



Power

Ref: APL/APJL/EMD/EC/MoEFCC/202/05/22

Date- 24/05/2022

To,

**Additional Principal Chief Conservator of Forest
Ministry of Environment, Forest and Climate Change**

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'2021 to March'2022** 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:

Regional Office, East Central Zone, Ranchi
Ministry of Environment, Forests & 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'2021 – March'2022

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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 business

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.

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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 &

**Its 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.	Noted & compliance assured during operation stage of plant.
(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.
(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 of the 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.	Compliance assured. 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.	Compliance assured during operational phase of the plant. High efficiency Electrostatic Precipitators (ESP) are under implementation to meet revised emission standard of <30 mg/ Nm ³ for PM. FGD & SCR are under implementation to meet revised standard of SO _x & NO _x Emission. TPP has been designed to meet the Specific Water consumption of less than 2.5 m ³ /MWh and zero waste water discharge.

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(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 once the project takes off. As per Fly Ash Notification, Half yearly & Annual Ash generation and utilization will be submitted to MoEFCC, CPCB & JSPCB during operational phase of the plant.
(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. CSR activities are reflected in Annexure-II .
(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 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 3884 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 112 candidates got placed at different organization with decent packages.
(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. In Seven villages level training (Theoretical & On-Field Demonstration) on Vermicomposting was conducted from 15th September'21 to 23rd October'21 in 7 core, railway line and pipeline villages of Godda & Sahebganj district . Adani Foundation supported farming communities by promoting production of organic manure by installation of Vermi-Compost Bag/Vermibed across the core and pipeline village. 144 small & marginal farmers were

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		supported to install 165 Vermicompost units including vermibeds, plastic sheets, earthworms, net, etc., along with conduction of training program and exposure visit on organic farming in 18 core, railway line and pipeline villages of Godda and Sahebganj district. Detailed summarized 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 work order of 45,000 Jute bags making from JSLPS, Ranchi. The Women entrepreneurs undertook the assignments meticulously at ITI Siktia Training Centre cum Production Hub. 88 skilled women were allocated the work as per their capabilities and efficiency. Out of total 88 women, 54 women (61%) earned on an average up to range of Rs. 5000 and remaining 34 women (39%) earned more than Rs 5000 respectively. • 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 70000 students of 290 government schools. • Digital Literacy classes are operational which benefited 2048 candidates. • We have constructed 59 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	Noted and compliance assured.

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	carried out and the status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	Project is under construction phase and it is proposed to utilize the roof tops of buildings which are feasible for installation of solar panels during plant operation.
(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 and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	<p>Noted.</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> <p>Further, Radioactivity Test and Heavy Metal study report will be submitted during the plant operation.</p> <p>There is no proven technology to monitor radioactivity at plant level on continuous basis. Periodic test report will be submitted during operational phase of the plant.</p>
(xv)	Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.	<p>Noted & compliance assured.</p> <p>AP(J)L has proposed to install Online Continuous Emission Monitoring System & Effluent Quality monitoring System. The monitoring system will be installed before COD of Plant.</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>Noted.</p> <p>High efficiency Electrostatic Precipitators (ESP) are under installation 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 proposed and will be installed along with project construction.</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.	Dust extraction system with Bag filter in Crusher House is proposed. Pneumatic ash handling system with bag filters for ash handling & water sprinkling system will be provided in Coal yard and will be installed along with project construction & Before plant operation.
(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 placed between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground	<p>Compliance assured.</p> <p>Baseline data was collected during EIA study & Regular monitoring of Air, Water (surface & ground) is being carried out. Environmental Parameters monitoring results (including monitoring of Heavy Metals in Ground water) are</p>

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	water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	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.	Rain Water Harvesting (RWH) study carried out along with EIA study and already submitted. RWH plan is being under implementation along with project construction.
(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 will be altered. The drainage profile will be 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 project 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.	Monitoring of Mercury and other heavy metals in bottom ash assured during operational phase of the plant. Dry Ash collection, pneumatic conveying and storage (silos) facilities are being 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.
(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	Compliance assured during operational phase of the plant.

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	shall be mitigated and suitable compensation provided with the local Panchayats.	To control fugitive emission, adequate water sprinkling arrangements will be made in fly ash area. 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%.	Compliance assured. Green belt development / plantation and landscaping is already started in the available spaces 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.	Noted and compliance assured.
(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 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.	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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		<p>Need Based Assessment Study and Development of CSR report has already been submitted along with compliance report.</p> <p>Detailed CSR report is enclosed as Annexure- II.</p>
(xxix)	<p>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.</p>	<p>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.</p> <p>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.</p>
S.N	General Conditions:	Compliance Status
(i)	<p>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.</p>	<p>Noted.</p> <p>Plant layout has been designed with separate system for Storm Water drain and Effluent.</p>
(ii)	<p>A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.</p>	<p>Compliance assured.</p> <p>Decentralized Sewage Treatment Plants are under construction stage & treated water will be reused suitably within the plant premises for green belt development.</p> <p>One STP of 10 KLD capacity is operational and 100% treated water is being used for plantation/green belt development.</p>
(iii)	<p>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.</p>	<p>Fire Safety Management Plan is prepared and implemented. Fire Safety Management Plan already submitted with compliance report of October 2018 to March 2019.</p>
(iv)	<p>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.</p>	<p>Noted.</p> <p>The LDO/HFO/LSHS will be properly stored in designated location & minimum risk area and Department of explosive shall be consulted. Mock drills are being conducted periodically.</p> <p>DMP already submitted with compliance report of October 2018 to March 2019.</p>

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(v)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	<p>Being Complied.</p> <p>First aid facilities, drinking water facility, Sanitation facility, Wastewater disposal, solid wastes management and primary health facilities are being ensured at site.</p>
(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.	<p>Necessary action/prevention measures have been taken care in design to maintain noise level within 85 dBA at source.</p> <p>High Noise areas are identified. Presently, being construction phase, Elevation Boards at MPH has been provided with mandatory Personnel Protective Equipment (PPE's). A complete medical check-up with audiometric test of workers & employees is being carried out prior their joining in the organization.</p>
(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.	<p>Being complied.</p> <p>Regular monitoring of ground level concentration of Ambient Air for SO₂, NO_x, PM_{2.5} and PM₁₀ and Hg is being carried out and monthly reports are being submitted to the MS, SEIAA & JSPCB Ranchi & RO JSPCB, Dumka.</p> <p>For selection of monitoring location and monitoring frequency in consultation with JSPCB, intimation letter is already submitted to the board.</p> <p>Monitoring frequencies are as below:</p> <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). <p>Periodic Environmental monitoring report is enclosed, Please refer Annexure- I.</p> <p>EC compliance report is uploaded on the company's website, www.adanipower.com</p>
(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.	<p>Noted.</p> <p>Ash utilization plan/schedule has been incorporated in the EIA report. Status of implementation will be reported to the Regional office, MoEFCC regularly during plant operation.</p>

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(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 temporary structures to be removed after the construction of the project.	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. Local manpower are being 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 Oct'17 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 MoEFCC, CPCB & JSPCB. Compliance status uploaded on Company's website. Digital display board is proposed to install at the main gate of the power plant, before COD. Manual Display Board is already provided at main gate showing information on Ambient Air Quality and waste details are displayed at main gate which is maintained and updated periodically. Environmental monitoring report is enclosed, Please refer Annexure- I and manual 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	Noted.

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	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.	Environment statement will be submitted to JSPCB, after obtaining the Consent to Operate (CTO).
(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.	Six monthly compliance status reports are regularly submitted to MoEF&CC, CPCB & JSPCB. The same is sent by email also. Six monthly compliance report for the period of Apr'21 to Sep'21 submitted to your good office vide our letter no. APL/APJL/EMD/EC/MoEF /213/11/21 dated 19.11.2021. 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.	Noted. 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 proposed to install at the main gate of the power plant, before COD. Manual Display Board is already provided at main gate showing information on Ambient Air Quality and waste details are displayed at main gate which is maintained and updated periodically.
(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.	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	Financial closures has been achieved and disclosed. Construction work for Site development, Boundary wall, Site office, Store and other facilities started. Main Plant and other facilities

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	start of land development work and commissioning of plant.	already Started. Commissioning of the Plant is expected by Sep'2022. However due to pandemic scenario of COVID 19 and subsequently 2 nd and 3 rd Wave of COVID it got delayed.
(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.
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 & Agreed Compliance assured once the project takes off. 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 started in the available spaces along with project construction. In addition to plant area, over 363 households and Forest Office, Godda & Mahagama, were

ADANI POWER (JHARKHAND) LIMITED

		<p>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.</p> <p>Our efforts are being made to develop more greenery in & around the plant with survival rate of more than 80%.</p>
(vi)	<p>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. Further, copy of Formal (Stage-II) Approval shall be submitted as and when it is obtained.</p>	<p>Compliance of conditions mentioned in the In-Principle approval (Stage-I) Forest Clearance dated 28.06.2019 has been uploaded on https://parivesh.nic.in/.</p> <p>Compliance report of Stage – I Forest Clearance submitted along with EC compliance report for the period of Oct'19 to Mar'20.</p> <p>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 Ooctober'20 to March'21.</p>
(vii)	<p>The total project area has now been reduced to 558 acres from 1255 acres. The remaining area (if acquired) shall be developed as greenbelt.</p>	<p>Noted.</p> <p>Power plant facilities have been reworked and total project area has now been optimized to 558 acres from 1255 acres.</p>
(viii)	<p>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.</p>	<p>Noted and agreed</p>
<p>Additional Conditions (EC Amendment)</p>		
(i)	<p>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.</p>	<p>Noted and agreed.</p> <p>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%.</p>
(ii)	<p>In para 5 of amended EC dated 03.09.2019, the period of '6 months' be read as '07 months'.</p>	<p>Noted.</p>

Annexure - I

ADANI POWER (JHARKHAND) LTD.

2*800 MW Godda Thermal Power Project

Village: Motia, Dist: Godda, Jharkhand

ENVIRONMENTAL MONITORING REPORT PERIOD: Oct'21 – Dec'21



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

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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:	Oct'21 to Dec'21
	REPORT DATE:	13.01.2022
	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.

Other than that expressly contained in the paragraph above, GGMPL provides no other representation or warranty whether express or implied, in relation to the services.

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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 Oct'21 to Nov'21 has been collected by Go Green Mechanisms Pvt. Ltd.

Note: Environmental Quality Monitoring Report for the Month of Dec'21 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	Hemson / 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

For Go Green Mechanisms Pvt. Ltd.

GO GREEN MECHANISMS PVT. LTD.

Amit Badlani
Managing Director

AUTHORIZED SIGNATORY

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):2006	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 4500 B C	Spectrophotometer
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 2017	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)	APHA 23rd Edn 2017 4500 CN C ,E	Ion Chromatography
Selenium (Se)	IS 3025 (Pt 56): 2003	ICP-OES
pH	IS 3025 (Pt 11): RA 2006	pH Meter
Colour	IS 3025 (Pt 04): RA 2017	-
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'21 has been collected by Envirotech East Pvt. Limited.



Figure 1: Weather Monitoring Station at Hostel Block

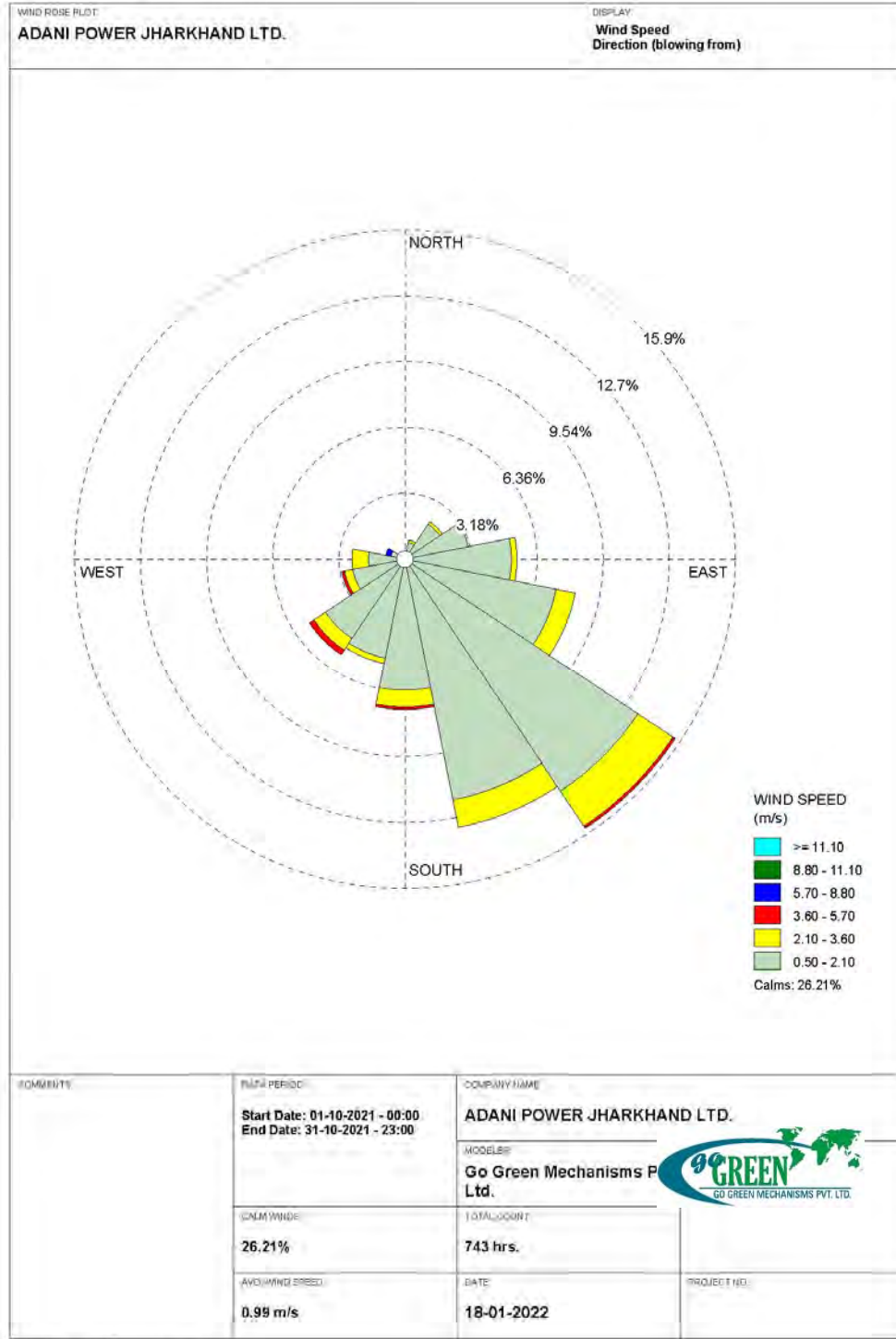


Figure 2: Windrose diagram for the month of Oct'21

It is observed from the windrose diagram for the month of Oct'21 the predominant wind direction is SE.

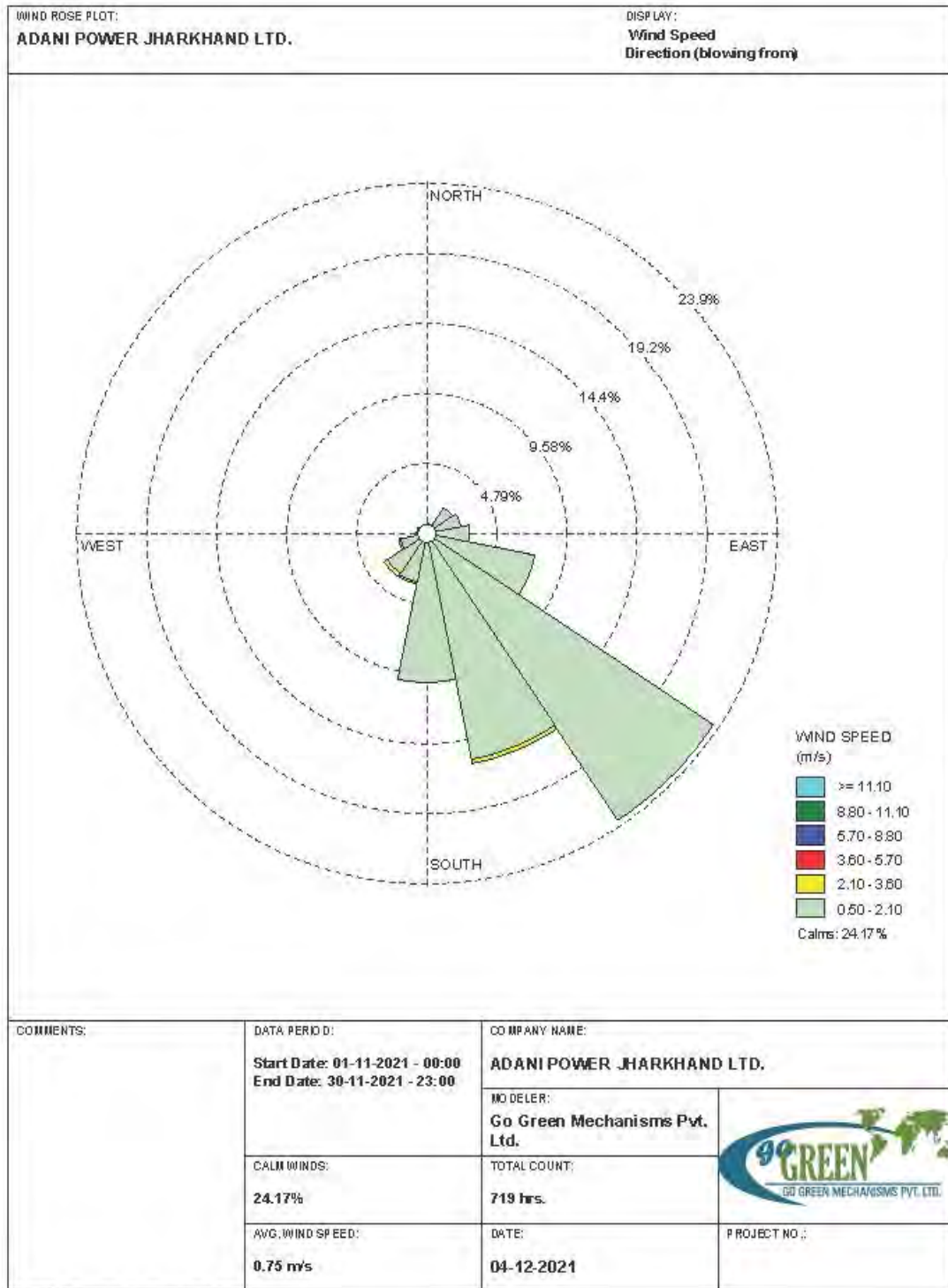


Figure 3: Windrose diagram for the month of Nov'21

It is observed from the windrose diagram for the month of Nov'21 the predominant wind direction is ENE.

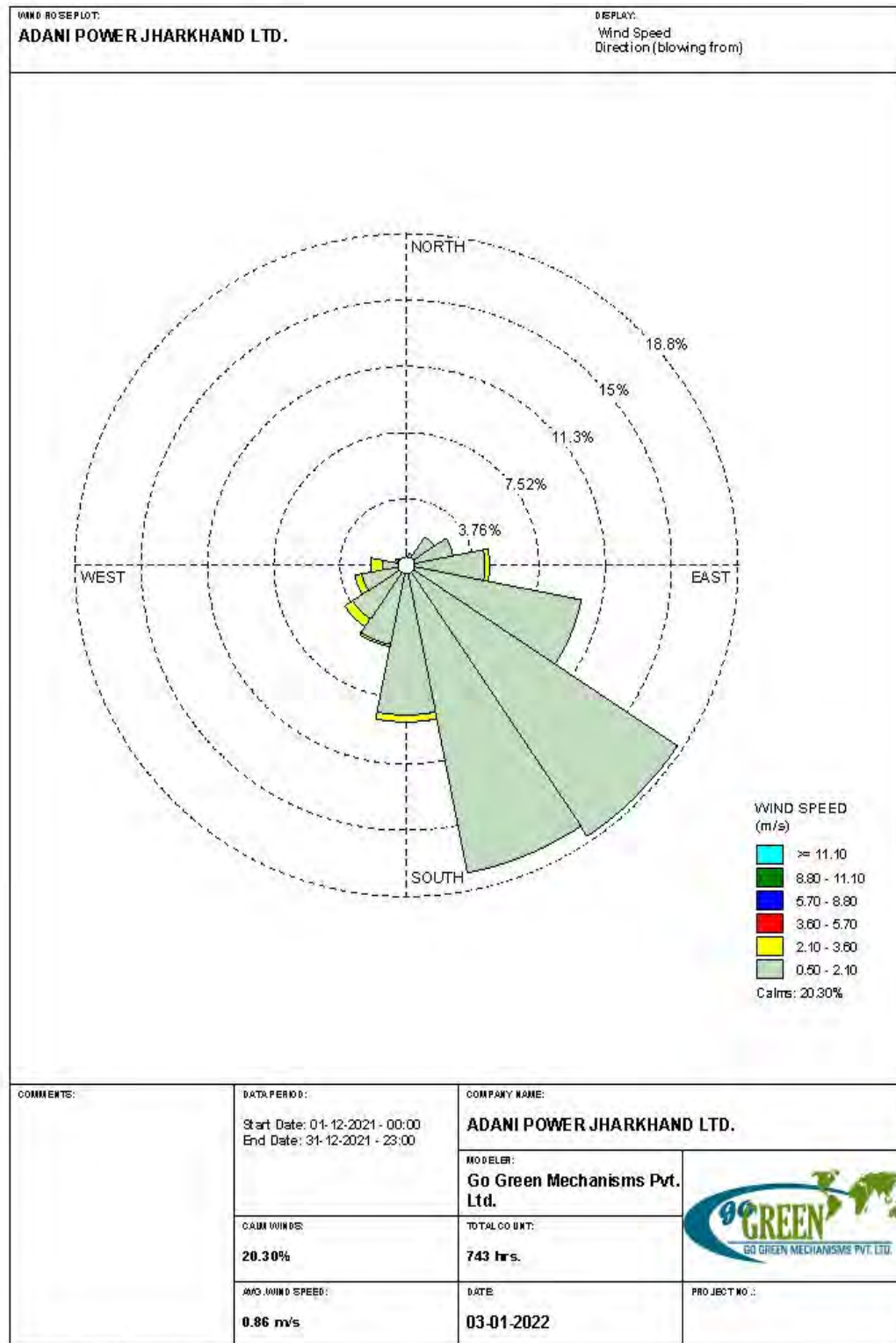


Figure 4: Windrose diagram for the month of Dec'21

It is observed from the windrose diagram for the month of Dec'21 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
PM10, PM2.5, 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.	01.10.2021	18.4	10.4	BQL(QL=5)	BQL(QL=5)
2.	04.10.2021	55.4	22.1	8.1	12.6
3.	07.10.2021	60.1	25.4	9.1	13.5
4.	11.10.2021	56.2	22.9	8.0	14.0
5.	14.10.2021	50.4	23.9	7.4	13.1
6.	18.10.2021	21.6	11.2	BQL(QL=5)	BQL(QL=5)
7.	21.10.2021	66.4	27.9	7.8	13.8
8.	25.10.2021	59.9	27.4	9.2	14.2
9.	28.10.2021	62.1	29.4	8.3	12.0
10.	01.11.2021	59.6	27.4	8.4	12.4
11.	04.11.2021	55.6	24.6	7.5	11.6
12.	08.11.2021	49.8	23.4	7.0	11.0
13.	11.11.2021	54.9	25.4	8.4	13.2
14.	15.11.2021	63.8	29.5	9.1	14.2
15.	18.11.2021	56.7	24.9	8.8	12.6
16.	22.11.2021	67.5	30.1	10.2	15.1
17.	25.11.2021	50.4	21.3	7.2	10.6
18.	29.11.2021	60.0	25.6	9.9	13.6
19.	03.12.2021	67.8	30.8	10.7	14.1
20.	07.12.2021	65.1	29.6	9.6	13.5
21.	10.12.2021	66.9	31.2	8.0	12.7
22.	14.12.2021	58.6	25.4	8.1	12.2
23.	17.12.2021	66.8	30.1	9.0	13.1
24.	21.12.2021	62.7	27.5	7.7	11.6
25.	24.12.2021	59.4	24.6	6.9	10.8
26.	28.12.2021	45.6	17.3	6.8	9.7

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	18.4	10.4	BQL(QL=5)	BQL(QL=5)
Max Concentration	67.8	31.2	10.7	15.1
Average	56.2	25.0	8.4	12.7

Note: Environmental Quality Monitoring Report for the Month of Dec'21 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.	01.10.2021	20.1	11.6	BQL(QL=5)	BQL(QL=5)
2.	04.10.2021	50.1	20.9	7.9	11.8
3.	07.10.2021	53.1	23.4	8.4	12.5
4.	11.10.2021	51.3	25.0	6.9	11.4
5.	14.10.2021	54.9	23.6	7.0	14.3
6.	18.10.2021	19.5	10.9	BQL(QL=5)	BQL(QL=5)
7.	21.10.2021	59.8	26.6	7.2	13.4
8.	25.10.2021	65.4	30.0	9.0	14.1
9.	28.10.2021	58.8	25.9	7.7	13.2
10.	01.11.2021	61.2	28.6	9.0	13.1
11.	04.11.2021	58.4	25.3	8.0	12.5
12.	08.11.2021	55.1	21.6	7.4	10.8
13.	11.11.2021	58.6	26.7	8.7	12.8
14.	15.11.2021	61.3	28.4	9.0	13.0
15.	18.11.2021	51.6	23.1	10.1	13.5
16.	22.11.2021	56.6	23.5	9.6	13.4
17.	25.11.2021	52.6	22.6	8.1	14.6
18.	29.11.2021	65.6	27.0	10.3	14.0
19.	03.12.2021	63.3	28.3	8.7	12.9
20.	07.12.2021	61.4	27.9	9.5	13.3
21.	10.12.2021	69.8	32.1	10.5	14.2
22.	14.12.2021	61.2	26.7	8.5	11.3
23.	17.12.2021	64.6	30.0	8.6	12.4
24.	21.12.2021	58.4	24.2	7.6	10.6
25.	24.12.2021	62.4	27.2	7.8	11.8
26.	28.12.2021	48.6	18.5	7.2	10.0

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	19.5	10.9	BQL(QL=5)	BQL(QL=5)
Max Concentration	69.8	32.1	10.5	14.6
Average	55.5	24.6	8.4	12.7

Note: Environmental Quality Monitoring Report for the Month of Dec'21 has been collected by Envirotech East Pvt. Limited.

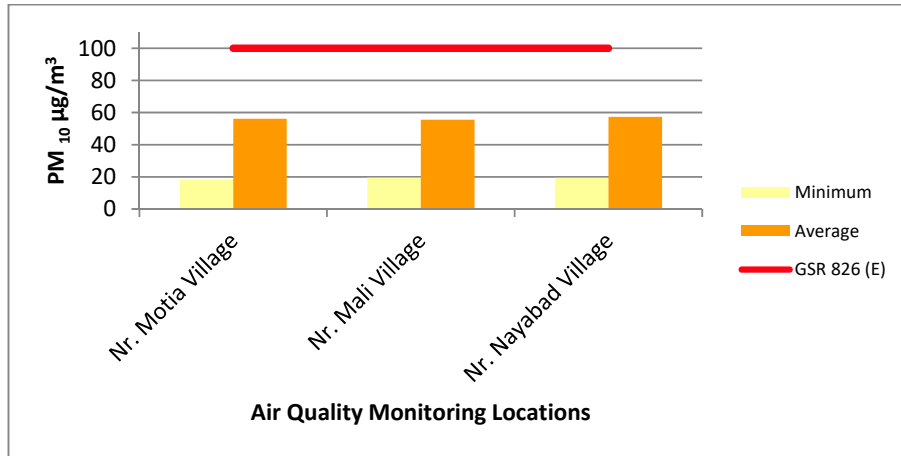
Results & statistical calculations for Location- A3:

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.	01.10.2021	19.4	11.7	BQL(QL=5)	BQL(QL=5)
2.	04.10.2021	58.4	24.1	7.6	11.9
3.	07.10.2021	62.4	28.7	8.6	14.5
4.	11.10.2021	56.7	25.3	8.9	13.7
5.	14.10.2021	61.4	26.4	9.4	14.4
6.	18.10.2021	20.8	12.4	BQL(QL=5)	BQL(QL=5)
7.	21.10.2021	56.9	23.8	8.2	13.3
8.	25.10.2021	60.2	26.7	8.8	13.0
9.	28.10.2021	65.8	30.2	8.7	13.6
10.	01.11.2021	63.4	26.9	8.7	13.2
11.	04.11.2021	60.1	26.6	7.6	14.1
12.	08.11.2021	53.2	22.1	8.2	12.6
13.	11.11.2021	57.4	23.9	7.8	13.1
14.	15.11.2021	65.8	29.1	8.8	14.3
15.	18.11.2021	61.5	27.7	9.6	14.0
16.	22.11.2021	66.5	29.3	10.5	13.5
17.	25.11.2021	49.6	20.6	6.9	9.8
18.	29.11.2021	55.2	25.1	9.2	13.3
19.	03.12.2021	65.6	28.7	9.2	13.0
20.	07.12.2021	59.1	25.8	8.3	12.6
21.	10.12.2021	65.3	26.4	10.2	14.5
22.	14.12.2021	68.1	31.7	10.3	13.9
23.	17.12.2021	60.2	27.1	8.4	12.8
24.	21.12.2021	61.8	26.2	9.4	12.1
25.	24.12.2021	63.4	26.1	9.3	13.4
26.	28.12.2021	51.2	19.7	7.5	10.4

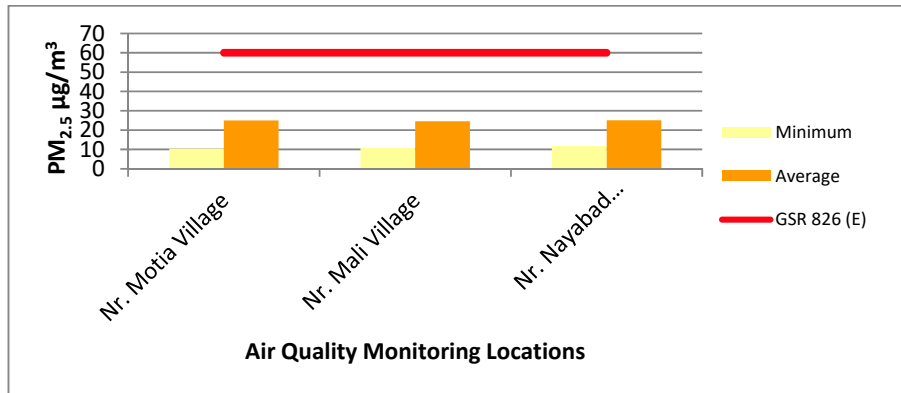
RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	19.4	11.7	BQL(QL=5)	BQL(QL=5)
Max Concentration	68.1	31.7	10.5	14.5
Average	57.3	25.1	8.8	13.1

Note: Environmental Quality Monitoring Report for the Month of Dec'21 has been collected by Envirotech East Pvt. Limited.

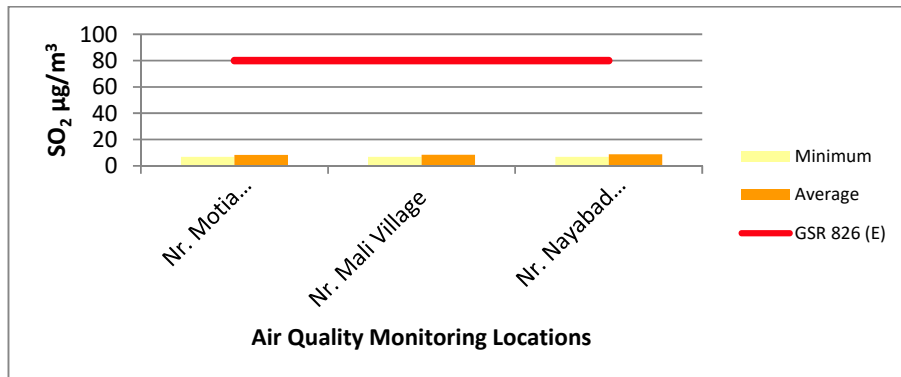
8.6 GRAPHICAL REPRESENTATION OF THE RESULTS



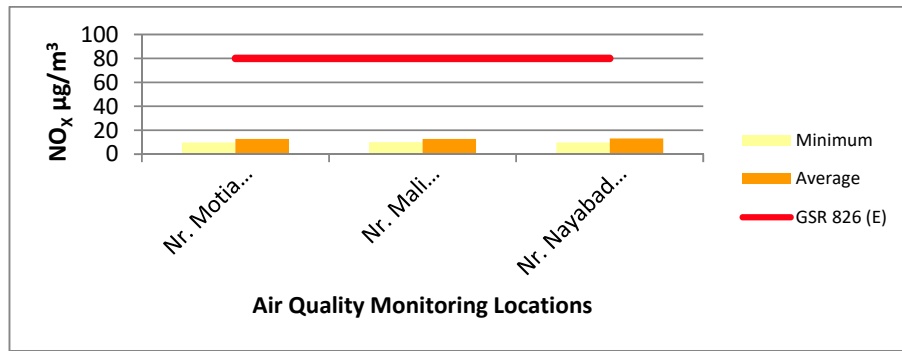
Graph 1: Particulate Matter (PM₁₀)



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 (PM ₁₀)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	18.4	67.8	56.2	100
Nr. Mali Village	19.5	69.8	55.5	100
Nr. Nayabad Village	19.4	68.1	57.3	100

Particulate Matter (PM _{2.5})				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	10.4	31.2	25.0	60
Nr. Mali Village	10.9	32.1	24.6	60
Nr. Nayabad Village	11.7	31.7	25.1	60

Sulphur Dioxide (SO ₂)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	6.8	10.7	8.4	80
Nr. Mali Village	6.9	10.5	8.4	80
Nr. Nayabad Village	6.9	10.5	8.8	80

Oxides of Nitrogen (NO _x)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	9.7	15.1	12.7	80
Nr. Mali Village	10.0	14.6	12.7	80
Nr. Nayabad Village	9.8	14.5	13.1	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'21	BQL(QL=0.02)
	Nov'21	BQL(QL=0.02)
	Dec'21	BQL(QL=0.02)
Nr. Mali Village	Oct'21	BQL(QL=0.02)
	Nov'21	BQL(QL=0.02)
	Dec'21	BQL(QL=0.02)
Nr. Nayabad Village	Oct'21	BQL(QL=0.02)
	Nov'21	BQL(QL=0.02)
	Dec'21	BQL(QL=0.02)

Note: NS= Not Specified

Note: Environmental Quality Monitoring Report for the Month of Dec'21 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'21 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	Atomic absorption spectroscopy is based on absorption by ground state atoms of an element present in the sample which is atomized in the flame or graphic furnace. Depending on absorption of selected wavelength of the element the concentration is estimated. The technique provides valuable information on concentration of required elements present in the sample. Concentration are in ppm or ppb levels depending on source of sample excitation.
Iron	Iron is brought into solution, reduced to the ferrous state by boiling with acid and hydroxylamine and treated with 1,10-phenanthroline at pH 3.2 to 3.3 Three molecules of phenanthroline chelate each atom of ferrous iron to form an orange-red complex. The colored solution obeys beer's law; its intensity is independent of pH from 3 to 9. A pH between 2.9 and 3.5 insures rapid color development in the presence of an excess of phenanthroline. Color standards are stable for at least 6 months.

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 (Na ₂ S ₂ 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.
Boron (As B)	In the presence of boron, a solution of carmine or carminic acid in concentrated sulphuric acid changes from a bright red to a bluish red or blue, Depending on the concentration of boron present.
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: 05.10.2021

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia 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	363	500	2000
4.	Total Hardness as CaCO ₃	mg/L	175.7	200	600
5.	Alkalinity as CaCO ₃	mg/L	75	200	600
6.	Calcium as Ca	mg/L	46.8	75	200
7.	Chloride	mg/L	30.9	250	1000
8.	Sulphate	mg/L	26.8	200	400
9.	Nitrate	mg/L	5.5	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	14.3	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	31.6	-	-
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	10.2	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.

Date of Sampling: 05.10.2021

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	336	500	2000
4.	Total Hardness as CaCO ₃	mg/L	160.9	200	600
5.	Alkalinity as CaCO ₃	mg/L	80	200	600
6.	Calcium as Ca	mg/L	44.3	75	200
7.	Chloride	mg/L	25.9	250	1000
8.	Sulphate	mg/L	42.6	200	400
9.	Nitrate	mg/L	4.6	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	12.2	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	30.6	-	-
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	9.9	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.

Date of Sampling: 05.10.2021

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad 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	365	500	2000
4.	Total Hardness as CaCO ₃	mg/L	176	200	600
5.	Alkalinity as CaCO ₃	mg/L	77.5	200	600
6.	Calcium as Ca	mg/L	43.6	75	200
7.	Chloride	mg/L	28.5	250	1000
8.	Sulphate	mg/L	25.6	200	400
9.	Nitrate	mg/L	5.2	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	16.3	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	33.1	-	-
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	12.0	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.

Date of Sampling: 05.10.2021

Sr. No.	Parameter	Unit	Location Patwa Village	As Per IS 10500:2012	
				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	324	500	2000
4.	Total Hardness as CaCO ₃	mg/L	160.8	200	600
5.	Alkalinity as CaCO ₃	mg/L	105	200	600
6.	Calcium as Ca	mg/L	41.3	75	200
7.	Chloride	mg/L	31.6	250	1000
8.	Sulphate	mg/L	41.9	200	400
9.	Nitrate	mg/L	5.1	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	14.0	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	33.1	-	-
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	10.8	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.

Date of Sampling: 05.10.2021

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.35
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	43
4.	Total Dissolved Solids	mg/L	475
5.	BOD at 27°C – 3 Days	mg/L	25.4
6.	Chemical Oxygen Demand	mg/L	83.6
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	60.1
9.	Sulphate as SO ₄	mg/L	139.5
10.	Ammonical Nitrogen as NH ₃	mg/L	3.6
11.	Total Kjheldal Nitrogen as TKN	mg/L	8.0
12.	Dissolved Phosphate	mg/L	1.3
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: 06.10.2021

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.28
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	27
4.	Total Dissolved Solids	mg/L	338
5.	BOD at 27°C – 3 Days	mg/L	10.3
6.	Chemical Oxygen Demand	mg/L	31.9
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	30.8
9.	Sulphate as SO ₄	mg/L	128.6
10.	Ammonical Nitrogen as NH ₃	mg/L	3.2
11.	Total Kjheldal Nitrogen as TKN	mg/L	6.7
12.	Dissolved Phosphate	mg/L	1.0
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: 06.10.2021

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.24
2.	Turbidity	NTU	2.2
3.	Total Dissolved Solids @ 180 °C	mg/L	286
4.	Total Suspended Solids	mg/L	66
5.	Dissolved Oxygen	mg/L	6.4
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	20.5
8.	Sulphate	mg/L	40.6
9.	Nitrate	mg/L	5.1
10.	Fluoride	mg/L	0.46
11.	BOD at 27°C – 3 Days	mg/L	6.1
12.	Chemical Oxygen Demand	mg/L	20.8
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	33.5
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.2
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	11.5

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

Date of Sampling: 15.11.2021

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.1	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	359	500	2000
4.	Total Hardness as CaCO ₃	mg/L	161.5	200	600
5.	Alkalinity as CaCO ₃	mg/L	70.0	200	600
6.	Calcium as Ca	mg/L	42.1	75	200
7.	Chloride	mg/L	28.6	250	1000
8.	Sulphate	mg/L	25.1	200	400
9.	Nitrate	mg/L	6.00	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	13.7	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	26.8	-	-
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	9.4	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: 15.11.2021

Sr. No.	Parameter	Unit	location Mali Village	As Per IS 10500:2012	
				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	365	500	2000
4.	Total Hardness as CaCO ₃	mg/L	175.3	200	600
5.	Alkalinity as CaCO ₃	mg/L	85	200	600
6.	Calcium as Ca	mg/L	47.1	75	200
7.	Chloride	mg/L	26.4	250	1000
8.	Sulphate	mg/L	43.5	200	400
9.	Nitrate	mg/L	5.1	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	14.0	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	27.6	-	-
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	10.3	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: 15.11.2021

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.30	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	345	500	2000
4.	Total Hardness as CaCO ₃	mg/L	164.2	200	600
5.	Alkalinity as CaCO ₃	mg/L	74.1	200	600
6.	Calcium as Ca	mg/L	41.2	75	200
7.	Chloride	mg/L	25.1	250	1000
8.	Sulphate	mg/L	28.3	200	400
9.	Nitrate	mg/L	6.1	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	14.9	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	28.6	-	-
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.	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	9.6	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: 15.11.2021

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	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	304		500	2000
4.	Total Hardness as CaCO ₃	mg/L	157.5		200	600
5.	Alkalinity as CaCO ₃	mg/L	99		200	600
6.	Calcium as Ca	mg/L	42.3		75	200
7.	Chloride	mg/L	30.1		250	1000
8.	Sulphate	mg/L	37.6		200	400
9.	Nitrate	mg/L	4.8		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	12.6		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	30.4		-	-
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	12.0		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: 15.11.2021

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.40
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	42
4.	Total Dissolved Solids	mg/L	447
5.	BOD at 27°C – 3 Days	mg/L	24.5
6.	Chemical Oxygen Demand	mg/L	78.3
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	58.6
9.	Sulphate as SO ₄	mg/L	143.6
10.	Ammonical Nitrogen as NH ₃	mg/L	3.1
11.	Total Kjheldal Nitrogen as TKN	mg/L	7.2
12.	Dissolved Phosphate	mg/L	1.6
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: 15.11.2021

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.35
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	32
4.	Total Dissolved Solids	mg/L	348
5.	BOD at 27°C – 3 Days	mg/L	11.2
6.	Chemical Oxygen Demand	mg/L	33.6
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	32.1
9.	Sulphate as SO ₄	mg/L	135.2
10.	Ammonical Nitrogen as NH ₃	mg/L	2.9
11.	Total Kjheldal Nitrogen as TKN	mg/L	7.2
12.	Dissolved Phosphate	mg/L	1.3
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: 16.11.2021

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.12
2.	Turbidity	NTU	2.0
3.	Total Dissolved Solids @ 180 °C	mg/L	264
4.	Total Suspended Solids	mg/L	61
5.	Dissolved Oxygen	mg/L	5.1
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	20.1
8.	Sulphate	mg/L	38.6
9.	Nitrate	mg/L	5.3
10.	Fluoride	mg/L	0.51
11.	BOD at 27°C – 3 Days	mg/L	5.6
12.	Chemical Oxygen Demand	mg/L	22.4
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	28.9
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	10.5

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: 06.12.2021

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia 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	345	500	2000
4.	Total Hardness as CaCO ₃	mg/L	158.44	200	600
5.	Alkalinity as CaCO ₃	mg/L	66.6	200	600
6.	Calcium as Ca	mg/L	40.2	75	200
7.	Chloride	mg/L	25.3	250	1000
8.	Sulphate	mg/L	24.8	200	400
9.	Nitrate	mg/L	5.0	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	14.1	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	mg/L	27.6	-	-
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	10.7	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: Environmental Quality Monitoring Report for the Month of Dec'21 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.12.2021

Sr. No.	Parameter	Unit	Location Mali Village	As Per IS 10500:2012	
				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	321	500	2000
4.	Total Hardness as CaCO ₃	mg/L	152.72	200	600
5.	Alkalinity as CaCO ₃	mg/L	75	200	600
6.	Calcium as Ca	mg/L	41.7	75	200
7.	Chloride	mg/L	24.3	250	1000
8.	Sulphate	mg/L	40.3	200	400
9.	Nitrate	mg/L	6.2	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		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	8.9	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: Environmental Quality Monitoring Report for the Month of Dec'21 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.12.2021

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.4	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	332	500	2000
4.	Total Hardness as CaCO ₃	mg/L	154.22	200	600
5.	Alkalinity as CaCO ₃	mg/L	71.3	200	600
6.	Calcium as Ca	mg/L	39.5	75	200
7.	Chloride	mg/L	24.1	250	1000
8.	Sulphate	mg/L	26.7	200	400
9.	Nitrate	mg/L	5.6	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	27.2	-	-
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.	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	11.5	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'21 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.12.2021

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.23		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	318		500	2000
4.	Total Hardness as CaCO ₃	mg/L	153.23		200	600
5.	Alkalinity as CaCO ₃	mg/L	95		200	600
6.	Calcium as Ca	mg/L	39.6		75	200
7.	Chloride	mg/L	28.5		250	1000
8.	Sulphate	mg/L	35.4		200	400
9.	Nitrate	mg/L	5.2		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			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	27.6		-	-
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.	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	10.9		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: Environmental Quality Monitoring Report for the Month of Dec'21 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.12.2021

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.6
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	46
4.	Total Dissolved Solids	mg/L	465
5.	BOD at 27°C – 3 Days	mg/L	26
6.	Chemical Oxygen Demand	mg/L	76.2
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	55.6
9.	Sulphate as SO ₄	mg/L	141.3
10.	Ammonical Nitrogen as NH ₃	mg/L	3.5
11.	Total Kjheldal Nitrogen as TKN	mg/L	7.6
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.

Note: Environmental Quality Monitoring Report for the Month of Dec'21 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 06.12.2021

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.16
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	34
4.	Total Dissolved Solids	mg/L	369
5.	BOD at 27°C – 3 Days	mg/L	12.3
6.	Chemical Oxygen Demand	mg/L	34.2
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	29.5
9.	Sulphate as SO ₄	mg/L	138.7
10.	Ammonical Nitrogen as NH ₃	mg/L	3.1
11.	Total Kjheldal Nitrogen as TKN	mg/L	6.5
12.	Dissolved Phosphate	mg/L	1.2
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'21 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 06.12.2021

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.3
2.	Turbidity	NTU	2.1
3.	Total Dissolved Solids @ 180 °C	mg/L	288
4.	Total Suspended Solids	mg/L	63
5.	Dissolved Oxygen	mg/L	5.3
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	22.4
8.	Sulphate	mg/L	41.2
9.	Nitrate	mg/L	5.3
10.	Fluoride	mg/L	0.56
11.	BOD at 27°C – 3 Days	mg/L	6.1
12.	Chemical Oxygen Demand	mg/L	23.8
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	
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	

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'21 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 '2021

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	1.35	3.85	2.15	-
MALI VILLAGE	0.50	6.20	5.7	2.4	3.3	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	2.4	3.3	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	2.35	3.45	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 '2021

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	1.65	3.55	2.15	-
MALI VILLAGE	0.50	6.20	5.7	2.8	2.9	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	2.85	3.85	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	2.75	3.05	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 '2021

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	3.0	2.7	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	3.05	2.65	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	3.0	2.8	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	18.10.2021	53.1	39.4	47.1	38.9	30.3	34.8
2	22.11.2021	54.2	40.0	48.7	40.3	31.6	36.1
3	21.12.2021	53.7	41.2	48.9	41.1	30.3	36.7

(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	19.10.2021	52.6	40.2	47.4	40.0	31.5	37.1
2	23.11.2021	53.6	38.4	47.8	42.3	32.6	38.7
3	22.12.2021	54.3	39.1	49.0	41.4	30.8	38.0

(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	18.10.2021	53.9	39.5	47.2	39.6	32.4	37.0
2	23.11.2021	54.1	40.6	49.5	41.7	30.4	37.6
3	22.12.2021	52.9	42.1	49.6	41.6	31.3	38.2

(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	18.10.2021	54.0	37.5	47.5	41.0	32.2	37.0
2	22.11.2021	53.8	39.6	49.8	38.6	30.9	38.5
3	21.12.2021	52.8	38.4	49.6	39.8	31.2	36.2

(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	22.10.2021	52.4	39.1	47.4	42.1	32.0	36.3
2	26.11.2021	53.7	41.2	50.4	42.5	32.4	37.3
3	24.12.2021	54.1	40.3	50.5	41.5	29.8	36.8

(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	21.10.2021	71.6	54.2	66.1	61.3	47.9	54.9
2	25.11.2021	70.3	56.1	63.8	56.9	46.5	51.5
3	23.12.2021	72.1	55.2	65.5	59.8	48.1	53.0

(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	21.10.2021	73.6	56.1	64.4	56.8	42.9	50.4
2	25.11.2021	70.5	55.2	62.5	58.1	45.	51.9
3	23.12.2021	72.4	56.2	64.9	57.1	44.6	51.9

(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	22.10.2021	70.6	46.1	62.9	48.3	34.0	42.7
2	26.11.2021	71.2	47.9	62.0	50.1	35.2	46.1
3	24.12.2021	69.1	50.2	61.9	51.3	36.2	47.3

(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	23.10.2021	53.6	40.3	48.0	41.8	31.5	36.6
2	27.11.2021	52.6	39.4	47.5	42.5	32.4	38.1
3	25.12.2021	53.1	41.3	47.6	43.2	30.9	37.9

(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	23.10.2021	54.1	38.4	47.7	42.0	32.1	38.1
2	27.11.2021	52.4	39.8	48.4	40.9	30.2	37.1
3	25.12.2021	53.9	40.0	48.8	42.3	32.1	38.4

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'21 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: 19.11.2021

Location: Nr. Mali Village				
Date of Sampling: 19.11.2021				
Sr. No.	Parameter	Unit	Result	Norms
1.	Maganesium as Mg	%	0.51	NS
2.	Calcium as Ca	%	1.15	NS
3.	Magnanese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.68	NS
5.	Cupper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.072	NS
7.	Chloride as Cl	%	0.091	NS
8.	Zinc as Zn	mg/kg	6.5	NS
9.	Nitrogen as N	%	1.21	NS
10.	Phosphorous as P	%	0.039	NS
11.	Potassium as K	%	0.045	NS
12.	Iron as Fe	%	0.057	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.75	NS
15.	Organic Carbon	%	0.51	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	54.0	NS
18.	Silt	%	33.0	NS
19.	Clay	%	13.0	NS

Location: Nr. Nayabad Village				
Date of Sampling: 19.11.2021				
Sr. No.	Parameter	Unit	Result	Norms
1.	Maganesium as Mg	%	0.71	NS
2.	Calcium as Ca	%	0.8	NS
3.	Magnanese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.54	NS
5.	Cupper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.083	NS
7.	Chloride as Cl	%	0.059	NS
8.	Zinc as Zn	mg/kg	4.0	NS
9.	Nitrogen as N	%	0.72	NS
10.	Phosphorous as P	%	0.07	NS
11.	Potassium as K	%	0.052	NS
12.	Iron as Fe	%	0.061	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.64	NS
15.	Organic Carbon	%	0.58	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	57.0	NS
18.	Silt	%	26.0	NS
19.	Clay	%	17.0	NS

Location: Nr. Patwa Village				
Date of Sampling: 19.11.2021				
Sr. No.	Parameter	Unit	Result	Norms
1.	Maganesium as Mg	%	0.67	NS
2.	Calcium as Ca	%	1.7	NS
3.	Magnanese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.56	NS
5.	Cupper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.084	NS
7.	Chloride as Cl	%	0.68	NS
8.	Zinc as Zn	mg/kg	4.3	NS
9.	Nitrogen as N	%	1.21	NS
10.	Phosphorous as P	%	0.076	NS
11.	Potassium as K	%	0.071	NS
12.	Iron as Fe	%	0.052	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.73	NS
15.	Organic Carbon	%	0.53	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	65.0	NS
18.	Silt	%	25.0	NS
19.	Clay	%	10.0	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'22 – Mar'22



Go Green Mechanisms Pvt. Ltd.

Head Office & Lab: Dayal Estate, National Highway
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Ahmedabad – 382426

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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'22 to Mar'22
REPORT DATE:	08.04.2022
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

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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'22** to **Mar'22** has been collected by Go Green Mechanisms Pvt. Ltd.

Note: Environmental Quality Monitoring Report for the Month of **Mar'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	02.5 Yrs	Field Assistant

For Go Green Mechanisms Pvt. Ltd.

GO GREEN MECHANISMS PVT. LTD.

Amit Badlani
Managing Director

AUTHORIZED SIGNATORY

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 adani Hostel BLock

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

January-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			
01.01.2022	19.1	11.8	14.7	92.0	70.0	84.1	5.0	1.3	N	757.2	0.0
02.01.2022	18.9	11.6	14.7	91.0	64.0	78.2	4.7	1.2	N	756.1	0.0
03.01.2022	19.2	10.1	13.7	94.0	58.0	82.6	3.9	0.9	N	755.0	0.0
04.01.2022	18.4	8.6	12.9	94.0	64.0	84.9	3.3	0.7	N	755.2	0.0
05.01.2022	17.5	10.9	13.4	94.0	72.0	87.5	3.0	0.6	ENE	754.8	0.0
06.01.2022	21.7	11.3	15.4	94.0	55.0	80.8	2.9	0.4	ENE	754.1	0.0
07.01.2022	23.5	10.2	17.2	94.0	56.0	78.4	4.1	0.8	SE	754.8	0.0
08.01.2022	24.7	13.0	18.5	91.0	57.0	76.6	5.0	0.9	SE	754.3	0.0
09.01.2022	24.0	13.4	19.0	88.0	55.0	75.2	2.3	0.6	ESE	752.7	0.0
10.01.2022	24.7	16.0	19.8	88.0	56.0	75.8	2.7	0.7	SE	753.3	0.0
11.01.2022	23.1	16.1	19.3	90.0	62.0	79.6	3.1	0.6	ESE	753.4	0.0
12.01.2022	22.5	14.5	18.0	94.0	63.0	84.5	4.3	0.9	SE	753.1	6.8
13.01.2022	22.3	14.2	17.3	93.0	55.0	81.7	4.1	0.7	NE	753.8	0.0
14.01.2022	19.9	12.7	16.1	91.0	64.0	80.3	3.1	0.4	E	754.5	0.0
15.01.2022	21.1	13.1	16.5	91.0	58.0	75.2	3.8	0.9	WNW	755.8	0.0
16.01.2022	20.2	11.4	15.3	88.0	46.0	72.1	6.1	1.1	WNW	756.4	0.0
17.01.2022	20.1	8.3	13.4	94.0	56.0	80.5	4.9	1.0	N	754.5	0.0
18.01.2022	18.1	9.6	12.9	92.0	59.0	79.4	4.1	0.9	NE	752.9	0.0
19.01.2022	17.4	8.3	12.3	93.0	62.0	81.1	5.4	0.9	E	750.8	0.0
20.01.2022	19.2	9.0	12.9	90.0	55.0	79.5	3.8	0.8	N	750.5	0.0
21.01.2022	22.8	8.3	14.8	94.0	49.0	76.0	2.0	0.5	E	750.1	0.0
22.01.2022	23.6	12.0	17.4	85.0	55.0	72.7	2.8	0.8	SE	749.7	0.0
23.01.2022	17.2	13.6	16.1	93.0	78.0	87.8	4.1	0.6	ENE	750.4	0.0
24.01.2022	22.2	13.8	17.3	94.0	62.0	83.3	2.4	0.5	ENE	750.4	0.0
25.01.2022	22.8	15.0	17.3	92.0	61.0	83.4	5.4	0.6	SE	751.0	0.7
26.01.2022	19.8	14.7	16.6	92.0	68.0	80.4	3.6	0.8	WNW	752.1	0.0
27.01.2022	19.5	11.5	15.0	81.0	51.0	67.0	6.1	1.4	WNW	753.0	0.0
28.01.2022	17.0	9.2	13.0	87.0	60.0	73.4	6.6	1.5	SW	753.8	0.0
29.01.2022	19.4	9.2	14.0	91.0	53.0	75.7	4.0	0.8	SE	753.8	0.0
30.01.2022	21.5	10.0	15.4	83.0	46.0	67.9	4.2	1.1	SE	751.1	0.0
31.01.2022	22.9	10.0	16.3	86.0	47.0	68.4	3.5	0.9	SE	750.7	0.0

Total Rainfall in mm	Rainfall	7.5

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

February¹-2022

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			
01.02.2022	23.2	10.8	16.9	86.0	38.0	64.8	6.2	1.3	SSE	749.4	0.0
02.02.2022	22.8	9.9	16.7	88.0	50.0	69.9	3.5	1.0	N	751.3	0.0
03.02.2022	25.6	12.6	18.1	91.0	46.0	72.7	2.8	0.7	NE	751.0	0.0
04.02.2022	17.9	13.6	15.8	93.0	71.0	85.8	5.7	1.2	NNE	749.3	48.5
05.02.2022	39.3	12.1	16.4	92.0	53.0	76.3	7.5	1.9	WNW	753.2	0.0
06.02.2022	20.8	10.8	14.7	88.0	56.0	75.8	4.8	1.0	NE	750.8	0.0
07.02.2022	22.2	10.4	15.6	91.0	54.0	74.7	3.4	0.8	SE	753.9	0.0
08.02.2022	21.9	10.9	16.3	89.0	52.0	73.1	3.4	0.7	ESE	753.5	0.0
09.02.2022	24.7	11.7	18.3	89.0	56.0	73.5	5.5	1.0	ESE	752.8	0.0
10.02.2022	24.1	16.5	19.7	89.0	62.0	79.4	2.9	0.9	WSW	752.9	0.0
11.02.2022	22.4	14.2	18.0	87.0	43.0	66.9	7.8	2.4	WNW	752.0	0.0
12.02.2022	23.2	12.5	17.3	82.0	41.0	62.7	6.4	1.4	S	752.6	0.0
13.02.2022	23.6	11.9	17.2	81.0	49.0	67.9	3.2	3.2	SE	752.1	0.0
14.02.2022	23.9	11.1	17.5	82.0	40.0	62.3	4.1	0.9	SSE	751.8	0.0
15.02.2022	24.1	11.5	17.6	78.0	40.0	60.8	3.4	1.0	SE	751.1	0.0
16.02.2022	24.3	12.9	18.2	77.0	48.0	65.4	6.2	1.1	S	749.5	0.0
17.02.2022	25.4	13.8	19.4	79.0	46.0	63.6	4.8	1.3	S	749.6	0.0
18.02.2022	26.0	13.5	19.7	74.0	29.0	53.1	6.2	1.5	SSE	750.9	0.0
19.02.2022	26.8	13.8	20.4	68.0	29.0	50.4	9.8	2.2	SE	750.5	0.0
20.02.2022	26.3	16.3	20.7	66.0	34.0	53.5	6.3	1.6	SE	747.9	0.0
21.02.2022	26.3	11.9	19.4	78.0	30.0	54.4	7.8	1.5	S	748.5	0.0
22.02.2022	26.6	12.1	19.3	86.0	38.0	64.4	6	1.0	ESE	752.6	0.0
23.02.2022	26.9	13.3	20.1	89.0	43.0	67.8	4.8	0.8	ESE	754.1	0.0
24.02.2022	29.4	16.1	21.5	88.0	53.0	72.2	6.5	1.1	SE	753.1	2.3
25.02.2022	27.5	17.9	22.0	89.0	57.0	74.9	5.9	1.0	ESE	753.3	1.0
26.02.2022	28.6	15.9	21.4	93.0	51.0	75.1	3.4	0.6	SE	754.6	0.0
27.02.2022	23.5	15.8	19.2	89.0	67.0	80.4	9.7	1.3	SE	753.4	4.6
28.02.2022	28.4	16.2	22.3	90.0	43.0	67.7	5.5	1.4	SE	752.6	0.0

Total Rainfall in mm	56.4
Rainfall From 01.01.2022	66.5
Rainfall From 01.06.2022	N/A

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'-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			
01.03.2022	27.2	16.4	21.8	83.0	44.0	63.3	4.6	1.0	ENE	753.8	0.0
02.03.2022	27.8	16.6	22	84.0	49.0	65.4	4.3	0.9	NE	753.3	0.0
03.03.2022	29.8	16.3	22.2	81.0	41.0	64.7	3.9	0.9	SE	752.9	0.0
04.03.2022	31.0	16.6	23.6	83.0	28.0	57.6	5.7	1.4	SE	751.7	0.0
05.03.2022	30.8	17.4	24.0	74.0	30.0	54.4	5.7	1.4	SE	750.9	0.0
06.03.2022	29.8	16.5	23	80.0	39.0	59.2	4.5	1.0	SE	751.9	0.0
07.03.2022	30.4	17.0	23.3	77.0	44.0	63.3	5.9	1.1	ENE	751.8	0.0
08.03.2022	30.8	18.2	24.0	78.0	41.0	62.0	4.0	1.2	SSE	750.5	0.0
09.03.2022	30.7	17.7	24.1	75.0	40.0	56.7	4.3	1.2	S	750.4	0.0
10.03.2022	31.3	17.9	24.5	72.0	37.0	56.8	4.9	1.0	SE	750.1	0.0
11.03.2022	31.9	19.4	25.2	70.0	35.0	55.2	6.3	1.8	S	749.7	0.0
12.03.2022	31.9	19.7	25.4	70.0	31.0	51.9	7.2	1.6	S	749.3	0.0
13.03.2022	32.5	19.5	25.4	73.0	30.0	56.8	5.0	1.3	S	749.6	0.0
14.03.2022	33.5	19.7	26.2	73.0	31.0	53.8	6.6	1.1	S	749.3	0.0
15.03.2022	33.8	19.5	26.8	76.0	37.0	56.8	2.7	1.0	SSE	747.2	0.0
16.03.2022	37.3	20.9	28.1	80.0	30.0	59.8	3.9	0.9	ESE	746.0	0.0
17.03.2022	37.1	22.3	28.3	83.0	30.0	62.0	3.8	1.1	E	746.3	0.0
18.03.2022	38.9	23.5	31.0	88.0	24.0	53.8	4.1	1.3	SE	747.1	0.0
19.03.2022	39.0	24.0	29.6	73.0	25.0	53.7	4.8	1.8	SE	745.6	0.0
20.03.2022	39.5	24.1	31.3	68.0	26.0	49.9	6.2	1.6	SSE	744.8	0.0
21.03.2022	36.7	25.0	29.1	81.0	28.0	62.8	4.3	1.2	ESE	745.6	0.0
22.03.2022	37.6	23.5	30.5	80.0	25.0	57.2	7.8	1.4	SE	746.2	0.0
23.03.2022	36.3	23.8	30.2	86.0	29.0	61.7	5.8	1.0	ENE	746.5	0.0
24.03.2022	36.4	22.8	29.0	58.0	19.0	36.7	10.2	2.8	SSE	745.5	0.0
25.03.2022	38.0	23.7	30.6	74.0	16.0	41.0	10.7	3.1	SE	745.4	0.0
26.03.2022	36.7	24.6	28.6	59.0	14.0	42.1	11.0	3.3	SE	746.7	0.0
27.03.2022	36.8	21.9	30.0	48.0	14.0	30.0	5.2	1.5	ESE	748.3	0.0
28.03.2022	36.9	21.8	29.0	80.0	15.0	50.9	7.1	1.4	SE	747.1	0.0
29.03.2022	33.8	22.5	28.0	90.0	48.0	72.5	5.0	1.1	NE	746.4	0.0
30.03.2022	33.6	25.0	28.3	90.0	56.0	76.3	5.0	1.0	ENE	747.2	0
31.03.2022	36.0	25.3	29.0	88.0	50.0	75.0	4.6	1.3	NNE	746.9	0

Total Rainfall in mm	0.0
Rainfall From 01.01.2022	66.5
Rainfall From 01.06.2022	N/A

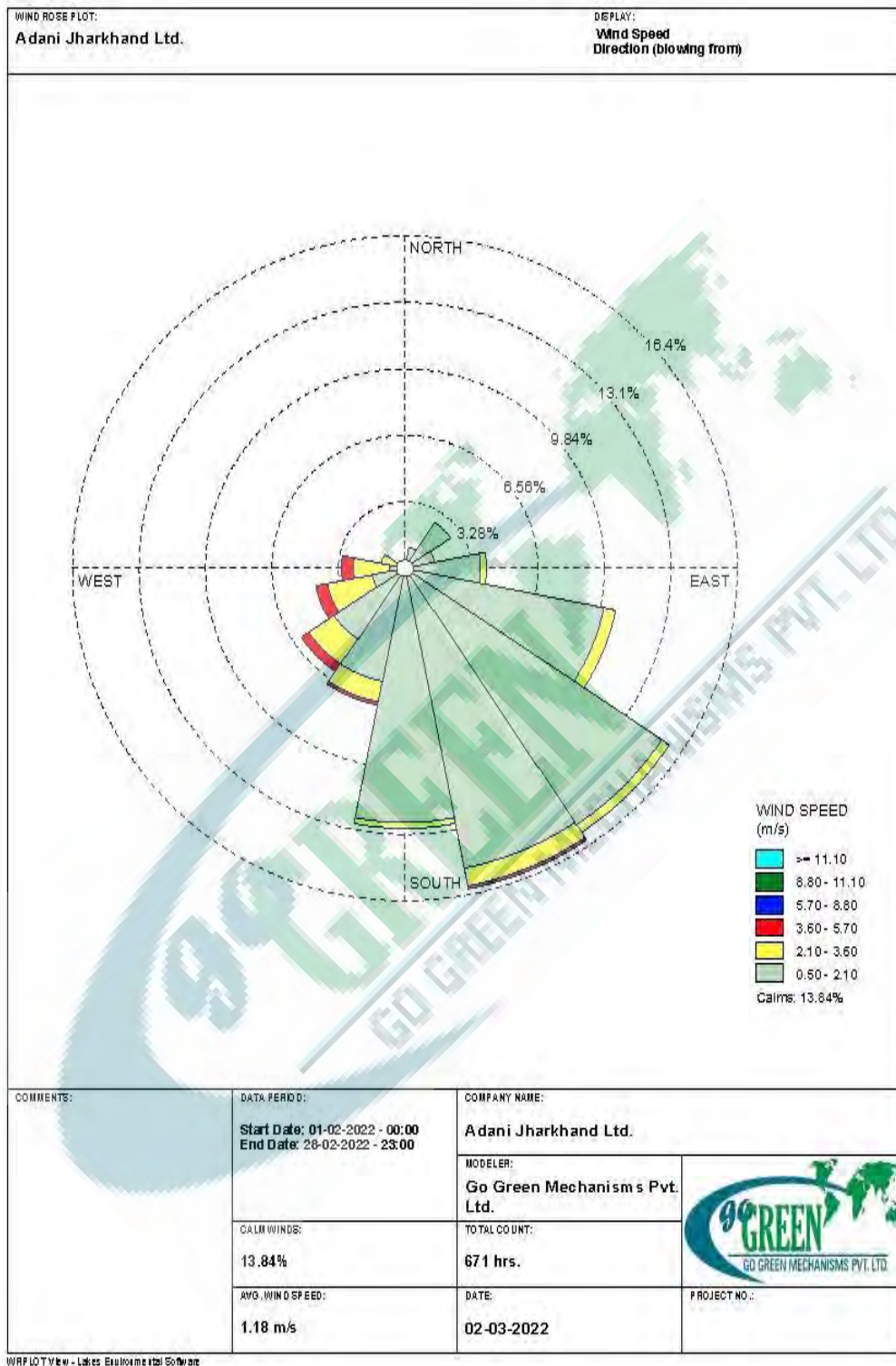


Figure 3: Windrose diagram for the month of Feb'22

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

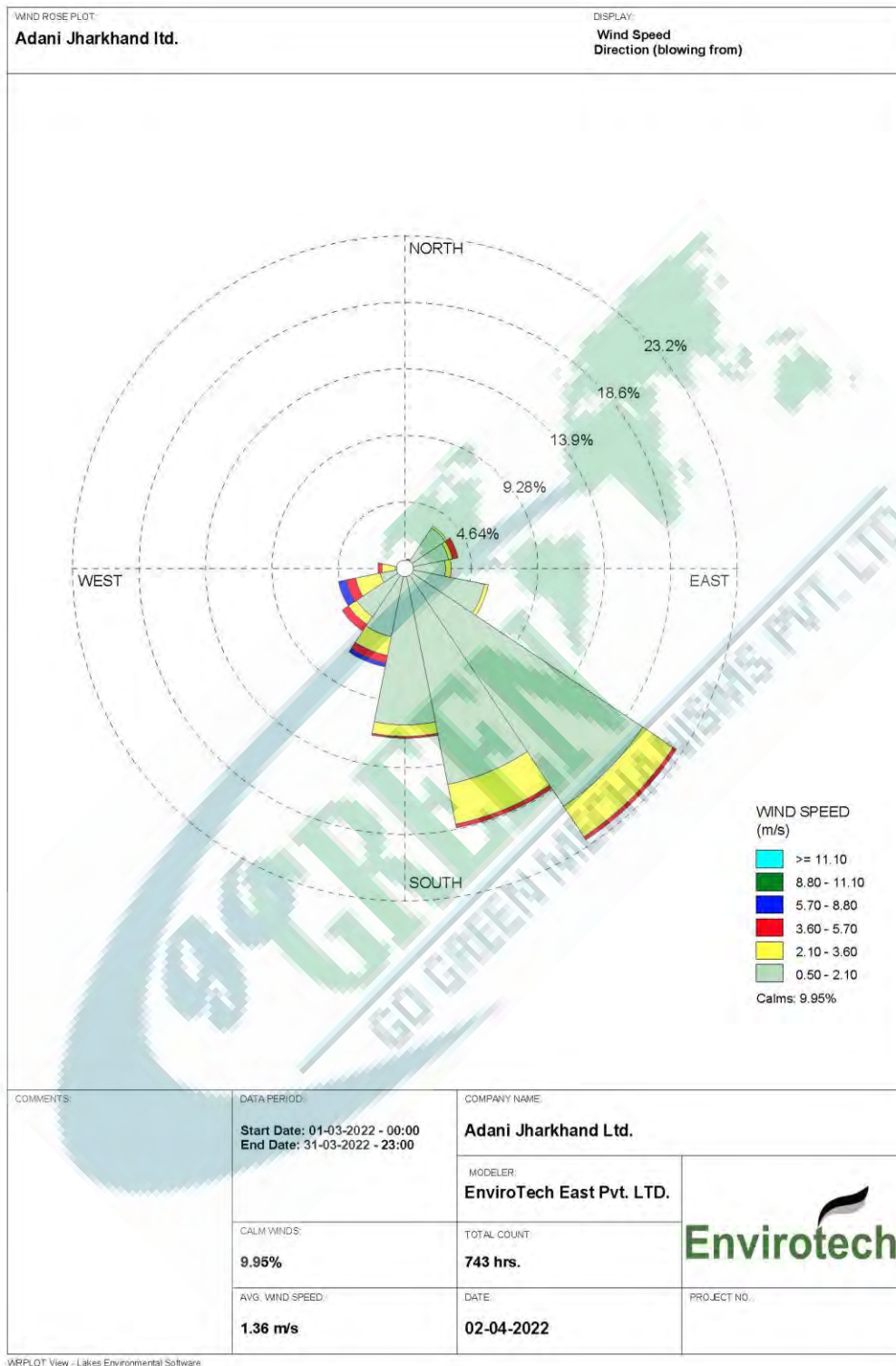


Figure 4: Windrose diagram for the month of Mar'22

It is observed from the windrose diagram for the month of **Mar'22** 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	-

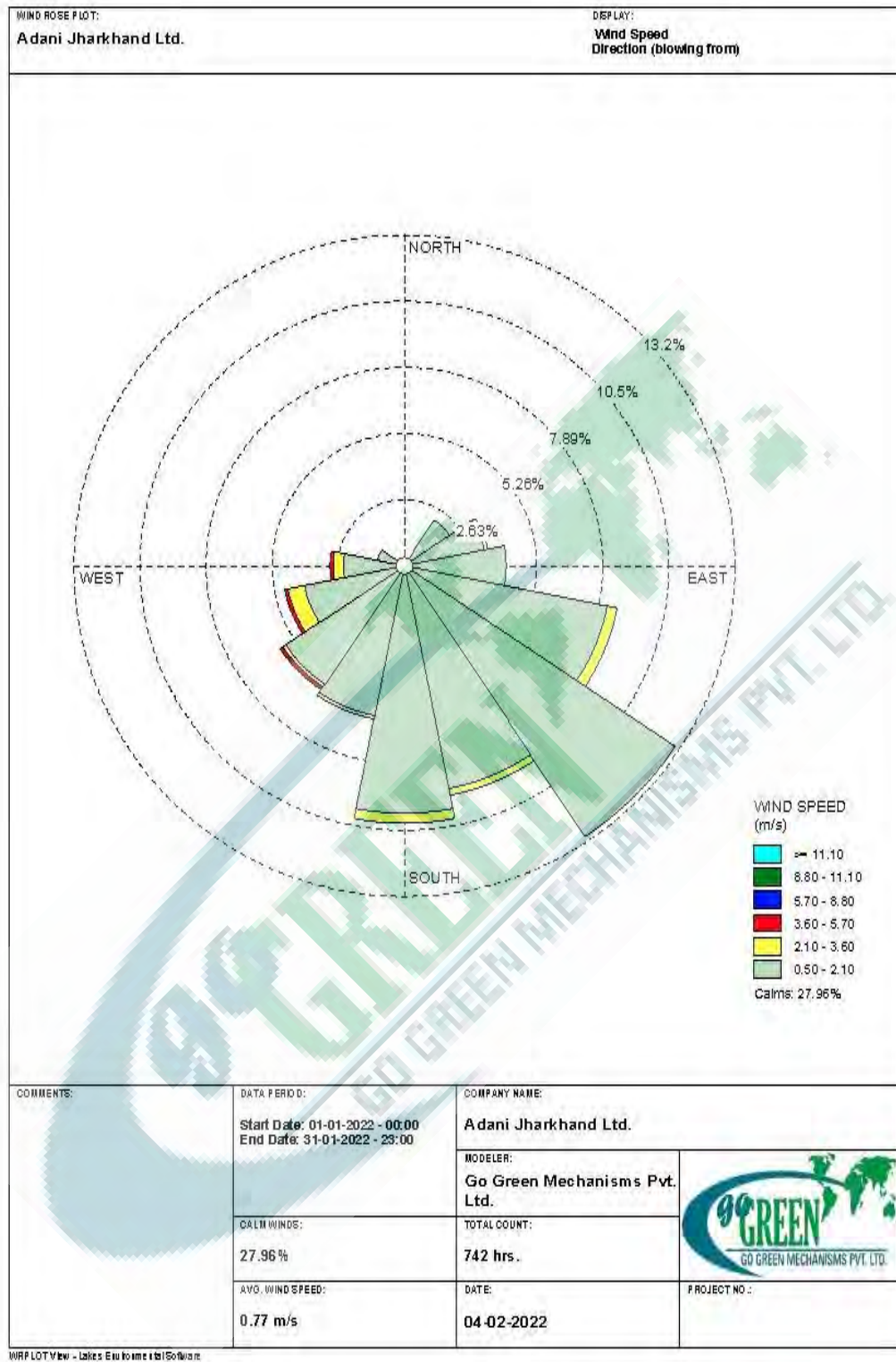


Figure 2: Windrose diagram for the month of Jan'22

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

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.	03.01.2022	63.1	27.1	10.3	14.5
2.	06.01.2022	69.1	31.2	11.1	15.2
3.	10.01.2022	64.5	28.5	9.6	13.1
4.	13.01.2022	56.8	23.6	8.9	12.7
5.	17.01.2022	61.4	28.4	9.5	12.8
6.	20.01.2022	66.8	30.1	10.0	15.4
7.	24.01.2022	56.6	24.5	8.8	11.9
8.	27.01.2022	63.0	23.8	7.9	12.5
9.	01.02.2022	65.1	30.4	9.8	13.6
10.	04.02.2022	25.6	12.4	BQL (QL=5)	BQL (QL=5)
11.	07.02.2022	53.4	23.8	7.4	10.7
12.	10.02.2022	62.3	28.4	8.8	13.2
13.	14.02.2022	70.1	32.4	10.2	14.3
14.	17.02.2022	67.2	32.3	11.0	15.3
15.	21.02.2022	66.7	30.5	8.9	13.4
16.	24.02.2022	54.1	26.4	8.4	12.7
17.	28.02.2022	64.8	30.7	10.8	14.7
18.	01.03.2022	72.7	31.2	11.9	16.1
19.	04.03.2022	70.2	30.4	9.7	15.7
20.	08.03.2022	68.1	30.2	8.6	13.4
21.	11.03.2022	75.3	34.1	12.1	16.7
22.	15.03.2022	62.4	26.8	9.8	13.5
23.	22.03.2022	70.5	30.5	11.7	15.1
24.	25.03.2022	75.9	33.8	13.2	16.4
25.	29.03.2022	72.8	34.1	12.9	17.0
RESULT INTERPRETATION					
No. of Observations		25	25	25	25
Min Concentration		25.6	12.4	BQL (QL=5)	BQL (QL=5)
Max Concentration		75.9	34.1	13.2	17.0
Average		63.9	28.6	10.1	14.2

Note: Environmental Quality Monitoring Report for the Month of **Mar'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.	03.01.2022	60.1	28.1	9.7	13.2
2.	06.01.2022	68.4	32.4	10.8	14.6
3.	10.01.2022	67.4	30.8	11.2	15.1
4.	13.01.2022	59.2	26.7	9.0	13.3
5.	17.01.2022	63.8	28.6	10.2	14.1
6.	20.01.2022	62.2	29.1	10.6	13.9
7.	24.01.2022	55.3	25.1	8.0	12.4
8.	27.01.2022	61.9	26.8	8.3	13.0
9.	01.02.2022	62.2	28.5	10.3	14.4
10.	04.02.2022	21.9	11.6	BOL (QL=5)	BOL (QL=5)
11.	07.02.2022	55.3	26.6	7.5	10.5
12.	10.02.2022	60.8	30.1	8.2	12.8
13.	14.02.2022	68.0	31.5	9.9	13.7
14.	17.02.2022	63.4	32.8	10.4	14.8
15.	21.02.2022	65.2	27.9	11.3	14.1
16.	24.02.2022	60.2	28.1	8.7	12.0
17.	28.02.2022	69.5	32.0	11.5	15.1
18.	01.03.2022	68.5	30.1	10.7	15.2
19.	04.03.2022	65.7	29.7	8.0	14.4
20.	08.03.2022	71.2	32.1	9.1	15.8
21.	11.03.2022	73.8	33.4	12.8	16.9
22.	15.03.2022	60.1	27.4	10.0	14.0
23.	22.03.2022	73.0	31.8	8.4	15.0
24.	25.03.2022	69.8	30.8	11.5	14.9
25.	29.03.2022	70.6	31.4	12.0	16.2

RESULT INTERPRETATION				
No. of Observations	25	25	25	25
Min Concentration	21.9	11.6	BOL (QL=5)	BOL (QL=5)
Max Concentration	73.8	33.4	12.8	16.9
Average	63.1	28.9	9.9	14.1

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

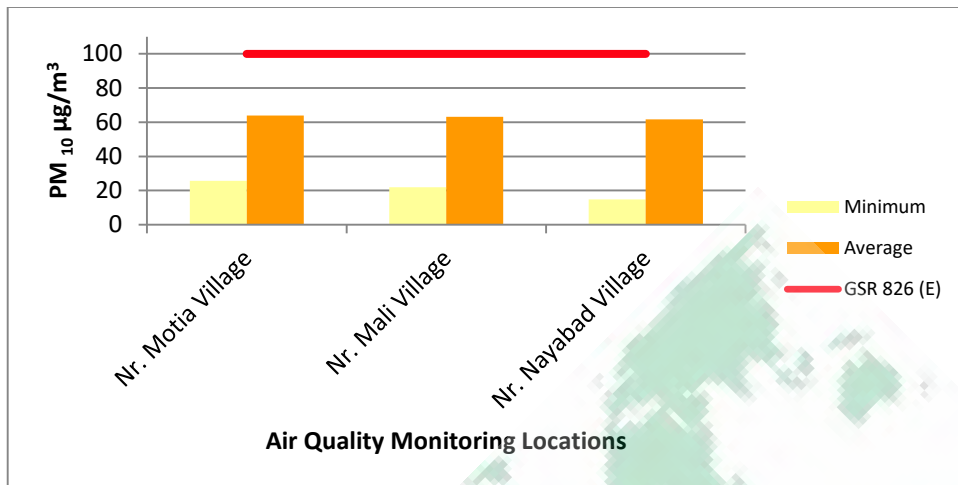
Results & statistical calculations for Location- A3:

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.	03.01.2022	66.1	29.8	10.5	14.4
2.	06.01.2022	63.7	28.7	9.8	13.5
3.	10.01.2022	70.3	32.5	11.8	15.6
4.	13.01.2022	61.3	27.6	8.7	12.2
5.	17.01.2022	55.5	24.9	7.5	13.4
6.	20.01.2022	60.2	28.0	8.6	13.7
7.	24.01.2022	58.7	26.6	9.1	14.2
8.	27.01.2022	66.4	30.3	10.4	14.9
9.	01.02.2022	67.4	32.1	11.1	15.4
10.	04.02.2022	23.4	12.5	BQL (QL=5)	BQL (QL=5)
11.	07.02.2022	49.8	23.7	6.8	9.7
12.	10.02.2022	65.7	31.1	9.2	14.2
13.	14.02.2022	63.7	29.4	10.1	14.6
14.	17.02.2022	71.2	33.5	10.6	15.0
15.	21.02.2022	61.9	27.6	11.2	14.9
16.	24.02.2022	56.9	25.5	7.8	11.8
17.	28.02.2022	71.0	33.1	11.4	15.2
18.	01.03.2022	69.7	30.9	10.9	14.8
19.	04.03.2022	68.0	30.3	7.6	12.5
20.	08.03.2022	72.5	32.0	9.2	16.0
21.	11.03.2022	76.1	34.0	13.1	17.2
22.	15.03.2022	58.9	28.8	8.1	12.4
23.	22.03.2022	71.5	32.8	10.4	16.6
24.	25.03.2022	72.9	34.9	13.0	16.8
25.	29.03.2022	74.9	35.4	12.7	15.6

RESULT INTERPRETATION				
No. of Observations	25	25	25	25
Min Concentration	23.4	12.5	BQL (QL=5)	BQL (QL=5)
Max Concentration	76.1	35.4	13.1	17.2
Average	63.9	29.4	10.0	14.4

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

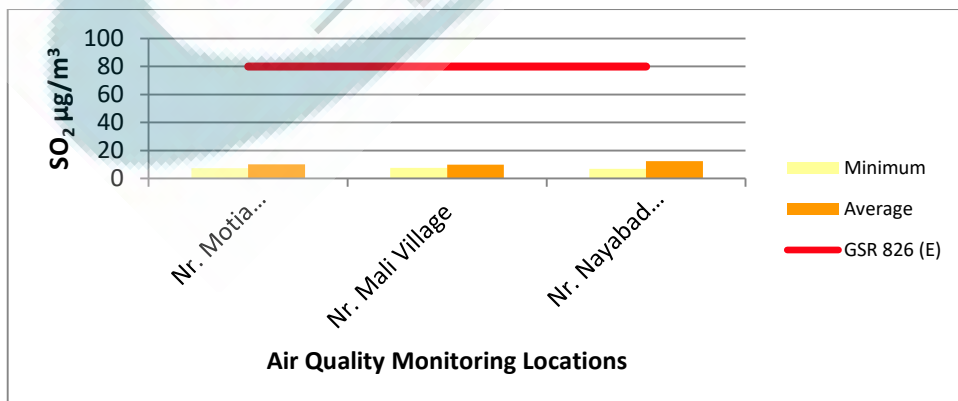
8.6 GRAPHICAL REPRESENTATION OF THE RESULTS



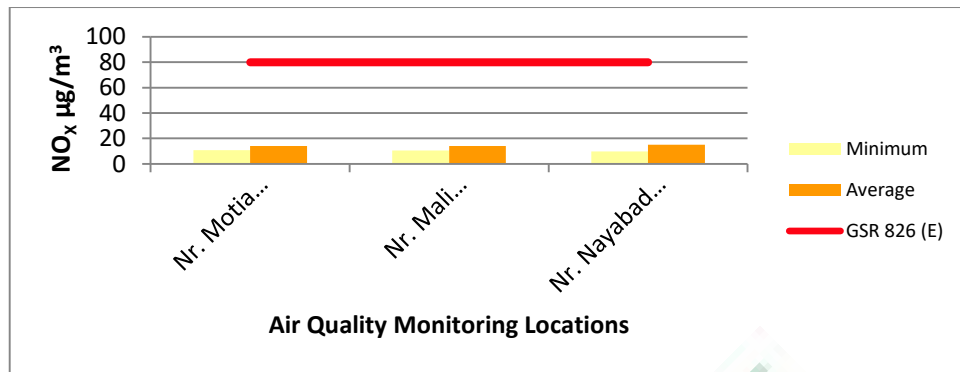
Graph 1: Particulate Matter (PM₁₀)



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	25.6	75.9	63.9	100
Nr. Mali Village	21.9	73.8	63.1	100
Nr. Nayabad Village	23.4	76.1	63.9	100

Particulate Matter (PM_{2.5})				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	12.4	34.1	28.6	60
Nr. Mali Village	11.6	33.4	28.9	60
Nr. Nayabad Village	12.5	35.4	29.4	60

Sulphur Dioxide (SO₂)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	BQL (QL=5)	13.2	10.1	80
Nr. Mali Village	BQL (QL=5)	12.8	9.9	80
Nr. Nayabad Village	BQL (QL=5)	13.1	10.0	80

Oxides of Nitrogen (NO_x)				
Site	Minimum	Maximum	Average	GSR 826 (E)
Nr. Motia Village	BQL (QL=5)	17.0	14.2	80
Nr. Mali Village	BQL (QL=5)	16.9	14.1	80
Nr. Nayabad Village	BQL (QL=5)	17.2	14.4	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'22	BQL (QL=1)
	Feb'22	BQL (QL=1)
	Mar'22	BQL (QL=1)
Nr. Mali Village	Jan'22	BQL (QL=1)
	Feb'22	BQL (QL=1)
	Mar'22	BQL (QL=1)
Nr. Nayabad Village	Jan'22	BQL (QL=1)
	Feb'22	BQL (QL=1)
	Mar'22	BQL (QL=1)

Note: NS= Not Specified

Note: Environmental Quality Monitoring Report for the Month of **Mar'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 **Mar'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: 10.01.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.30	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	378.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	167.4	200	600
5.	Alkalinity as CaCO ₃	mg/L	68.1	200	600
6.	Calcium as Ca	mg/L	44.1	75	200
7.	Chloride	mg/L	26.2	250	1000
8.	Sulphate	mg/L	25.8	200	400
9.	Nitrate	mg/L	6.1	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	13.9	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	28.1	-	-
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	10.2	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.

Date of Sampling: 10.01.2022

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Mali Village		Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.20		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BOL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	341.0		500	2000
4.	Total Hardness as CaCO ₃	mg/L	161.2		200	600
5.	Alkalinity as CaCO ₃	mg/L	79.3		200	600
6.	Calcium as Ca	mg/L	44.1		75	200
7.	Chloride	mg/L	25.7		250	1000
8.	Sulphate	mg/L	42.1		200	400
9.	Nitrate	mg/L	5.9		45	No Relaxation
10.	Iron	mg/L	0.2		0.3	No Relaxation
11.	Fluoride	mg/L	BOL(QL=0.1)		1	1.5
12.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BOL(QL=0.01)		-	-
13.	Zinc (Zn)	mg/L	BOL(QL=0.02)		5	15
14.	Magnesium (Mg)	mg/L	12.4		30	100
15.	Residual Chlorine	mg/L	BOL(QL=0.05)		0.2	1
16.	Colour	Hazen	BOL(QL=1)		5	15
17.	Odour	...	Agreeable		Agreeable	Agreeable
18.	Temperature °C	°C	28.3		-	-
19.	Taste	...	Agreeable		Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BOL(QL=0.001)		0.001	0.002
21.	Cyanide	mg/L	BOL(QL=0.025)		0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BOL(QL=0.02)		0.03	0.2
23.	Arsenic (As)	mg/L	BOL(QL=0.005)		0.01	0.05
24.	Boron (B)	mg/L	BOL(QL=0.05)		0.5	1
25.	Cadmium (Cd)	mg/L	BOL(QL=0.002)		0.003	No Relaxation
26.	Copper (Cu)	mg/L	BOL(QL=0.02)		0.05	1.5
27.	Lead (Pb)	mg/L	BOL(QL=0.005)		0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BOL(QL=0.05)		0.1	0.3
29.	Mercury (Hg)	mg/L	BOL(QL=0.0005)		0.001	No Relaxation
30.	Selenium (Se)	mg/L	BOL(QL=0.005)		0.01	No Relaxation
31.	Silica (Si)	mg/L	9.6		NS	NS
32.	Detergent	mg/L	BOL(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: 10.01.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad 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	358.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	166.7	200	600
5.	Alkalinity as CaCO ₃	mg/L	75.3	200	600
6.	Calcium as Ca	mg/L	42.5	75	200
7.	Chloride	mg/L	26.4	250	1000
8.	Sulphate	mg/L	25.9	200	400
9.	Nitrate	mg/L	6	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	14.7	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	29.4	-	-
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	10.8	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.

Date of Sampling: 10.01.2022

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	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	336		500	2000
4.	Total Hardness as CaCO ₃	mg/L	160.3		200	600
5.	Alkalinity as CaCO ₃	mg/L	103.2		200	600
6.	Calcium as Ca	mg/L	40.3		75	200
7.	Chloride	mg/L	31.1		250	1000
8.	Sulphate	mg/L	40.1		200	400
9.	Nitrate	mg/L	5.5		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	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	27.3		-	-
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.	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	11.3		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: 10.01.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.80
2.	Colour	CU	BQL(OL=1)
3.	Total Suspended Solids	mg/L	43
4.	Total Dissolved Solids	mg/L	504
5.	BOD at 27°C – 3 Days	mg/L	28.1
6.	Chemical Oxygen Demand	mg/L	83.1
7.	Oil & Grease	mg/L	BQL(OL=2)
8.	Chloride	mg/L	60.6
9.	Sulphate as SO ₄	mg/L	146.2
10.	Ammonical Nitrogen as NH ₃	mg/L	3.7
11.	Total Kjheldal Nitrogen as TKN	mg/L	8.0
12.	Dissolved Phosphate	mg/L	1.6
13.	Aluminium (Al)	mg/L	BQL(OL=0.1)
14.	Arsenic (As)	mg/L	BQL(OL=0.02)
15.	Boron (B)	mg/L	BQL(OL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(OL=0.01)
17.	Copper (Cu)	mg/L	BQL(OL=0.1)
18.	Lead (Pb)	mg/L	BQL(OL=0.02)
19.	Manganese (Mn)	mg/L	BQL(OL=0.1)
20.	Mercury (Hg)	mg/L	BQL(OL=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: 10.01.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.60
2.	Colour	CU	BOL(OL=1)
3.	Total Suspended Solids	mg/L	32.0
4.	Total Dissolved Solids	mg/L	356.0
5.	BOD at 27°C – 3 Days	mg/L	13.4
6.	Chemical Oxygen Demand	mg/L	32.5
7.	Oil & Grease	mg/L	BOL(OL=2)
8.	Chloride	mg/L	30.1
9.	Sulphate as SO ₄	mg/L	134.6
10.	Ammonical Nitrogen as NH ₃	mg/L	3.00
11.	Total Kjheldal Nitrogen as TKN	mg/L	7.1
12.	Dissolved Phosphate	mg/L	1.1
13.	Aluminium (Al)	mg/L	BOL(OL=0.1)
14.	Arsenic (As)	mg/L	BOL(OL=0.02)
15.	Boron (B)	mg/L	BOL(OL=0.1)
16.	Cadmium (Cd)	mg/L	BOL(OL=0.01)
17.	Copper (Cu)	mg/L	BOL(OL=0.1)
18.	Lead (Pb)	mg/L	BOL(OL=0.02)
19.	Manganese (Mn)	mg/L	BOL(OL=0.1)
20.	Mercury (Hg)	mg/L	BOL(OL=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: 11.01.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.2
2.	Turbidity	NTU	2.0
3.	Total Dissolved Solids @ 180 °C	mg/L	296.0
4.	Total Suspended Solids	mg/L	65.0
5.	Dissolved Oxygen	mg/L	6.5
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	24.1
8.	Sulphate	mg/L	44.6
9.	Nitrate	mg/L	5.5
10.	Fluoride	mg/L	0.51
11.	BOD at 27°C – 3 Days	mg/L	5.4
12.	Chemical Oxygen Demand	mg/L	21.6
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	26.5
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.2
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	10.2

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

Date of Sampling: 10.02.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.32	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	321.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	170.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	98.0	200	600
6.	Calcium as Ca	mg/L	40.1	75	200
7.	Chloride	mg/L	42.0	250	1000
8.	Sulphate	mg/L	35.9	200	400
9.	Nitrate	mg/L	4.66	45	No Relaxation
10.	Iron	mg/L	0.26	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	17.0	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	27.6	-	-
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	11.6	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: 10.02.2022

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	299.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	172.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	100.0	200	600
6.	Calcium as Ca	mg/L	46.49	75	200
7.	Chloride	mg/L	30.0	250	1000
8.	Sulphate	mg/L	51.0	200	400
9.	Nitrate	mg/L	5.81	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	13.6	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	27.0	-	-
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	9.1	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: 10.02.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.28	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	304.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	180.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	106.0	200	600
6.	Calcium as Ca	mg/L	41.68	75	200
7.	Chloride	mg/L	36.0	250	1000
8.	Sulphate	mg/L	32.1	200	400
9.	Nitrate	mg/L	4.94	45	No Relaxation
10.	Iron	mg/L	0.26	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	18.5	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	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.	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	12.2	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: 10.02.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.11	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	298.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	166.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	101.0	200	600
6.	Calcium as Ca	mg/L	48.09	75	200
7.	Chloride	mg/L	37.0	250	1000
8.	Sulphate	mg/L	48.2	200	400
9.	Nitrate	mg/L	5.05	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	11.2	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	9.8	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: 10.02.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.32
2.	Colour	CU	BOL(QL=1)
3.	Total Suspended Solids	mg/L	66
4.	Total Dissolved Solids	mg/L	447
5.	BOD at 27°C – 3 Days	mg/L	27
6.	Chemical Oxygen Demand	mg/L	90
7.	Oil & Grease	mg/L	BOL(QL=2)
8.	Chloride	mg/L	74
9.	Sulphate as SO ₄	mg/L	134.6
10.	Ammonical Nitrogen as NH ₃	mg/L	2.9
11.	Total Kjheldal Nitrogen as TKN	mg/L	13.4
12.	Dissolved Phosphate	mg/L	1.24
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: 10.02.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.38
2.	Colour	CU	BOL(OL=1)
3.	Total Suspended Solids	mg/L	40.0
4.	Total Dissolved Solids	mg/L	357.0
5.	BOD at 27°C – 3 Days	mg/L	18
6.	Chemical Oxygen Demand	mg/L	40.0
7.	Oil & Grease	mg/L	BOL(OL=2)
8.	Chloride	mg/L	38
9.	Sulphate as SO ₄	mg/L	130.4
10.	Ammonical Nitrogen as NH ₃	mg/L	3.6
11.	Total Kjheldal Nitrogen as TKN	mg/L	14.6
12.	Dissolved Phosphate	mg/L	1.5
13.	Aluminium (Al)	mg/L	BOL(OL=0.1)
14.	Arsenic (As)	mg/L	BOL(OL=0.02)
15.	Boron (B)	mg/L	BOL(OL=0.1)
16.	Cadmium (Cd)	mg/L	BOL(OL=0.01)
17.	Copper (Cu)	mg/L	BOL(OL=0.1)
18.	Lead (Pb)	mg/L	BOL(OL=0.02)
19.	Manganese (Mn)	mg/L	BOL(OL=0.1)
20.	Mercury (Hg)	mg/L	BOL(OL=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: 11.02.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.17
2.	Turbidity	NTU	1.7
3.	Total Dissolved Solids @ 180 °C	mg/L	273.0
4.	Total Suspended Solids	mg/L	72.0
5.	Dissolved Oxygen	mg/L	5.1
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	28.0
8.	Sulphate	mg/L	48.0
9.	Nitrate	mg/L	4.8
10.	Fluoride	mg/L	0.41
11.	BOD at 27°C – 3 Days	mg/L	8
12.	Chemical Oxygen Demand	mg/L	30
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	27.0
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.23
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	9.1

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: 07.03.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.29	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	332.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	162.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	88.0	200	600
6.	Calcium as Ca	mg/L	37.68	75	200
7.	Chloride	mg/L	45.0	250	1000
8.	Sulphate	mg/L	36.7	200	400
9.	Nitrate	mg/L	4.1	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	16.5	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	mg/L	27.7	-	-
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	10.1	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: Environmental Quality Monitoring Report for the Month of **Mar'22** has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 07.03.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.28	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	292.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	168.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	102.0	200	600
6.	Calcium as Ca	mg/L	43.29	75	200
7.	Chloride	mg/L	36.0	250	1000
8.	Sulphate	mg/L	49.8	200	400
9.	Nitrate	mg/L	5.8	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	14.58	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	27.1	-	-
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	9.9	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: Environmental Quality Monitoring Report for the Month of **Mar'22** has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 07.03.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad 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	319.0	500	2000
4.	Total Hardness as CaCO ₃	mg/L	172.0	200	600
5.	Alkalinity as CaCO ₃	mg/L	108.0	200	600
6.	Calcium as Ca	mg/L	40.88	75	200
7.	Chloride	mg/L	42.0	250	1000
8.	Sulphate	mg/L	34.2	200	400
9.	Nitrate	mg/L	5.2	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	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	°C	27.7	-	-
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	11.6	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 **Mar'22** has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 07.03.2022

Sr. No.	Parameter	Unit	Location		As Per IS 10500:2012	
			Patwa	Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 °C	...	7.29		6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)		1	5
3.	Total Dissolved Solids @ 180 °C	mg/L	281.0		500	2000
4.	Total Hardness as CaCO ₃	mg/L	152.0		200	600
5.	Alkalinity as CaCO ₃	mg/L	100.0		200	600
6.	Calcium as Ca	mg/L	44.09		75	200
7.	Chloride	mg/L	38.0		250	1000
8.	Sulphate	mg/L	45.5		200	400
9.	Nitrate	mg/L	4.7		45	No Relaxation
10.	Iron	mg/L	0.13		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			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	27.9		-	-
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.	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	9.0		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 **Mar'22** has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 07.03.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.19
2.	Colour	CU	BOL(OL=1)
3.	Total Suspended Solids	mg/L	53.0
4.	Total Dissolved Solids	mg/L	424.0
5.	BOD at 27°C – 3 Days	mg/L	24.0
6.	Chemical Oxygen Demand	mg/L	75.0
7.	Oil & Grease	mg/L	BOL(OL=2)
8.	Chloride	mg/L	67.99
9.	Sulphate as SO ₄	mg/L	126.5
10.	Ammonical Nitrogen as NH ₃	mg/L	2.2
11.	Total Kjheldal Nitrogen as TKN	mg/L	12.0
12.	Dissolved Phosphate	mg/L	1.21
13.	Aluminum (Al)	mg/L	BOL(OL=0.1)
14.	Arsenic (As)	mg/L	BOL(OL=0.02)
15.	Boron (B)	mg/L	BOL(OL=0.1)
16.	Cadmium (Cd)	mg/L	BOL(OL=0.01)
17.	Copper (Cu)	mg/L	BOL(OL=0.1)
18.	Lead (Pb)	mg/L	BOL(OL=0.02)
19.	Manganese (Mn)	mg/L	BOL(OL=0.1)
20.	Mercury (Hg)	mg/L	BOL(OL=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 **Mar'22** has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 07.03.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.24
2.	Colour	CU	BOL(QL=1)
3.	Total Suspended Solids	mg/L	50.0
4.	Total Dissolved Solids	mg/L	381.0
5.	BOD at 27°C – 3 Days	mg/L	14.3
6.	Chemical Oxygen Demand	mg/L	46.6
7.	Oil & Grease	mg/L	BOL(QL=2)
8.	Chloride	mg/L	27.9
9.	Sulphate as SO ₄	mg/L	131.3
10.	Ammonical Nitrogen as NH ₃	mg/L	2.8
11.	Total Kjheldal Nitrogen as TKN	mg/L	12.6
12.	Dissolved Phosphate	mg/L	1.72
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 **Mar'22** has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 08.03.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 °C	...	7.15
2.	Turbidity	NTU	1.8
3.	Total Dissolved Solids @ 180 °C	mg/L	272.0
4.	Total Suspended Solids	mg/L	70.0
5.	Dissolved Oxygen	mg/L	5.1
6.	Hexavalent Chromium as Cr ⁶⁺	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	26.99
8.	Sulphate	mg/L	46.2
9.	Nitrate	mg/L	5.1
10.	Fluoride	mg/L	0.39
11.	BOD at 27°C – 3 Days	mg/L	6.7
12.	Chemical Oxygen Demand	mg/L	25.0
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature °C	°C	27.3
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	9.2

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 **Mar'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: January'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	1.95	3.25	2.15	-
MALI VILLAGE	0.50	6.20	5.7	3.2	2.5	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	3.25	2.45	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	3.2	2.6	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: February'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	1.9	3.3	2.15	-
MALI VILLAGE	0.50	6.20	5.7	3.15	2.55	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	3.2	2.5	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	3.15	2.65	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: MARCH'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	3.5	1.7	2.15	-
MALI VILLAGE	0.50	6.20	5.7	4.65	1.05	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	4.7	1.0	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	4.7	1.1	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	17.01.2022	54.0	40.1	48.3	39.5	31.2	36.6
2	21.02.2022	54.3	39.4	48.7	40.6	29.8	36.5
3	14.03.2022	53.8	40.3	48.3	41.5	30.1	36.8

(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	18.01.2022	53.7	38.9	48.3	40.3	29.6	37.7
2	22.02.2022	54.0	39.5	49.1	42.3	30.4	38.6
3	15.03.2022	53.6	38.5	48.7	41.2	31.5	38.5

(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	18.01.2022	53.9	41.2	48.9	39.8	30.3	36.7
2	22.02.2022	52.7	38.8	48.6	38.9	31.2	36.2
3	15.03.2022	54.3	41.6	49.0	40.2	30.5	36.6

(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	17.01.2022	54.5	37.6	49.4	40.2	29.8	36.9
2	21.02.2022	53.7	40.1	49.5	41.2	30.3	37.3
3	14.03.2022	54.0	39.5	50.0	42.0	31.6	36.8

(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	21.01.2022	52.1	38.2	48.6	42.7	30.5	37.1
2	25.02.2022	53.1	37.5	48.5	41.6	31.4	36.7
3	17.03.2022	54.6	39.9	48.8	42.3	30.8	37.0

(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	20.01.2022	70.2	54.8	64.1	58.1	47.6	53.2
2	24.02.2022	71.2	55.3	64.4	56.4	45.8	51.7
3	16.03.2022	72.2	56.4	65.7	59.1	47.5	53.8

(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	20.01.2022	70.5	55.1	62.4	57.1	45.3	52.0
2	24.02.2022	72.1	54.6	64.3	55.9	44.1	51.8
3	16.03.2022	73.4	56.0	65.9	58.2	48.6	53.2

(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	21.01.2022	71.1	48.5	64.0	50.3	34.8	46.6
2	25.02.2022	70.3	46.2	63.1	48.6	35.8	44.8
3	17.03.2022	71.6	50.5	64.7	49.7	36.4	43.5

(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	22.01.2022	52.7	42.1	48.0	40.9	31.4	37.1
2	26.02.2022	53.8	40.5	48.5	42.7	30.5	37.7
3	31.03.2022	54.1	38.8	49.3	41.4	32.0	37.3

(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	22.01.2022	52.6	41.5	48.0	41.1	31.3	37.9
2	26.02.2022	54.5	39.6	48.7	42.0	32.4	38.2
3	21.03.2022	53.7	40.1	47.9	42.6	31.8	38.4

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 Mar'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: 22.02.2022

Location: Nr. Mali Village				
Date of Sampling: 22.02.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.42	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	0.79	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.021	NS
7.	Chloride as Cl	%	0.061	NS
8.	Zinc as Zn	mg/kg	5.2	NS
9.	Nitrogen as N	%	0.072	NS
10.	Phosphorous as P	%	0.0029	NS
11.	Potassium as K	%	0.054	NS
12.	Iron as Fe	%	0.046	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.68	NS
15.	Organic Carbon	%	0.39	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	58.0	NS
18.	Silt	%	30.0	NS
19.	Clay	%	12.0	NS

Location: Nr. Nayabad Village				
Date of Sampling: 22.02.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.53	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	0.62	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.035	NS
7.	Chloride as Cl	%	0.062	NS
8.	Zinc as Zn	mg/kg	3.4	NS
9.	Nitrogen as N	%	0.083	NS
10.	Phosphorous as P	%	0.003	NS
11.	Potassium as K	%	0.056	NS
12.	Iron as Fe	%	0.049	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.70	NS
15.	Organic Carbon	%	0.40	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	56.0	NS
18.	Silt	%	29.0	NS
19.	Clay	%	15.0	NS

Location: Nr. Patwa Village				
Date of Sampling: 22.02.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.62	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	0.68	NS
5.	Copper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.043	NS
7.	Chloride as Cl	%	0.069	NS
8.	Zinc as Zn	mg/kg	3.7	NS
9.	Nitrogen as N	%	0.086	NS
10.	Phosphorous as P	%	0.002	NS
11.	Potassium as K	%	0.071	NS
12.	Iron as Fe	%	0.058	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	%	60.0	NS
18.	Silt	%	23.0	NS
19.	Clay	%	17.0	NS

Note: NS= Not Specified

ANNUAL REPORT 2021-22

(APRIL 2021- MARCH 2022)

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 and 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. Amidst COVID 19 outbreak, Gyanodaya program swiftly met the needs of spreading the light of education via electronic & digital media which facilitated the students to continue building their career in a new normal. Due to exemplary impact of Gyanodaya in the education sector, the Foundation has bagged two prestigious awards **7th CSR Impact Awards from CSRBOX & National Award for E-Governance** and received accolades from **UNDP & Prime Minister of India**. On the other hand, two students had cleared the Jawahar Navodaya Vidyalaya entrance examination. Similarly, it was endeavoured 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 health institutions to mitigate the crisis occurred due to second wave of COVID 19 and eliminate the hurdles for preparedness of third wave.

In this financial year Adani's CSR intervention extends to Godda and Sahebganj districts of Jharkhand state covering 192 villages of Core, Periphery, Railway Siding and Pipeline area. Apart from benefitting and engaging communities from our intervention areas, many of CSR activities were conducted in Godda town too for establishing Adani Foundation as a brand among the intellectuals of the society. The CSR Umbrella also shielded the community and public amidst Epidemic outbreak by instantly providing relief from several COVID Mitigation and Relief Program in all over district. Total population of Godda district is 13.13 lakhs, out of which population of our intervention villages is 60000 approximately. We have been able to benefit 5 lakhs people directly and 10.38 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.

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

The progress of CSR projects/interventions from **April 2021 to March 2022** is described in detail as under:

HIGHLIGHTS OF CSR ACTIVITIES

A. Education & Rural Sports

Providing Quality Education in Society

Adani Foundation strives to enhance the quality of education in its intervention villages through following initiatives directly benefitting over 70000 students and their families in the year 2021-22. Due to epidemic, some of the coaching classes and schools remained closed to avoid any occurrence of fatalities caused by COVID 19. The teachers were engaged in shielding the citizens and community at large from infections of COVID 19 through management in Relief Measures Program. While, after the end of Lockdown period, the coaching classes were resumed gradually at community places such as school ground, near trees, with social distancing and adherence to all safety protocols and guidelines.

❖ By Initiating Competitive Classes and Coaching for the Poor Students viz.

- **Apna School** initiative is providing coaching classes to **537 students** in a 'Group of 30' till 8th standard in 10 locations at Nayabad, Gangta, Baliakitta, Parasi, Amrakanoli, Kauribihar, Kaithartikar of core, and railway line area and Jiyajori, Maniamore, and Baniadih village of pipeline area

- **Adani Gyan Jyoti (Group -30) Yojana:** This year 110 students till 10th standard from Motia and Sondiha panchayat benefitted from foundation building coaching classes and capacity building sessions. Since, program inception (2018-19), the program has shown a significant improvement in the students' performance with 100% students under first division bracket of Academic Session 2020-21.
- **Teacher Support** has been provided in 15 schools for subjects like Science and Mathematics and improving education level by benefitting over 2900 students.
- ❖ **Education Sponsorship program** 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.
- ❖ **Gyanodaya Project:** Adani Foundation in partnership with District Administration launched Gyanodaya project in August 2018 to promote e-learning through Smart Classes. Gyanodaya project is currently operational in 290 schools in 9 blocks of Godda district with its spread across 209 remote and untapped villages facilitated by over 1000 skilled teachers and benefitting more than 70,000 students directly.

AWARDS & ACCOLADES

- **Received accolades from UNDP & Prime Minister of India** for Gyanodaya on 12th June 2021
- Gyanodaya, Godda has bagged **7th CSR Impact Awards from CSRBOX in the Education category** on December 9, 2021, at the India CSR Summit in Gurugram.
- **'National Award for E-Governance' to Gyanodaya Godda** on 7th-8th January 2022 during the 24th National e-Governance Conference held in Hyderabad, Telangana.
- ❖ **Super 200 Programme:** Online Super 200 class was operational for the preparation of 10th board examination of 224 meritorious students of Godda district facilitated by 20+ best teachers of Godda and learning facilities on regular basis.

- ❖ **IIT JEE Coaching Classes** was commenced in collaboration with district administration and Gyanodaya team on 14th September 2021 at four IIT JEE centres in Godda district benefiting 94 students for IIT JEE entrance exam preparation of session 2021-22.
- ❖ **Coaching Program for the preparation of Jawahar Navodaya Vidyalaya (JNV) Class 6 Entrance Examination** for Academic Session 2022-23 was operational in ten coaching centres in core and pipeline area of Godda district facilitated by ten skilled Utthan Sahayaks and support of study materials and resources accessed by 147 meritorious children from ten villages.
 - **Achievements: 2 students namely, Boni Murmu from Gangta village- Motia center & Tripti Kumari from Jajalpur village- Maniyamore center** had cleared the examination and got admission in Jawahar Navodaya Vidyalaya, Lalmatia, Godda in Academic Session 2021-22.
- ❖ **Kitchen Material & Learning Games Support for Strengthening Anganwadi Centre** to improve Anganwadi kitchen and prepare meals in a hygienic condition along with learning games enabling mental and cognitive development of children. Two AWCs namely, AWC, Motia (Harijan tola) and AWC, Motia (Kahar tola) and 1 SHG for facilitation of creche were supported with basic facilities.
- ❖ **Adani Foundation Support for Palni's Education** for five years @Rs 2500 per month, Rs. 30,000 per year

Capacity Building Programme

1. **Quiz Contest Program-Under Capacity Building & Competitions-** Gyan Jyoti Tuition Program, the Education Team (Gyan Jyoti Kendra Motia) had organized Two Days Quiz Contest Program on 29th August 2021, among 9th & 10th Class Students, participated by 42 students during this program.
2. **Drawing Competition Program- Under Gyan Jyoti Tuition Program,** the education team at Gyan Jyoti Kendra, Kauribihar had organized Drawing Competition Program on 15th September 2021 participated by 25 students.
3. **PAHAL- Talent Hunt Program for Children:** Adani Foundation has inaugurated a Talent Hunt Program, named PAHAL in eight schools of TPP core area with an objective to nurture and develop the personality of children in extracurricular activities namely Dance, Music, Skit, Drama, Drawing, Paintings, Handicrafts, Sports, etc.

- 4. Science Exhibition on the eve of National Science Day at High School, Baksara:** On the eve of 'National Science Day' on 28th February 2022, Adani Foundation in collaboration with Association for Research & Training in Basic Science, Nagpur had organized three days' Apurva Vigyan Mela (Science Fair) on dated February 27, 2022, till March 1, 2022, at High School, Baksara in Podaiyahat block of Godda district.

Supporting Sports Events

- 1. Sports Kit Distribution: 17 Sports kit** comprising of football, volleyball, cricket etc., were distributed to more than 17 youth groups under rural youth engagement program to promote recreational activity and sports events in 13 core, railway line and pipeline villages of Godda district
- 2. Sports Tournament: Forty-Eight sports tournament** including Football, Badminton, Cricket, Volleyball, Netball, Badminton, and general sports were organized on several occasions with coverage of 40 villages of core, and pipeline areas of Godda & Sahebganj district involving **7300** children, rural youths & tribals to instill them with confidence, develop their personality and motivate them for shaping bright future.

B. Community Health

1. Mobile Health Care Unit (MHCU)

Four Mobile Health Care Units have together catered to primary health care needs of **45,713** patients this year from core, periphery, railway siding and pipeline area villages.

- ❖ **AF's Supported Mobile Health Care unit** in core villages treated and disbursed medicines to **6729 patients (2563 males, 2818 females & 1348 children)** covering 13 villages and labourers working at Site office.
- ❖ **Adani supported Helpage India** 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 **14261** patients including **4434** males, **5110** females and **4717** children.
- ❖ **AF supported Wockhardt operated MHCU in Godda** is functional across 4 blocks viz. Mahagama, Boarijor, Pathargama and Thakurgangti in pipeline area treating

and disbursing medicines to **16634** patients including **6156** males, **6814** females and **3664** children in 42 villages

❖ **AF supported Wockhardt operated MHCU in Sahebganj** is functional across 4 blocks viz. Mandro, Borio, Sahebganj, and Taljhari in pipeline area treating and disbursing medicines to **8089** patients including **2883** males, **3744** females and **1462** children covering 40 villages in total 60 stoppages.

2. Specialized Medical Camps: Adani Foundation has organized **48 Specialized Health Camps in 8 specializations** and total **2457 patients** were screened and treated including **829 males, 1457 females and 171 children.**

3. Covid Sample Collection Center is operational at **Health & Wellness Center/Clinic in Motia** has swiftly cope up with the need of detecting COVID 19 infection in the individual and provide instant medications and counselling to them.

4. Vaccination Drive at Primary Health Center (PHC), Motia: Total Vaccinated **4684 people** of the age group between 18-44 years and above 45 years of age of the intervention villages from June 2021 to December 2021

5. Health Awareness: With collaboration of Medical Team of Adani Foundation and Helpage India, health awareness is raised among school children, teachers, and community. Community health awareness programme during medical camp in rural areas helps aware rural dwellers about their better health and safety from diseases.

6. 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.

7. Anemia Detection cum Hemoglobin Screening Camp was organized for adolescents and women at village level in 14 core, and railway line villages. Total **518 adolescents & women** were screened during the camp

8. Support of Supplementary Food to Malnutrition Treatment Centre (MTC): Adani has worked for the cause of improving the status of malnutrition under the India's flagship programme of National Nutrition Mission (POSHAN Abhiyan) by facilitating with adequate Micronutrient-Fortified Foods or Super Food in Malnutrition Treatment Centre (MTC) at Sunderpahari & Boarijore for nutritional care of 480 mothers of malnourished children admitted for 15 days' duration.

9. Support of Growth Monitoring Device for Anganwadi Centres (AWCs): Adani Foundation with consistent endeavor for the cause of combating malnutrition and aligning the vision of making Anaemia Mukta Bharat, the Women & Child

Development department of Godda, has been supported with **201 Growth Monitoring Devices** for AWCs located in 201-gram panchayats.

10. Relief Program against Pandemic COVID 19: COVID Relief & Mitigation program was initiated by Adani Foundation to cope up with second & third wave of COVID 19 and ensure safety and protection of every individual and community from Pandemic. Adani Foundation, District Administration & Municipal Corporation of Godda & Dumka district worked jointly to fight battle against infection of COVID 19 through several interventions:

- i. **Support of Essential Commodities & Food Packets** delivered to COVID affected 2500 migrant laborers and poorer of core & pipeline villages of Godda district
- ii. **Support of 500 Oxygen Cylinder** delivered to District Administration of Godda and Dumka district
- iii. **Support of 900 Oximeter** to District Administration of Godda district.
- iv. **20 Ventilators Support** for Dumka Hospital
- v. **Support to Hospitals- Oxygen Piping Connection in 562 Beds** in eight hospitals located in Godda, Sahebganj, Pakur and Dumka district of Jharkhand state.
- vi. **Installation of Oxygen Plant with 50 ICU Beds** at Dumka Medical College Hospital.
- vii. **Support of several medical instruments in tune of Rs. 4 crores** to Dumka Medical College Hospital.

11. 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.

12. Health Card Distribution Drive in core villages delivered to **3267 families** of core villages

13. Satisfaction Survey of Mobile Health Care Unit (MHCU): 135 patients' feedback was collected from core & periphery villages in this year.

14. Solar Street Light Installation at Pipeline area, Sahebganj: 15 solar streetlights were installed in 12 remotest villages and roadside point in three blocks namely, Borio, Mandro, and Sahebganj of Sahebganj district, benefitting more than **10,000 rural population.**

Suposhan Program

- ❖ **SuPoshan:** Suposhan project has reached out to over 9000 direct beneficiaries. During the year, anthropometry measurement of 2755 children of 0 to 5 years was

done, out of which 2341 children (85%) are healthy while, 9 children has shifted from SAM to MAM, 56 children has shifted from MAM to Healthy and 8 children has shifted from SAM to Healthy.

Initiatives amidst COVID 19

- **Telephonic Follow up & Counselling:** Due to epidemic, telephonic mode has been started to counsel the target groups including Children, Adolescent Girls, Pregnant Women on topic such as Anaemia, Nutrition & Hand wash; Immunisation, Importance of MCP Card, etc.
 - **Follow-up of Sanginis:** - Sanginis were taught through telephonic communication for creating awareness on management of COVID 19 situation and family counseling of target groups.
 - **Importance of Hand wash and Social Distancing:** - Sanginis took a lead to guide their community on various measures to fight and tackle with Covid 19, manage social distancing, local measures to boost immunity system, and made aware about hand wash practice through demonstration.
 - **Cooking demonstration by Sangini:** The Sangini had initiated to raise awareness of community on COVID 19 and Nutritional elements which is easily found in the villages for the enhancement of health of children, adolescents, and women.
-
- ❖ **AF Supported with 506 Vegetable seeds packets** including nine varieties of green and leafy vegetables seeds to 434 households in 25 core and railway line villages to meet the nutritional requirement of women and children as well as the entire family through inclusion of green nutritious vegetables in their daily meal.

 - ❖ **AF Supported to setup 20 Poshan Vatika model** at household level in 8 villages of core & railway line area including traditional method, Ganga Maa model, and Multilayer system.

Awareness Programmes

- ❖ **Awareness Program on COVID 19:** Adani Foundation operated Wockhardt Foundation had organized 'One-day Awareness Program on COVID 19' in Malnistara village of Pathargama block, Godda district.

- ❖ **Celebration of World Breastfeeding Week:** World Breastfeeding Week (WBW) was celebrated by Suposhan Sanginis to mobilize the target groups through Banner on MHCU, Slogan writing, Pamphlet, etc.

- ❖ **Celebration of National Nutrition Month (1-30th September), Global Hand Washing Day, World Food Day, Newborn Care Week, etc.** was done in core, railway

line, and pipeline villages, by Suposhan Sanginis to mobilize the target groups on importance of Nutrition and its various dimensions.

- ❖ **Dustbin Distribution- Swachhata Abhiyan:** Inculcating Culture of Cleanliness and Sanitation, Swachhata Abhiyan was conducted in villages of TPP core area on 21st September 2021. **Six schools** of core villages were provided with seven units of dustbins under Swachhata Abhiyan.
- ❖ **Cleanliness Drive on Social Occasion:** On the occasion of Chhath festival, cleanliness activity was done near the puja site and surrounding areas including Road, Drainage, Streets and Ghats in villages namely, Dumaria, Motia, Godda, Purvedih, Baksara, Sondiha, Parasi, Birnia, Patwa, etc. to enable the devotees to perform puja without any hindrances, also, promoting cleanliness of environment and creating space for the natural creatures to survive.

Capacity Building Programmes

- ❖ On 3rd Dec 2021, organized a meeting with Sanginis at Dhamni Simariya for planning on measurement & Survey
- ❖ On 14th Dec 2021, organized a one-day training session and evaluation program

Seasonal Assistance/Community Involvement

- ❖ **Assistance to tribal in Sohraye festival:** AF distributed T-Shirts, Lungi & Panchi on the occasion of Sohrai festival to over 320 tribal men & women in four tribal villages of core & pipeline area namely, Petwi Santhali, Nayabad, Gangta and Boarijore of Godda, Poreyahat and Boarijore block of Godda district.
- ❖ **Aids & Assistive Devices- Tricycle for Disabled Child:** Under Welfare Support, Adani supported with Tricycle to PWD child, Mr. Babulal Hembrom from Ranidih village of Boarijor Block in October 2021.
- ❖ **Drinking water facility:** AF supported with **2 RO Water Purifier** for clean and safe drinking water facility for students, patients, college staffs, and hospital staffs of Intermediate College, Mahagama and Community Health Centre (CHC), Mahagama, respectively of pipeline area, Godda district
- ❖ **Cloths Donation Drive- Joy of Giving Week** was celebrated by lending support of cloths including Pant, T-Shirt, Jeans, and Jacket to bring smile in the lives of 62 tribals of Nayabad village
- ❖ **Distribution of Relief Materials (Tarpaulin)-** AF supported 374 families of Godda & Sahebganj district, affected from natural and man-made calamities with tarpaulin sheets to provide immediate relief from adversities.

- ❖ **Distribution of Relief Materials (Blankets)-** AF supported over 4300 families benefiting over 21,000 population directly in seven blocks of Godda & Sahebganj district with blankets to provide relief and cope up with cold winter under 'Poorer Welfare & Relief Program'.
- ❖ **Assistance in Health, Marriage and Death:** Poor people are supported financially in events like marriage, death and illness as emergency support. Adani provides financial support for such purposes which require huge expense such as marriage ceremony, educational needs, major illness including hospitalization of patient, death of a person. **806** beneficiaries from 20 villages have been extended financial support to the tune of **Rs. 31, 21, 394/-**

C. Sustainable Livelihood

- ❖ **Adani Skill Development Centre (ASDC),** Godda had initiated online training classes in eight Business Trades viz. Fitter, Bar-Bender, Asst. Elec., Welder, GDA, SMO, F&B, and Digital Literacy trade amidst COVID 19 benefiting over **1636 candidates** under Skilling India Program of National Skill India Corporation.
- ❖ **Merit Certification to Skilled youths:** Out of 1636 trainees, **1151** have completed their trainings, duly assessed, and certified after completion and remaining 485 trainees are ongoing trainings.
- ❖ **On the Job Training (OJT) & Placement:** This year, **112 youths** in Fitter (51), Asst. Electrician (9), F & B (18), GDA (4), Bar bending (25), and Welder (5) trade have got placement and joined the reputed organizations with decent annual package and accommodation facilities.
- ❖ **AF conducted 34 Veterinary Health Camps** in in **26 villages** of five blocks in Godda & Sahebganj district benefitting over **2110 households** and treatment of **14,023 cattle and domesticated livestock.**
- ❖ **Village level training on Vermicomposting:** Seven village level training (Theoretical & On-Field Demonstration) on Vermicomposting was conducted from 15th September'21 to 23rd October'21 in 7 core, railway linpae and pipeline villages of Godda & Sahebganj district, disseminating information & in-depth knowledge to more than **300 landless, small & marginal farmers.**
- ❖ **Vermicomposting production by Farmers:** During the year 2021-22, **144 small & marginal farmers** were supported to install **165 Vermicompost units** in 18 core, railway line and pipeline villages of Godda and Sahebganj district
- ❖ **Lemon Grass Project:** During the year 2021-22, **13 farmers** were mobilized and selected for cultivation of Lemon Grass in **20 acres of land.**
- ❖ **Facilitation & Monitoring** of 88 women members of Self-Help Groups under livelihood programme.
- ❖ **Environment Protection Programme-** Promoting Afforestation, Nutrition and Ecological Preservation in project villages and plant premises to conserve the Planet, Earth, and its biological creatures.

- ❖ **Plantation of Horticulture plants:** Over **363 households** and Forest Office, Godda & Mahagama, were supported with fruit bearing saplings of Mango (331), Lemon (330) and Guava (135) to supplement their livelihood and improve their health and well-being.
- ❖ **Open Gym Development for Rural Youth:** Adani Foundation supported the rural youths to develop Outdoor Gym at two rural stadiums of Godda district namely Bohara (Podaiyahat) & Parsoti Playground benefiting over 50 youths from each location.
- ❖ **Celebration of International Women's Day** on 8th March at Training centre, ITI Siktia

Chief Guest Visits & Important Days Celebration

- **Celebration of Birthday of Honorable 'Chairman, Adani Group, Shri Gautam S. Adani (GSA)'**: On the auspicious occasion on 24th June 2021 of the birthday of our very precious, Honorable Chairman, Adani Group, Shri Gautam S. Adani, Adani Parivar at Godda had planted more than 50 trees including Peepal, Banyan, etc. near the villages of Thermal Power Plant (TPP) Area.
- **Social Presentation at Group level – Chief Guest Visit- Adani Investor Group** for enabling the team to understand **CSR activities on Local and Rural Infra development on 8th and 9th of July 2021** comprising of team of six delegates
- **Silver Jubilee (25 years) Adani Foundation Day Celebration: Adani Foundation Day** was celebrated on **11th August 2021** marking **Silver Jubilee (25 years)** at site level.
- **Social Presentation at Community level – Chief Guest Visit- Regional Head:** Honorable, Shri Jayanta Mohanty, Regional Head of Eastern Region, Adani Foundation, who was on **four-day visit from 26th Oct to 29th October** to the CSR intervention areas of Godda district to review the operational interventions and glitches of the developmental work at community level.

D. Rural/Community Infrastructure Development

Water Conservation, Ground water recharge

1. **Received National Water Awards 2020-** 2nd rank in East zone to Godda district for 68 Ponds Deepening & Restoration

Drinking Water Facility

- 1. Drinking water facility in villages –Borewell, Community Well etc.:** 65 drinking water facility in villages –Borewell, Community Well etc.in core, railway line and pipeline villages.
- 2. Installation & Repairing Work of 512 Hand pumps & Hand pump Platform** in core, railway line and pipeline villages.

Educational infrastructure Development

- 1. School Development of High School, Motia** including finishing work of 06 Classroom and drinking water facilities is going on at High School, Motia to provide infrastructure for students to learn in a proper proximity.
- 2. Renovation, development & beautification of AWCs** with BALA painting and other infrastructure facilities including drinking, kitchen, sanitation, etc. for learnings of the children (3-5 years) in seven Anganwadi Centre of core & railway line area. Anganwadi is the source of several benefits for child and maternal health and well-being.
- 3. Construction of Gate at 2 educational institutions** for better infrastructure facilities
- 4. Renovation of Classroom for Smart Class** at Balbikash Vidyalaya, Godda to improve quality of education and Smart Class program
- 5. Construction of School Kitchen in Middle School, Motia** with an objective to improve **Health, Nutrition, and Wellness of children** and increase the attendance rate of students and academic performance.
- 6. Construction of Boundary Wall & BALA Painting** in 2 schools to protect the school premises and contribute towards imparting quality of education to rural children.

Health and Sanitation infrastructure Development

- 1. Renovation of Doctor's Quarter & 2 Hospital Building at Thakurgangti Hospital** to channelize the functioning of hospital to serve the public of pipeline area in large number.
- 2. Construction of Waiting Shade & Labour Room in Mahagama Hospital** provided seating arrangement facility for the indoor and outdoor patients, medical and supporting staffs and, helped them to operate all health services in a better manner.

Other Village development structures

- 1. Construction of 59 Model Bathroom & Soak pit near Handpump:** As we are working towards creating awareness for cleanliness and hygiene by our program named "SWACCHAGRIH" with aim to aware and engage people in creating cleanliness culture.
- 2. Construction of 23 Seating Place (Chabutra)** in TPP villages of our pipeline and core area.
- 3. Construction of Conference Hall** at cultural heritage sites in Sahebganj to provide adequate infrastructure to held meetings, seminars, and cultural events for tribals students & community (Ongoing)
- 4. Construction of Cultural Stage** at Ranidih (Saroni) and Amdiha village of Mahagama block for organizing community level program.
- 5. Renovation of 2 Community Hall at TPP area for Community Programs** for Promotion of cultural activity and local events at village level for community.
- 6. Renovation of Village Welcome Gate** at Pipeline area in Kakhana Village to provide better rural infrastructure in the villages
- 7. Construction of Drains in 3** villages of core & pipeline area for proper drainage system and sanitation in the rural area.
- 8. Renovation of SC Welfare Girls Hostel Building at Pokharia, Sahebganj** to provide better infrastructure facilities to the girls.
- 9. Construction of RCC Box Culvert at Mahagama Pipeline area:** To provide better infrastructure facilities to the villagers to minimize the drudgery and problems of the villagers and benefiting the stakeholders at manifold.
- 10. Renovation and construction of 26 community structures & cultural heritage:** We have taken up the renovation of old, defunct, and dilapidated community structures and cultural heritage structures in the intervention villages to restore, adapt and conserve structures of heritage and cultural value.
- 11. Painting work for 26th January (Republic Day) program** at Historical places of Godda for conducting flag hoisting ceremony in presence of chief dignitaries, front line workers, covid warriors and police force keeping in view the safety protocols of COVID 19.
- 12. Repairing of Village Road** at Jajalpur and Amrakanoli to provide better rural infrastructure facilities to the villagers

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 area 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	Kaithatikar	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

- **Inaugural Program of Gyan Jyoti Tuition Programme at Parasi:** On 21st September 2021, Adani Foundation in association with Janta Shakti Sangh had

organized inaugural program of Gyan Jyoti Tuition Programme at Parasi village of Sondiha panchayat falling under Poreyahat block of Godda district. The Chief Guests present during the occasion were Sh. Maheshwari Yadav, Block Development Officer (BDO) of Poreyahat block, Mr. Manoj Prabhakar (Sr. Project Officer), Adani Foundation, Sh. Surjit Jha, President of Red Cross Society, Mr. Saurabh Parasar, Young Activist along with School Principal and Headmasters of Parasi School, Sondiha along with the participation of 75 children from the village.

The participants including parents and children were encouraged to enroll their children in Gyan Jyoti Kendra for developing the learning abilities and skills of children and improve their academic performance. Total 28 meritorious children were enrolled after doing assessment of their performance from 23rd September 2021 at Adani Gyan Jyoti Kendra, Parasi.

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. In this year, 110 children are enrolled from class 3rd standard till 10th standard in coaching program in core villages of two-gram panchayat Motia and Sondiha and 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
1	Sondiha	Podaiyahat	III to X	60
2	Motia	Godda	IX to X	50
TOTAL				110

Programme Outcome

- **Enrollment in Super 30- Class 10th:** During the last year 2020-21, total 46 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, Harijan tola.
- **Academic Performance (Session 2020-21):** All 25 students had appeared in the 10th board examination and succeeded with improved marks and passed with flying colours. All the students passed the exam with 100% passing percent securing 1st division marks. 11 students have passed with **distinction**

marks above 75%. Rest, 14 students have passed the examination with 1st division marks in the range of 60% -73%. Comparatively, since program inception (2018-19), the program has shown a significant improvement in the students' performance with 100% students under first division bracket (2020-21).

Super 30- Class 10th Results- Gyan Jyoti Tuition Programme								
Academic Session	Gyan Jyoti Kendra	Students			Students			Overall Passing %
		Enrolled	Appeared	Passed	1st Division	2nd Division	3rd 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

- **Passing Result of Class 10th at Panchayat Level:** Baseline survey of total number of students at High School (Class 10th) of three panchayats of project area namely Motia, Sondiha, and Baksara was done followed by conduction of special coaching classes with an objective to get 100% passing result with distinction and higher marks in the JAC Board examination.
- **Under Gyan Jyoti Tuition Programme, students of class 10th standard of three intervention panchayats of TPP Core area** including Motia, Sondiha, and Baksara were given special focus for the preparation of 10th Board examination for Academic Session 2020-21. From three panchayats, **270 students** had appeared in the board examination, out of which **252 students have passed the examination with 93.33% passing percentage.**

On the other hand, **157 students got 1st Division marks**, 89 students got 2nd division marks and 6 students secured 3rd division marks. Overall, **62.30% students** have passed the examination with **1st division marks.**

Panchayat Wise- Class 10 th Board Performance of Students								
Panchayat	School	Students Enrolled	Students Appeared	Students Passed	1 st Division	2 nd Division	3 rd Division	Overall Passing %
Motia	High School, Motia	144	144	129	104	25	0	89.58
Baksara	+2 High School, Baksara	97	97	97	47	49	1	100
Sondiha	U.H.S Sondiha	29	29	26	6	15	5	89.65
Total		270	270	252	157	89	6	93.33

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 space and improved the diverse spectrum of education through digital learning in **290 Govt. Schools** with its outreach in more than **209 remote and untapped villages** of **9 blocks** of Godda district of Jharkhand.

In the tenure of less than 3.8 years, the program has leveraged its services facilitated by over **1000 skilled teachers** and benefitting more than **70,000 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 the smart classes with a simple touch of TV remote.

Outreach of Gyanodaya: Gyanodaya program has created its impact in **144** Middle Schools, **107** High Schools, **10** Plus 2 Schools, **17** KGBVs, **7** Welfare Association Schools, and **5** JEE/NEET Centres, respectively.

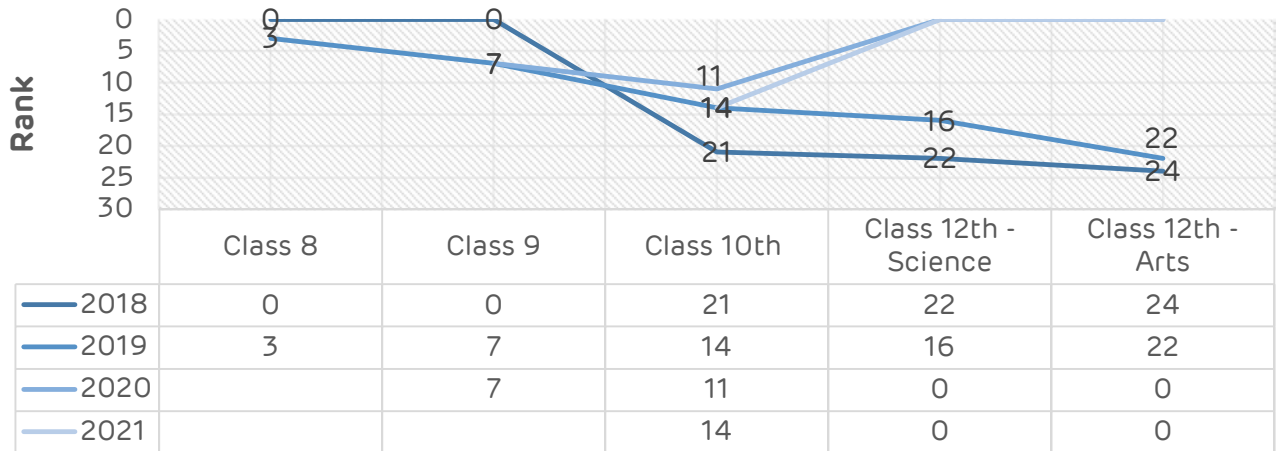
Block	Middle schools	High Schools	Plus2 Schools	KGBVs	Welfares	JEE/NEET Centres	Aggregate
Godda	48	25	3	2	0	3	81
Sunderpahari	3	5	0	2	3	NA	13
Poraiyahat	30	16	3	2	0	NA	51
Pathargama	24	7	1	2	0	1	35
Basantry	9	5	0	1	0	NA	15
Mahagama	13	17	2	2	0	1	35
Boarijore	3	9	0	2	4	NA	18
Mehrama	6	12	0	2	0	NA	20
Thakurgangti	8	11	1	2	0	NA	22
Total	144	107	10	17	7	5	290

Programme Outcome

- 1. 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 2021 as compared to preceding three consecutive years' performance.

IMPROVEMENT IN SCHOOL RANKING AT DISTRICT LEVEL

(YEAR WISE RANKING) – TOTAL DISTRICT (24)



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

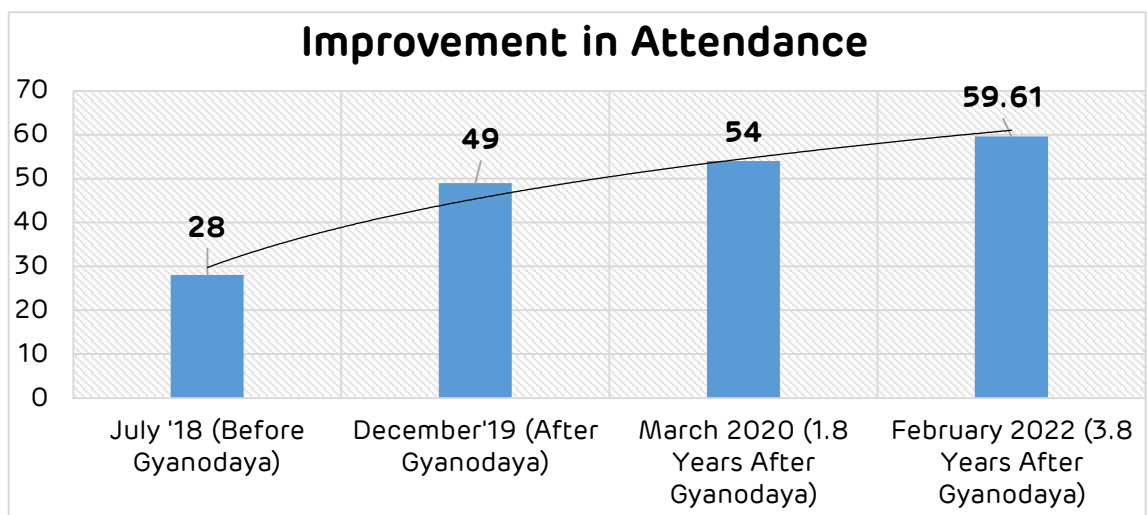
- a) Class 9th standard upholds **7th** rank position in the year 2019 & **2020** as compared to **21st position** in the year 2018-19
- b) The figures improved from 21st rank (2018) to 14th rank (2019) to **11th** rank in the year **2020** of Class 10th, while the position went to 14th rank in 2021.
- c) 22nd rank (2018) to **16th rank (2019)** in class 12th (Science) and
- d) 24th rank (2018) to **22nd rank (2019)** in class 12th (Arts)
- e) Class 8th stands at **3rd** rank (2019) among 24 districts of Jharkhand state.

2. Increase in Attendance Rate of Students: The visually appealing, easy-to-grasp and retainable concepts covered in the study materials has led to **198.05% increase** in the class-wise attendance comparing the figures of past years (**July 18**) from **20% low attendance rate** to a **rise in 54% attendance rate in March 2020** to an **exemplary growth to 59.61% in February 2022** despite of unprecedented circumstances due to second & third wave of COVID 19 and closure of schools due to Lockdown.

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.

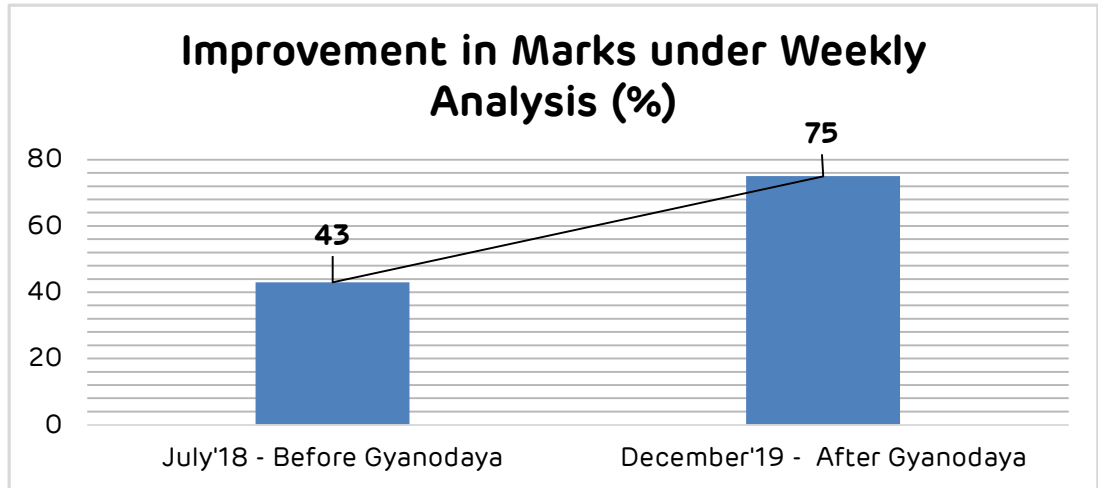
Improvement in Attendance after implementation of Gyanodaya		
July-18 (Before Gyanodaya)	March 2020 (1.8 Years After Gyanodaya)	February 2022 (3.8 Years After Gyanodaya)
20-30%	54%	59.61



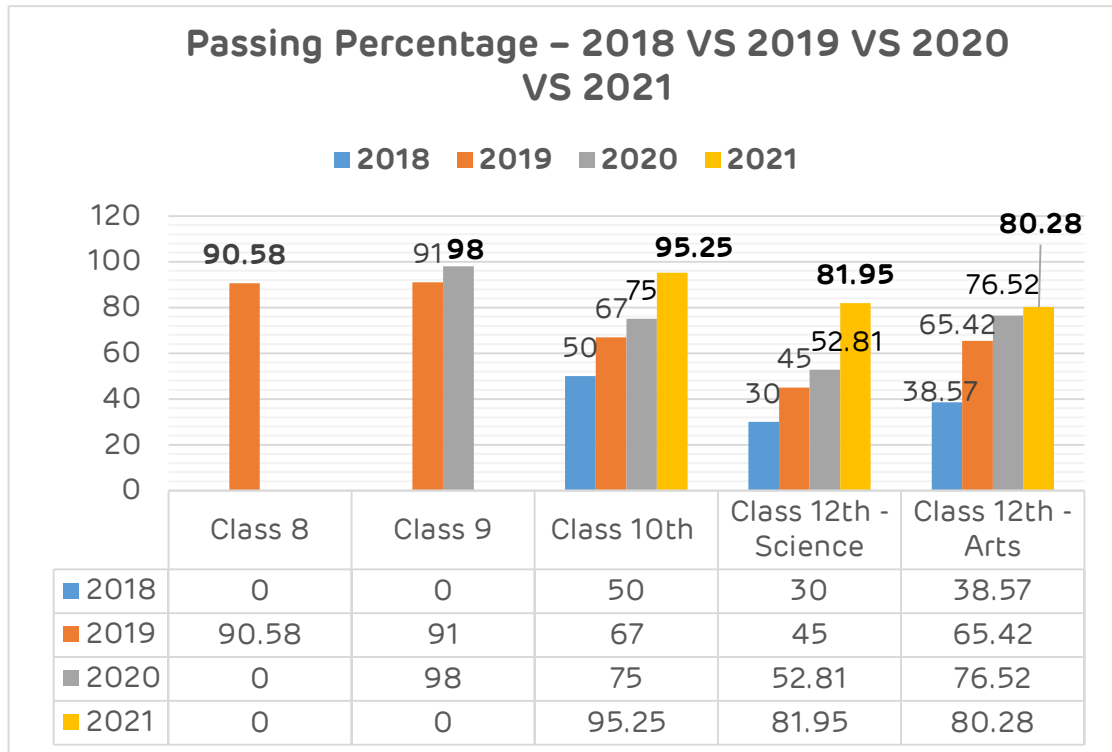
3. Improvement in Marks of Students: Prior to educational initiative of Gyanodaya, the students used to fall under 30-40% marks bracket which has now shifted to **70-75%** marks bracket on an average due to better understanding and retention of basic concepts and a daily quiz after every video.

Impact of Gyanodaya project on Results is as given below:

July-18 (Before Gyanodaya)	December 2019 (1.6 Years 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 10th and Class 12th has increased progressively in the year 2021 as compared to previous three consecutive years 2020, 2019 and 2018.



**Year Wise Passing %*

- i. **Class 10th**: The passing percentage of students has increased in 2021 (**95.25%**) as compared to status of 2020 (75%), 2019 (67%) & 2018 (50%) of the students of Class 10th
- 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) to major improvement of **81.95% (2021)** 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)** in Intermediate (Arts) Stream.
- iv. **Class 9th**: Passing percentage increased from 91% (2019) to **98%** in the year **2020**,
- v. On the other hand, the passing percentage of **class 8th** students is **90.58%** in the year **2019**.

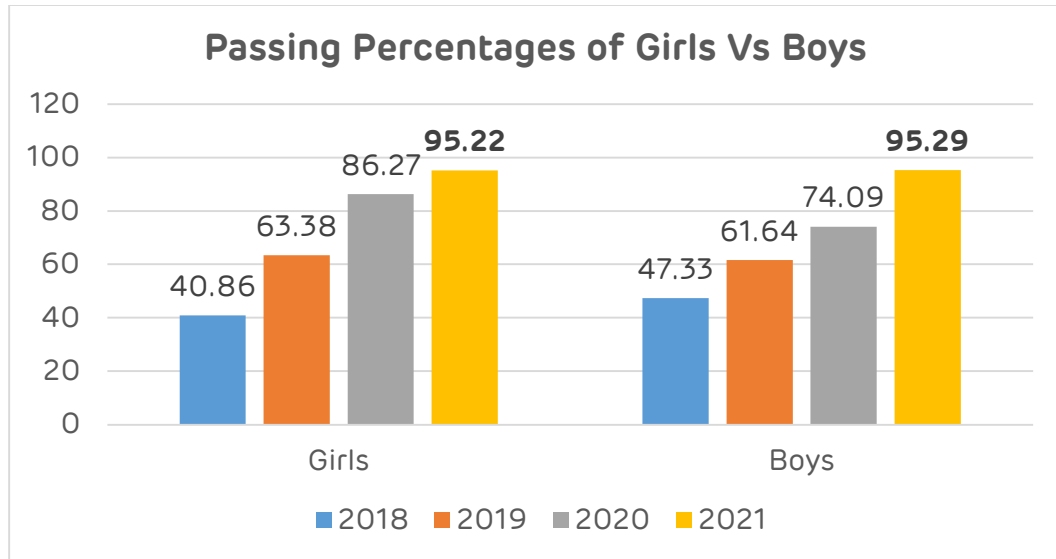
Class-wise Improvement in Passing Percentages					
Academic Year	Class 8 th	Class 9 th	Class 10 th	Class 12 th Science	Class 12 th Arts
2017-2018	0	0	50	30	38.57
2018-2019	90.58	91	67	45	65.42
2019-2020	NA	98	75	52.81	76.52
2020-2021	NA	NA	95.25	81.95	80.28
% Increase	NA	7.69	90.5	173.2	108.1

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

***% increase figure from 2018 to 2021*

5. Passing Percentages of Girls Vs Boys

The graph presents a sharp increase in the passing percentage of girls and boys compared with last 3 years. In the session 2017-18, girls passing percent was 40.86% which increases to **95.22% in the session 2020-21**. Simultaneously, boys passing percentage in the session 2017-18 was 47.33% which increases to **95.29% in the session 2020-21**.



Source: Education department of Godda district

□ Gyanodaya Initiatives during COVID 19 Epidemic

- Gyanodaya Godda - Mera Mobile Mera Vidyalaya:** In the view of prevailing Covid-19 pandemic, District Administration Godda in collaboration with Adani Foundation launched a personalized online learning platform called "Gyanodaya Godda - Mera Mobile Mera Vidyalaya" App for students studying in class I to XII. The app contains amended learning materials, video lectures, sample papers, doubt discussion group, test, quizzes and many more based on Jharkhand Board syllabus. The app has better course animated video lectures which enables the students to understand the subject matter easily and well. Uploaded more than 330 Chapters & 2500 Videos. The app offers original content, watch, and learn videos, animations and interactive simulations that help students grasp things easily.
- 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, **7,01,162 views from May 2021 to March 2022.**
- Gyanodaya DD Jharkhand:** The Department of Education, of Jharkhand state has collaborated at state level, to telecast Gyanodaya classes on DD Jharkhand from 28th June 2021 onwards keeping in view second & third wave of COVID 19. Daily 2 hours of content is broadcasted through DD Jharkhand for students of Class 1st to Class 12th standard residing in remote

areas of Jharkhand. It is instrumental in cases where students do not have access to a smart phone or high-speed internet access.

During last year 2020-21, it benefitted over 1 lakh children including both schools going students and out of school children from all across the districts of Jharkhand state. It also created a learning space which enriched their knowledge in an inclusive manner for both parents and their wards at home.

- ❑ **Support of MCQ mock test question paper to each high schools (134 High School)** to ensure better result in upcoming class 10th board exam. MCQ mock test question paper was delivered to 134 High Schools of Godda district including non-Gyanodaya schools along with packages of MCQ test video content, counseling of students to get extra focus, doubt clearing session, special guidance from experts, and weekly quiz is conducted to provide support for the preparation of exam.

4. IIT JEE Coaching Classes: The district administration in collaboration with Gyanodaya team has provided an opportunity to financially weak and meritorious students of the district to access free coaching of IIT JEE entrance exam preparation. IIT JEE coaching classes was commenced on 14th September 2021 at four IIT JEE centres in Godda district benefiting **94 students** for session 2021-22.

AWARDS & ACCOLADES

- **Notable Appreciation of Gyanodaya by UNDP & Prime Minister of India (PMO)**

The Hard work and perseverance pay off for entire team of Gyanodaya Program. Earlier, it has been appreciated by many dignitaries at **National Level by NITI Aayog, the Government of Jharkhand and Education Department.** Gyanodaya has also bagged **"Indian Chamber of Commerce (ICC) Social Impact Award -Promoting Education"** on **12th March 2021** at **Kolkata** on improving the standard of education of the children of Godda district. Nonetheless, the incredible performance of Gyanodaya has left its mark at United Nations level through the publication of "Success Story of Gyanodaya" in transforming the lives of children from the darkness to a ray of hope in the **United Nations Development Programme (UNDP) Report.** The same was appreciated by the **Prime Minister of India (PMO), Shri Narendra Modi**

through his twitter account on **12th June 2021** in the early morning at 8:34 a.m.

- **7th CSR Impact Awards from CSRBOX:** Gyanodaya, Godda has bagged prestigious awards- **7th CSR Impact Awards from CSRBOX in the Education category** on **December 9, 2021**, at the India CSR Summit hosted in Gurugram.
- **'National Award for E-Governance' to Gyanodaya Godda:** "Gyanodaya, Godda a digital learning program" was felicitated with **"Silver award under category III - Excellence in District level initiative in e-Governance" from Ministry of Information and Broadcasting, and Ministry of Personnel, Public Grievances and Pensions.** The award ceremony was hosted on **7th-8th January 2022** during the 24th National e-Governance Conference held in Hyderabad, Telangana. The award was presented by esteemed dignitaries, Dr. Jitendra Singh, Union Minister of State for Science and Technology and KT Rama Rao, Telangana Urban Development Minister.
- **Celebration of Teachers Day:** Teachers Day was celebrated on 5th September 2021 in Middle School, Parasi to applaud and laud the teachers for their constant support and sacrifices. The people associated in the field of education and who have devoted their life in building secure and bright future of children residing in remote villages through their persistence, hard work, and dedication were honored and felicitated with mementos as a token of love.

During the occasion, co-curricular activities was also organized, including quiz contest, and essay writing with participation of 50 students from two schools, MS Maldih from Khatnai panchayat, Godda block and MS Parasi from Sondiha panchayat, Poreyahat block of Godda district. 10 students were awarded with shields and mementos who came up with best of writing and won the contest.

5. Super 200 Program: Online Super 200 class was operational for the preparation of 10th board examination of **224 meritorious students** 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.

6. 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.

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) is conducted at different locations at village level and online access to learning materials by students (self-study) are adhered.
- d. The preparation of the examination includes arrangement of learning materials, stationery items and miscellaneous items.
- e. Weekly tests are conducted by teachers for evaluation of students' performance and proper follow-up of students is done for improvement area.

Program Output

- a. **Students Outreach:** In the year 2020-21, **1312** number of students were benefitted from online learning material by issuance of G-suite ID and **113 students** were provided coaching classes for Academic Session 2021-22 at eight centers in core and pipeline area facilitated by Adani teachers.
 - **Examination Timeline:** The examination date was postponed from April 2021 to the month of August 2021 due to second wave of COVID 19 as per the decision of Ministry of Education.
 - **JNV Entrance Exam (2021-22):** On 11th August 2021, **73 students** out of total 113 students had appeared in the examination. The result of Navodaya Vidyalaya Samiti was declared on 27th September 2021.
 - **Clearance of Examination:** Out of 73 students, **2 students (Boni Murmu from Gangta village- Motia center & Tripti Kumari from Jajalpur village- Maniyamore center)** have cleared the examination and selected for the admission in JNV for Academic Session 2021-22.

- b. Enrollment for Session 2022-23:** In this year 2021-22, ten coaching centres was operational in core and pipeline area of Godda district facilitated by ten skilled Utthan Sahayaks and support of study materials and resources accessed by children for Academic Session 2022-23. Baseline survey, social mobilization and selection of meritorious children was done with an objective to add a greater number of children in the basket of success and reach the results to next level. 147 meritorious children from ten villages are selected based on assessment and evaluation of their performance for Academic Session 2022-23.

Navodaya Coaching Details				
S.N.	Block	Centre Name	Students Enrolled (Year)	
			2020-21	2021-22
1	Godda	MS Motia	18	18
2	Poreyahat	MS Sondiha	13	15
3	Poreyahat	MS Baksara	16	20
4	Poreyahat	MS Birniya	15	14
5	Godda	Dumaria	9	-
6	Godda	PS Kaithatikar	14	-
7	Mahagama	UMS Maniamore	19	-
8	Thakurgangti	UMS Baniadih	9	28
9	Godda	Kauribahiyar	-	15
10	Poreyahat	Amrakanoli	-	5
11	Mahagama	Jiyajori	-	7
12	Mahagama	Karnu	-	14
13	Poreyahat	Bohra	-	11
Total			113	147

7. School Education Sponsorship Program

Context: Jitpur coal block is in north-western part of Chuperbita Basin of Rajmahal coal field in Godda district of Jharkhand. Around, 70 % of population are PVTGs including Santhal and Paharia tribes who resides 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 under 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 no availability of adequate school and school teachers, there was 100% incidence of dropout in schools.

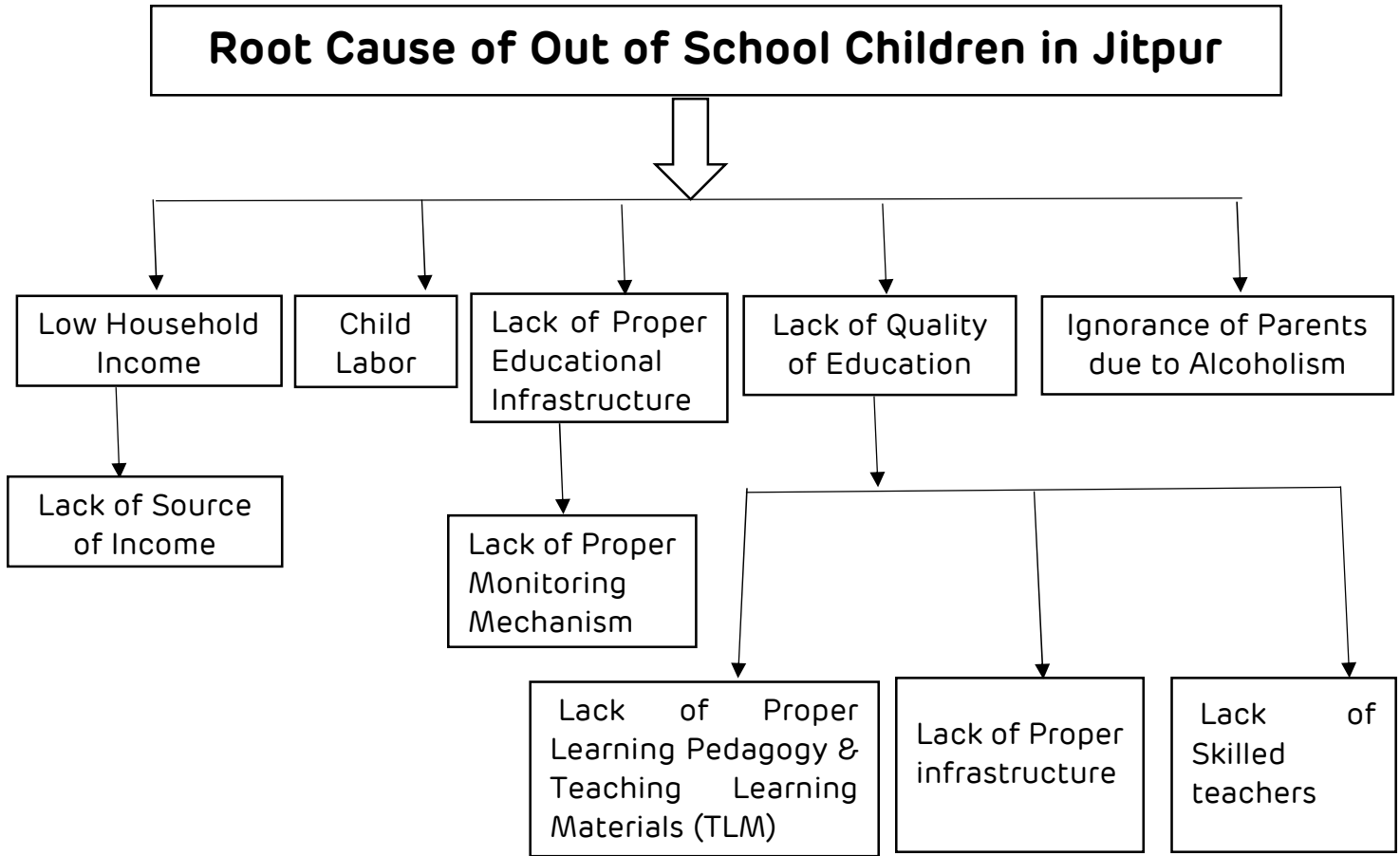


Fig. 1 Root Causes of Drop out of Children in Jitpur coal mines area

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.

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 Adani Foundation under Financial Support for education of children.
- ii. **Accommodation facilities:** The students are permitted residential facilities on annual basis for the duration of 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 children 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.

Annual Investment on Building Bright Future of Children

The annual expenses on each child are borne by 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 financial year 2020-21 & 2021-22, total 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

Triggers of Adani Foundation

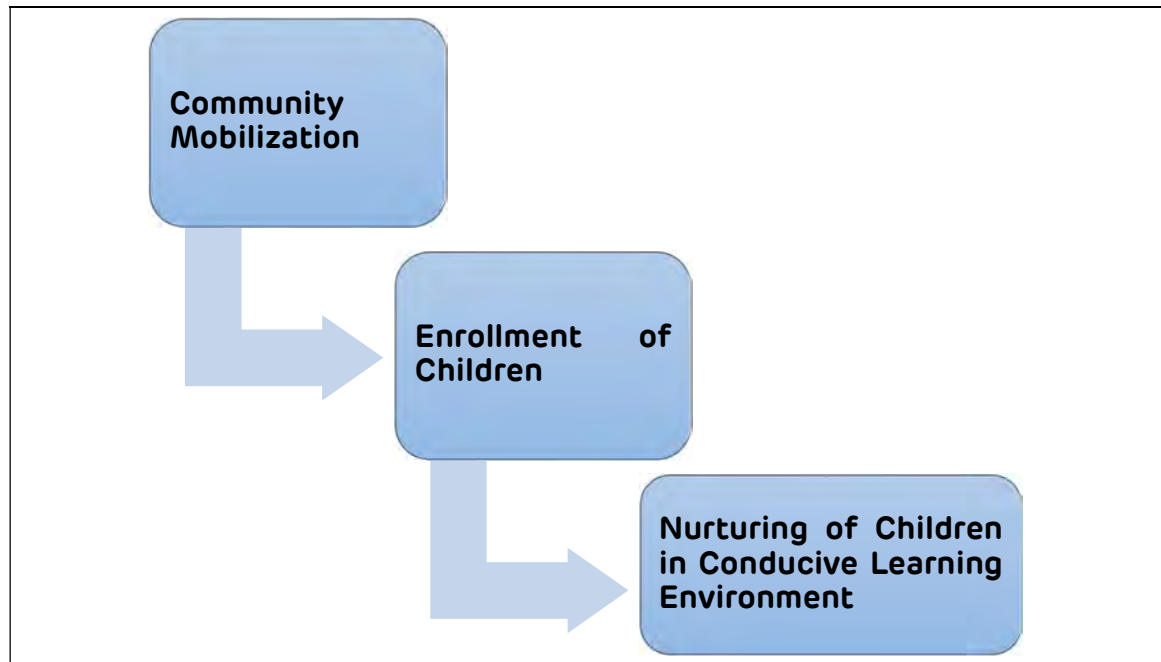


Fig. 2 Process of Intervention

- 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
1	Dahubera	29	29
2	Pakeri	13	13
3	Dandagora	20	20
4	Dumarpalam	29	29
5	Jitpur	84	84
6	Kairajori	22	22
7	Paharpur	64	64
8	Sunder Pahari	07	07
9	Telvita	07	07
Total		275	275

Gradually, with quality learning pedagogy used by teachers and facilities provided to students helped hold children who attended classes with their own interest, effortlessly. It led to link 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
155	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, 33 students in Nav Prabhat Mission School, and 37 students in Evergreen Bhartiya Charitable Trust (Table 4).

TABLE 4 SCHOOL WISE ENROLLED CHILDREN UNDER EDUCATION RESIDENTIAL PROGRAM			
SN	School	Location	No. of Students
1	Evergreen Bhartiya Charitable Trust	Tiyodih, Sunderpahari Road, Godda	37
2	Viswa Bharti Mission School	Hanuman Nagar, Pakur Road, Godda	73
3	Veena Bharti Residential School	Gunghasa, Poreyahat, Godda	132
4	Nav Prabhat Mission School	Godda	33
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 assuring *"Equal Right of Education for Every Child"*.

TABLE 5 CLASS WISE STUDENTS UNDER EDUCATION SPONSORSHIP PROGRAMME												
S N	School/Class	Number of Students										Total
		Nursery	L.K. G	U.K. G	I	II	III	IV	V	VI	VII	
1	Evergreen Bhartiya Charitable Trust	0	0	5	0	14	4	4	6	3	1	37
2	Viswa Bharti Mission School	0	8	19	17	21	3	4	1	0	0	73
3	Veena Bharti Residential School	0	21	31	29	22	14	5	5	4	1	132
4	Nav Prabhat Mission School	0	0	6	15	12	0	0	0	0	0	33
Total		0	29	61	61	69	21	13	12	7	2	275

Class Wise Enrolment of Children: Out of total 275 children studying under Education Residential/Sponsorship Programme, presently, 29 students are studying in L.K.G., 61 students are studying in U.K.G., 61 students in class 1, 69 students in Class 2, 21 students in class 3, 13 students in class 4, 12 students in class 5, 7 students in class 6th and 2 students are studying in class 7th (Table 5).

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 five years of intervention, the program has effectively retained the 275 students in schools with 100% attendance rate. In the year, 2020-21, the program was facilitated through online coaching by teachers for students having smart phones. 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			
Academic Session	Total Students	Dropout Rate (%)	Attendance Rate (%)
2016-17	155	0	100
2017-18	275	0	100
2018-19	275	0	100
2019-20	275	0	100
2020-21	275	0	100

- ii. **Average Marks of Students:** The average marks scored by each student in the year 2019-20 was **74.31%**. On the other hand, the highest average mark **78.62%** was attained by students of Nav Prabhat Mission School. Relatively, the average marks secured by the students in the last year 2020-21 has dropped down to 59.76% with again leading performance of students of Nav Prabhat Mission School scoring **72.30%** average marks (Table 7).
- iii. **Overall Passing % of Students:** All 275 enrolled children under Sponsorship Programme had appeared in the examination since 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
1	Evergreen Bhartiya Charitable Trust	74	43.34
2	Viswa Bharti Mission School	72.78	64.93
3	Veena Bharti Residential School	71.85	58.37
4	Nav Prabhat Mission School	78.62	72.30
Average Marks		74.31	59.76

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%

- iv. Achievements (2020-21):** The academic performance of students in this year 2020-21 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, **119 students (43.27%) got 1st Division marks, 90 students (32.73%) secured 2nd division marks and 66 students (24%) secured 3rd division marks** respectively (Table 9).

Table 9 Academic Performance of Students- 2020-21								
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	37	0	0.00	1	2.70	36	97.30
2	Viswa Bharti Mission School	73	41	56.16	20	27.40	12	16.44
3	Veena Bharti Residential School	132	47	35.61	67	50.76	18	13.64
4	Nav Prabhat Mission School	33	31	93.94	2	6.06	0	0.00
TOTAL		275	119	43.27	90	32.73	66	24.00

8. 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.

Capacity Building Programme

- 1. Quiz Contest Program-Under Capacity Building & Competitions-** Gyan Jyoti Tuition Program, the Education Team (Gyan Jyoti Kendra Motia) had organized Two Days Quiz Contest Program on 29th August 2021, among 9th & 10th Class Students, participated by 42 students during this program. The program was organized in two steps 1) written test 2) oral test in which final 9 students selected for final round.
- 2. Drawing Competition Program- Under Gyan Jyoti Tuition Program,** the education team at Gyan Jyoti Kendra, Kauribihar had organized Drawing Competition Program on 15th September 2021 participated by 25 students. Every week on Saturday, Recreational cum Co- Curricular activity is organized in each eight Gyan Jyoti Center to develop the personality of children and their overall growth & development. It helps to build up their confidence, inculcate values and culture of discipline and new energy for their aspirational career by crafting their imaginations through art and craft.
- 3. PAHAL- Talent Hunt Program for Children:** Adani Foundation has inaugurated a Talent Hunt Program, named PAHAL in eight schools of TPP core area with an objective to nurture and develop the personality of children in extracurricular activities namely Dance, Music, Skit, Drama, Drawing, Paintings, Handicrafts, Sports, etc. Earlier, the parents who could not afford due to financial constraints to nurture the skills and creativity of their wards will now find space for their children to sharpen their skills & talent in a broader range. The selected children will be able to present their hidden talents and capabilities during Mega Talent Hunt Program and new direction will be given in the field of art & craft. The winners of the talent hunt competition will be awarded as an honor of their achievements.
- 4. Science Exhibition on the eve of National Science Day at High School, Baksara:** On the eve of 'National Science Day' on 28th February 2022, Adani Foundation in collaboration with Association for Research & Training in Basic Science, Nagpur had organized three days' Apurva Vigyan Mela (Science Fair) on dated February 27, 2022, till March 1, 2022, at High School, Baksara in Podaiyahat block of Godda district. The chief dignitaries who graced the event were Prabhakar Kumar, BEEO, Poreyahat, Tarun Kumar Ghanti, BEEO, Pathargama, Awadhesh Kumar, President, SMC, Baksara, Hemant Kumar, Mukhiya, Baksara, Unit CSR head and team, Adani Foundation. Total 415 students of class 9th, 10th, 11th & 12th of High School, Baksara and Girls High School, Godda had participated in the science fair. Out of which 196 students were selected, divided, and

organized for different themes into 27 teams of 4 members each on day 1 on February 28, 2022, and 22 teams of 4 members each on day 2 on March 1, 2022, respectively.

The procedures for selecting students were nomination of meritorious, outspoken and vigor students by School Management and Principals followed by orientation, trainings and rehearsal with the theoretical and practical experiments and presentation skills. The **Apurva Vigyan Mela** was emphasized to give exposure and groom the rural students to have practical demonstration of the curriculum being taught in the classroom of science subject and cultivate the learnings in every sphere of life. The participants got firsthand learning experiences based on experiments and observations from locally available resources and enhanced their learning experiences from several 'scientific laws' such as Light sound, Air pressure, Centre of gravity, Force of Buoyancy, Cohesive force, Adhesive force, Action-reaction, Reflection of light, Gravitational force, Light & distance, Demonstration on Automatic toys, and, etc.

Exchange learnings was also encouraged among the participants. The participants were mentored to become Resource person for conducting training program for students studying in other high and plus 2 schools in intervention villages to nurture more bright minds and foster development of children. The hard work and dedication of students, teachers and Adani Foundation had poured fruitful results and concluded the program successfully.

Supporting Sports Events

- 1. Sports Kit Distribution:** 17 Sports kits were distributed to Sports team comprising of football, volleyball and cricket including sports material, Football, Boots, Jersey, Shoes, and cricket kit to more than 17 youth groups under rural youth engagement program to promote recreational activity and sports events in 13 core, and pipeline villages of Godda, Boarijor, Mahagama, Podaiyahat and Pathargama block of Godda district. It helped them in regular practice and a means of recreation. The distribution of kit help youth in more engaged in constructive activity.

Sports Kit Distribution					
Particulars	Date	Village	Block	Quantity	No. Of Team
Football Kit	04.06.21	Jhirli	Boarijor	1	1
Football Kit	17.06.21	Ranidih	Boarijor	1	1
Football Kit	July 2021	Ranidih	Boarijor	1	1
Football Kit	July-2021	Dakaita	Boarijor	1	1
Football Kit	Aug-21	Ranidih	Boarijor	1	1
Football Kit	Aug-21	Telgama	Boarijor	1	1
Volleyball Kit (Shoes)	27.09.21	Godda	Godda	1	1
Football Kit-Boots	October'21	Jhirli	Boarijor	1	1
Football Kit	November'21	Jiyajori	Mahagama	1	1
Football Kit	Feb-22	Jhirli	Boarijor	1	1
Football Kit	Feb-22	Dhamni	Boarijor	1	1
Cricket Kit	Feb-22	High School, Baksara	Podaiyahat	1	1
Cricket Kit	Feb-22	High School, Motia	Godda	1	1
Cricket Kit	Feb-22	Youth Club Motia	Godda	1	1
Cricket Kit	Feb-22	Youth Club Bohra (Lilado panchayat)	Podaiyahat	1	1
Cricket Kit	Feb-22	Youth Club Pathargama	Pathargama	1	1
Football Kit	Mar-22	Bhagwanpur	Thakurgangti	1	1
Total				17	17

2. Sports Tournament: Forty-Eight sports tournament including Football, Badminton, Cricket, Volleyball, Netball, Badminton, and general sports were organized with coverage of 40 villages of core, and pipeline areas of Godda & 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 **7300 players** and 28,000 audiences 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	Football Tournament in Maniyamore	01.04.2021	4	16 teams	240	400	
2	Football tournament in Chunakhairi	26.06.21	4	4 teams	60	300	
3	Badminton tournament- National Sports Day	29.08.21	12	46 teams	46	800	
4	Sports Tournament- National Sports Day	29.08.21	2	6 teams	40	450	
5	Cricket Tournament in Godda	Sep-21	2	2 teams	22	110	
6	Football tournament on Vishwkarma puja in Godda	17.09.2021	1	4 teams	60	300	
7	Cricket Tournament	08.10.21	2	16 teams	176	350	
8	Memorial Football tournament	06.10.21	2	2 teams	30	100	
9	Football Tournament in Dhamni Simariya	10.10.2021	2	16 teams	240	400	
10	Football Tournament in Dhamni	October'21	2	16 teams	240	430	
11	Football Tournament in govindpur	18.10.2021	2	16 teams	240	510	
12	Football Tournament in Dhankol	10.10.2021	2	16 teams	240	450	
13	Football Tournament in Godda	20.10.2021	2	16 teams	240	600	
14	Football Tournament in Godda	7.11.2021	2	16 teams	240	510	
15	Football Tournament in Gangta village	November'21	2	16 teams	240	510	
16	Football Tournament in Dhankunda	November'21	2	16 teams	240	520	
17	Football Tournament in Dhamni simariya	3.11.2021	2	16 teams	240	520	
18	Football Tournament in Harinchara	7.11.2021	2	16 teams	240	450	
19	Football Tournament in Telgama	16.11.2021	2	16 teams	240	570	
20	Cricket Tournament in Godda	25.11.2021	2	2 teams	22	135	
21	Football Tournament in Ranidih	03.12.2021	2	8 teams	120	201	
22	Football Tournament in Harkatta	04.12.2021	2	16 teams	240	460	
23	Football Tournament in Jhirli	25.12.2021	2	8 teams	120	250	
24	Football Tournament in Lalmatia	25.12.2021	2	8 teams	120	300	
25	Football Tournament in Paharpur	25.12.2021	2	16 teams	240	460	
26	Football Tournament in Gangta	Dec'2021	2	2 teams	30	120	
27	Cricket Tournament in Motia High School	Dec'2021	2	2 teams	22	150	
28	Cricket Tournament in Sondiha	Dec'2021	2	2 teams	22	110	
29	Cricket Tournament in Parasi	05.12.2021	2	2 teams	22	95	
30	Cricket Tournament in Gandhi Maidan	Dec'2021	2	2 teams	22	135	
31	Handball tournament in Godda	15.01.2022	2	2 teams	14	60	

32	Football Tournament in Sundarpahari	16.01.2022	2	16 teams	240	450
33	Football Tournament Dhankol	26.01.2022	2	16 teams	240	460
34	Football Tournament in Beldiha	27.01.2022	2	16 teams	240	550
35	Football Tournament in Chunakheri	28.01.2022	2	8 teams	120	250
36	Cricket Tournament in Basantpur	29.01.2022	2	2 teams	22	135
37	Football Tournament in Harkatta	30.01.2022	2	16 teams	240	460
38	Football Tournament in Khairbani	30.01.2022	2	16 teams	240	460
39	Football Tournament in Jhirli	21.02.2022	2	16 teams	240	400
40	Football Tournament in Medani	25.02.2022	2	16 teams	240	600
41	Football Tournament in Kalajhar	28.02.2022	2	16 teams	240	550
42	Football Tournament in Siktia on Memorial Ceremony of Tilka Manjhi	Feb-22	1	16 teams	240	10000
43	Godda Premier League (GPL)-Cricket tournament	05.02.2022 to 16.02.2022	8	8 teams	88	800
44	Football Tournament in Goradih	05.03.2022	1	16 teams	240	600
45	Football Tournament in Bhagwanpur	23.03.2022	1	16 teams	240	615
46	Volleyball Tournament in Motia	Mar-22	2	2 teams	12	200
47	Volleyball Tournament in Lougay	Mar-22	2	2 teams	12	150
48	East Zone Invitational Championship for Badminton Tournament at Dumka	29.03.2022 to 31.03.2022	6	6 teams	150	1000
Total			116		7352	28436

9.Kitchen Material & Learning Games Support 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.

ICDS functionaries were provided with kitchen utensils for improving Anganwadi kitchen and prepare meals in a hygienic condition along with learning games enabling mental and cognitive development of children. Two AWCs namely, AWC, Motia (Harijan tola) and AWC, Motia (Kahar tola) and 1 SHG for facilitation of creche were supported with basic facilities.

SN	Beneficiary Group	Material Support
1	AWC, Motia (Kahar tola)	Learning games
2	AWC, Motia (Harijan tola)	Learning games + Kitchen items
3	SHG Group for day nursery (creche)	Learning games

COMMUNITY HEALTH PROGRAMME

Mobile Health Care Unit (MHCU)

During the Financial Year 2021-2022 (April- March 2022), four Mobile Health Care Units have together catered to **45,713** patients from the Core, Periphery, Railway line and Pipeline villages. Adani Foundation runs its own MHCU in core villages, while it has partnered with Helpage India and Wockhardt Foundation to extend primary medical services in periphery and pipeline villages respectively. All of 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. The services provided at doorsteps during COVID 19 has been instrumental in protecting the health of the individuals of all age group and gender.

- ❖ **Mobile Health Care Unit in Core villages:** During the Financial Year, April-March 2022, 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, the MHCU was catalyst to mitigate the turbulence of 2nd & 3rd wave of COVID 19 by regulating 24 hours emergency services from Ambulance at Site Office, Motia for nearby project affected areas.

Total **6729** patients including **2563** males, **2818** females & **1348** children have been served in this year.

Patients treated by Adani Operated MHCU- Core on April-March 2022					
SN	Month	Males	Females	Children	Total
1	April	192	64	33	289
2	May	80	19	10	109
3	June	73	23	6	102
4	July	114	83	48	245
5	August	207	171	109	487
6	September	242	262	122	626
7	October	253	263	142	658
8	November	240	261	128	629
9	December	334	452	214	1000
10	January	315	453	231	999
11	February	292	442	155	889
12	March	221	325	150	696
Gross Total		2563	2818	1348	6729

- ❖ **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 **14261** patients including **4434** males, **5110** females and **4717** children. Apart from sites visit, to cope up and mitigate the impact of COVID 19, Ambulance services was made available for COVID 19 cases at Godda district.

Patients treated by Helpage India MHCU on April-March 2022					
SN	Month	Males	Females	Children	Total
1	April	171	207	154	532
2	May	0	0	0	0
3	June	0	0	0	0
4	July	91	75	96	262
5	August	542	500	596	1638
6	September	473	563	617	1653
7	October	464	551	405	1420
8	November	566	449	557	1572
9	December	576	812	686	2074
10	January	533	649	591	1773
11	February	515	715	471	1701
12	March	503	589	544	1636
Gross Total		4434	5110	4717	14261

- ❖ **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 **16634** patients including **6156** males, **6814** females and **3664** children in 42 villages from 4 blocks namely, Mahagama, Boarigor, Pathargama and Thakurgangti were treated and disbursed free medicines. The camp was conducted adhering to COVID 19 safety protocols by medical team and the community.

Patients treated by Wockhardt Foundation (Godda) MHCU on April-March 2022					
SN	Month	Males	Females	Children	Total
1	April	318	333	231	882
2	May	0	0	0	0
3	June	59	61	54	174
4	July	556	475	356	1387
5	August	677	699	352	1728
6	September	815	1003	496	2314
7	October	593	758	384	1735
8	November	605	602	245	1452
9	December	627	741	343	1711
10	January	680	711	409	1800
11	February	706	721	344	1771
12	March	520	710	450	1680
Gross Total		6156	6814	3664	16634

- ❖ **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 **8089** patients including **2883** males, **3744** females and **1462** children were treated till March'22 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 2022					
SN	Month	Males	Females	Children	Total
1	April	167	214	125	506
2	May	0	0	0	0
3	June	0	0	0	0
4	July	167	169	78	414
5	August	426	570	249	1245
6	September	123	150	48	321
7	October	0	0	0	0

8	November	398	435	190	1023
9	December	570	742	253	1565
10	January	354	417	164	935
11	February	402	742	219	1363
12	March	276	305	136	717
Gross Total		2883	3744	1462	8089

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- 10680, No. of Positive-233, No. of Negative- 10447**

COVID Sample Collection (April 2021- March 2022)				
SN	Month	Total Sample Collected	No. of Positive	No. of Negative
1	April	239	18	221
2	May	837	35	802
3	June	1346	30	1316
4	July	207	0	207
5	August	111	0	111
6	September	272	0	272
7	October	1314	2	1312
8	November	1656	0	1656
9	December	1364	0	1364
10	January	1293	92	1201
11	February	1056	42	1014
12	March	985	14	971
Total		10680	233	10447

3. Vaccination Drive at Primary Health Center (PHC), Motia has been initiated by CSR Medical team supported by District Administration to protect and shield the individuals dwelling in project affected villages through Vaccination cum Awareness Program. Vaccination dose is being given as per the availability of Vaccine- **COVISHIELD and COVAXIN.**

Total Vaccinated **4684 people** of the age group between 18-44 years and above 45 years of age of the intervention villages from June 2021 to December 2021.

VACCINATION DRIVE (June 2021- December 2021)		
SN	Month	No. of Vaccinated (18-44 and 45+ years of age)
1	June	740
2	July	1052
3	August	775
4	September	708
5	October	621
6	November	470
7	December	318
	Total	4684

4.Specialized Medical Camps: In this Financial Year (21-22), Adani Foundation endeavored to cater health needs in a specific health issue of the masses amidst Epidemic outbreak by adhering to safety protocols. Adani Foundation has organized **48 Specialized Health Camps in several specializations namely, Ophthalmic, Paediatrics, Gynec, Cardio, Osteo, HB & Thyroid screening, and General Physician** and delivered services in 20 villages of core, railway line and pipeline villages of Godda district. Total **2457 patients** were screened and treated and provided with free medicines including **829 males, 1457 females and 171 children**. 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								
SN	Block	Village	Date	Specialization	Patients treated			
					Male	Female	Children	Total
1	Godda	Motia	18.08.2021	Eye Camp	70	81	3	154
2	Poreyahat	Sondiha	19.08.2021	Eye Camp	65	34	13	112
3	Poreyahat	Basantpur	20.08.2021	Eye Camp	87	61	6	154
4	Godda	Kauribihar	21.08.2021	Eye Camp	63	67	1	131
5	Godda, Poreyahat	Nayabad & Gumma	08.09.2021	Eye Camp	55	64	5	124
6	Poreyahat	Belbarna & Gumma Santhali	09.09.2021	Eye Camp	40	35	4	79
7	Poreyahat	Baksara	10.09.2021	Eye Camp	55	74	4	133

8	Thakurgangti	Samda	14.09.2021	Eye Camp	76	94	3	173
9	Mahagama	Maniyamore	15.09.2021	Eye Camp	67	90	37	194
10	Mahagama	Jiyajori	16.09.2021	Eye Camp	48	42	13	103
11	Podaiyahat	Baksara	6.10.2021	General Health Camp	42	46	21	109
12	Godda	PHC, Motia	21-Nov	General Health Camp	23	23	6	52
13	Godda	ASDC, Godda	7-Dec-21	General Health Camp	28	26	0	54
14	Godda	ASDC, Godda	20-Dec-21	General Health Camp	13	14	0	27
15	Godda	Health & Wellness Centre, Motia	3/2/2022	Cardio	4	2	0	6
16	Godda		17/2/2022	Cardio	4	8	0	12
17	Godda		9/2/2022	Pediatrician	0	0	16	16
18	Godda		23/2/2022	Pediatrician	0	0	12	12
19	Godda		4/2/2022	Gynec	0	16	0	16
20	Godda		18/2/2022	Gynec	0	7	0	7
21	Godda		12/2/2022	Osteo	3	5	1	9
22	Godda		26/2/2022	Osteo	22	13	2	37
23	Godda	Dumaria	12/3/2022	HB & Thyroid screening camp	0	49	0	49
24	Godda	Motia	12/3/2022	HB & Thyroid screening camp	0	39	0	39
25	Godda	Nayabad	13/3/2022	HB & Thyroid screening camp	0	13	0	13
26	Godda	Gangta	13/3/2022	HB & Thyroid screening camp	0	19	0	19
27	Godda	Patwa	13/3/2022	HB & Thyroid screening camp	0	35	0	35
28	Godda	Kauribahiyar	14/3/2022	HB & Thyroid screening camp	0	45	0	45
29	Godda	Gumma	15/3/2022	HB & Thyroid screening camp	0	60	0	60
30	Podaiyahat	Baliakitta	16/3/2022	HB & Thyroid screening camp	0	34	0	34
31	Podaiyahat	Sondiha	21/3/2022	HB & Thyroid screening camp	0	17	0	17
32	Podaiyahat	Rangania	21/3/2022	HB & Thyroid screening camp	0	23	0	23
33	Podaiyahat	Baksara	22/3/2022	HB & Thyroid screening camp	0	37	0	37
34	Podaiyahat	Petbi	23/3/2022	HB & Thyroid screening camp	0	21	0	21
35	Podaiyahat	Basantpur	23/3/2022	HB & Thyroid screening camp	0	82	0	82
36	Godda	Ramnagar	24/3/2022	HB & Thyroid screening camp	0	28	0	28

37	Podaiyahat	Gumma	25/3/2022	HB & Thyroid screening camp	0	23	0	23
38	Godda	Health & Wellness Centre, Motia	3/3/2022	Cardio	12	15	0	27
39	Godda	Health & Wellness Centre, Motia	24/3/2022	Cardio	2	4	0	6
40	Godda	Health & Wellness Centre, Motia	4/3/2022	Gynec	0	17	0	17
41	Godda	Health & Wellness Centre, Motia	29/3/2022	Gynec	0	13	0	13
42	Godda	Health & Wellness Centre, Motia	5/3/2022	Ophthalmology	10	17	0	27
43	Godda	Health & Wellness Centre, Motia	29/3/2022	Ophthalmology	9	25	0	34
44	Godda	Kauribahiyar	31/3/2022	Ophthalmology	16	25	1	42
45	Godda	Health & Wellness Centre, Motia	9/3/2022	Pediatric	0	0	14	14
46	Godda	Health & Wellness Centre, Motia	30/3/2022	Pediatric	0	0	7	7
47	Godda	Health & Wellness Centre, Motia	12/3/2022	Osteo	13	8	2	23
48	Godda	Health & Wellness Centre, Motia	26/3/2022	Osteo	2	6	0	8
Total					829	1457	171	2457

5.Support of Supplementary Food to Malnutrition Treatment

Centre (MTC): Adani Foundation has worked for the cause of improving the status of malnutrition under the India's flagship programme of National Nutrition Mission (POSHAN Abhiyan) by facilitating with adequate Micronutrient-Fortified Foods or Super Food in Malnutrition Treatment Centre (MTC) at Sunderpahari & Boarijore. As per **survey analysis (October-December 2020) by National Health Mission, Jharkhand**, the MTC Centre at Sunderpahari and Boarijore situated in

Godda district of Jharkhand is operational contributing **57%** and **67%** in recovery of SAM children into healthy state.

The challenges faced by the rural tribes due to financial inabilities to sustain their livelihood with food and nutritional security and several other factors leads to malnutrition especially among the children and anaemia among the women. The noble motive of this intervention emphasises to protect and save the lives of the malnourished children by providing supplementary nutritional care to the mothers and achieving the objectives of **Anemia Mukh Bharat Programme**. The Essential supplementary food was supported to MTC includes Chickpeas (Chana), Flattened rice (Chura), Sattu, Jaggery and Puffed Rice for nutritional care of **480 mothers of malnourished children** admitted for 15 days' duration. On an average, **300 Supplementary food packets are provided for mothers per month per MTC (15 days* 10 beds* 2 cycle per month)**.

6. Support of Growth Monitoring Device for Anganwadi Centres

(AWCs): Adani Foundation with consistent endeavor for the cause of combating malnutrition and aligning the vision of making Anemia Mukh Bharat, the Women & Child Development department of Godda, has been supported with **201 Growth Monitoring Devices** fostering improved & effective monitoring mechanism for infants, children (0-6), adolescents and nursing mothers.

On **25th August 2021, Deputy Development Commissioner (DDC), Godda** was handed over the Growth Monitoring Devices with an objective to channelize one Anganwadi in each panchayat (total 201 panchayats) of Godda district under Model Anganwadi Programme. The devices including, i. Infantometer, ii. Stadiometer, iii. Baby Weight Machine, iv. Baby Hanging/Suspension Weighing Scales with Weighing Trouser for Baby, and v. Body Weight Machine (Mother) will be instrumental in screening and combating the malnutrition enabling 100% Malnutrition Free villages of Godda, one of the aspirational districts of Jharkhand.

7. Relief Program against Pandemic COVID 19: COVID Relief & Mitigation

program was continued by Adani Foundation to cope up with second wave of COVID 19 and to ensure safety and protection of every individual and community from Pandemic. Adani Foundation, District Administration & Municipal Corporation of Godda & Dumka district worked jointly to fight battle against infection of COVID 19 through several interventions:

1. Support of Essential Commodities & Food Packets to COVID Affected Population:

Adani supported more than 2500 migrant laborers and poorer of

core & pipeline villages of Godda district by responding to the subsistence needs & delivered essential commodities & food packets for their families amidst COVID 19.

2. Equipment Support for COVID Care Center (CCC)/ Health Institution:

Adani has undertaken to support the District Administration and Health Department of Godda and Dumka district to protect and safeguard the citizens and community.

- i. Support of Oxygen Cylinder:** 500 Oxygen Cylinder delivered to District Administration of Godda and Dumka district (250 O.C. each).
- ii. Support of Oximeter:** 900 Oximeter delivered to District Administration of Godda district.
- iii. Ventilators Support for Health Institution:** Adani has handed over 20 Ventilators on 27th June 2021 for Dumka Hospital amidst the second wave of Covid 19 Pandemic, crucial for declining the incidence of fatalities.

3. Support to Hospitals- Oxygen Piping Connection:

Adani has undertaken to support the District Administration and Health Department to protect and safeguard the citizens and community through Oxygen piping work during the second wave of Covid 19. Oxygen piping work will mitigate the crisis of Oxygen which is one of the latest COVID bottleneck at this juncture. More than 500 Oxygen Beds has been set up and made operational through oxygen piping connection work in eight hospitals located in Godda, Sahebganj, Pakur and Dumka district of Jharkhand state.

SN	Location	No. Of Bed Connecting
1	Sadar Hospital, Godda	146
2	Dakaita (Mahagama) Hospital	8
3	Thakurgangti CHC	16
4	Mehrama CHC	20
5	Sahebganj Hospital	50
6	RINCHI Trust Hospital Littipara, Pakur	72
7	Dumka	200
8	Poreyahat Hospital	50
Total		562

4. Oxygen Plant Installation at Dumka: Adani has continued amidst COVID-19 outbreak to fight together with District Administration of Godda and Dumka

to Protect and Safeguard the citizens and community in spatial against new variant of Covid-19 through initiatives such as:

- i. **Installation of Oxygen Plant with 50 ICU Beds** at Dumka Medical College Hospital.
- ii. The Hospital administration were supported with **several medical instruments in tune of Rs. 4 crores.**

Review by District Administration, Dumka

The progress of work was minutely inspected by **Honorable Deputy Commissioner (DC), Dumka, Smt. Rajeshwari B** on **16th June 2021** along with team of Adani Power (Jharkhand) Limited & Adani Foundation. The intervention will aid in saving the lives and bridge the gap of oxygen deficiency due to financial inabilities of poorer and delay in implementation at District level during second and the upcoming third wave.

5. Capacity Building & Orientation- Oxygen Plant Orientation- Training at Dumka Hospital: On 21st September 2021, Oxygen Plant Orientation- Training was facilitated to the Management & Medical staffs of Dumka Hospital facilitated by team of Electrical, Fire & Safety department from Godda site. The session provided the staffs an in-depth information & practical knowledge through the demonstration of operating oxygen plant in the period of crisis and emergency. Dos and don'ts of operating and handling the system was also briefed to the medical team of Dumka Hospital.

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 TPP core villages including Motia, Patwa, Dumaria, Gangta, Nayabad, Baliakitta, Rangania, Baksara, Basantpur, Sondiha, etc. Generation and issuance of Health cards to the residents of core villages 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. 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. During the year 21-22, more than **3200 families** have been benefited by providing with Health Cards.

Details of Health Card Distribution		
SN	Village	Households
1	Nayabad	63
2	Gangta	49
3	Patwa Samarua	100
4	Motia	910
5	Badi Baksara	509
6	Choti Baksara	203
7	Baliakitta	150
8	Rangania	33
9	Sondiha	290
10	Dumaria	430
11	Basantpur	400
12	Petwi	130
Total		3267

10. Satisfaction Survey of Mobile Health Care Unit (MHCU):

'Satisfaction Survey' of Mobile Health Care Unit (MHCU) intervention of Community Health Programme (CHP) was carried out in core and periphery villages to get feedback from regular patients and assess the impact created in their lives. It is conducted on monthly basis and based on their feedbacks collected, it will be emphasized to upgrade and improve the efficacy of health care services enabling more accessible health care services and inclusion of all social groups of rural Godda & Sahebganj district of Jharkhand. **135 patients' feedback** was collected from core & periphery villages in this year.

11. Solar Street Light Installation at Pipeline area, Sahebganj:

Under Village Infrastructure Development programme, 15 solar streetlights were installed in 12 remotest villages and roadside point in three blocks namely, Borio, Mandro, and Sahebganj of Sahebganj district, benefitting more than **10,000 rural population**. Solar Street light serves throughout lifetime for community and

their upcoming generation. It lightens up the villages and assist the poorer households to commute from one place to another with safety. Health and Life of each individual are also, safeguarded and less incidence of road accidents and other turbulence in the region. The children, women and elders will be benefitted serving largely to the community.

SN	Location	Block	Unit	Population	Duration
1	Shivmandir Jirwawadi	Borio	1	3000	June'21
2	Jirwawadi O. P.	Borio	1	500	June'21
3	Musaffil Police Station	Sahebganj	2	700	June'21
4	Chota Tetariya Ashram	Borio	1	1000	June'21
5	Teliagadhi Majar	Mandro	1	800	June'21
6	Maa Khasi Sthan (Gadhi)	Mandro	1	2000	June'21
7	Mukh Badhir School	Sahebganj	1	150	June'21
8	Lalatok Karmabi (Pahad)	Mandro	3	130	June'21
9	Ranger Office (Nursery)	Sahebganj	1	80	June'21
10	DFO Office Nursery	Borio	1	90	July'21
11	Lohanda Bedi	Borio	1	750	July'21
12	Bada Lohanda	Borio	1	1200	July'21
Total			15	10400	

Health Awareness Programmes

12. 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 five years of implementation period, Suposhan project has reached out to over 9000 direct beneficiaries. During the year, anthropometry measurement of 2755 children of 0 to 5 years was done, out of which 2341 children (85%) are healthy while, 9 children has shifted from SAM to MAM, 56 children has shifted from MAM to Healthy and 8 children has shifted from SAM 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 Programmes

- ❖ **Telephonic Follow up & Counselling:** Due to epidemic, telephonic mode has been started to counsel the target groups including Children, Adolescent Girls, Pregnant Women on topic such as Anaemia, Nutrition & Hand wash; Immunisation, Importance of MCP Card, etc.

- ❖ **Follow-up of Sanginis:** - Sanginis were taught through telephonic communication for creating awareness on management of COVID 19 situation and family counseling of target groups. Also, counselled on dietary requirements for the adolescent's health and improve the anaemic ratio during using the home base available product like Sprouted seeds, Moringo leaf, using Pulses and other iron reached vegetables.

- ❖ **Importance of Hand wash and Social Distancing:** - Sanginis took a lead to guide their community on various measures to fight and tackle with Covid 19, manage social distancing, local measures to boost immunity system, and made aware about hand wash practice through demonstration.

- ❖ **E- Learning Course:** - Due to lock down effect of Covid pandemic Suposhan team along with Sangini did E-Learning Courses for time utilization and knowledge purpose.

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 Environment Day	Village level	5 th June 2021	100
2	World Breastfeeding Week	Village level	1 st Aug'21-7 th August'21	90
3	National Nutrition Month	Village level	1 st -30 th September 2021	120
4	Global Hand washing Day cum Health Awareness Program	Village level	8 th & 15 th October 2021	250
5	World Food Day	Village level	16 th October 2021	150
6	Celebration of Newborn Care Week	Village level	22 nd November'21 to 28 th November'21	70
Total				780

**Conducted with precautions and safety face masks and sanitizer*

13. Dustbin Distribution- Swachhata Abhiyan: Inculcating Culture of Cleanliness and Sanitation, Swachhata Abhiyan was conducted in villages of TPP core area on 21st September 2021. With an objective to make Universal, affordable, and sustainable access to WASH which is a key public health issue and is the focus of the first two targets of *Sustainable Development Goal 6 (SDG 6) - Clean Water & Sanitation*. The School Headmasters took lead to use dustbins provided by Adani Foundation in their schools and guided the students about the core elements of WASH (water, sanitation, and hygiene). Six schools of core villages were provided with seven dustbins under Swachhata Abhiyan.

SN	Village	School	Units
1	Motia	MS Motia	1
2	Motia	HS Motia	1
3	Dumaria	MS Dumaria	1
4	Patwa	UMS Patwa	1
5	Sondiha	UHS Sondiha	2
6	Baksara	Plus 2 Baksara	1
Total			7

14. Cleanliness Drive on Social Occasion: On the occasion of Chhath festival, cleanliness activity was done in the puja site and surrounding areas including Road, Drainage, Streets and Ghats in villages namely, Dumaria, Motia, Godda, Purvedih, Baksara, Sondiha, Parasi, Birnia, Patwa, etc. Large number of devotees participate in the festival and chants mantras and prayers at Ghat for the well-being of their family and society. The places of rituals are cleaned, and culture of cleanliness is instilled among the community to enable the devotees to perform puja without any hindrances, also, promoting cleanliness of environment and making space for the natural creatures to survive.

15. 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 has been a major reason of poor health condition. 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 the households and enhances the standard of living through improved health and well-being of each individual in the family.

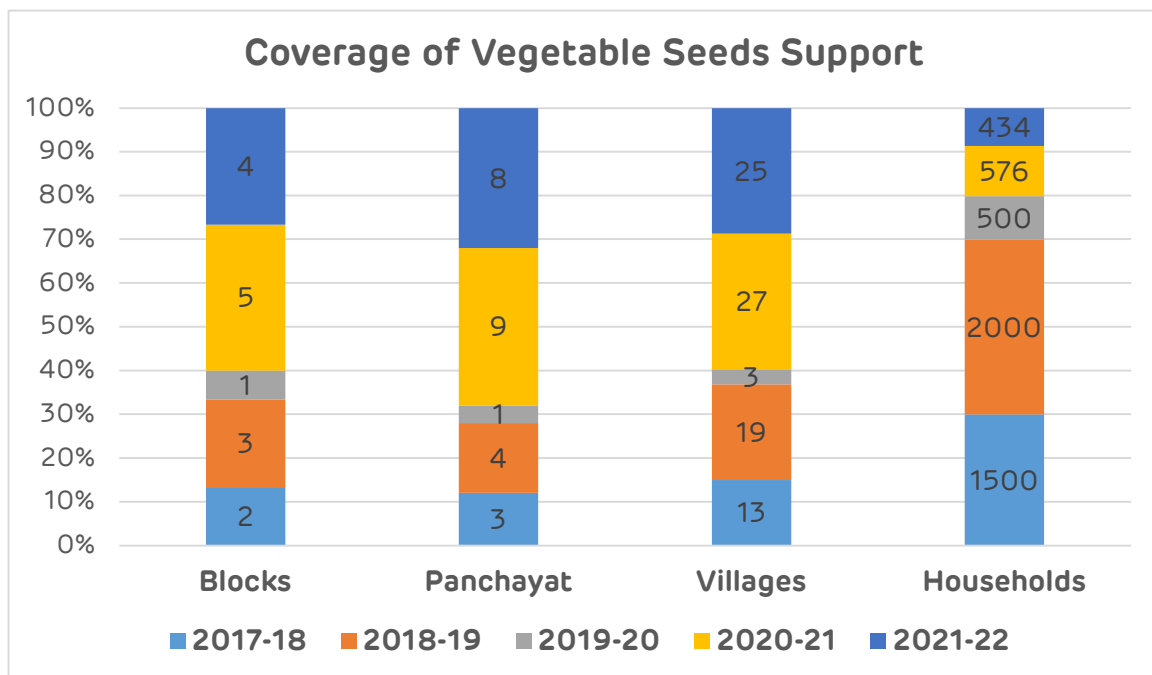
Methodology

- **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, 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:** Adani Foundation has been consistently supporting to poorer and deprived families since 2017-18 which has benefitted to more than **5000 families** in **27 villages** of core, railway line, pipeline and Jitpur mines area in **nine-gram panchayats** and **five blocks** of Godda & Sahebganj district to meet the nutritional requirement of women and children as well as the entire family through inclusion of green nutritious vegetables in their daily diet.

Input Support of Vegetable seeds				
Year	Blocks	Panchayat	Villages	Households
2017-18	2	3	13	1500
2018-19	3	4	19	2000
2019-20	1	1	3	500
2020-21	5	9	27	576
2021-22	4	8	25	434
Total	5	9	27	5010



- Support of Vegetables Seeds:** Set of **506 seeds packets** including **nine varieties of green and leafy vegetables seeds** were provided during the year 21-22 consisting of micro and macro rich nutrients viz. iron, minerals, and vitamins such as spinach, amaranthus, fenugreek seeds, coriander, peas, radish, beetroot, carrot, tomato, etc. to **434 families** in **25 villages** enabling Nutrition Security and Health awareness in community. The objective was to promote establishment of nutrition garden in the homestead land or the backyard area to have access to vegetables for whole year with nutritional security for the needful poorer children, adolescents, and women.

- Demonstration Model of Poshan Vatika:** During 2018-19, Adani Poshan Vatika demonstration plot was developed at Basantpur village which was developed by self-initiative of beneficiary at another three village's viz. Rangania, Purvedih and Choti Buxara in presence of community leaders and villagers. It has led to improvement in health status of children, adolescent girls, and women along with rest family members. This initiative was much appreciated by community; however, a need was felt for demonstration and training of participants for correct placing and sowing of seed since some of the vegetable seeds like beetroot, carrot, etc. were planted for the first time by the beneficiaries. During this participant were explained about Ganga Maa model, its significance and utility and all measurements of Ganga Maa Model.
- Expansion of Ganga Maa Model (20-21 & 21-22):** Post successful intervention of Ganga Maa Model in the year 2018-19, the system was practiced in two consecutive years 2020-2021 & 2021-22, to increase the reach of benefits to more target rural dwellers in intervention villages. 39 Poshan Vatika model was established in the year 20-21 and **20 model** was setup by the households in the year 21-22 in **8 villages** of core & railway line area including traditional method, Ganga Maa model, and Multilayer farming at household level. It showed a positive response and good impact in the lives of project beneficiaries with significant enhancement of consumption pattern with an addition of number of healthy and nutritious foods in their meal.

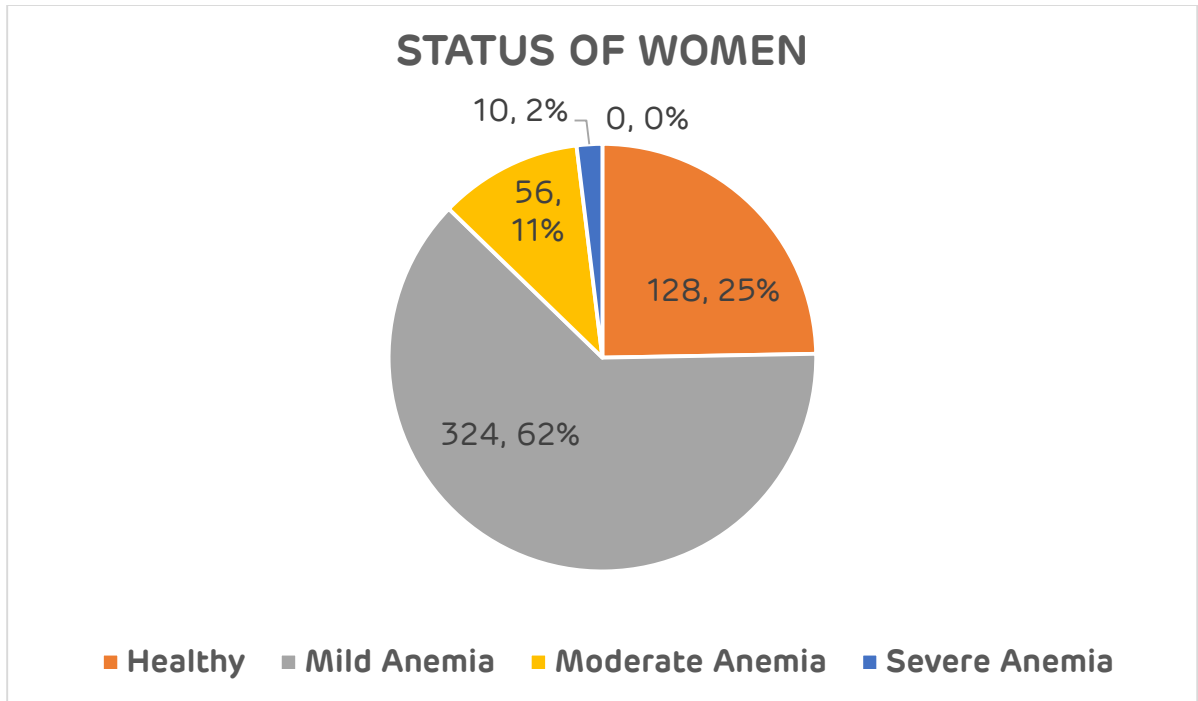
Poshan Vatika Demonstration Model				
Year	Blocks	Panchayat	Villages	Poshan Vatika (Unit)
2018-19	1	1	4	4
Phase I (Ganga Maa Model & Traditional Method)- Oct'20-Nov'20				
2020-21	3	6	14	31
Phase II (Machan System)- March'21				
2020-21	1	2	2	8
Ganga Maa Model & Traditional Method				
2021-22	2	4	8	20
Total	3	6	16	43

Output & Outcome of Poshan Vatika Programme

Over the past five years', the Poshan Vatika programme has impacted in the lives of **over 5000 families directly and 25,000 beneficiaries indirectly**. Under **Poshan Vatika**, we promoted it to propagate the concept of diet diversity, household availability of fresh vegetables and fruits such as papaya, banana, etc. round the year which contain vitamins and minerals; gave pride to women/ adolescent girls to manage the NGs and help the families to save the money which they would otherwise spend on purchasing vegetables and earned income from sale of vegetables after consumption. The earnings were utilized in doing livelihood activities and bearing expenses on education and health of children and other family members. KGs are developed on 900 to 1200 square feet piece of land adjacent to houses where the solid and liquid waste from kitchen and farm waste is used to made NADEP and Vermicomposting; water from nearby Hand pumps, wells, and Kitchen waste is used to water the plants and grow vegetables, which is the base of sustainability of Nutrition Garden, and this is a very low cost model for self-consumption only for the poorest of the households.

It also brought changes with respect to availability and access to green and leafy vegetables (chemical free), increased dietary diversity, improved daily food intake, availability of micronutrients in the meals and decline in diseases and health complications, especially of women and adolescents with improved hemoglobin level, energy built, healthy body of mother and child and their active roles and participation in every sphere of life such as school, workplace, and home. They have become empowered and self-sustained to amplify their lifestyles and reduced dependencies on market for getting vegetables.

16. Anemia Detection cum Hemoglobin Screening Camp: Anemia Detection cum Hemoglobin Screening Camp was organized for adolescents and women at village level in 14 core, and railway line villages. Total **518 adolescents & women** were screened during the camp supported by Medical and Adani Foundation team. The result of anemia screening comprised of as follows, 10 adolescents & women falls under range of severe anemia, 56 adolescents & women under moderate anemia, 324 adolescents & women under mild anemia range and 128 women are healthy.



*Severe anemia- 6.5-<8 g/dL
 Moderate anemia- 8-<10 g/dL
 Mild anemia- 10-<12 g/dL
 Healthy- 12 & above g/dL

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.
- ❖ **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.

Seasonal Assistance

- ❖ **Assistance to tribal in Sohraye festival:** Lungi-Panchi are traditional costume of tribal for festivities. AF distributed T-Shirts, Lungi & Panchi on the occasion of Sohrai festival to over 320 tribal men & women in four tribal villages of core and pipeline area namely Petwi Santhali, Nayabad, Gangta and Boarijore of Godda, Poreyahat and Boarijore block of Godda district
- ❖ **Aids & Assistive Devices- Tricycle for Disabled Child:** Under Welfare Support, Adani supported with Tricycle to PWD child, Mr. Babulal Hembrom from Ranidih village of Boarijor Block on October 2021.
- ❖ **Support for drinking water facility:** AF supported with drinking water facility in Intermediate College, Mahagama (1 RO Water Purifier of 20 LPH) and Community Health Centre (CHC), Mahagama (1 RO Water Purifier of 100 LPH). It will serve to over 1100 students, college staffs and hospital patients, with availability of clean & safe drinking water facility. It will also facilitate in improving the quality of education and delivery of health services in a better manner with better health and hygiene.
- ❖ **Cloths Donation Drive- Joy of Giving Week:** Adani Ports & Logistics with support of Adani Foundation had initiated Joy of Giving Week to bring smile in face of unprivileged groups of society by undertaking Cloths Donation Drive on 3rd August 2021 in the most deprived and backwards villages of TPP area. **62 tribals** of Nayabad village were benefitted with cloths including Pant, T-Shirt, Jeans, and Jacket.
- ❖ **Relief Materials Support to Affected Families from Natural Hazards:** Under Welfare Support, Relief Materials are distributed to support families affected from natural hazards or manmade calamities for the safety of their health and lives. The distribution of these materials has helped us to build positive image of Adani amongst people of Godda as well as strengthen our ties with key stakeholders during Pandemic.

Adani has reached to more than 373 families impacting the lives of over 1800 poorer and tribal populations of Godda & Sahebganj district, affected from natural and man-made calamities, were supported with tarpaulin sheets to provide immediate relief from adversities. Similarly, Adani supported over 4300 families benefiting over 21,000 population directly in seven blocks of Godda & Sahebganj

district with blankets to provide relief and cope up with cold winter under 'Poorer Welfare & Relief Program'. During the year 2021-22, Adani distributed various materials and reach out to more than **4800 families and 24,000 direct beneficiaries** of **58 villages** of Godda & Sahebganj district.

Seasonal Assistance to Community						
SN	Project Area	Distribution duration	Name of block	Location/Village	No of HHs/families	No. of Beneficiaries
Material Support to Community: Tarpaulin (Affected Families from Natural Hazards)						
1	Railway line area	July'21	Godda	Kauribahiyar	30	150
2	Core Area		Godda	Motia	4	20
3	Pipeline area- Godda	September'21	Pathargama	Pathargama	2	10
4	Core Area		Godda	Motia	7	35
5	Core Area	October'21	Godda	Dumaria	3	15
6	Core Area		Godda	Motia	6	30
7	Core Area		Godda	Godda	4	20
8	Core Area		Podaiyahat	Petbi	2	10
9	Core Area		Godda	Motia	1	5
10	Pipeline area- Sahebganj	November'21	Sahebganj	Sahebganj	199	995
11	Core Area	December'21	Godda	Motia	2	10
12	Core Area		Godda	Patwa	2	10
13	Pipeline area- Godda		Pathargama	Harkatta	1	5
14	Pipeline area- Godda		Mahagama	Mahagama	2	10
15	Pipeline area- Sahebganj		Sahebganj	Sahebganj	69	345
16	Core Area	February'22	Godda	Motia	1	5
17	Core Area		Godda	Patwa (Laiya tola)	2	10
18	Core Area		Podaiyahat	Baksara	3	15
19	Core Area		Godda	Motia	2	10
20	Core Area		Podaiyahat	Petbi	1	5
21	Pipeline area- Sahebganj		Borio	Chhota tetariya	2	10
22	Pipeline area- Sahebganj		Borio	Jirvavari	1	5
23	Pipeline area- Sahebganj		Mandro	Banskola	2	10
24	Pipeline area- Sahebganj		Mandro	Karamtola	2	10
25	Pipeline area- Sahebganj		Mandro	Ambadiha	3	15
26	Pipeline area- Sahebganj		Mandro	Bhawani chouki	2	10
27	Pipeline area- Sahebganj		Mandro	Dayalpur	4	20
28	Pipeline area- Sahebganj		Mandro	Bhagaiya	1	5
29	Pipeline area- Sahebganj		Mandro	Karla	2	10
30	Pipeline area- Sahebganj		Mandro	Kohbara	1	5
31	Pipeline area- Sahebganj		Mandro	Korikhutana	1	5
32	Pipeline area- Sahebganj		Mandro	Hathmari	2	10
33	Pipeline area- Sahebganj		Mandro	Pindra	1	5
34	Pipeline area- Sahebganj		Mandro	Mathadih	2	10
35	Pipeline area- Sahebganj		Mandro	Khaerbani	3	15
36	Pipeline area- Sahebganj	Mandro	Brindavan	1	5	
Total (a)					373	1865

Material Support to Community: Blanket Distribution						
1	Pipeline area- Godda	November'21	Mahagama	Kenchua Mal Chit	20	100
2	Pipeline area- Godda		Mahagama	Jiyajori	20	100
3	Pipeline area- Godda		Mahagama	Daikaita	6	30
4	Jitpur mines area	December' 21	Sunderpahari	St. Mary's Residential school, Sunderpahari	75	375
5	Pipeline area- Godda		Mahagama	Amdiha	2	10
6	Pipeline area- Godda		Mahagama	Kaithiya	2	10
7	Pipeline area- Godda		Mahagama	Gudiya	10	50
8	Pipeline area- Godda		Mahagama	Karnu	6	30
9	Pipeline area- Godda		Mahagama	Dharmodih	7	35
10	Pipeline area- Godda		Boarijor	Jhirla	10	50
11	Pipeline area- Godda		Boarijor	Dhankunda	4	20
12	Pipeline area- Godda		Boarijor	Dhamni	2	10
13	Pipeline area- Godda		Boarijor	Ranidih	2	10
14	Pipeline area- Sahebganj		Sahebganj	Sahebganj	200	1000
15	Pipeline area- Godda		Podaiyahat	Mount Assisi School, Podaiyahat	100	500
16	Pipeline area- Godda		Podaiyahat	Sondiha	150	750
17	Pipeline area- Sahebganj		Sahebganj	Sahebganj	1504	7520
18	Pipeline area- Sahebganj	January'22	Borio	Chhota Lohanda	16	80
19	Pipeline area- Sahebganj		Borio	Bara Lohanda	9	45
20	Core Area		Godda	Pathargama	400	2000
21	Core Area		Podaiyahat	Baksara	300	1500
22	Core Area		Godda	Motia	14	70
23	Jitpur mines area		Sunderpahari	Sunderpahari	50	250
24	Core Area		Podaiyahat	Podaiyahat	500	2500
25	Core Area		Godda	Kauribahiyar	50	250
26	Pipeline area- Godda		Pathargama	Pathargama	50	250
27	Pipeline area- Godda		Pathargama	Pathargama	15	75
28	Pipeline area- Godda		Podaiyahat	Podaiyahat	50	250
29	Core Area		Godda	Godda	350	1750
30	Pipeline area- Godda		Mahagama	Mahagama	100	500
31	Core Area		Godda	Korka	22	110
32	Core Area	Godda	Malhara	55	275	
33	Core Area	Godda	Nayabad	90	450	
34	Core Area	Godda	Gangta	110	550	
35	Core Area	Godda	Godda	20	100	
36	Pipeline area- Sahebganj	Borio	Nirapara	3	15	
37	Pipeline area- Sahebganj	Borio	Satichouki pangro	4	20	
38	Pipeline area- Sahebganj	Borio	Chhota tetariya	1	5	
39	Pipeline area- Sahebganj	Borio	Baratoufir	1	5	
40	Pipeline area- Sahebganj	Borio	Bara pangro	5	25	
41	Pipeline area- Sahebganj	Borio	Bara Lohanda	1	5	
42	Pipeline area- Sahebganj	Sahibganj	Mahadev Ganj	8	40	

43	Pipeline area- Sahebganj		Mandro	Ambadiha	12	60
44	Pipeline area- Sahebganj		Mandro	Bara betona	2	10
45	Pipeline area- Sahebganj		Mandro	Bara solbandha	6	30
46	Pipeline area- Sahebganj		Mandro	Bhawani chouki	5	25
47	Pipeline area- Sahebganj		Mandro	Baskola	3	15
48	Pipeline area- Sahebganj		Mandro	Lahurbera	4	20
49	Pipeline area- Sahebganj		Mandro	Chunakheri	20	100
Total (b)					4396	21980
Relief Material Support to Fire affected Households						
1	Core Area	Mar'22	Godda	Amrakanoli	1	5
Total (c)					1	5
Total (a+b+c)					4770	23850

- ❖ **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 Sawan Mahotsav, Dusshera, Chhath, Harinam Sankirtan, Saraswati Puja, Kali Puja, Ganesh Chaturthi, Sohray festival, etc. was celebrated in the villages.

Welfare Support

- ❖ **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. **806** beneficiaries from 20 villages have been extended financial support to the tune of **Rs. 31, 21, 394/-**

SN	Support Cause	No. of beneficiaries	Supported Amount
1	Health Support	54	643419
2	Others Support	9	28000
3	Marriage Support	26	113000
4	Death Support	80	422000
5	Education Support	22	462200
6	Social Occasion Support	615	1452775
Total		806	31,21,394

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 **3884** candidates were trained and benefitted till Financial Year 2021-22.

Trainees Enrolled and Benefitted in Various Trades at ASDC						
S. N	Trade	Year 18-19	Year 19-20	Year 20-21	Year 21-22	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	
1	Fitter (2 year)	29	91	64	218	402
2	Welder	30	35	43	57	165
3	Ass. Electrician (2 year)	30	50	65	150	295
4	Hospitality	30	65	55	114	264
5	Digital Literacy	257	985	432	374	2048
6	G.D.A.	30	175	72	191	468
7	Bar Bending	30	80	25	107	242
Total		436	1481	756	1211	3884

- **Enrollment in New Batch in 2021-22:** In the year 2021-22, new training batch of Domain and Non-Domain Business trades was started amidst COVID 19 from June'21 onwards. Due to outbreak, online training classes at ASDC was initiated in eight Business Trades viz. Fitter, Bar-Bender, Asst. Elec., Welder, GDA, SMO, F&B, and Digital Literacy trade benefiting over **1636 candidates** under **Skilling India Program of National Skill India Corporation**. Out of **1636** trainees, 1151 of them have completed their trainings, duly assessed, and certified after completion and remaining 485 trainees are ongoing trainings. 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 will appear on examination to self-evaluate their performance followed by certification duly provided by NSDC.

ADMISSIONS APRIL '21 TILL MARCH' 22															
S r.	Mode of Training	Courses	Apr -21	May -21	Jun -21	Jul -21	Aug -21	Sep -21	Oct -21	Nov -21	Dec -21	Jan -22	Feb-22	Mar -22	Total
1	Online & Hybrid	Sewing Machine Operator	0	0	17	42	13	62	35	73	58	10	93	22	425
2	Online & Hybrid	Assistant Electrician	0	0	0	8	10	32	6	44	39	5	6	0	150
3	Online & Hybrid	Fitter Mechanical Assembly	0	0	14	15	25	76	20	33	30	5	0	0	218
4	Online & Hybrid	Food & Beverage Service-Steward	0	0	0	6	13	34	8	15	22	14	2	0	114
5	Online & Hybrid	General Duty Assistant	0	0	0	7	8	58	35	27	32	21	3	0	191
6	Online & Hybrid	Welding Technician	0	0	0	1	7	16	1	24	5	3	0	0	57
7	Online & Hybrid	Bar Bender & Steel Fixer	0	0	0	0	13	23	14	45	11	1	0	0	107
8	Online	Digital Literacy	0	0	0	23	58	218	11	26	14	5	5	14	374
Total			0	0	31	102	147	519	130	287	211	64	109	36	1636

▪ **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. Total **112 youths** in **Fitter (51)**, **Asst. Electrician (9)**, **F & B (18)**, **GDA (4)**, **Barbending (Farmin and Welder (5) 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.

Placement of Trainees at ASDC (April'21-March'22)						
S No	Trade	No of Trainees	Location	Company Name	Salary per Month	CTC (In lakhs)
1	Fitter	2	Ahmedabad	JBM	11000	1.32
2	Fitter	2	Godda	OM Engineering workshop	8000	0.96
3	Fitter	1	Godda	GBT (Gramin Bikash Trust)	7500	0.9
4	Fitter	1	Mundra	Adani Port & Special Economic zone (SEZ)	13200	1.58
5	F & B	5	Godda	Cogent E Service	10000	1.2
6	Fitter	3	Uttarakhand	Micro Turner	13000	1.56

7	Welder	2	Uttarakhand	Micro Turner	13000	1.56
8	F & B	5	Godda	Adani Power (Jh.) Ltd.	8000	0.96
9	F & B	1	Ahmedabad	Jay Bharat Maruti (JBM)	8000	0.96
10	Fitter	9	Ahmedabad	Jay Bharat Maruti (JBM)	14000	1.68
11	Asst. Electrician	3	Ahmedabad	JBM	13000	1.56
12	F & B	2	Godda	Tushtaya Inn	9000	1.08
13	Fitter	1	Godda	IPL, Adani Power (Jh.) Ltd.	14200	1.7
14	Fitter	1	Jamshedpur	Ram Krishna Forging (RKFL) Work	12000	1.44
15	Fitter	3	Godda	IPL (Incredible Project Logistic Limited), Adani Power (Jh.) Ltd	12400	1.49
16	F & B	2	Godda	Tushtaya Inn	10000	1.2
17	F & B	1	Dumka	Royal majestic Restaurant	6000	0.72
18	Fitter	1	Godda	IPL (Incredible Project Logistic Limited), Adani Power (Jh.) Ltd	12400	1.49
19	Fitter	1	Godda	Reliance Mart	8500	1.02
20	Fitter	1	Sahebganj	Capital Business System Limited (CBSL) Sahebganj, Jharkhand	12000	1.44
21	Fitter	1	Gujarat	JBM (Jay Bharat Maruti, Gujarat)	14500	1.74
22	Fitter	13	Ahmedabad	Jai Bharat Maruti (JBM)	14500	1.74
23	Welder	3	Ahmedabad	Jai Bharat Maruti (JBM)	14500	1.74
24	Asst. Electrician	6	Ahmedabad	Jai Bharat Maruti (JBM)	14500	1.74
25	Fitter	5	Dumka (Jharkhand)	Oxygen Plant Phoolo Jhano Medical College, Dumka	8000	0.96
26	GDA	1	Godda	Apollo Health Plus, Godda	6000	0.72
27	GDA	1	Godda	Eye Hospital Mahagama	6000	0.72
28	Fitter	4	Panipat, Haryana	Lars Medicare	12000	1.44
29	F & B	2	Hyderabad	Radiant Appliance & Electronics	12000	1.44
30	Fitter	1	Gurgaon, Haryana	K K die and tools	14000	1.68
31	Fitter	1	Godda	IPL, Adani Power (Jh.) Ltd.	12000	1.44
32	GDA	2	Godda	Apollo Health Plus, Godda	7000	0.84
33	Bar Bending	25	Godda	Ansari Erectors	9700	1.16
Total Trainees Placed---112						

2. 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 TPP core and railway line areas. During previous year, 2020-21, 88 farmers were encouraged to set up 111 vermicomposting units which resulted positive response by farmers for doing organic based farming and entrepreneurship. Therefore, in this financial year 21-22, it was envisaged to link more farmers in the revolution of organic farming and entrepreneurship to steer livelihood of farmers.

i. Village level training on Vermicomposting: Seven village level training (Theoretical & On-Field Demonstration) on Vermicomposting was conducted from 15th September'21 to 23rd October'21 in 7 core, railway line and pipeline villages of Godda & Sahebganj district namely Parasi, Motia, Dumaria, Kauribahiyar, Baksara, Govindpur, and Bada Pangro, disseminating information & in-depth knowledge to more than 300 landless, small & marginal farmers. The organic step emphasises on capacitating the farmers with technical knowledge of organic farming, its significance and importance on improving socio-economic and ecological conditions. The farmers are encouraged to become *Vermi-Entrepreneurs* to supplement their livelihood with increased monetary income on annual basis in a sustained manner.

Training Details on Vermicomposting				
SN	Date	Panchayat	Village	Farmers
1	15.09.21	Sondiha	Parasi	50
2	16.09.21	Motia	Motia	50
3	17.09.21	Dumaria	Dumaria	50
4	19.09.21	Pairidih	Kauribahiyar	30
5	23.09.21	Murlitok	Govindpur	50
6	23.09.21	Bada Taufir	Bada Pangro	50
7	23.10.21	Baksara	Baksara	30
Total				310

ii. Support of Vermibed & Setup of Vermicomposting Units: During the year 2021-22, **144 small & marginal farmers** were supported to install **165 Vermicompost units** including vermibeds, plastic sheets, earthworms, net, etc., along with conduction of training program and exposure visit on organic farming in 18 core, railway line and pipeline villages of Godda and Sahebganj district, for promotion of Vermicomposting and supplementing their livelihood through vermi-entrepreneurship. The farmers 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.

Vermicomposting (2021-22)				
SN	Block	Location/Village	Farmers	Unit
1	Podaiyahat	Amrakanoli	11	11
2	Podaiyahat	Badi Baksara	2	2
3	Podaiyahat	Baliakitta	6	6
4	Podaiyahat	Chotibaksara	7	7
5	Podaiyahat	Devinagar	3	3
6	Godda	Dumaria	23	30
7	Godda	Gangta	4	4
8	Godda	Kauribahiyar	10	10
9	Mahagama	Karnu	10	10
10	Mahagama	Mahagama	10	10
11	Godda	Motia	15	22
12	Podaiyahat	Muchehra	2	2
13	Godda	Nayabad	5	5
14	Podaiyahat	Parasi	11	11
15	Godda	Rampur	4	6
16	Podaiyahat	Rangania	9	10
17	Borio	Chota Tetariya	6	6
18	Borio	Bada Pangdo	4	4
19	Podaiyahat	Podaiyahat	1	5
20	Podaiyahat	Purvedih	1	1
Total			144	165

3. Plantation on World Environment Day: World Environment Day was celebrated on 5th June'21 in plant premises and near Primary Health Centre, Motia among the community to protect the environment and preserve the Mother Earth. Adani Foundation and Medical team encouraged the community to promote afforestation to preserve our Planet, Earth. Saplings of five Ashok and Neem tree was planted by the team members and the community near Primary Health Centre, Motia.

Plantation of trees enables the human being to survive in a toxic and pollution free environment with inhalation of fresh and pure air and a gift to our 'Mother Earth'.

On an average, one tree produces nearly 260 pounds of oxygen each year. Plantation of a tree acts as a detoxification agent and heals and cures many diseases and infection.

4. 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. 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 supplement their livelihood and 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.

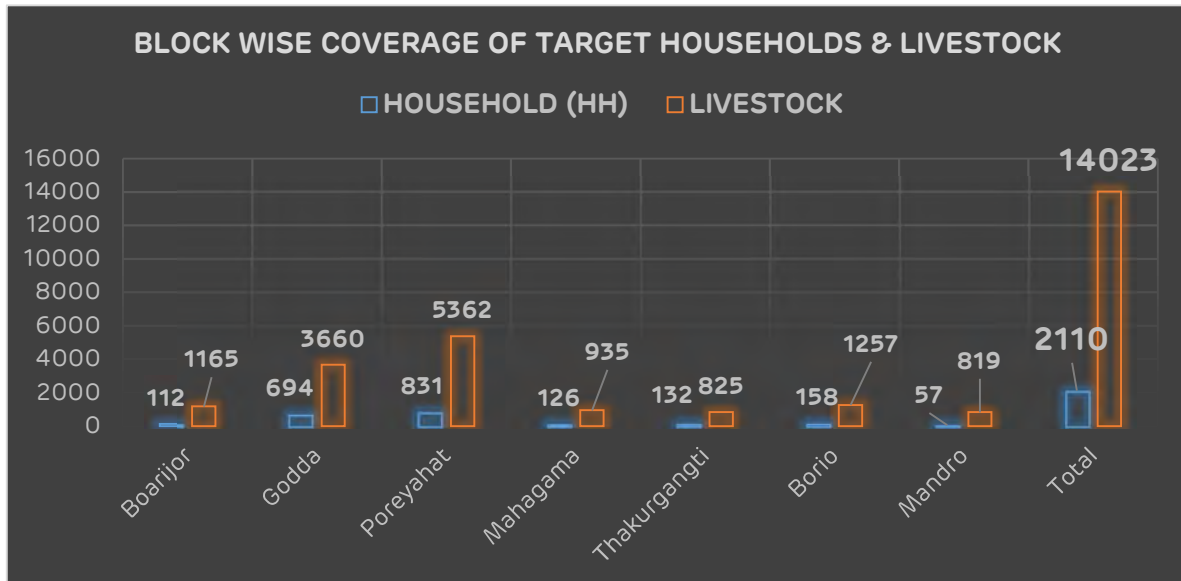
5. Veterinary Health Camp in Godda & Sahebganj

Specialized Medical Camp for Livestock was organized in the intervention villages including core, periphery, railway line and pipeline areas with an objective to treat and cure the diseases occurring in the cattle's and livestock to prevent them from fatalities and strengthen the financial status of poor and needful households during the outbreak. Adani Foundation in association with Animal Husbandry Department, Godda had organized **Specialized Health Camp for Livestocks** from **4th Oct. 2021 to 28th Nov. 2021** with mutual guidance and needful support of Dr. Pravin Kumar-District Animal Husbandry Officer (DHO).

DAY WISE VETERINARY HEALTH CAMP					
S N	DATE	BLOCK	VILLAGE	HOUSEHOLD (HH)	LIVESTOCK
1	04.10.2021	Godda	Kauribahiyaar	92	317
2	04.10.2021	Godda	Motiya	108	489
3	05.10.2021	Godda	Kauribahiyaar	103	472
4	05.10.2021	Godda	Motiya	101	513
5	06.10.2021	Poreyahat	Petwi	79	940
6	06.10.2021	Poreyahat	Petwi Santhali	52	261
7	07.10.2021	Godda	Nayabad	35	367
8	07.10.2021	Poreyahat	Belbarna	28	233
9	07.10.2021	Godda	Patwa	47	218
10	08.10.2021	Poreyahat	Gumma	56	639
11	08.10.2021	Poreyahat	Gumma Santhali	60	311
12	09.10.2021	Godda	Dumariya	74	638
13	09.10.2021	Poreyahat	Gangta Santhali	41	226
14	10.10.2021	Godda	Dumariya	70	410
15	10.10.2021	Godda	Mal Kauribahiyaar	64	236
16	19.10.2021	Mahagama	Karnu	67	364
17	19.10.2021	Mahagama	Maniyamore	59	571
18	20.10.2021	Thakur Gangti	Dhankol	64	426
19	20.10.2021	Thakur Gangti	Baghakol	68	399
20	21.10.2021	Boarizor	Dhankunda	56	521
21	21.10.2021	Boarizor	Dhamni	56	644
22	23.10.2021	Poreyahat	Sondiha	67	233
23	27.10.2021	Poreyahat	Sondiha	95	637
24	23.10.021	Borio	Satichuki khutahari	43	248
25	25.10.021	Borio	Nirapara	18	159
26	26.10.021	Borio	Chhota lohanda	21	164
27	27.10.021	Mandro	Barabetona	26	432
28	28.10.021	Mandro	Ambadiha	31	387
29	19.11.021	Borio	Chhota tetariya	33	198
30	20.11.021	Borio	Barapangro	43	488
31	27.11.2021	Poreyahat	Basantpur	106	502
32	27.11.2021	Poreyahat	Baksara	91	474
33	28.11.2021	Poreyahat	Basantpur	86	506
34	28.11.2021	Poreyahat	Baksara	70	400
Total				2110	14023

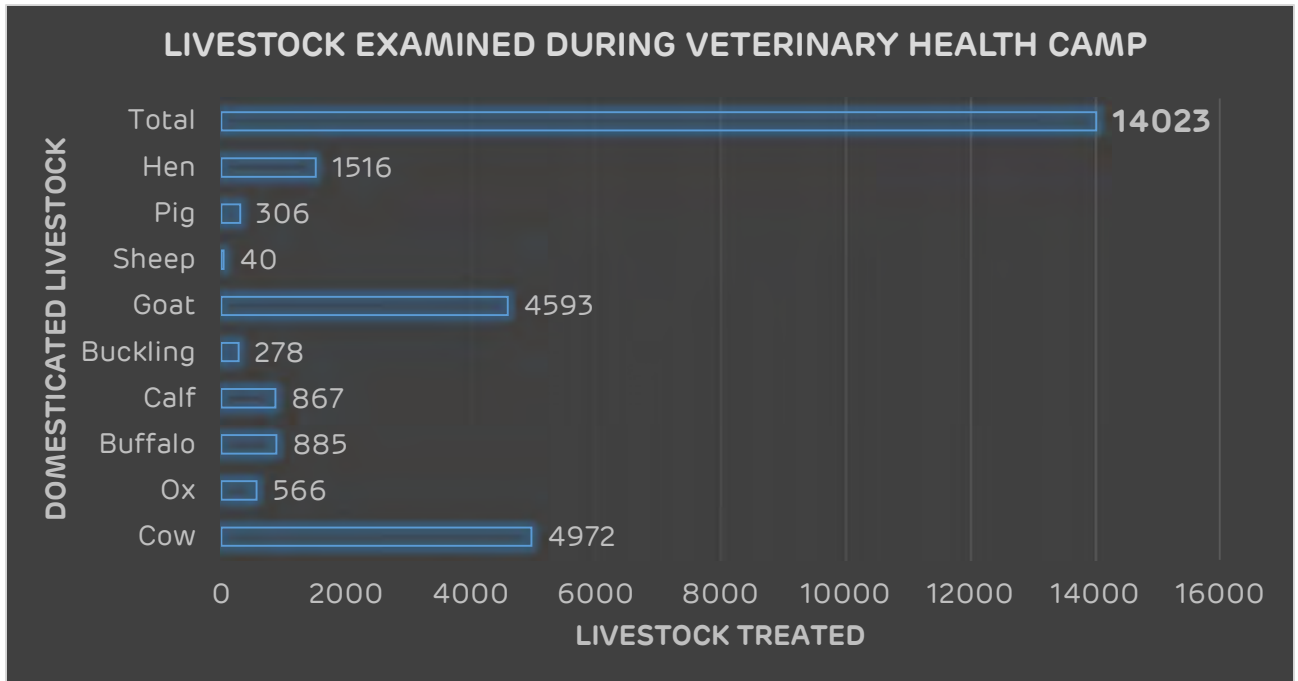
**Number of Village, Households and Livestock covered during Camp*

Coverage: Total **34 Veterinary Health Camps** at village level were conducted in **26 villages** of five blocks namely Godda, Poreyahat, Thakurgangti, Boarigor, & Mahagama in Godda district and Borio & Mandro blocks in Sahebganj district benefitting over **2110** households directly by providing door to door services to the farmers. Total **14023 cattle and Livestock** were screened during the camp.



**Block Wise Details of Household and Livestock covered during the Camp*

- **Examination and Treatment of Livestocks:** Animals were examined by Dr. Ranjit Soren, Dr. Dhananjay Yadav, Dr. Chandrakant, Dr. Baleswar Meera & Dr. Virendra Kishore and assisted by field animators of Adani Foundation in delivering their services during the camp. It catered to the needs of small & marginal farmers irrespective of caste, creed, and religion through diagnosis of health complications of their Livestocks.
- **Treatment of Domesticated Livestock:** Total **14023** domesticated cattle and Livestock were screened including 4972 Cow, 4593 Goat, 867 Calf, 885 Buffalo, 40 Sheep, 278 Buckling, 1516 Hen, 566 Ox, and 306 Pigs are screened respectively during the camp.



**Livestock wise treatment during Veterinary Camp*

- Diseases Identified and Diagnosed:** The screening and health check-up included 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.

DISEASE	SYMPTOMS
Endoparasites	Worms inside the rumen
Osteoporosis	Swelling infacial bones, weakness
Ectoparasites	Ticks and mites on the body of the animal
Enterotoxaemia	Diarrhoea, Dysentery, running animal
Unknown Fever/Pyrexia of Unknown Origin (PUO)	Fever
Wounds	Any Part of the body
Pregnancy Diagnosis	Detecting the pregnancy of cattle
Repeat Breeding (RB)	Animal is not conceiving/Infertility
Dermatitis	Scratching, swelling in the skin-generalized
Lymphadenitis	Swelling in lymph node, conjunctivitis

D. Distribution of Medicines:

The medicines were procured from Maruti Drug Agency, supplier of medicines. The medicines consisted of DE wormer, Animal Feed Supplements, Antiseptic lotion, Antibiotic and Vaccines for treatment of common pandemic and epidemic diseases occurring to domesticated Livestock in intervention villages. Total 17 kinds of medicines and animal feed supplements were arranged for treatment of various species of animal's including cattle, buffalo, bull, goat, poultry, and pig and distribution to needful farmers during the camp. Medicines and nutrient supplements were also distributed to concerned livestock owners.

VETERINARY MEDICINE LIST		
S.N	MEDICINE NAME	USAGE
1	Sulphacure	Treatment of ring worm infection and different forms of mange in camels, equines, cattle, sheep, goats & small animals. It kills biting and sucking lice.
2	Amoxirum Forte	Treatment of Mastitis & other Bacterial infections
3	Curemox Bolus	Treatment of Infections
4	Nil Tik	Effective solution against Ectoparasites
5	Worned	used to treat Filaroides infections and Giardia infections.
6	Himalayan Battisa	Feed Supplement for Veterinary
7	Vetzole 1.5 Bolus	DE wormer for Cattle
8	Himax Oint	Antifungal, Antiseptic, Antipruritic skin Ointment. Ideal for thrush, seedy toe and sweet itch lesions.
9	Ictolive Forte	Animal Feed Supplements
10	Neblon Powder	Acute, Subacute or Chronic Diarrhoea and Dysentery, Symptomatic relief to animals suffering from Rinderpest and other specific diseases
11	Rumen-FS	Animal Feed Supplements: Calves, goats, and sheep
12	Panacure	Pneumonia, Broncho pneumonia, Pleuritis, Mastitis, Prolapse of Uterus, Sprain, Laminitis, Myositis, Arthritis, surgical interventions, and Otitis.
13	Zydacef 3GM	<ul style="list-style-type: none"> • Antibiotic for severe infections: Infection of the brain • Respiratory tract infections (Pneumonia and COPD) • Ear infections • Abdominal infections • Infection of urinary tract • Bone and joint infection • Skin and soft tissue infections
14	Ostovet	<ul style="list-style-type: none"> • Antibiotic for severe infections: • Infection of the brain • Respiratory tract infections (Pneumonia and COPD) • Ear infections • Abdominal infections • Infection of urinary tract • Bone and joint infection • Skin and soft tissue infections

15	Vetzole tab	Treat tapeworm infection
16	Nicodin	Antiseptic
17	Bandyes	Teat wounds, prevent swelling

6. Lemon Grass Project: Adani Foundation endeavors to uplift the socio-economic condition of farmers and preserve the ecology by adapting to Drought Resilient and Climate Based Smart Agricultural Practices as per the needs & requirement of geographical and climatic condition of the region. Initiation of Lemon Grass project brings an opportunity to act as catalyst to mitigate the distress & farmers' suffering due to low agricultural production during Kharif and Rabi season and simultaneously, increase the monetary income of farmers through one acre model of high-quality commercial cultivation of the crop. During the year 2021-22, 13 farmers were mobilized and selected for cultivation of Lemon Grass in 20 acres of land. In the next year 2022-23, the cultivation of Lemon grass crop in the selected land will be initiated and after successful production of crops, it will be further processed for oil extraction and making of value-added products enabling livelihood enhancement of farmers.

7. Open Gym Development for Rural Youth: Open Gym/Outdoor Gym is built outside in a public space, with the all-weather construction of its exercise machines somewhat modeled on playground equipment. Adani Foundation supported the rural youths to develop Outdoor Gym at two rural stadiums of Godda district namely Bohara (Podaiyahat) & Parsoti Playground benefiting over 50 youths from each location. Six equipment was installed at Parsoti playground namely, Leg Press, Air Walker, Cycle, Rower, Shoulder builder and Seated twister respectively.

8. Support to SHG for Income Generation: Adani Foundation supported the Women Self Group- Phoolo Jhano Saksham Sakhi Mandal (PJSASM) in accomplishment of work order of **45,000 Jute bags making** from JSLPS, Ranchi. The Women entrepreneurs undertook the assignments meticulously at ITI Siktia Training Centre cum Production Hub. The Jute bag making project was commenced on August 2021 after completion of training program on Sewing Machine Operation (SMO) and Tailoring trade. The skilled women were assigned duties to execute and assemble the work in a systematic manner. **88 skilled women** were allocated the work as per their capabilities and efficiency. The nature of work consisted of manual and mechanized work including cutting, half stitching, full stitching, and buttoning and branding of finished Jute bags. The women worked in the work timing of 9 am to 6 pm with utmost discipline and dedication. The safety protocols of COVID 19 were strictly followed by the women at workplace exhibiting zero tolerance. The toil and perseverance of women entrepreneurs bore fruitful

results and accomplished making of 45,000 Jute bags in the month of November 2021. With the talent of stitching & sewing machine operation, each woman entrepreneur engaged in Jute bag making project has earned decent income. On an average, women members have earned sum of Rs. 4000. Out of total 88 women, 54 women (61%) earned on an average up to range of Rs. 5000 and remaining 34 women (39%) earned more than Rs 5000 respectively.

9. Chief Guest Visits & Important Days Celebration

- **Celebration of Birthday of Honorable 'Chairman, Adani Group, Shri Gautam S. Adani (GSA)'**: On the auspicious occasion on 24th June 2021 of the birthday of our very precious, Honorable Chairman, Adani Group, Shri Gautam S. Adani, Adani Parivar at Godda had planted more than 50 trees including Peepal, Banyan, etc. near the villages of Thermal Power Plant (TPP) Area. The noble objective was to wish and bless him for a healthy and bright future and continue giving the lives to his family with goodness like a plant embodies oxygen to the human mankind. 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.
- **Social Presentation at Group level – Chief Guest Visit- Adani Investor Group: Visit of Chief Guest- Adani Investor Group from Ahemdabad (H.O)** was done at Godda site for enabling the team to understand **CSR activities on Local and Rural Infra development on 8th and 9th of July 2021** comprising of team of six delegates namely, 1.Mr. Rakesh Tiwary – CFO, Adani electricity Mumbai Ltd., (based out of Mumbai), 2. Mr. Sandesh S Shinde – AVP – Finance and Accounts, Adani electricity Mumbai (based out of Mumbai), 3. Mr. Sanjay Poddar – VP – Finance controller – Adani Transmission Ltd., 4. Mr. Sanjay Chauhan – VP – Finance Controller – Adani Ports and SEZ Ltd., 5. Mr. D. Balasubramanyam – VP – Group Head IR, Adani group, 6.Mr. Satya Prakash Mishra – Senior Manager – IR, APSEZ.

It was a **two days' review visit on 8th & 9th July 2021**, in which the team reviewed and interacted with the stakeholders of CSR initiatives of core Program **Education, Community Health Programme (CHP), Sustainable Livelihood Development, and Rural Infrastructure Development (RID)** consisting of Pond Deepening, Gyanodaya & Super 200 Program, IIT- JEE Student, teaching staffs. They had also visited the Anganwadi centre at Motia, Vaccination centre & Covid -19 Sample Collection Centre visit at Motia, interacted with beneficiary of medical camp and OPD at Motia PHC Centre. The team also got to assess the impact created in the lives of beneficiaries of Farm & Fishpond, Integrated

farming model at Dumaria, Vermi-compost unit and Suposhan Vatika which supplemented their livelihood, & improved nutritional level.

Nonetheless, the intervention done in the distress period amidst COVID 19 in Sadar Hospital was also examined and interacted with doctors and the frontline health workers. The SHG model of Uniform Stitching & Production was also reviewed briefly at ITI Siktia centre visit and interacted with SHG group member of Phoolo Jhano Saksham Aajeevika Sakhi Mandal. While on 9th July, the team reviewed the ongoing project activities in pipeline area of Godda district including MHCU – Wockhardt Foundation, Patient Shed and Labour Room development, Well Renovation, Manjhisthan, MHCU, Bathroom and other RID structures.

- **Silver Jubilee (25 years) Adani Foundation Day Celebration: Adani Foundation Day** was celebrated on **11th August 2021** marking **Silver Jubilee (25 years)** at site level. The message of Adani Foundation was spread among the community by joining hands with the masses and instilling values and spirit which signifies Unity, Peace, Solidarity and Holistic Development. Adani Foundation Day was celebrated at Baksara village of Poreyahat block, Godda district by site team and stakeholders including rural beneficiaries, PRI members, District level officials and community.

It was a festive occasion to celebrate with great joy and enthusiasm by filling the colours of hope and dreams of success, worshiping the human identity and integrity, and encouraging the values of everyone. On the occasion, poem recital and tribal dance was organized followed by plantation by community with a gesture to showcase the legacy of Adani Foundation. All community members put forth their well wishes and expressed their heartfelt gratitude to Adani Foundation on breaking the taboos and hurdles of their lives and becoming the foundation for the development of human mankind.

- **Social Presentation at Community level – Chief Guest Visit- Regional Head:** Honorable, Shri Jayanta Mohanty, Regional Head of Eastern Region, Adani Foundation, who was on **four-day visit from 26th Oct to 29th October** to the CSR intervention areas of Godda district to review the operational interventions and glitches of the developmental work at community level. The visit included a thorough interaction with direct stakeholders at Community, Project site and District level.
- **Celebration of International Women’s Day on 8th March at ITI Siktia: International Women’s Day 2022 (“Break the Bias”)** was celebrated to honour and acknowledge the perseverance and contribution of women folks in society,

encourage gender equity and equality, and reduce gender-based discrimination faced by women in family and society. During the occasion, several cultural activities were organised with participation of adolescent girls, SHG members, tribal women and Suposhan Sanginis such as Welcome Song, Speech, Tribal Dance, Solo Dance, Nukkad Natak, etc. on prevailing social evils and exploitation faced by women gender such as Beti- Bachao, Beti Padhao, and Female Feticide. Social message was spread to reduce its occurrence and rejuvenate the broken society. More than 200 women including Saksham trainees, Suposhan Sanginis, SHG women members and rural women participated in the programme followed by felicitation of participants with gifts, mementos, and prizes as a token of appreciation and gratitude.

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 last year 2020-21, pond deepening work was carried out in five ponds of four villages falling under core area. More than 400 farmers availed benefits from pond deepening for doing irrigation in their agricultural land of 607.5 acres along with enhanced soil fertility and restoration of ecology. Impact Assessment was also conducted in aspirational villages including short documentary, and Pani Chaupal to assess the impact leveraged to farmers, and community.

In this year, two pond deepening in Petbi and Gangta village will be initiated to benefit the farmers and community for channelizing economic as well as domestic, cultural, and religious activities in villages.

Sr No.	Name of Pond	Village	Status
1	Petbi Pond	Petbi	To be started
2	Barkabandh Pond	Gangta	To be started

Honour & Awards

- **Received National Water Awards 2020- 2nd rank in East zone to Godda** district for 68 Ponds Deepening & Restoration under Water Harvesting program

Drinking Water Facility

- 1. Drinking water facility in villages –Borewell, Community Well etc.:** 1 Borewell was installed at Kauribihar village, 1 Over Head Tank and Panel was constructed along with water supply system and boring at Petbi Village and 63 wells were renovated in 20 villages of core & pipeline area. The work will facilitate the villagers and community during the summer season and all the year for drinking & domestic use.
- 2. Installation, Renovation & Repairing Work of 512 Hand pumps & Hand pump Platform:** Hand pumps are primary source for drinking water and other domestic need in the TPP area. Adani Foundation has been taken up the hand pumps maintenance and repairing work of hand pumps, its installation and construction of hand pump platform in 6 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 477 hand pumps in villages of Godda, Podaiyahat, Thakurgangti, Mahagama, Mehrama & Boarijor blocks of core, railway & pipeline area and 35 hand pump was installed in core, railway line and pipeline villages benefitting more than 1 lakh rural population. Branding of hand pumps repaired by Adani Foundation has also been done for its recognitions and better monitoring.

Educational infrastructure Development

- 1. School Development of High School, Motia:** During the last year 2020-21, six Classroom was constructed in High School, Motia. The remaining work was taken up in this year to develop adequate infrastructure and make the school functional including 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 poorer and rural children in a proper space and conducive learning environment.
- 2. Construction of Gate at 2 educational institutions** namely, +2 School, Baksara and SBSSPJ College, Pathargama Block to provide better rural infrastructure and enable access to educational institutions for 300 rural children.
- 3. Strengthening Anganwadi Centre (AWC)- Infrastructural Support for Model Anganwadi:** During the year 2021-22, several infrastructural works was initiated including education related sanitation facilities, kitchen facilities, drinking water facilities 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 educative, health and nutritive requirements of rural children.

SN	Anganwadi Center	Intervention	Status	Intervention	Status
1	Dumaria	Drinking water facility- Water Supply System & Water tank	Not completed	Beautification work of buildings including kitchen & construction of Soakpit	Completed
2	Patwa	Drinking water facility- Water Supply System & Water tank with Boring & Submersible	Borewell done	Renovation of Kitchen & Anganwadi centre	Completed
3	Motia (Kahar tola)	Connection of Drain	Not started	Boundary Wall construction	Completed
4	Baksara (Laiya tola)	Sanitation facility- Construction of Toilet & Septic tank	Completed	-	-
5	Gangta	Sanitation facility- Construction of Toilet	Not started	-	-
6	Motia (Harijan tola)	Drinking water facility- Water Supply System & Water tank with Boring & Submersible	Boring done	-	-
7	Birniya	Sanitation facility- Construction of Toilet	Not started	Drinking Water facility- Handpump Installation with Boring	Not started

- 4. Renovation of Classroom for Smart Class at Balbikash Vidyalaya, Godda:** The school building of Balbikash Vidyalaya, Godda was renovated along with the classroom for making it functional and starting Smart Class program benefiting more than 400 students of 6th to 10th standard. The students will be able to learn in the renovated education space and their learning capabilities will improve gradually, along with personality development through digital based Smart Learning program.
- 5. Construction of School Kitchen in Middle School, Motia** with an objective to improve **Health, Nutrition, and Wellness of children** and increase the attendance rate of students and academic performance.
- 6. Construction of Boundary Wall & BALA Painting** in 2 schools namely, Middle School, Kaithatikar and Middle School, Basantpur to protect the school premises and contribute towards imparting quality of education to rural children.

Health and Sanitation infrastructure Development

Good Health and Well-being is an important indicator of 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, the people face many difficulties and challenges in availing the public health care services. Ultimately, it results into miserable health conditions and other uncertain situations for 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. Renovation of Doctor's Quarter & 2 Hospital Building at Thakurgangti Hospital:** Renovation work of hospital building & Doctor's Quarter at Thakurgangti Hospital was done to channelize the functioning of hospital at the earliest to serve the public of pipeline area in large number. It will benefit all stakeholders including the patients, hospital staff and other indirect stakeholders. It will also build more trust and solidarity among public and community.
- 2. Construction of Waiting Shade & Labour Room in Mahagama Hospital:** The infrastructure of hospital at Mahagama was in a poor, and defunct condition. There was no seating arrangement facility for the indoor and outdoor patients, and medical and supporting staffs due to which the people suffer in manifolds.

Construction of Waiting Shed & Labour Room at Mahagama Hospital helped them to operate all health services in a better manner.

Other Village development structures

1. Construction of 59 Model Bathroom & Soak pit near Handpump: As we are working towards creating awareness for cleanliness and hygiene by our program named "SWACCHAGRIH" with an aim to aware and engage people in creating cleanliness culture. 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. To get rid of from this issue we have constructed 59 model bathrooms with soak pit near hand pump in 21 villages of core and pipeline area of Godda & Sahebganj district to provide better rural infrastructure in the villages and educational institutions.

S.N	Duration	Block	Village	No. Of Bathroom	Total HHs	Beneficiary
1	21-Jun	Mahagama	Kaithia	1	50	250
2	21-Jun	Boarijor	Dhankunda	1	40	200
3	21-Jun	Boarijor	Dhamni	2	80	400
4	21-Jun	Boarijor	Jhirli (Pradhan Tola)	13	520	2600
5	21-Jun	Boarijor	Jhirli (Neem Tola)	2	60	300
6	21-Jun	Boarijor	Jhirli (Gandhi Tola)	1	45	225
7	21-Jul	Boarijor	Goradih	4	160	800
8	21-Jul	Boarijor	Madhuchak	1	40	200
9	21-Aug	Boarijor	Goradih	4	120	360
10	21-Sep	Boarijor	Jhirli	2	100	415
11	21-Sep	Boarijor	Dhankunda	1	60	280
12	21-Oct	Boarijor	Jhirli	3	120	600
13	21-Oct	Boarijor	Dhamani Simariya	2	90	450
14	21-Nov	Boarijor	Hijri	2	90	450
15	21-Nov	Boarijor	Dhamani Simariya	2	90	450
16	21-Dec	Godda	Ramnagar (Kanhadih)	1	45	225
17	21-Dec	Mahagama	Bansipur	1	55	275
18	21-Dec	Mahagama	Karnu	1	58	290
19	Jan'22	Podaiyahat	Sondiha (Harijan tola)	1	55	275
20	Jan'22	Godda	Kauribahiyar	1	30	90
21	Jan'22	Mahagama	Karnu	4	120	600
22	Jan'22	Mahagama	Maniyamore	1	35	175
23	Feb'22	Godda	Nayabad	1	25	50
24	Feb'22	Mandro	Korikhutana	1	20	40
25	Feb'22	Thakurgangti	Ramchandrapur	1	20	40
26	Feb'22	Boarijore	Ramkol	1	20	40
27	Feb'22	Mahagama	Bansipur (Mahadeobathan)	1	20	40
28	Feb'22	Godda	Kauribahiyar	1	20	40
29	Mar'22	Godda	Motia (Yadav tola)	1	30	80
30	Mar'22	Mandro	Jabdi Bhagaiya	1	25	50
Total			21	59	2243	10290

- 2. Construction of 23 Seating Place (Chabutra) in villages:** Construction of 23 Seating place has been done in 18 core and pipeline villages. Normally village not having common places in the village for seating purpose for elders and senior citizens. This is being used by the common people in the village for seating purpose.

SN	Village	Block	Unit	Duration
1	Telgama	Mahagama	2	June'21
2	Rahabaria	Boarigor	1	June'21
3	Kamaldori	Boarigor	1	June'21
4	Bhagakol	Thakurgangti	1	June'21
5	Hijri	Boarigor	2	July'21
6	Baghakol	Thakurgangti	1	July'21
7	Jhirli	Boarigor	1	July'21
8	Deoghar More	Thakurgangti	1	Aug'21
9	Goradih	Boarigor	1	Aug'21
10	Goradih	Boarigor	1	Sep'21
11	Jhirli Nim Tola	Boarigor	1	Sep'21
12	Dhankunda	Boarigor	1	Sep'21
13	Bada Lohanda	Borio	1	Jan'22
14	Chunakheri -1	Mandro	1	Jan'22
15	Chunakheri-2	Mandro	1	Jan'22
16	Dayalpur	Mandro	1	Jan'22
17	Chota tetariya	Borio	1	Feb'22
18	Nayabad	Godda	1	Feb'22
19	Kauribahiyar	Godda	1	March'22
20	Basantpur	Poreyahat	1	March'22
21	Parashi	Poreyahat	1	March'22
Total			23	

- 3. Construction of Conference Hall** at cultural heritage sites in Sahebganj to provide adequate infrastructure to held meetings, seminars, and cultural events for tribals students & community (Ongoing)

- 4. Construction of Cultural Stage** at Ranidih (Saroni) and Amdiha village of Mahagama block 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 community. As we are committed to provide better community structures to the village, we have renovated 2 community halls in Choti Baksara, Laiya Tola village, and Choti Baksara, Yadav Tola of core area. This hall is also being used for community purpose.

- 6. Renovation of Village Welcome Gate** at Pipeline area in Kakhana Village to provide better rural infrastructure in the villages and doing better planning and implementation of village development work.
- 7. Construction of Drains:** Construction of 250m Drain at near Plant Main Gate area (Market area), 165m RCC Drain at Nayabad village and 20m Drain at Bahadurchak village for proper drainage system and sanitation in the rural area.
- 8. Renovation of SC Welfare Girls Hostel Building at Pokharia, Sahebganj** to provide better infrastructure facilities to the girls.
- 9. Construction of RCC Box Culvert at Mahagama Pipeline area:** To provide better infrastructure facilities to the villagers. In Mahagama block, there was a problem of drainage blockage which affects the socio-economic and environmental conditions with occurrence of pollutants, passage of polluted water in the roads, agriculture land and other areas, impacting the economic activities of the villagers. Therefore, a RCC Box Culvert was constructed to minimize the drudgery and problems of the villagers and benefiting the stakeholders at manifold.
- 10. Renovation and construction of 26 community structures:** We have taken up the renovation & upgradation of old, defunct, and dilapidated community structures and cultural heritage structures in the intervention villages to restore, adapt and conserve structures of heritage and cultural value. 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.
- 11. Painting work for 26th January (Republic Day) program** at Historical places of Godda: 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 Republic Day of India on January 26th, 2022, Painting work was done at several Historical places of Godda for conducting flag hoisting ceremony in presence of chief dignitaries, front line workers, covid warriors and police force keeping in view the safety protocols of COVID 19.
- 12. Repairing of Village Road** at Jajalpur and Amrakanoli to provide better rural infrastructure facilities to the villagers

Annexure – III



Green Belt Development



Plantation along the boundary (Inside plant)



Green Belt Development



Plants in Nursery (inside plant)



Trees in Nursery (inside plant)



Green Belt under Development



Outside Avenue Plantation



Outside Avenue Plantation



Outside Avenue Plantation



Use of Fly Ash Bricks/Blocks



Water sprinkling on road to reduce fugitive emission



Water sprinkling on road to reduce fugitive emission



Green Carpet



Concrete Road which help to reduce fugitive emission

ENVIRONMENTAL PARAMETER			adani					
Name of Company : Adani Power (Jharkhand) Limited.								
Address : Godda, Jharkhand								
Contact Person : Environment Officer								
Date : 07.01.2022								
Information on Ambient Air Quality			Information on Hazardous Waste					
Parameter	Result	Standard Limit (24Hrs)	Cat.	Qty. of Waste	UOM	Mode of Storage	Disposed Qty	Stock
PM10	61.6	100		N.A	N.A	N.A	N.A	N.A
PM2.5	26.8	60		N.A	N.A	N.A	N.A	N.A
SO ₂	8.7	80		N.A	N.A	N.A	N.A	N.A
NO _x	12.4	80		N.A	N.A	N.A	N.A	N.A
Avg. Values in µg/m ³								

Display Board at Main Gate