under theme of "Azadi ka Amrit Mahotsav", celebrating 75 years of Independence. This book fair has been organized since 1999. Several cultural activities were performed by children to welcome chief guests and the participants. In this grand festival, Book Exhibition and Sales was conducted along with multiple cultural events and competitions. The Central point of attraction was several activities including Inter School Competitions, events, Yoga and Meditation, Youth Motivation, Career Counselling, Literary Seminars, Cultural programs, Journal paper publications, Handicraft Exhibition and Food festival. More than 50,000 participants (students, teachers, parents, book lovers, publishers, artists, media, and others) from nearby region, districts of Jharkhand and Bihar had participated in this program. The local beneficiaries had positive association with national publishers, media, schools, colleges, and the public in this great platform.
- 5. Support of Musical instruments in Mukh Badhir Vidyalaya (Vanuden Badhir Kalyan Sansthan) in Sahebganj** was provided to benefit the differently abled children studying in the institute helping to promote extracurricular activities, develop cognitive ability and their overall personality. These gifted children belongs to an extreme poor family and small support will bring smiles in their lives. The instruments included 1 Dholak, 1 Harmonium, 2 Kartal, 2 Jhal, and 2 pc Football to benefit over **65 children** studying in Class standard from 1 to Class 8.
- 6. Organizing Mega event–Rajkiya Gantantra Mela Samaroh** on the eve of Republic Day 2023: 'Rajkiya Gantantra Mela Samaroh' was organized with support of Adani and district administration on 10th and 11th February 2023 at Gandhi Maidan, Godda on Republic Day 2023 celebration in Godda district. Adani extended support to organize the Mega event successfully which enabled the local public and the participants from across the other districts of Jharkhand to attend the program with their family members, acquaintances, peers, and the social groups. The program activities comprised of several patriotic and cultural activities performed by children, youths, artists, singers, and the celebrities representing the India's heritage, tribute to freedom fighters and martyrs, and national legends. During the ceremony, around 15000+ participants including

chief dignitaries, celebrities, local public, youths, artists, and media participated and cherished the program. The program led to strengthen ties with many stakeholders and created goodwill among the stakeholders in the district.

- 7. 'Kavi Sammelan' at Godda on the eve of Republic Day 2023:** On 74th Republic Day of India, Adani supported to organize "Akhil Bhartiye Kavi Sammelan" in Godda. In this Kavi Sammelan, renowned poets from all over the Nation had gathered and recited their poetry to each other and had a general discussion on literary issues. The Kavi Sammelan took place among the poets, large number of audiences, esteemed dignitaries, and civil society person. Every year, Kavi Sammelan is organized in district and likewise, this year also it was celebrated where more than 5,000 participants (students, youths, elders, teachers, poem lovers, publishers, artists, media, and others) from nearby region and districts of Jharkhand and other states had participated in this program. It provided a great platform to connect with local beneficiaries and had positive association with poets, media, artists, youth, elders, and the public.

COMMUNITY HEALTH PROGRAMME

Mobile Health Care Unit (MHCU)

In the year 2022-2023, **four Mobile Health Care Units** have together catered to **58955 patients** including **19014 male, 25121 female and 14820 children** from around **121+ Core, Periphery, Railway line and Pipeline villages** of Godda and Sahebganj district. Adani Foundation runs its own MHCU (1) in core villages, while it has partnered with Helpage India (1) and Wockhardt Foundation (2) to extend primary medical services in periphery and pipeline villages respectively. All these four MMUs provide services in the villages as per schedule through a team of a Doctor, a Pharmacist, an ANM, and a Social Protection Officer. AF supported mobile medical facilities goes a long way to ensure access of poor people to quality primary health care services at their doorstep.

- ❖ **Mobile Health Care Unit in Core villages:** During the year 2022-23, Adani operated Mobile Health Care Unit in core villages of TPP area have conducted medical camp along with disbursement of free medicines at 9 locations covering 13 villages along with for labourers working at Site office on daily basis to cater medical needs of the villagers at grassroots. Moreover, 24 hours emergency services were regulated from Ambulance at Site Office, Motia for

treatment/hospitalization of critical patients of nearby project affected areas in concerned hospitals outside district.

Total **12389** patients including **3826** males, **5403** females & **3160** children have been served in this year.

Patients treated by Adani Operated MHCU- Core on April-March 2023					
SN	Month	Males	Females	Children	Total
1	April	138	180	87	405
2	May	308	463	291	1062
3	June	328	535	299	1162
4	July	378	533	259	1170
5	August	310	409	298	1017
6	September	447	542	480	1469
7	October	380	508	359	1247
8	November	306	423	213	942
9	December	377	539	300	1216
10	January	301	435	179	915
11	February	272	420	231	923
12	March	281	416	164	861
Gross Total		3826	5403	3160	12389

- ❖ **Helpage India operated MHCU for Periphery Villages:** Helpage India operated MHCU delivered medical services in 26 periphery villages coming under buffer zone 1 and railway siding villages of Adani Power Plant. MHCU was operational at 17 sites covering 26 locations benefitting over total **17878** patients including **5432** males, **7199** females and **5247** children.

Patients treated by Helpage India MHCU on April-March 2023					
SN	Month	Males	Females	Children	Total
1	April	370	444	401	1215
2	May	401	472	269	1142
3	June	440	689	599	1728
4	July	496	647	625	1768
5	August	523	727	416	1666
6	September	671	759	540	1970
7	October	386	464	359	1209
8	November	483	721	448	1652
9	December	526	743	543	1812
10	January	417	485	368	1270
11	February	350	503	327	1180

12	March	369	545	352	1266
Gross Total		5432	7199	5247	17878

❖ **Wockhardt Foundation operated MHCU for Pipeline Villages in Godda:**

Adani supported Wockhardt Foundation MHCU team commenced its operation for pipeline area in the villages of Godda district since October '18. Total **15590** patients including **5344** males, **6806** females and **3440** children in 42 villages from 4 blocks namely, Mahagama, Boarigor, Pathargama and Thakurgangti were treated and disbursed free medicines.

Patients treated by Wockhardt Foundation (Godda) MHCU on April-March 2023					
SN	Month	Males	Females	Children	Total
1	April	501	600	353	1454
2	May	405	431	227	1063
3	June	540	659	404	1603
4	July	403	500	182	1085
5	August	484	537	302	1323
6	September	484	706	374	1564
7	October	350	453	263	1066
8	November	623	891	426	1940
9	December	387	513	194	1094
10	January	417	542	229	1188
11	February	258	353	163	774
12	March	492	621	323	1436
Gross Total		5344	6806	3440	15590

❖ **Wockhardt Foundation operated MHCU for Pipeline Villages in Sahebganj:**

Adani supported Wockhardt Foundation MHCU team commenced its operation for pipeline area villages of Sahebganj district since 21st September '18. Total **13098** patients including **4412** males, **5713** females and **2973** children were treated till March'23 in 40 villages from 4 blocks viz. Mandro, Borio, Sahebganj and Taljhari (Boha village) in total 60 stoppages.

Patients treated by Wockhardt Foundation (Sahebganj) MHCU on April-March 2023					
SN	Month	Males	Females	Children	Total
1	April	465	612	269	1346
2	May	356	349	206	911
3	June	91	133	86	310
4	July	314	389	186	889
5	August	510	588	312	1410
6	September	491	651	423	1565
7	October	493	521	327	1341
8	November	435	727	351	1513
9	December	238	370	161	769
10	January	285	366	151	802
11	February	269	402	209	880
12	March	465	605	292	1362
Gross Total		4412	5713	2973	13098

2.Covid Sample Collection Center at Health & Wellness

Center/Clinic in Motia: The **Covid Sample Collection Center** is operational in Primary Health Center (PHC), Motia village has swiftly cope up with the need of detecting COVID 19 infection in the individual and provide instant medications and counselling to them. The Medical team has bravely come forward in shielding their community from the threat and attack of COVID virus and continued imparting and disseminating the knowledge and generating awareness about the new variants of Covid and their complexities to poor people living in remote areas. **Total Sample Collected- 25202, No. of Positive - 200, No. of Negative- 25002**

COVID Sample Collection (April-Feb 2023)				
SN	Month	Total Sample Collected	No. of Positive	No. of Negative
1	April	1850	10	1840
2	May	4165	12	4153
3	June	3319	22	3297
4	July	3023	83	2940
5	August	3118	45	3073
6	September	2002	14	1988
7	October	1501	5	1496
8	November	2221	7	2214

9	December	2225	2	2223
10	January	1328	0	1328
11	February	450	0	450
	Total	25202	200	25002

3.Specialized Medical Camps: During Year (2022-23), Adani Foundation endeavored to cater health needs in a specific health issue of the masses amidst Epidemic outbreak by adhering to safety protocols. The Foundation strives to be a catalyst to 'Sustainable human development' and serves the deprived and marginalized human mankind and community with means of rendering appropriate services at grassroots. The triggers adopted for development encompass health as one of the major elements for holistic development of an individual. Moreover, the drive aligns with **Sustainable Development Goals (SDG) 3, 'Ensure healthy lives and promote well-being for all at all ages.**

Adani Foundation has organized **89 Specialized Health Camps in specializations namely, Ophthalmic (11), Paediatrics (23), Gynec (21), Cardio (18), Osteo (16) at Health & Wellness Centre, Motia & 24 General Health Camps** was conducted in **13** intervention villages of core, railway line and pipeline area of Godda district. **Total 2639 patients (1411 patients at Wellness center and 1228 patients in General Health Camps)** including **866 males, 1232 females and 541 children from over 15 villages** were screened, treated, and provided with free medicines.

Specialized Medical Camps was organized with an objective to provide critical and specialized health care services in villages to cater untreated illness/ medical issues concerning women/ girls and children, elders, and community for whom access to safe and standard health services remains a challenge.

Details of Specialized Medical Camps & Mega Health Camps								
SN	Block	Village	Date	Specialization	Patients treated			
					Male	Female	Children	Total
1	Godda	Health & Wellness Centre, Motia	7/4/2022	Cardio- Dr. Narendra Kumar	6	7	0	13
2	Godda	Health & Wellness Centre, Motia	21/4/2022	Cardio- Dr. Narendra Kumar	6	7	0	13
3	Godda	Health & Wellness Centre, Motia	13/4/2022	Pediatric- Dr. K.N. Choudhary	0	0	8	8
4	Godda	Health & Wellness Centre, Motia	27/4/2022	Pediatric- Dr. K.N. Choudhary	0	0	9	9
5	Godda	Health & Wellness Centre, Motia	9/4/2022	Osteo-Dr. Satyendra Mishra	3	7	3	13
6	Godda	Health & Wellness Centre, Motia	8/4/2022	Gynec- Dr. Kiran Jaiswal	0	20	0	20

7	Godda	Health & Wellness Centre, Motia	15/4/2022	Gynec- Dr. Kiran Jaiswal	0	13	0	13
8	Godda	Health & Wellness Centre, Motia	5/5/2022	Cardio- Dr. Narendra Kumar	4	6	0	10
9	Godda	Health & Wellness Centre, Motia	19/5/2022	Cardio- Dr. Narendra Kumar	5	6	0	11
10	Godda	Health & Wellness Centre, Motia	11/5/2022	Pediatric- Dr. K.N. Choudhary	0	0	11	11
11	Godda	Health & Wellness Centre, Motia	25/5/2022	Pediatric- Dr. K.N. Choudhary	0	0	10	10
12	Godda	Health & Wellness Centre, Motia	14/5/2022	Osteo- Dr. Satendra Mishra	1	0	1	2
13	Godda	Health & Wellness Centre, Motia	28/5/2022	Osteo- Dr. Satendra Mishra	3	7	2	12
14	Godda	Health & Wellness Centre, Motia	7/5/2022	Gynec- Dr. Kiran Jaiswal	0	5	0	5
15	Godda	Health & Wellness Centre, Motia	20/5/2022	Gynec- Dr. Kiran Jaiswal	0	7	0	7
16	Godda	Beldiha-Helpage	7/5/2022	General Physician	13	18	1	32
17	Godda	Health & Wellness Centre, Motia	2/6/2022	Cardio- Dr. Narendra Kumar	7	10	0	17
18	Godda	Health & Wellness Centre, Motia	16/6/2022	Cardio- Dr. Narendra Kumar	3	5	0	8
19	Godda	Health & Wellness Centre, Motia	15/6/2022	Pediatric- Dr. K.N. Choudhary	0	0	8	8
20	Godda	Health & Wellness Centre, Motia	22/6/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	19
21	Godda	Health & Wellness Centre, Motia	11/6/2022	Osteo- Dr. Satendra Mishra	7	3	5	15
22	Godda	Health & Wellness Centre, Motia	23/6/2022	Osteo- Dr. Satendra Mishra	3	10	0	13
23	Godda	Health & Wellness Centre, Motia	3/6/2022	Gynec- Dr. Kiran Jaiswal	0	12	0	12
24	Godda	Health & Wellness Centre, Motia	17/6/2022	Gynec- Dr. Kiran Jaiswal	0	5	1	6
25	Godda	Health & Wellness Centre, Motia	4/6/2022	Dr. Sumit Kumar (Ophthalmic)	4	6	0	10
26	Godda	Health & Wellness Centre, Motia	1/7/2022	Gynec- Dr. Kiran Jaiswal	0	3	0	3
27	Godda	Health & Wellness Centre, Motia	2/7/2022	Dr. Sumit Kumar (Ophthalmic)	16	9	3	28
28	Godda	Health & Wellness Centre, Motia	9/7/2022	Osteo-Dr. Satyendra Mishra	4	8	5	17
29	Godda	Health & Wellness Centre, Motia	13/7/2022	Pediatric- Dr. K.N. Choudhary	0	0	12	12
30	Godda	Health & Wellness Centre, Motia	27/7/2022	Pediatric- Dr. K.N. Choudhary	0	0	22	22
31	Godda	Health & Wellness Centre, Motia	28/7/2022	Cardio- Dr. Narendra Kumar	5	14	1	20
32	Godda	Dhodhari	2-Jul-22	General Health Camp	29	35	1	65

33	Godda	Chaprasa Mohalla	16-Jul-22		14	38	5	57
34	Godda	Health & Wellness Centre, Motia	5/8/2022	Gynec- Dr. Kiran Jaiswal	0	21	0	21
35	Godda	Health & Wellness Centre, Motia	6/8/2022	Dr. Sumit Kumar (Ophthalmic)	9	19	1	29
36	Godda	Health & Wellness Centre, Motia	13/8/2022	Osteo-Dr. Satyendra Mishra	4	3	4	11
37	Godda	Health & Wellness Centre, Motia	27/8/2022	Osteo-Dr. Satyendra Mishra	11	6	3	20
38	Godda	Health & Wellness Centre, Motia	10/8/2022	Pediatric- Dr. K.N. Choudhary	0	0	26	26
39	Godda	Health & Wellness Centre, Motia	18/8/2022	Cardio- Dr. Narendra Kumar	10	16	1	27
40	Godda	Health & Wellness Centre, Motia	25/8/2022	Cardio- Dr. Narendra Kumar	5	6	2	13
41	Godda	Chaprasa Mohalla	6-Aug-22	General Health Camp	20	30	2	52
42	Godda	Health & Wellness Centre, Motia	1/9/2022	Cardio- Dr. Narendra Kumar	7	5	1	13
43	Godda	Health & Wellness Centre, Motia	12/9/2022	Cardio- Dr. Narendra Kumar	16	30	0	46
44	Godda	Health & Wellness Centre, Motia	2/9/2022	Gynec- Dr. Kiran Jaiswal	0	21	0	21
45	Godda	Health & Wellness Centre, Motia	16/9/2022	Gynec- Dr. Kiran Jaiswal	0	9	0	9
46	Godda	Health & Wellness Centre, Motia	14/9/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	19
47	Godda	Health & Wellness Centre, Motia	28/9/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	19
48	Godda	Health & Wellness Centre, Motia	12/9/2022	Dr. Sumit Kumar (Ophthalmic)	9	12	0	21
49	Godda	Health & Wellness Centre, Motia	10/9/2022	Osteo- Dr. Satyendra Mishra	6	22	0	28
50	Godda	Health & Wellness Centre, Motia	24/9/2022	Osteo- Dr. Satyendra Mishra	16	11	2	29
51	Godda	Chaprasa Mohalla	3-Sep-22	General	16	22	0	38
52	Godda	Chilkara- Helpage	18-Sep-22	Mega Camp	40	30	3	73
53	Godda	Chilkara- Wockhardt- Sah	18-Sep-22	Mega Camp	30	15	0	45
54	Godda	Chilkara	18-Sep-22	Dr. Sumit Kumar (Ophthalmic)	22	1	0	23
55	Godda	Baksara (Mega Camp)	6/10/2022	Cardio- Dr. Narendra Kumar	11	8	0	19
56	Godda	Health & Wellness Centre, Motia	20/10/2022	Cardio- Dr. Narendra Kumar	5	5	0	10
57	Godda	Township		Cardio- Dr. Narendra Kumar	2	1	0	3
58	Godda	Health & Wellness Centre, Motia	7/10/2022	Gynec- Dr. Kiran Jaiswal	0	8	0	8
59	Godda	Township		Gynec- Dr. Kiran Jaiswal	0	6	0	6
60	Godda	Health & Wellness Centre, Motia	21/10/2022	Gynec- Dr. Kiran Jaiswal	0	9	0	9

61	Godda	Baksara (Mega Camp)	6/10/2022	Pediatric- Dr. K.N. Choudhary	0	0	14	14
62	Godda	Health & Wellness Centre, Motia	12/10/2022	Pediatric- Dr. K.N. Choudhary	0	0	5	5
63	Godda	Township		Pediatric- Dr. K.N. Choudhary	0	0	1	1
64	Godda	Health & Wellness Centre, Motia	26/10/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	19
65	Godda	Township		Pediatric- Dr. K.N. Choudhary	0	0	2	2
66	Godda	Health & Wellness Centre, Motia	15/10/2022	Dr. Sumit Kumar (Ophthalmic)	9	13	3	25
67	Godda	Health & Wellness Centre, Motia	8/10/2022	Osteo-Dr. Satyendra Mishra	7	6	1	14
68	Godda	Health & Wellness Centre, Motia	22/10/2022	Osteo-Dr. Satyendra Mishra	6	5	1	12
69	Godda	Chaprasi Mohalla	1-Oct-22	General	7	32	0	39
70	Godda	Baxra	6-Oct-22	General (Memorial Ceremony- Freedom Fighter)	27	23	7	57
71	Godda	Chaprasi Mohalla	15-Oct-22	General	8	29	2	39
72	Godda	Darghati	26-Oct-22	General	16	27	9	52
73	Godda	Laxmikitta	26-Oct-22	General	13	14	30	57
74	Godda	Health & Wellness Centre, Motia	3/11/2022	Cardio- Dr. Narendra Kumar	11	11	2	24
75	Godda	Health & Wellness Centre, Motia	17/11/2022	Cardio- Dr. Narendra Kumar	6	11	0	17
76	Godda	Township		Cardio- Dr. Narendra Kumar	2	0	0	2
77	Godda	Health & Wellness Centre, Motia	4/11/2022	Gynec- Dr. Kiran Jaiswal	0	7	0	7
78	Godda	Health & Wellness Centre, Motia	9/11/2022	Pediatric- Dr. K.N. Choudhary	0	0	14	14
79	Godda	Township		Pediatric- Dr. K.N. Choudhary	0	0	1	1
80	Godda	Health & Wellness Centre, Motia	23/11/2022	Pediatric- Dr. K.N. Choudhary	0	0	16	16
81	Godda	Godda near Shani temple	12-Nov-22	General Camp	16	4	2	22
82	Godda	Chaprashi Mohallah	12-Nov-22	General Camp	10	27	6	43
83	Godda	Maldih	23-Nov-22	General Camp	28	25	15	68
84	Godda	Health & Wellness Centre, Motia	1/12/2022	Cardio- Dr. Narendra Kumar	5	8	0	13
85	Godda	Health & Wellness Centre, Motia	22/12/2022	Cardio- Dr. Narendra Kumar	2	3	1	6
86	Godda	Township		Cardio- Dr. Narendra Kumar	0	1	0	1
87	Godda	Health & Wellness Centre, Motia	2/12/2022	Gynec- Dr. Kiran Jaiswal	0	15	0	15
88	Godda	Township		Gynec- Dr. Kiran Jaiswal	0	4	0	4
89	Godda	Health & Wellness Centre, Motia	16/12/2022	Gynec- Dr. Kiran Jaiswal	0	4	0	4
90	Godda	Township		Gynec- Dr. Kiran Jaiswal	0	1	0	1
91	Godda	Health & Wellness Centre, Motia	15/12/2022	Pediatric- Dr. K.N. Choudhary	0	0	16	16
92	Godda	Health & Wellness Centre, Motia	21/12/2022	Pediatric- Dr. K.N. Choudhary	0	0	9	9

93	Godda	Township			0	0	14	14
94	Godda	Health & Wellness Centre, Motia	3/12/2022	Dr. Sumit Kumar (Ophthalmic)	14	11	1	26
95	Godda	Health & Wellness Centre, Motia	15/12/2022	Dr. Sumit Kumar (Ophthalmic)	4	23	0	27
96	Godda	Health & Wellness Centre, Motia	10/12/2022	Osteo-Dr. Satyendra Mishra	3	5	0	8
97	Godda	Township			1	0	0	1
98	Godda	Health & Wellness Centre, Motia	24/12/2022	Osteo-Dr. Satyendra Mishra	6	5	2	13
99	Godda	Township			2	0	0	2
100	Godda	Chaprashi Mohallah	3-Dec-22	General Camp	10	29	9	48
101	Godda	Chaprashi Mohallah	17-Dec-22	General Camp	12	24	5	41
102	Godda	Health & Wellness Centre, Motia	12/1/2023	Cardio- Dr. Narendra Kumar	8	2	0	10
103	Godda	Health & Wellness Centre, Motia	6/1/2023	Gynec- Dr. Kiran Jaiswal	0	8	0	8
104	Godda	Health & Wellness Centre, Motia	20/1/2023	Gynec- Dr. Kiran Jaiswal	0	5	0	5
105	Godda	Township			0	2	0	2
106	Godda	Health & Wellness Centre, Motia	11/1/2023	Pediatric- Dr. K.N. Choudhary	0	0	6	6
107	Godda	Health & Wellness Centre, Motia	25/1/2023	Pediatric- Dr. K.N. Choudhary	0	0	14	14
108	Godda	Township			0	0	2	2
109	Godda	Korka Village	3/1/2023	Dr. Sumit Kumar (Ophthalmic)	15	21	0	36
110	Godda	KORKA	3-Jan-23	Mega Camp	63	34	9	106
111	Godda	CHAPRASI MOHALLAH	21-Jan-23	General Camp	15	28	1	44
112	Godda	PLUS TWO HIGH SCHOOL	27-Jan-23	General Camp	23	7	5	35
113	Godda	Health & Wellness Centre, Motia	3/2/2023	Gynec- Dr. Kiran Jaiswal	0	11	0	11
114	Godda	Health & Wellness Centre, Motia	17/2/2023	Gynec- Dr. Kiran Jaiswal	0	9	0	9
115	Godda	Township			0	2	0	2
116	Godda	Health & Wellness Centre, Motia	8/2/2023	Pediatric- Dr. K.N. Choudhary	0	0	9	9
117	Godda	Thakur Gangti (Bahadurchak)	4/2/2023	Dr. Sumit Kumar (Ophthalmic)	23	15	0	38
118	Godda	Health & Wellness Centre, Motia	15/2/2023	Dr. Sumit Kumar (Ophthalmic)	19	16	2	37
119	Godda	Ramnagar	1-Feb-23	General Health Camp	13	11	20	44
120	Godda	Chaprasi Mohallah	11-Feb-23	General Health Camp	9	27	5	41
121	Godda	Hilawe	14-Feb-23	General Health Camp	67	28	0	95
122	Godda	Health & Wellness Centre, Motia	3/3/2023	Gynec- Dr. Kiran Jaiswal	0	8	0	8
123	Godda	Town Ship		Gynec- Dr. Kiran Jaiswal	0	3	0	3
124	Godda	Health & Wellness Centre, Motia	17/3/2023	Gynec- Dr. Kiran Jaiswal	0	10	0	10
125	Godda	Health & Wellness Centre, Motia	3/3/2023	Pediatric- Dr. K.N. Choudhary	0	0	18	18

126	Godda	Town Ship			0	0	4	4
127	Godda	Health & Wellness Centre, Motia	22/3/2023	Pediatric- Dr. K.N. Choudhary	0	0	12	12
128	Godda	Town Ship			0	0	9	9
129	Godda	Health & Wellness Centre, Motia	11/3/2023	Osteo-Dr. Satyendra Mishra	5	10	2	17
130	Godda	Health & Wellness Centre, Motia	25/3/2023	Osteo-Dr. Satyendra Mishra	3	8	0	11
131	Godda	Chaprasi Mohalla	4-Mar-23	General Health Camp	6	23	6	35
Total					866	1232	541	2639

4. Blood Donation Drive: The Adani Power (Jharkhand) Limited, Godda and Adani Foundation, Godda organized the **Blood Donation Camp** under joint aegis of Medical CSR and OHC to mark the **60th Birthday of Sh. Gautam Adani, Chairman of the Group on June 24th at Officer's Club, Motia site.** The Site Head, APJL, Mr. Naresh Goel, welcomed the Civil Surgeon, Sadar Hospital, Mr. Anant Jha with a flower bouquet and jointly inaugurated the Blood Donation Camp. Both the dignitaries recognized the good work of the blood donors and gave away the certificates to boost the morale of donors. More than 355 employees, contractors' staff and workers donated blood on this occasion creating an indelible mark of the highest collection on a day in the district. **Total blood unit collection- 358**

The occasion witnessed the enthusiasm and passion among the blood donors to serve the cause of humanity. The idea was to save human lives at the time of emergency. The significance of the Blood Donation could be gauged from the fact that the donated blood was used by the government the next day for treating the thalassemia patient, thereby saving the lives of the young child, informed the OHC staff.

The Adani Foundation and the Occupational Health Centre played a major role in organizing the camp and the efforts of all the organizers including the HR Administration were appreciated by all. T- Shirts, Selfie point, Prizes, juice, and snacks were arranged for the donors and the organizers on the occasion.

Donors were also awarded certificates of appreciation duly signed off by the Adani Foundation Chairperson, Mrs. Priti G. Adani, that provided a sense of elevation to all. It turned out to be a memorable moment.

5. Plantation on the eve of 60th Birthday of Chairman of the Group: On 60th Birthday of Sh. Gautam Adani, Chairman of the Group on June 24th, the team of Intake Pump Point, Sahebganj had organized Plantation

program under which 12 saplings of horticulture & timber plants were planted including Mango, Shagwan and Amla at the site area. The team had also expressed their love and affection by beautifully crafting and sketching the iconic figure, Sh. Gautam Adani.

6. Awareness Drive on Specialized Health Camps: Health Camp Awareness Drive has been initiated to inform, aware and educate the villagers and community of 17 core and railway line areas of the intervention of Adani Foundation of providing free Specialized Health Care services at PHC Motia, instrumental in safeguarding the life of approx. 2000 economically backward and marginalized rural population of the society.

Door to door household visit and awareness campaign is conducted in each village in which the target households are informed about Doctors' schedule, specialization of diseases diagnosed, and sensitized about the importance of good health and productive life for a happy living. Five doctors of concerned specialization namely, Gynec, Pediatrics, Osteo, Cardio, & Ophthalmic are deputed at PHC, Motia on respective days and time duration in monthly and fortnightly manner where the patients reach to the health centre along with their health card for diagnosis of their health complication and follow-up as per doctor's prescription.

7. Providing Nutritional Support to TB Patients as "Ni-Kshay Mitra": Adani is providing Nutritional Support (Monthly Food Baskets) as "Ni-Kshay Mitra" for Nation-wide Campaign "Pradhan Mantri TB Mukh Bharat Abhiyan" of Central TB Division, Ministry of Health & Family Welfare, Government of India to eliminate Tuberculosis (TB) in Godda district of Jharkhand. The programme was launched by District Administration on 24th September 2022 in Godda district of Jharkhand with an objective to treat over **1179 TB Patients undergoing treatment** in **seven Tuberculosis Units (District TB Center)** located in district namely, Boarijore, DTC Godda, Mahagama, Mehrama, Pathargama, Podaiyahat, and Sunderpahari.

Adani has been working collectively by supporting in the cause and instrumental in catering to **353 adopted TB Patients** by becoming "Ni-Kshay Mitra" for duration of 6 months in the year 2022-23 with an impetus to eliminate TB from the district and the country. Every month from November 2022 onwards Monthly Food Baskets is provided to 353 TB patients of intervention villages at 7 Tuberculosis Units (TU) located in seven blocks in Godda district. The chief dignitaries who participated during the distribution program were District Tuberculosis Officer (DTO), Medical Officer Incharge (MOIC), CHC, Senior Treatment Supervisor (STS), local leaders, social activist, and Adani team.

8. Medical Support and **health checkup** services are carried out by Ambulance and Medical team of Adani Foundation, Godda providing immediate ambulance services in affected region of Godda district.

9. Health Card Distribution Drive: Adani Foundation initiated **Health Card Distribution Drive** in 2 core villages namely, Gangta, and Petbi benefiting over 8 tribal households of Santhal community. Generation and issuance of Health cards to the residents of core villages is essential for identification of deserving beneficiaries, diagnosis and treatment of diseases, and promotion of wellness at all ages followed by regular monitoring and appropriate actions for critical cases. The objective of the drive is to mainstream the marginalized, socially, and economically excluded rural population to gain access to primary health care services at their doorsteps and Primary Health Care centre for clinical services under Specialized Health Camp intervention.

The motto of sustainable development is also attained by raising awareness, and dissemination of knowledge among the poorer, illiterate, and unaware masses. It also plays a pivotal role in behavior change of community towards seeking health care services and detain quacks/unskilled practitioners.

Details of Health Card Distribution			
SN	Month	Village	Households
1	July 2022	Gangta	6
2	July 2022	Petbi	2
Total			8

Health Awareness Programmes

10. Suposhan Program

Support Program for Sustained Health and Nutrition (SuPoshan): SuPoshan programme, a flagship programme of Adani Foundation, was launched in Godda in January '17 with an objective to reduce the occurrence of malnutrition & anemia amongst children, adolescent girl, pregnant & lactating women. Within six years of implementation period, Suposhan project has reached out to create an impact in the lives of over 9000 direct beneficiaries. During the year, anthropometry measurement of 4066 children of 0 to 5 years was done, out of which 3203

children (79%) are healthy, while 114 children have shifted from SAM to MAM, and 255 children have shifted from MAM to Healthy.

The program has been able to achieve set goals by administering program inputs with target groups such as regular focused group discussions, awareness events, family counseling on topics to bring about change in behavior pattern within the community and raise awareness on various related issues like feeding practices for newborn, introduction of complementary feeding, pregnancy care, health and hygiene, facts and myths related to menstruation cycle, diet and care during sickness, effective methods and habits of cooking, etc. Activities like Hb screening, promoting IFA tablet to anemic girls and women, check-up by pediatrician and MHCU doctor, immunization in VHND, vegetable seeds support too contributed to bring about improvement in health status of malnourished children, girls, and women.

Awareness Events

Various awareness events like celebration of world breastfeeding week, national nutrition month, world environment day, etc. were conducted spreading the message in the community. Various competitions were organized under SuPoshan which play an effective role in spreading the message for care of pregnant lady, signs of malnutrition, right food and care for malnourished child, importance of hygiene/ sanitation and timely vaccination for good health of child and family to masses as it easily draws attention of public and conveys messages through Banner on MHCU, Slogan writing, Pamphlet, etc. in local language. Activities to stimulate thinking among participants were also conducted on topics such as significance of nutrition and its constituents in regular diet, vitality and method of hand washing, pregnancy care, proper latching and breastfeeding, nutritional requirement, and its impact on newborn health, etc.

SN	Event Name	Mode	Date/Duration	Beneficiary
1	World Menstrual Hygiene Day	Village level	28 th May 2022	50
2	World Environment Day	Village level	5 th June 2022	100
3	International Yoga Day	Village level	21 st June 2022	150
4	World Breastfeeding Week	Village level	1 st Aug'22-7 th August'22	325
5	National Nutrition Month	Village level	1 st -30 th September 2022	360
6	Global Hand washing Day cum Health Awareness Program	Village level	8 th & 15 th October 2022	250

7	World Food Day	Village level	16 th October 2022	150
8	Celebration of Newborn Care Week	Village level	22 nd November'22 to 28 th November'22	70
	Total			1455

11. Nutrition Garden (Poshan Vatika) Programme

- Context:** Godda district is one of the aspirational districts of Jharkhand which falls under state of underdevelopment and backwardness with respect to less scope of employment, restrained economy, with the prevalence of stereotype and societal taboos in the remotest of the villages. The socio-economic limitations in the villages of Godda district have been a major reason for poor health conditions. The financial Inabilities of rural households to find a sustainable source of income to meet the subsistence needs of the households' results into occurrence of both chronic and acute diseases and the cases of high range of malnutrition. Due to knowledge gap and lack of awareness about importance of balance diet and proper food intake in daily routine in the villages results into improper growth & development of children, and adolescents.
- Triggers of Adani Foundation:** Adani Foundation endeavors to transform the lives of deprived and marginalized groups of community by mainstreaming to the entitlements and provisions of poorer rural and tribal households from the periphery. It aligns its activities with Sustainable Development Goals (SDGs) by envisaging its interventions with NITI Aayog, Planning Commission of India. The flagship programme Suposhan is a modified term of development which implies development with an approach of gender equality and equity, women empowerment, improvement of health & well-being, and capacitating with skills and knowledge base to supplement livelihood in a sustainable manner.
- Nutrition garden,** also spelled as Poshan Vatika is a sustainable model which provides all micronutrients with an availability and access of all households to all varieties of green leafy vegetables, and fruits rich in Vitamin, Minerals, Iron, Proteins and other Macro and micronutrients throughout the year. It helps to mitigate the challenges of food resources and provides an equitable amount of food availability to the households. The programme alleviates the problems of food scarcity and nutritional gaps in households and enhances the standard of living through improved health and well-being of everyone in the family.

Methodology

- **Baseline Survey, Need Assessment and Root Cause Analysis of Problems of Households:** The village volunteers and the community mobilizers of Adani Foundation rigorously conducts baseline survey to find out the socio-economic condition of the villagers followed by collection and collation of their various needs and selection of one root cause of the problems. After completion of the survey, project planning is done for doing the interventions to change the circumstances. Further, the list of the beneficiaries is prepared village wise of core, railway line and pipeline areas and accordingly, proposed activities are executed as per timelines.

- **Intervention**
 - i. **Vegetable Seeds Distribution** to selected households including children, adolescents, and women.
 - ii. **Training** to women and farmers on establishing Poshan Vatika, its importance, and advantages.
 - iii. **Exposure Visit** to established Ganga Maa model in village for Capacity Building on Poshan Vatika and its benefits.
 - iv. **Setup of Poshan Vatika Model for Demonstration** in selected villages with higher reach and accessibility by the villagers including school going and out of the school children, adolescents, women, elders, and frontline workers viz. ICDS functionaries, SHG, PRI members, village volunteers, etc.

- ❖ **AF Supported with Vegetable Seeds: Vegetable seeds** under **Poshan Vatika programme** was provided to over **500 families** in more than **16 villages** of TPP Core area, railway line area and pipeline area. The program was focused on providing vegetables throughout the season making it sustainable including the target groups of Suposhan.

Medical Services

- ❖ **Health Awareness:** with collaborative efforts of Adani Foundation & Helpage India in Peripheral & Railway Line village area to provide support for better community health. Health Awareness Program are organised in area to aware rural people about harmful diseases, maintenance of cleanliness, direction for balance diet which help them to fight from diseases and the COVID 19 virus affecting the populations at large scale followed by all safety norms. School children and community persons have become more vocal with active approach towards curbing

diseases and sharing of such valuable information among community. **10000+ villagers** benefitted.

- ❖ **Critical Health cases:** Diagnosis of critical cases of laborers working in TPP (site office) is done by CSR Medical Team regularly in an emergency manner.
- ❖ **Ambulance Facility to Poor Patients:** Families from 13 core villages have been benefitted from this initiative of Adani whose families remain loyal and grateful to company for the support provided by us in times of distress. Ambulance service is given to poor people belonging to TPP area in times of medical emergency or for transfer of critical patients to higher centre and for COVID health check-up, doing home quarantine and quarantine center and treatment like Bhagalpur, Deoghar, Ranchi, and Patna & Other nearby hospitals. **60+ patients benefitted from ambulance facility.**

Seasonal Assistance

- ❖ **Aids & Appliances Distribution:** Adani endeavors to engage the community in promoting traditions and diversity of culture in the fields of art and music. The community is supported to organize local festivals, cultural program and perform puja rites with great joy, festivity and solidarity uniting the community. One Amplifier & 2 Horns was provided to the Puja committee of Hanuman temple in Niyamatchak village, Thakurgangti block in April 2022.
- ❖ **Support (Mike & Speaker) for Recreation & Cultural Program in 2 Schools of Core area:** Provided Support of Mike & Speaker to School Management Committee of High School, Motia (29th September 2022) and Plus 2 High School, Baksara (30th September 2022) for organizing cultural program and extra- curricular activities at different occasion in schools for the recreation of around 1200 students.
- ❖ **Support for Digital Empowerment:** With an objective to assist and support the District Administration of Godda in smooth functioning and management for discharging duties for welfare and development of 1 lakh+ public of the district. Provided support of 4 set of Computers on 17th January 2023.
- ❖ **Support to Tribals (Umbrella Distribution):** Adani supported tribal and rural community with Umbrella in the pipeline villages of Sahebganj district, to enable them to protect themselves from heavy rainfall during the rainy season and the

summer heat for the welfare of community. It was also a gesture of honour to the tribal communities for supporting to smoothly operate business activities and building long-term strong relationship with community. 115 families were supported with 130 umbrellas in Borio, Mandro, Sahebganj and Rajmahal block of Sahebganj district.

- ❖ **Road Traffic Barriers Support for Safety of Public:** Adani provided support of 50 Road Traffic Barriers for nearby police station in Thakurgangti, Sahebganj and TPP Motia in Godda district in February 2023. This initiative will assist the police staffs in delivering the services conveniently for safeguarding lives of around 70% of total 18.25 lakh public and will resolve the conflicts and grievances of community by taking immediate action and follow-up.
- ❖ **Support of Three-Seater visiting Steel chair:** Adani provided support of 40 nos. Three-Seater visiting Steel chair to Civil Court, Godda district in February 2023. This will assist the district administration in discharging duties for welfare of public of the district.

- ❖ **Relief Materials Support to Affected Families from Natural Hazards**

- i. **Tarpaulin Assistance for Natural Disaster Management:** Under 'Poorer Welfare & Assistance' program, Adani supported the poorer and weaker sections of society affected from natural calamities or uncertain disasters such as fire, flood, cyclone, thunderstorm, etc. On dated 19th May 2022, heavy thunderstorm, rainfall, and cyclone was experienced in all over the Godda district causing massive damage to the capacity of beneficiaries to earn their living and loss to materials, also causing injury and loss to human life, nonetheless.

Adani instantly supported **292** affected families of core and railway line villages namely, Baksara, Baliakitta, Petwi, Nayabad, Kauribahiyar, Bhartikitta, Bohra, Sondiha, etc. with Tarpaulin sheets for addressing the issue and safeguarding over **1400 beneficiaries** in Godda district.

- ii. **Blanket Support under Relief Program in Winter Season:** Adani has provided **5291 blankets** and supported over **5200 families** in more than **26** core, railway line and pipeline villages of Godda and Sahebganj to provide relief and cope up with cold winter under 'Poorer Welfare & Relief Program'. The community upon receiving the blanket expressed heartfelt gratitude to Adani for providing them the immediate relief support. The strong ties with community and more solidarity are observed in the villages.

Seasonal Assistance to Community					
SN	Project Area	Distribution duration	Name of block	Location/Village	No of HHs/families
Tarpaulin Support (Affected Families from Natural Hazards)					
1	Core Area	May-June'22	Podaiyahat	Baksara	6
2	Core Area	May-June'22	Podaiyahat	Chhoti Baksara Laiya Tola	1
3	Core Area	May-June'22	Podaiyahat	Baliyakitta	9
4	Core Area	May-June'22	Godda	Bhartikitta	17
5	Core Area	May-June'22	Podaiyahat	Bohra (Laiya Tola)	3
6	Core Area	May-June'22	Podaiyahat	Dahupakhar	6
7	Core Area	May-June'22	Godda	Dumaria	16
8	Core Area	May-June'22	Godda	Gangta Govindpur	1
9	Core Area	May-June'22	Podaiyahat	Jalgo	5
10	Railway line area	May-June'22	Godda	Kauribahiya	17
11	Periphery area	May-June'22	Godda	Kumarkund	4
12	Periphery area	May-June'22	Godda	Laxmikitta	1
13	Periphery area	May-June'22	Podaiyahat	Majdiha	2
14	Periphery area	May-June'22	Podaiyahat	Maltola Bohra	1
15	Core Area	May-June'22	Godda	Motia	50
16	Core Area	May-June'22	Podaiyahat	Petbi	6
17	Railway line area	May-June'22	Godda	Ramnagar	1
18	Core Area	May-June'22	Podaiyahat	Rangania	2
19	Core Area	May-June'22	Godda	Ranitikar	2
20	Pipeline area-Sahebganj	June-July'22	Sahebganj	Sahebganj	10
21	Core Area	July'22	Podaiyahat	Baksara	3
22	Core Area	July'22	Godda	Gangta	25
23	Core Area	July'22	Godda	Karikado Laiya tola	12
24	Core Area	July'22	Godda	Motia	12
25	Core Area	July'22	Godda	Nayabad	20
26	Core Area	July'22	Podaiyahat	Petbi	1
27	Core Area	July'22	Godda	Siktia	1
28	Periphery area	July'22	Podaiyahat	Tesho Bathan	1
29	Godda	July'22	Godda	Godda	2
30	Core Area	July- Aug'22	Podaiyahat	Sondiha	11
31	Core Area	October'22	Godda	Motia- Manjhi tola	44
Total					292
Blanket Support under Relief Program in Winter Season					
SN	Project Area	Distribution duration	Name of block	Location/Village	No of HHs/families
1	Core Area	25.12.2022-28 12.2022	Godda	Godda	250
2	Core Area	28.12.2022	Godda	Gangta	100
3	Core Area	28.12.2022	Godda	Basmati Tikkar	24
4	Core Area	28.12.2022	Godda	Rani Tikkar	24
5	Core Area	29.12.2022	Godda	Nayabad	81

6	Core Area	29.12.2022 11.01.2023	Godda	Laiya Tola Patwa	31
7	Core Area	29.12.2022- 11.01.2023	Godda	Godda	900
8	Core Area	30.12.2022	Godda	Ramnagar	25
9	Periphery area	31.12.2022	Podaiyahat	Korka	500
10	Core Area	04.01.2023- 05.01.2023	Godda	Godda	500
11	Core Area	04.01.2023- 10.01.2023	Podaiyahat	Baksara	200
12	Core Area	4.01.2023- 5.01.2023	Godda	Godda	65
13	Periphery area	06.01.2023	Sunderpahari	Sunderpahari	100
14	Pipeline area	09.01.2023	Pathargama	Gandhi Gram	100
15	Core Area	10.01.2023	Godda	Godda	50
16	Core Area	10.01.2023	Godda	Motia	50
17	Core Area	11.01.2023	Godda	Motia Plant	150
18	Core Area	12.01.2023	Godda	Godda	15
19	Core Area	12.01.2023	Podaiyahat	Baksara	15
20	Pipeline area	12.01.2023	Mahagama	Mahagama	2000
21	Pipeline area	14.01.2023	Sahebganj	Sahebganj	50
22	Pipeline area	23.01.2023	Thakurgangti	Thakurgangti	30
23	Core Area	11.02.2023	Godda	Godda	25
24	Core Area	Mar-23	Godda	Godda	6
		Total			5,291

❖ **Support to tribal community for cultural event- Sohrai Festival:** Sohrai is a harvest festival also called cattle festival of the Indian states of Jharkhand, Bihar, Chhattisgarh, Odisha, and West Bengal. In this festival, people fast, paint houses, and prepare food. In night, they light earthen lamps in the cattle-sheds and offer sacrifice to deity of animals Pasupati. Adani Foundation supported the community with financial assistance, traditional instruments, and traditional attire for the celebration of event with joy and happiness in tribal villages of TPP Core and Pipeline area. The festival was celebrated with participation of Community Leaders and PRI members with community.

Over **600 tribals in 3 core villages** (Nayabad, Gangta and Petbi Santhali) of Godda district were supported with 1 set of Lungi- Panchi for women and 1 set of T-Shirt-Panchi/Lungi for men and 1 set of traditional musical instruments (2 Dhol & 1 Mandar) benefitting over **1800 tribal community** to celebrate the festival with huge zeal, joy and enthusiasm and unite their community in tackling the social challenges.

Support to Tribals on Social Occasions						
SN	Particulars	Month	Village	Block	Unit	Beneficiary
1	Lungi- Panchi & T-Shirt- Panchi	Jan'23	Petwi Santhali	Poreyahat	400	200 (100 Men & 100 Women)
2	Lungi- Panchi & T-Shirt- Panchi	Jan'23	Nayabad	Godda	300	150 (75 Men & 75 Women)
3	Lungi- Panchi & T-Shirt- Panchi	Jan'23	Gangta	Godda	500	250 (125 Men & 125 Women)
4	2 Dhol, 1 Mandar	Jan'23	Gangta	Godda	3	1000
5	2 Dhol, 1 Mandar	Jan'23	Nayabad	Godda	3	500
	Total				1206	600

❖ **Provided support of 2 Garbage Trolley** to Motia Hospital and Motia Panchayat benefitting **5000+ villagers**.

ii. **Team Participation in cultural event:** Adani supported the local villagers in organizing festivals and social events to strengthen ties and build relation with community. It emphasizes to celebrate the cultural program with huge joy and enthusiasm among the rural people. Social occasion program such as Sarhul Parv, Sawan Mahotsav, Dusshera, International Day of Indigenous Peoples, Harinam Sankirtan, Santmant Satsang, Ganesh Chaturthi, etc. was celebrated in the villages.

Welfare Support

iii. **Assistance in Health, Marriage and Death:** Adani provides financial support to poor people for such events which require huge expense such as marriage ceremony, educational needs, major illness including hospitalization of patient, death of a person. **774** beneficiaries from more than 20 villages have been extended financial support to the tune of **Rs. 34,60,440/-**

Support Cause	FY 2022-23	
	No. of Beneficiaries	Supported Amount
Health Support	45.00	451500.00
Others Support	10.00	73640.00

Marriage Support	24.00	188500.00
Death Support	58.00	369000.00
Education Support	10.00	360000.00
Social Occasion Support	627.00	2017800.00
Total	774.00	3460440.00

Awards & Accolades

- **Felicitation from Health department:** On November 2022, Dr. Rajendra P Joshi, Deputy Director General (TB), Central TB Division, Ministry of Health & Family Welfare, Govt. of India, had felicitated Adani Power Jharkhand Limited (Godda) with Certificate of Appreciation for valuable contribution to the country's fight against Tuberculosis People with TB.
- **Recognition from District administration:** On World TB Day on 24th March 2023, Adani Power Jharkhand Limited (Godda) was felicitated by District administration for contributing towards Nation-wide Campaign "Pradhan Mantri TB Mukh Bharat Abhiyan."

SUSTAINABLE LIVELIHOODS

- 1. Adani Skill Development Centre:** Adani Skill Development Centre- ASDC, Godda was inaugurated by Executive Director AF- Education and Skills on 27th September 2018. Total Eight trades viz. Welder, Fitter, Mason and Bar bender, General Duty assistant, Hospitality, Electrical, industrial Sewing Machine Operator, and Digital Literacy classes is operational in which over **4600** candidates were trained and benefitted till Financial Year 2022-23.

Trainees Enrolled and Benefitted in Various Trades at ASDC							
SN	Trade	Year 18-19	Year 19-20	Year 20-21	Year 21-22	Year 22-23	Total
		No. of trainees benefitted in 1 st Batch	No. of trainees benefitted in 2 nd Batch	No. of trainees benefitted in 3 rd Batch	No. of trainees benefitted in 4 th Batch	No. of trainees benefitted in 5 th Batch	
1	Fitter (2 year)	29	91	64	218	147	549
2	Welder	30	35	43	57	0	165
3	Ass. Electrician (2 year)	30	50	65	150	47	342
4	Hospitality	30	65	55	114	84	348
5	Digital Literacy	257	985	432	374	290	2338
6	G.D.A.	30	175	72	191	148	616
7	Bar Bending	30	80	25	107	0	242
Total		436	1481	756	1211	716	4600

- **Enrollment in New Batch in 2022-23:** In the year 2022-23, a new training batch of Domain Business trades was started from April 2022 onwards. Nine batch was operational consisting of **1059** candidates provided online training under **Skilling India Program of National Skill India Corporation from Online & Offline mode of training classes at ASDC in Business Trades viz. Fitter, Bar-Bender, Asst. Elec., Welder, GDA, SMO, F&B, and Digital Literacy trade.**

710 candidates have been certified in Current Financial Year 2022-23. The Self-learning model enables the candidate to build repository of knowledge through access of learning materials provided in the link and after the completion of course, the candidates appear on examination to self-evaluate their performance followed by certification duly provided by NSDC.

Actual Admissions / Registrations done Month-wise.														
S N	Job Role	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Total
1	Sewing Machine Operator	96	22	27	24	14	0	0	12	16	0	0	2	213
2	Sewing Machine Operator Outreach	0	0	0	20	0	24	0	0	0	13	30	43	130
3	Assistant Electrician	3	2	7	7	7	2	0	5	10	4	0	0	47
4	Fitter Mechanical Assembly	16	22	20	17	31	5	6	17	4	1	7	1	147
5	F & B Service Steward	3	12	15	12	17	3	3	14	5	0	0	0	84
6	General Duty Assistant	18	11	10	19	30	7	11	11	21	8	2	0	148
7	Welding Technician	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Bar Bender & Steel Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Digital Literacy	40	26	21	65	36	25	15	16	29	0	9	8	290
	Total	176	95	100	164	135	66	35	75	85	26	48	54	1059

▪ **On Job Training & Placement of Saksham Trainees at ASDC**

This year, the candidates bagged the offer and got placed at different reputed organization in their domain field. A total of **122 youths** in **Fitter (63), F & B (39), GDA (19), and Asst. Electrician (1) trade** have got placement and joined the reputed organizations with decent annual package and accommodation facilities. The candidates have expressed their heartfelt gratitude towards Adani Foundation for giving them a platform to rejuvenate their conditions and succeed with bright career through skill training under Skilling India Program.

- **Job Fair at ITI Siktia Centre: 2 Days Job Fair** was conducted in collaboration with District Administration, Department of Labor, Employment, Training and Skill Development, and Adani Skill Development Centre (ASDC), Godda at Women's College ITI Siktia centre in February 2023. During the event chief dignitaries present were officials of Employment department, Saksham team and the Senior representatives from various Company of different States. The youths were mobilized, and informed about different prospects of employment, employment opportunities in varied nature of Companies. Over 15 representatives from more than 8 Companies with its operational location from several districts and states had presented the job opportunities in their companies namely, in Godda (Hero Motors, SBI Life), Dhanbad, Bokaro, Kolkata, Gujarat, and Chennai, etc.

Placement details of Trainees at ASDC (April'22-March'23)						
S No	Trade	No of Trainees	Location	Company Name	Salary per Month	CTC (In lakhs)
1	Fitter Mechanical Assembly	1	Hyderabad	Musashi Auto Parts India Pvt. Ltd.	10000	1.20
2	Fitter Mechanical Assembly	1	Dumka	Bababasukinath work center	10500	1.26
3	Fitter Mechanical Assembly	2	Kolkata	Barbeque Nation	10000	1.20
4	Fitter Mechanical Assembly	1	Godda	Chandra Power under Adani power Godda	28000	3.36
5	Fitter Mechanical Assembly	1	Sahebganj	Coalfield Equipment Pvt. Ltd	15000	1.80
6	Fitter Mechanical Assembly	1	Godda	District Legal Service Authority, Godda	80000	9.60
7	Fitter Mechanical Assembly	1	Godda	ESSEL HTG under Adani power	13000	1.56
8	Fitter Mechanical Assembly	8	Godda	IPL (Invisible project lojectic limited) Under Adani Power	12000	1.44
9	Fitter Mechanical Assembly	1	Godda	Hiro Motors	10000	1.20
10	Fitter Mechanical Assembly	1	Aara	Nagarmal Sheonarain & Sons, Ara	10000	1.20
11	Fitter Mechanical Assembly	9	Howrah	Reliance Warehouse	11000	1.32
12	Fitter Mechanical Assembly	4	Bhagalpur	Shivshakti Biotechnology Limited	10000	1.20
13	Fitter Mechanical Assembly	25	Godda	Techno Power under HTG Adani Power, Godda	13000	1.56
14	Fitter Mechanical Assembly	6	Chennai	Big Basket	17000	2.04
15	Fitter Mechanical Assembly	1	Giridih	Vanu Organic Pvt. Ltd	8000	0.96
16	F&B	12	Kolkata	Barbeque Nation	10000	1.20
17	F&B	21	Delhi	Barbeque Nation	10000	1.20
18	F&B	6	Bhagalpur	Shivshakti Biotechnology Limited	10000	1.20
19	GDA	2	Godda	Apollo health plus, Godda	5000	0.60
20	GDA	11	Ranchi	Care At Home, Ranchi	10000	1.20
21	GDA	1	Godda	Home care, Godda	10000	1.20
22	GDA	5	Telangana	Portea Medical and Health, Hyderabad	10000	1.20
23	Asst. Electrician	1	Howrah	Reliance Warehouse	11000	1.32
Total Trainees Placed---122						

2. Celebration of World Environment Day (5th June 2022) at Motia:

On the occasion of World Environment Day on June 5, Adani Foundation had organized Awareness Rally and Plantation drive in Motia village with participation of more than 200 children, school teachers, PRI members and community. The program was inaugurated in the presence of Mukhiya Sh. Ashok Choudhary and school teachers at Middle School, Motia who delivered speech and motivated the students on importance of Environment Day and conservation of environment. Various environmental & global issues such as deforestation, environmental pollution, soil erosion, land degradation, health issues and global warming based on sign boards, posters, etc. were informed to the community within radius of 2 km in Motia village. The students were provided saplings of Ashoka tree for plantation at home and community level. Apart from students, the villagers also had a good participation in the **Rally led by 200 villagers who planted 150 Ashoka saplings** in nearby villages and school area.

3. Plantation of Horticulture plants in villages: Promote Environment Conservation, Ecological Restoration and Conservation of Biodiversity

With, the motto of 'People and Planet', the community were educated to spread awareness on the significance of Plantation with the sustenance of livelihood of the flora and fauna and enlighten the lives of the poorer and downtrodden community. In August and December 2022, over **250 households** from **30** core, railway line, periphery, and pipeline villages of Godda and Sahebganj district were supported with total **1700 saplings** of horticulture plants and flowering plants including **Mango (1300), Lemon (150), Guava (50), Papaya (50) and 150 (Gulomohar)** to encourage plantation at households and community level and, supplement their livelihood to improve their health and well- being.

The community praised Adani Foundation for its continued support for Plantation of trees helps to make the environment cleaner and ensure fresh air around us. Also, the women and adolescents were made aware and sensitized to include nutritional diet in daily routine to reduce occurrence of malnutrition among children and anaemia in adolescents.

4. Veterinary Health Camp in Godda

Adani Foundation in association with Animal Husbandry Department, Godda had organized Veterinary Health Camp for Livestock on 27th September 2022 to 28th October 2022 with mutual guidance and needful support of Dr. Birendra Kumar - District Animal Husbandry Officer (DHO). Total **26 Veterinary Health Camps** at village level were conducted in which 26 villages were covered of five blocks namely Godda, Poreyahat, Thakurgangti, Boarijor, Mahagama (Godda district) and two

blocks, Borio & Mandro (Sahebganj district) benefitting over **1510** households directly by providing door to door services benefitting more than 1000 farmers directly. Total **8721 Livestock** including cattle and other domesticated animals were screened during the camp.

DAY WISE VETERINARY HEALTH CAMP					
SN	DATE	BLOCK	VILLAGE	HOUSEHOLD (HH)	LIVESTOCK
1	27.09.2022	Godda	Motiya	64	374
2	28.09.2022	Godda	Dumariya	63	473
3	29.09.2022	Poreyahat	Sondiha	77	504
4	11.10.2022	Poreyahat	Parasi	108	577
5	11.10.2022	Godda	Patwa	61	193
6	12.10.2022	Godda	Gangta	33	224
7	13.10.2022	Poreyahat	Baliyakitta	84	484
8	14.10.2022	Poreyahat	Basantpur	86	449
9	15.10.2022	Godda	Nayabad	42	346
10	17.10.2022	Poreyahat	Belbarna	49	257
11	18.10.2022	Poreyahat	Gumma Santhali	75	345
12	19.10.2022	Godda	Karikado	56	282
13	20.10.2022	Poreyahat	Gumma	76	461
14	21.10.2022	Poreyahat	Petwi Santhali	41	212
15	21.10.2022	Poreyahat	Petwi	54	431
16	22.10.2022	Godda	Kauribahiyaar	79	319
17	23.10.2022	Poreyahat	Baksara	79	443
18	26.10.2022	Godda	Maldih	70	396
19	20.10.2022	Borio	Chota Tetariya	15	90
20	21.10.2022	Borio	Chota lohanda	19	122
21	22.10.2022	Borio	Satichauki Khitahari	39	381
22	27.10.2022	Borio	Nirapara	18	420
23	28.10.2022	Mandro	Bara Beltauna	18	200
24	27.10.2022	Mahagama	Ghatgodhiya	68	183
25	28.10.2022	Mahagama	Maniyamore	78	206
26	28.10.2022	Thakur Gangti	Bahadurchak	58	156
Total				1510	8721

Diseases Identified and Diagnosed: The screening and health check-up included lumpi disease Vaccination, Deworming, Ticks, and Parasites, Demolition, Infertility Check-ups, Weakness treatments and General treatment to the animals. The most common diseases were found to be Endoparasites, Osteoporosis, Ectoparasites, Enterotoxaemia, and Unknown Fever/Pyrexia of Unknown Origin (PUO), Wounds, Pregnancy Diagnosis, Repeat Breeding (RB), Dermatitis, and Lymphadenitis. The farmers were advised to do routine deworming and vaccination along with feeding of supplemental mineral-vitamin mixture to improve their body nutrient status and overall health. **Over 351 cattles** were vaccinated for protection from Lumpi disease in September 2022.

5. Skill Development & Employment Generation for Youths at Women's College at ITI, Godda

Under Public Private Partnership (PPP) Model, an MoU was signed between Directorate of Employment and Training, Department of Labor, Employment, Training and Skill Development, Government of Jharkhand, and Adani Skill Development Centre (ASDC), Ahmedabad on dated 6th April 2022 to commence Vocational training program under affiliation of NCVT at Women's ITI, Siktia (Godda).

Govt Women's ITI College in Godda, Jharkhand was inaugurated in the year 2016 to provide employment based Vocational Training under Skill Development Mission Government of India. The infrastructure of Govt Women's ITI College was adopted for commencing Skill development programme in different ASDC and ITI trades with an objective to train over 1500 marginalized and vibrant youths of rural areas to outshine their obstacles and uplift their living by sharpening their skills and gets self-employed in concerned area of interest (mechanical & non-mechanical).

On dated 17th May 2022, Sh. Jatin Trivedi, COO, ASDC visited 'Women's ITI College at Siktia, Godda' and interacted with the officials of Government department and staffs regarding Adoption of Women' ITI College by Adani Skill Development Centre (ASDC), Godda and discussion was held on provision of Handover of Women's ITI College by Government of Jharkhand to Adani Skill Development Centre (ASDC), Godda.

The major intervention for inception of program was initiated in this year 22-23 comprising of Procurement of Tools & Equipment and its installation, renovation of infrastructure, drinking facilities and construction of building units for development of Workshop unit (Under progress).

The **ITI inspection** was done by members of **SCVT Ranchi** on **11th November 2022** by **Mr. Devendra Kumar Sharma, Deputy Director, Skill and Employment, Ms. Shobha Kumari, Chief Training Officer, Jamshedpur ITI College**. A visit to ITI by **Mr. Sanjay Anand, District Skill Officer, Godda** was also done on **23rd November 2022** for assessment of infrastructure and training materials. After completion of verification process of ITI as per norms, the **Vocational training program** in **two trades, 1. Sewing Technology and 2. Fashion Design & Technology** was started from November 2022 onwards, along with mobilization of youths and community in different intervention locations in Godda district. So far, **35 students' admission** is done in ITI in Sewing Technology & Fashion Design trade.

ITI Inspection on compliance of ITI norms regarding training materials, trainer, campus availability, admission of students and quality of training was done by **Mr. Yogendra Sharma, Assistant Director, Employment, Ranchi, and Skill Department** in the month of **February 2023**.

6. Plantation Survival Survey in Villages: Plantation Survival survey was conducted in the month of May 2022 in Dumaria, Baksara, Sondiha, Motia village of core area and 18 pipeline villages of Godda district to assess the success of plantation and measure the survival % on an average for the horticulture plants distributed during the year 2021-22. The survival survey was conducted on random basis in 4-5 villages comprising of 69 households of core area while total 28 households were surveyed in pipeline villages. The result of the survey was 82% survival of total 150 mango plantation in pipeline villages while, in core villages, 51% survival was analysed of mango and lemon plantation.

7. Vermicomposting production by Farmers: Vermicomposting production has been started with an objective to enable farmers to become Vermi-Entrepreneurs to boost their income and uplift their socio-economic condition and promotion of Sustainable Livelihood practices among farmers in more than 13 TPP core, railway line and pipeline villages. During the year, 2022-23, **17 farmers** were supported with **22 Vermibed** along with trainings for setup of vermicomposting units which resulted positive response by farmers for doing organic based farming and entrepreneurship.

Program Outcome: So far, the program has benefitted more than 700 farmers by installing over 457 vermicomposting units who have cultivated the culture of organic farming by application of vermicompost and other organic fertilizers in agriculture and plantation of horticulture plants which has increased the crop yields and productivity of the farm produces by 15%. While, the remaining produce is sold to other progressive farmers, vegetable growers, etc. in nearby villages and rural market which has augmented their livelihood due to increase in earnings by minimum Rs. 5000 on an average per farmer per annum.

▪ **Exposure Visit and Training on Vermicomposting:** One day Exposure visits and training of B.Sc. (Agriculture) Hons. students of Tilka Manjhi Agriculture college, Punsia under Agro-Industrial Attachment (AIA) Programme was conducted on Adani Foundation driven Vermi compost production unit of a farmer in Dumaria village. Total 48 students of B. Sc. (Ag.) Hons., VII semester, 4th year, visited farmer's Vermicompost unit for undergoing their Agro-Industrial attachment at M/s Agro World Enterprises. The students gained knowledge on various aspects of Vermicompost production, organic farming, and economic benefits to farmers.

8. Support to SHG for Income Generation: Adani Foundation supported the Women Self Help Group- Phoolo Jhano Saksham Sakhi Mandal (PJSASM) in accomplishment of flags stitching in a short span of around **1,16,713 Flags** assigned by JSLPS and District Administration, respectively with an objective to celebrate **Independence Day under the National Campaign of Government of India- "Har Ghar Tiranga" as part of 75th 'Azadi Ka Amrit Mahotsav' from 13-15 August 2022.** More than 200 women members were engaged and earned income Rs. 2000-Rs 3000 from flag stitching work at core and outreach sewing centres namely, ITI Siktia, Pathargama, ASDC, Motia, Dumaria, Sondiha, Rangania and Bahuria respectively.

9. Chief Guest Visits & Important Days Celebration

- **Celebration of Independence Day among community:** Adani endeavors to commemorate the freedom fighters and exhibit patriotism towards the Nation by fostering growth & development of community for progressive and sustainable future. On the eve of Independence Day (15th August 2022), Adani had organized **National Campaign of Government of India- "Har Ghar Tiranga" as part of 75th 'Azadi Ka Amrit Mahotsav' from 13-15 August 2022**, by providing National flags stitched by Women SHG to villagers and community of intervention villages and public of Godda district and instilling them with true essence of patriotism in remembrance of the martyrs and freedom fighters. The 75th Independence Day was marked with great pride, vitality, and festivity among every patriot of 'Mother Earth' and the 'Nation'.
- **Social Presentation at Group level – Chief Guest Visit- Adani Foundation:** **Four days' Site level Review Visit was held from dated 12th September 2022 till 15th September 2022** among dignitaries of Adani Foundation, Ahmedabad, and site level CSR team to get deeper understanding of the CSR projects being carried out at the location, Godda (district Godda, and Sahebganj, Jharkhand). The dignitaries had reviewed and interacted with different stakeholders including the beneficiaries of core programs namely, Education, Health, SLD and RID in Godda and Sahebganj. The prospective programs with structured approach were discussed with the site team so that the efforts and resources could be prioritized. **'Vision 2026'** was also suggested to the Godda team which would be governed by a vision for the villages at the site.
- **Social Presentation at Group level – Chief Guest Visit- Adani Group:** Chief Guest Visit was held on 26th October 2022 among dignitaries of Adani Group, Ahmedabad, and site level CSR team to get deeper understanding of the CSR projects being carried out at the location, Godda (district Godda, Jharkhand). The

dignitaries had reviewed and interacted with different stakeholders including beneficiaries of Suposhan, SHG Women, ASDC Saksham trainees and AWC Patwa.

- **Corporate Communication - Godda 1st Unit Commissioning / Video shooting of CSR activities:** Corporate Communication team had visited Godda Site from 1st November 2022 to 4th November 2022 for Video Shooting of Power Plant & CSR activities. On 2nd and 3rd November 2022, Video shooting of varied CSR activities (Education, Health, SLD and RID) intervened in TPP core, and pipeline villages of Godda & Sahebganj district was done. Also, some local person (Male & Female) was identified who spoke and explained about the developments of area, also about their own skill enhancement and how this benefited them in their daily life.
- **Celebration of World Water Day:** Adani Foundation organized a World Water Day event on 22 March to raise awareness about the importance of freshwater and the need for its conservation and management. The day was marked by various programs and activities by the community, farmers, and school students around the villages of the TPP area, including awareness rally, painting competition, slogan competition, essay writing competition and awareness workshops and community groups came together to discuss its importance, raised awareness about sustainable water management practices. Approx. 800 students & 200 farmers participated in the program.

RURAL INFRASTRUCTURE DEVELOPMENT

Water Conservation, Ground water recharge

- 1. Deepening work of Ponds:** Pond plays a crucial role in the functioning of natural cycle with enhancement of livelihood of human mankind, and natural species of flora and fauna. It enhances the soil moisture in the agricultural land, increases the water storage capacity of other harvesting structures and recharges ground water level in catchment area enabling access to drinking water namely wells, community wells and hand pumps.

Pond Deepening work caters to multipurpose usage in relation to livelihood generation for poorer households and community, and water security which entails the reliable availability of an acceptable quantity and quality of water for health, livelihoods, and production, coupled with an acceptable level of water-related risks. It also promotes Environment Conservation & Protection, Ecological Restoration and increase access to Water Commons and other Common Pool Resources (CPRs) in the villages.

In the year **2022-23**, a total of **7 ponds deepening** work has been completed in **7 villages, pond cleaning** work in **1 pond** in **one pipeline village, Canal Cleaning (3.5 Km long)** in **one pipeline village**, and **Stair construction** at **2 ponds** in **2 periphery villages**. More than **500 farmers** availed benefits from pond deepening for doing irrigation in their agricultural land of around **1200 acres** along with enhanced soil fertility and restoration of ecology.

More than 1500 acres of agricultural land from 10 villages is depending on these ponds for irrigation purposes, but due to lack of storage capacity the pond can provide irrigation to only 500-600 acres of agriculture land. The intervention has enhanced the crop intensity and irrigation area in more than 1200 acres of agricultural land with **net increase in storage capacity** by **64867 cubic meters**. Apart from agriculture, other alternative livelihoods options have increased in our area such as livestock development, pisciculture etc. In addition to this the work has also boosted the ground water level in the wells and bore wells in the area. As availability and increase in water storage, we could also introduce the scientific methods of agriculture like SRI methods in paddy and other crops.

Canal and pond cleaning and stair work at pond has also benefited around **1000 farmers and community** for channelizing economic as well as domestic, cultural, and religious activities in their daily routine.

SN	Activity/ Name of Pond	Village	Duration	Net Increase in storage area (In Cubic Meter)	Potential Water Recharge	Farmers benefitted	Land Benefitted in Acres
					(2.5 times of increase in storage)		
1	Barabandh (Lalu Pond cutting)	Barabandah, Pathargama	Apr-22	3946	9865	55	110
2	Cleaning of Pond	Tulshikitta village, Pathargama block	Apr-22	-		45	90
3	Deepening of Mal tola pond	Bohra	Jun-22	8466	21165	50	115
4	Deepening of Madhuri Pond	Asadhi Madhuri	Jun-22	11145	27862.5	42	84
5	Deepening of Kura Pond	Motia	Jun-22	14905	37262.5	40	95
6	Deepening of Dumaria Pond	Dumaria	Jun-22	9934	24835	49	124
7	Deepening of Kauribahiyar Pond	Kauribahiyar	Jun-22	13793	34482.5	62	190
8	Canal Cleaning (3.5 Km long)	Bhagwanpur	Jul-22	-		100	230
9	Stair at Pond	Kauribahiyar	Aug-22	-		60	120
10	Stair at Pond in Dhamsai temple	Dhamsai	Aug-22	-		25	20
11	Deepening of Gangta Pond	Gangta	Jan-23	2678	6695	25	50
	Total			64867	162167.5	553	1228

Drinking Water Facility

- 1. Drinking water facility in villages –RO, Community Well etc.:** 1 Submersible installation at doctor's quarter, Thakurgangti Hospital in August'22, Water supply connection (Tap water) at Baksara village (near Durga temple), Water supply connection (Tap water) for differently abled children of Mukhbadhir Vidyalaya in pipeline village of Sahebganj district, 1 RO Water Purifier (60 LPH) was provided in Hari Devi Referral Hospital, Thakurgangti, 1 Kent RO Water filter (50 LPH) to Middle School, Motia and 14 wells were renovated in 7 villages of core, railway line and pipeline area benefitting more than **7000 population** directly. The work will facilitate the villagers, community, students, hospital staff and patients during the summer season and all the year for drinking & domestic use.

Well renovation						
S. N	Duration	Block	Village	No. Of Wells Renovated	Total HHs	Beneficiary
1	22-Apr	Godda	Kauribahiyar	2	50	400
2	22-Apr	Podaiyahat	Gumma	2	50	400
3	22-May	Godda	Kauribahiyar Mal	2	60	480
4	22-Aug	Godda	Kauribahiyar	3	45	180
5	Sep'22	Godda	Motia	1	15	60
6	Dec-22	Borio	Bara Pangdo	1	25	125
7	Dec-22	Borio	Chhota Tetariya	1	40	200
8	Feb-23	Boarijore	Jhirli	1	54	270
9	23-Mar	Mahagama	Ghat Gamhariya	1	61	305
Total				14	400	2420

2. Installation, Renovation & Repairing Work of 374 Hand pumps & Hand pump Platform:

Hand pumps are primary source for drinking water and other domestic needs in the TPP area. Adani Foundation has taken up the hand pumps maintenance and repairing work of hand pumps, its installation and construction of hand pump platform in 8 blocks including core, railway line and pipeline villages. With this work, we are ensuring 100% functionality of the hand pumps in the area. This year we have renovated and repaired **360 hand pumps** in villages of Thakurgangti, Mahagama, Mehrama & Boarijore blocks of pipeline area and **14 hand pumps** was installed in core, railway line and pipeline villages benefitting more than **70,000 rural population** of **200+ villages** of Godda and Sahebganj district. Branding of hand pumps repaired and installed by Adani Foundation has also been done for its recognition and better monitoring.

Hand Pump Repairing						
Sl. No	Duration	Block	No. Of Village Covered	No. Of Hand Pump Repaired	Total HHs	Beneficiary
1	22-May	Mahagama	14	63	2520	12600
2	22-May	Meharama	5	16	640	3200
3	22-Jun	Mahagama	11	24	960	4800
4	22-Jun	Meharama	8	19	760	3800
5	22-Jul	Mahagama	31	61	2440	12200
6	22-Jul	Mehrama	31	53	2120	10600
7	22-Jul	Boarijore	3	8	320	1600
8	22-Aug	Mahagama	14	29	1160	5800
9	22-Aug	Meharama	8	13	520	2600
10	22-Sep	Mahagama	5	11	440	2200
11	22-Sep	Meharama	4	6	240	1200

12	Oct-22	Mahagama	5	9	360	1800
13	Oct-22	Meharama	6	16	640	3200
14	Nov-22	Mahagama	4	14	560	2800
15	Nov-22	Meharama	6	12	480	2400
16	Nov-22	Thakurgangti	2	6	240	1200
Total			157	360	14400	72000

Handpump Installation						
S. N	Duration	Block	Village	Unit	Total HH	Beneficiary
1	Apr'22	Podaiyahat	Gumma	1	20	80
2	22-Jun	Podaiyahat	Gumma	1	20	80
3	22-Jun	Podaiyahat	Gumma	1	30	120
4	22-Aug	Sahebganj	Sahebganj	1	25	100
5	22-Aug	Godda	Motia (Laiya tola & near Shailesh temple)	2	44	176
6	22-Aug	Godda	Gangta	1	22	88
7	Dec-22	Thakurgangti	Bahadurchak	1	30	150
8	Jan-23	Borio	Chota Tetariya	1	50	250
9	Jan-23	Podaiyahat	Petbi	1	55	275
10	Jan-23	Borio	Satichouki Khuthari	1	65	325
11	Feb-23	Mahagama	Dhankol	1	70	350
12	Mar-23	Godda	Dhamsai	1	38	190
13	Mar-23	Thakurgangti	Bahadurchak (Bhagwanpur)	1	75	375
Total				14	544	2559

Educational infrastructure Development

- 1. School Development of High School, Motia** including construction of six Classrooms, sanitation facilities, drinking facilities (installation of borewell), flooring, plumbing, tiles, painting, and beautification work of the classrooms. It will bridge the infrastructural gap in pursuing education for more than 500 poorer and rural children every year in a proper space and conducive learning environment.
- 2. Construction of School Kitchen in Middle School, Motia** was completed in June 2022 with an objective to improve Health, Nutrition, and Wellness and increase the attendance rate of 600+ students and their academic performance.

3. Strengthening School Infrastructure in periphery villages: Construction of Boundary Wall at Gangwara village School and Middle School, Kaithatkar, Beautification work at Virkuwar Singh Inter College, Boundary and Gate at Diyara Middle school, Godda to provide better rural infrastructure and enable access to educational institutions for more than 2000 students.

4. Strengthening Anganwadi Centre (AWC)- Infrastructural Support for Model Anganwadi: Several infrastructural work was initiated including education related sanitation facilities, kitchen facilities, renovation of infrastructure and BALA paintings as learning aid with an objective to achieve the vision of Model Anganwadi and transform the state of target groups comprising of children (0-5 years), adolescents, pregnant women, lactating mother, and community with advanced tools for their holistic development. The project aims to provide a caring environment that addresses the educational, health and nutritive requirements of around 1000 rural children every year of 22 AWCs of TPP Core and railway line area.

SN	Anganwadi Center	Intervention	Status	Intervention	Status
1	Dumaria	Boundary Wall	Completed	BaLA (Building as Learning Aid) painting	Completed
2	Patwa	-	-	BaLA (Building as Learning Aid) painting	Completed
3	Motia (Kahar tola)	Roof Treatment, Beautification of AWC (Tiles Flooring, Painting of outside wall & building, etc.)	Completed	BaLA (Building as Learning Aid) painting	Completed
4	Gangta	Bathroom + Beautification of AWC (Tiles Flooring + Kitchen upgradation)	Completed	BaLA (Building as Learning Aid) painting	Completed

Health and Sanitation infrastructure Development

Good Health and Well-being is an important indicator of the development of individuals, groups, family, and society. It also contributes towards achievement of Sustainable Development Goals, **SDG 3** "Ensure **healthy** lives and promote well-being for all at all

ages". However, due to weakened health institutions, people face many difficulties and challenges in availing the public health care services. Ultimately, it results in miserable health conditions and other uncertain situations for the whole family due to low household income to afford medical expenses of private hospitals. Similarly, due to defunct and damaged health infrastructure, the operational deliverable in line gets adjourned, affecting the health of the people.

- 1. Construction of Labor Room in Mahagama Hospital:** Completed in July 2022. It has helped the hospital staffs and patients to operate all health services in a better manner serving over 1000 patients and pregnant women for health treatment and safe institutional delivery in Mahagama hospital.

Other Village development structures

- 1. Construction of 9 Model Bathroom & Soak pit near Handpump:** Model Bathroom and Soakpit/ Recharge pit has become a critical component in the socio-economic development of rural people and ecological restoration. It serves the objective of providing access to amenities like health, hygiene and sanitation for women, children, and tribal community. Some time ago people had no bathroom facility in their village, and they were using open places for toilet as well as bathing purpose which invites unhygienic condition and diseases among the people and makes the women more vulnerable to several social issues.

Construction of **9 Model Bathroom and Soakpit** in **7 villages** of core and periphery area of Godda and Sahebganj district has addressed the needs of around **300 women and girls (70% of total 450 beneficiaries)** who lived in vulnerable condition. It has reduced their drudgery and safeguarded dignity of women and girls fostering social inclusion and equity. Development of such structures in rural habitation has also ensured alignment with Sustainable Development Goals, namely, 'Goal 3- Ensure healthy lives and promote well-being for all at all ages' and 'Goal 6. Ensure availability and sustainable management of water and sanitation for all'.

S. N	Duration	Block	Village	No. Of Bathroom	Total HHs	Beneficiary
1	April'22	Podaiyahat	Sarwa	1	15	45
2	Dec-22	Borio	Bara Pangdo	1	18	54
3	Jan-23	Podaiyahat	Petbi	3	20	60
4	Jan-23	Borio	Nirapada	1	22	66
5	Jan-23	Mandro	Solbandha	1	20	60
6	Feb-23	Mahagama	Dhankol	1	25	75
7	23-Mar	Mahagama	Ghat Gamhariya	1	30	90
Total				9	150	450

- 2. Construction of 12 Seating Place (Chabutra) in villages:** Construction of **12 Seating place** has been done in **9 core and pipeline villages** benefiting more than **45000 rural and tribal population**. Normally villages do not have common places in the village for seating purposes for elders and senior citizens. This is being used by the common people in the village for seating purposes.

SN	Village	Block	Unit	Duration	Beneficiary
1	Sarwa	Podaiyahat	1	April'22	3500
2	Kauribahiyar	Godda	1	April'22	4200
3	Bhagwanpur	Thakurgangti	1	April'22	5000
4	Korka	Godda	1	May'22	5100
5	Ratanpur	Thakurgangti	1	June'22	2600
6	Kauribahiyar	Godda	1	August'22	2500
7	Lalmati	Mandro	1	Dec-22	3200
8	Satichauki Khothari	Borio	1	Dec-22	3000
9	Baksara+2 School	Podaiyahat	2	Dec-22	5600
10	Kauribahiyar	Godda	1	Jan-23	4900
11	Gumma	Godda	1	Feb-23	5800
Total			12		45400

- 3. Construction of Conference Hall at Sibn Soren Janjatiya Inter College, Borio Block** at cultural heritage sites in Sahebganj to provide adequate infrastructure to held meetings, seminars, and cultural events for tribals students & community (1st Part Completed and 2nd Part Ongoing).

- 4. Construction of Cultural Stage at Ratanpur village of Thakurgangti block of pipeline area** for organizing community level program.

- 5. Renovation of Community Hall at TPP area for Community Programs** for Promotion of cultural activity and local events at village level for community. It helps share peace and harmony among the community. As we are committed to provide better community structures to the village, we have renovated 1 community hall in Motia, Kahar Tola of and 1 is ongoing in core area. This hall is also being used for community purposes.

SN	Duration	Village	Unit
1	July 2022	Motia, Kahar Tola	1
2	Dec 2022	Motia (Ongoing)	1
Total			2

- 6. Construction of 9 Drains** was carried out in various core villages, namely at Motia (Yadav tola) (100 m), Kauribahiyar near Bhairan baba temple (80 m), Drain (130 m)

at Patwa village, Motia (Mandal tola) (123 m), 2 Drains at Sondiha (105 m, 170 meter), Kauribahiyar (80 m), Drain at Gangta (57 m), and Drain at Motia village (71 m) for proper drainage system and sanitation in the rural area benefiting over **15000 rural population**.

7. Construction of 3 nos. Shed: 2 shed at Sahebganj and 1 Shed at Motia OP, to provide better infrastructure facilities to more than **10000 public** of Godda and Sahebganj district.

8. Renovation of Women's College ITI Building at Siktia, Godda: To provide better infrastructure facilities to trainers, candidates, and staff for Skill development program benefiting over **1500 youths and women**.

9. Development of Workshop unit at Women's ITI Siktia, Godda: To provide better infrastructure facilities to the students of Skill development program. (Ongoing).

10. Construction of Green room at Sarwa for better rural infrastructure facilities to the villagers.

11. Renovation and construction of 31 community structures: We have taken up the renovation & upgradation of old, defunct, and dilapidated community structures and cultural heritage structures in 26 intervention villages to restore, adapt and conserve structures of heritage and cultural value benefiting more than **1 lakh beneficiaries**. Moreover, it enables the villagers to organize local festivals, perform puja rites and conduct village level meetings such as SHG meeting, Gram Sabha, Sports Committee meeting, etc.

12. Beautification of Historical places in Godda for 15th August 2022 (Independence Day) and 26 January 2023 program: Adani endeavors to commemorate the freedom fighters and exhibit patriotism towards the Nation by fostering growth & development of community for progressive and sustainable future. On the auspicious occasion of **15th August 2022** (Independence Day), and **26 January 2023 celebration**, painting work was done at several Historical places of Godda for conducting flag hoisting ceremony in presence of chief dignitaries, and police force.

13. Repairing of 3 Village Road at 3 locations namely, Gumma Village on April 22, GSB Filling Road was done in Basantpur village on Sep 22 and GSB Filling Road (660 m in Bahadurchak village, Thakurgangti (March 23) to provide better rural infrastructure facilities benefiting **15000+ villagers** for commuting.

14. Construction of Paver block pathway beside Flag Hoisting Stage at Sahebganj

15. Construction of Bird shed & Boundary at Dhobi Jharna - Mukh Badhir School, Sahebganj benefiting over 65+ differently abled children.



Green Belt Development



Green Belt



Mass Plantation



Green Belt Development



Green Belt Development



Plantation between Ash Silo and Coal Stock Yard



Along the boundary plantation



Green Belt Development along the Ash Dyke



Green Belt Development



ELECTROSTATIC PRECIPITATOR (ESP)



WAGON TIPLER WITH DUST EXTRACTION SYSTEM



SPRINKLER SYSTEM AT WAGON TIPLER



RAINWATER HARVESTING - 1



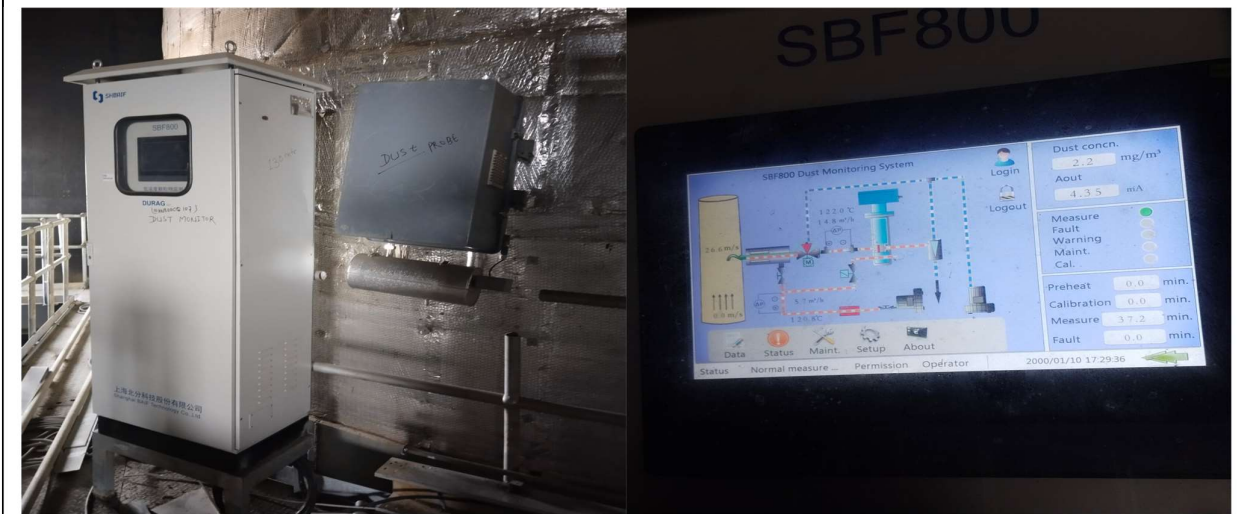
RAINWATER HARVESTING - 2



CEMS LOCATION



CAAQMS



CEMS – PM ANALYSER



Display Board at Main Gate



Power

Ref: APJL/ENV/COD/JSPCB/142/23

Date: 08.04.2023

To,

The Member Secretary

Jharkhand State Pollution Control Board

T.A Building, Dhurwa

Ranchi, Jharkhand – 834004

Sub: Successfully Completion of COD of Unit-I (800 MW) of Godda Ultra Supercritical Thermal Power Plant at Godda, Jharkhand by Adani Power (Jharkhand) Limited

Ref: Consent to Operate (CTO) vide no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated: 27.10.2022

Dear Sir,

With reference to the above subject, it is our pleasure to inform that we have **successfully completed COD of Unit-I (800 MW)** of Godda Ultra Supercritical Thermal Power Plant at around 00:00 Hrs on dated: 6th April 2023 (mid night of 5th April 2023).

This is for your kind information please.

Thanking you.

Yours faithfully,

for **Adani Power (Jharkhand) Limited**

(R N Shukla)

Authorized Signatory

CC:

Integrated Regional Office,
Ministry of Environment Forest & Climate Change
Ranchi, Jharkhand
The Member Secretary,
Central Pollution Control Board (CPCB),
Parivesh Bhavan, East Arjun Nagar, Shahadra,
New Delhi-110 032

The Regional Officer,
Jharkhand State Pollution Control Board
Dudhani, Dumka, Jharkhand – 814110



Ref: APL/APJL/ENV/MoEFCC/506/23

Date: 05.05.2023

To,

The Director – IA, II (T)

Ministry of Environment, Forest, and Climate Change

Government of India, Indira Paryavaran Bhavan,

Vayu Wing, Jor Bagh Road,

New Delhi - 110 003

Sub.: Information towards the change in Coal Source by Adani Power Jharkhand Limited, Godda (APJL), Jharkhand.

Ref.: 1. Environmental Clearance vide File no: J13012/01/2016-IA.I (T) dated: 31.08.2017 and amendments dated 03.09.2019 & 27.02.2020.
2. MoEFCC office Memorandum No: J-13012/8/2009-IA.I (T) dated 11.11.2020

Dear Sir,

With reference to above subject, it is our pleasure to inform that we have successfully completed COD of 1st Unit of Godda Ultra Supercritical Thermal Power Plant at Jharkhand, on 00:00 Hrs of 6th April 2023 (mid night of 5th April 2023).

The EC vide reference 1 was issued to APJL on the basis of Imported Coal. APJL propose to use domestic Coal through e-auction and hereby submits information as per para 7 of the OM dated 11.11.2020.

As per the Office Memorandum, MoEFCC dated; 11.11.2020, all the Thermal Power Plants (including Captive Power Plants) having Environmental Clearance can **change the Coal Source** (from imported to domestic, domestic to domestic, and domestic to imported) including Lignite, directly through e-auctions/short term linkage/long term linkage/other linkage options of Ministry of Coal or any organization recognized for allotting coal linkages, **without seeking the amendment in Environmental Clearance.**

Adani Power (Jharkhand) Ltd
Adani Corporate House
Shantigram, S G Highway
Ahmedabad 382 421
Gujarat, India
CIN: U40100GJ2015PLC085448

Tel +91 79 2555 4444
Fax +91 79 2555 7177
info@adani.com
www.adanipower.com

We are submitting herewith pointwise information towards the change in Coal Source by Godda TP of Adani Power Jharkhand Ltd. Jharkhand

Sl. No.	MoM Conditions	Information & Compliance status
1.	Details required regarding change in Source of Coal. <ul style="list-style-type: none"> o Location of the source, o Proposed quantity, o Distance from the power plant and o Mode of transportation o Quality (Ash, Sulphur, Moisture content and Calorific value) 	Details regarding change in Source of Coal are attached in Annexure-I
2.	The quantity of Coal transported from each source along with the mode of transportation shall be submitted as part of EC Compliance Report.	The quantity of Coal transported from source along with the mode of transportation is mentioned in Annexure-I
3.	The applicable flue gas emissions standards for Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen and Mercury shall be complied in line with Ministry's Notification vide S.O. 3305(E) dated 7.12.2015 and subsequent emissions. A progress of implementation and its compliance shall be submitted as part of Compliance Report.	High Efficiency Electrostatic Precipitators (ESP) has already installed to meet PM emission well within prescribed limit. FGD & SCR are installed to meet prescribed standard of SOx & NOx emission respectively. Emission monitoring results/report will be submitted along with half yearly EC compliance report to the concern authority on regular basis.
4	Ash content in the Coal and Coal transportation is governed by the Ministry's Notification vide S.O. 1561(E) dated 21.05.2020. As far as possible, Coal transportation shall be done by Rail/ Conveyor or other eco-friendly modes.	Ash content will be in compliance with Gazette Notification dated 21.05.2020. Coal transportation from the loading railway siding of mines to the Power Plant will be by Rail.
5	Additional ash pond is also not allowed.	No additional Ash Pond is proposed



We hope you will find the above information in order. We assure the Ministry that Adani Power Jharkhand Ltd. is committed to pollution prevention and will always operate and maintain the plant as per applicable environmental standards.

Thanking You,

Yours faithfully

for Adani Power Jharkhand Ltd.

A handwritten signature in blue ink, appearing to read "Santosh Kumar Singh".

(Santosh Kumar Singh)
Authorized Signatory

Encl: As above

CC Integrated Regional Office, Ranchi

Ministry of Environment Forest & Climate Change
Second Floor, Headquarter-Jharkhand State
Housing Board, Ranchi, Jharkhand

The Regional Officer,
Jharkhand State Pollution Control Board
Dudhani, Dumka, Jharkhand – 814110

Member Secretary,

Jharkhand Pollution Control Board
TA Division Building (Ground Floor), HEC,
Dhurwa, Ranchi-834 004 (JH)

Annexure-I

Location of Source	Central Coalfields Limited command area in the state of Jharkhand (District Chatra & Latehar)	Northern Coalfields Limited command area in the state of Madhya Pradesh (District Singrauli)	Suliyari Coal Mine in the state of Madhya Pradesh (District Singrauli)
Mine	Amrapali/Magadh	Block-B	Suliyari
Booked Qty in Auction	Amrapali-29,500 MT / Magadh-70,500 MT	Block-B-16,000 MT	24000 MT
Distance from Power Plant	Shivpur Railway Siding to GTPP- 550 Km and Balumath Railway siding to GTPP-516 Km	Gajara Bahara Railway siding to GTPP 745 Km	Gajara Bahara Railway siding to GTPP 745 Km
Mode of transportation	Rail	Rail	Rail
Grade	G-11	G-5	G-6
Calorific Value Range (Eq basis) Kcal/Kg	4000-4300	5800-6100	5500-5800
ASH %	35%-40%	20%-25%	25%-30%
Sulphur %	0.5%-1%	0.5%-1%	0.5%-1%
Moisture %	TM 10%-12% IM 5%-6%	TM 12%-15% IM 5%-6%	TM 12%-15% IM 5%-6%

- Coal quality as per grade of Coal published by Coal India Ltd.

F. No.J-13012/8/2009-IA.II (T)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Aliganj, Jorbagh Road
New Delhi-110 003

Dated 11th November, 2020

Office Memorandum

Sub: Amendment in Environmental Clearance for change in coal source by Thermal Power Plants- reg.

The Environment Impact Assessment (EIA) Notification dated 14th September, 2006 under the Environment (Protection) Act, 1986 mandates the requirement of prior Environmental Clearance to the projects/activities listed in the schedule to the said Notification. The Environmental Clearances are granted for Thermal Power Projects as per the capacities mentioned in the Schedule of the EIA Notification, 2006.

2. The Environmental Clearance (EC) has been granted based on a specific coal source such as a specific coal mine (domestic coal), or Imported coal, or blend of Imported coal and domestic coal. The Environmental Clearance has stipulated a condition that an amendment in EC is to be sought from the Ministry in case of change in fuel source.

3. The Ministry has been receiving several proposals regarding change in coal source, viz. change in domestic coal due to change in fuel linkages/auctions, and switching from imported coal to domestic coal. The linkage period granted through short-term linkage and e-auctions vary from 3 months to 1 year, making Project Proponents to approach the Ministry for granting amendment in EC each time there is change in coal source. In each amendment process, new conditions are being stipulated by making old conditions redundant.

4. The Ministry of Power (MoP) vide Policy Advisory dated 28.4.2020 encouraged all the power generating companies who are using imported coal (part/full) to switch over to domestic coal to the extent possible. The MoP has also set up a mechanism to deal with difficulties faced by the power companies in obtaining required quantity, quality of domestic coal including logistic bottlenecks.

5. The present process of dealing with change in coal source is to apply at PARIVESH, subsequent appraisal by the Expert Appraisal Committee (EAC), processing of EAC recommendations and granting the amendment to the EC. The whole process would approximately take about 2-3 months.

6. The various environmental impacts due to change in coal source viz. increased ash quantity and its management, increased emissions, and impacts of transportation have already been addressed and adequate mitigation measures have been stipulated by the Ministry vide Notifications dated 7.12.2015, 28.6.2018 and 21.5.2020.

7. In order to simplify the procedure for change in coal source and encourage Thermal Power Plants to use domestic coal, **the Ministry has decided the following procedure:**

All the Thermal Power Plants (including Captive Power Plants) having Environmental Clearance can change the coal source (from imported to domestic, domestic to domestic, and domestic to imported) including Lignite, directly through e-auctions/short term linkage/long term linkage/other linkage options of Ministry of Coal or any organisation recognised for allotting coal linkages, without seeking the amendment in Environmental Clearance, subject to the following conditions and thereby making earlier conditions in the EC regarding coal source redundant:

- a) Details regarding change in source (location of the source, proposed quantity, distance from the power plant and mode of transportation), quality (Ash, Sulphur, Moisture content and Calorific value) shall be informed to the Ministry and its concerned Regional Office. The quantity of coal transported from each source along with the mode of transportation shall be submitted as part of EC Compliance Report.
- b) The applicable flue gas emissions standards for Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen and Mercury shall be complied inline with Ministry's Notification vide S.O. 3305(E) dated 7.12.2015 and subsequent emissions. A progress of implementation and its compliance shall be submitted as part of Compliance Report.
- c) Ash content in the Coal and Coal transportation is governed by the Ministry's Notification vide S.O. 1561(E) dated 21.5.2020. As far as possible, Coal transportation shall be done by rail/conveyor or other eco-friendly modes. However, road transportation is allowed with tarpaulin covered trucks till the railway/conveyor belt infrastructure is made available. A progress (Physical and financial) of rail connectivity from nearest railway siding or conveyor connectivity to the power plant shall be submitted in the EC compliance report.
- d) Additional ash pond is not allowed due to increase in ash content in the raw coal as against the ash pond permitted in the Environmental Clearance. The 100% flyash utilisation is to be achieved within 4 years in line with Flyash Notifications dated 14.9.1999, 27.8.2003, 3.11.2009 & 25.1.2016 and amended time to time or extant regulations on Fly ash Utilisation.
- e) In case of exceptional circumstances, project proponents may approach the Ministry for seeking permission to use an emergency ash pond with cogent reasons, if any.
- f) The details regarding monthly generation, utilisation and disposal of flyash (including bottom ash) shall be submitted to the Ministry and its Regional Office.

This issues with the approval of the Competent Authority.



(Dr. S. Kerketta)
Director, IA Division

To

1. All the Thermal Power Plants.

2. The Chairman/Member Secretaries of all the Expert Appraisal Committees.
3. The Chairman /Member Secretaries of all the SEIAAs/SEACs.
4. The Chairman/Member Secretaries of all SPCBs/UTPCCs.
5. The Deputy Director General of Forest of all ROs of MoEF&CC.
6. All the Officers of I.A. Division.

Copy for information to:

1. PS to Hon'ble Minister for Environment, Forest and Climate Change.
2. PS to Hon'ble MoS (EF&CC).
3. The Joint Secretary, Ministry of Coal.
4. The Joint Secretary, Ministry of Power.
5. Sr. PPS to Secretary (EF&CC).
6. Sr. PPS to AS (RA) / AS (RSP).
7. Sr. PPS to JS (GM)/ JS (SKB)/JS (AKN).
8. Website of MoEF&CC/ Guard file.

Siderka