

Date: 20.05.2022

To,
The Director
Ministry of Environment, Forest & Climate Change
Kendriya Bhawan, 5th Floor, Sector "H" Aliganj
Lucknow (Uttar Pradesh)

Subject: Request for "Certified Compliance Report" of Environmental Clearance of expansion of Molasses based Distillery from 75 KLD to 150 KLD at Village: Barkatpur, Tehsil: Nazibabad, District: Bijnor (Uttar Pradesh) by M/s Uttam Sugar Mills Limited (Distillery Division)

EC Ref. No.: J-11011/169/2014-IA II (I) Dated 19th August 2016.

Respected Sir,

In reference to the above-mentioned subject, we would like to inform you that we are going to file an application for proposed capacity expansion from 150 KLD to 250 KLD within existing premises of distillery. As per EIA Notification 2006 and its amendment, it is necessary to take the EC certified compliance report of existing unit.

We are also submitting the six monthly compliance of existing EC to the Regional MOEF&CC office, Lucknow. Copy of latest environmental Clearance Compliance along with all necessary annexure is enclosed with this letter.

Hence, it is requested that, kindly considered our compliance report and grant us the certified compliance report for which we shall be highly obliged.

Thanking you
Your Faithfully


Authorized Signatory
M/s Uttam Sugar Mills Limited
(Distillery Division)



**SIX-MONTHLY ENVIRONMENTAL COMPLIANCE
REPORT OF STIPULATED CONDITIONS OF
ENVIRONMENTAL CLEARANCE**

आवृत्ति संख्या - 3

(October 2021 to March 2022)

For

Expansion of Molasses based Distillery from 75 KLD to 150 KLD

By

M/s Uttam Sugar Mills Limited

(Distillery Division)

At

Village: Barkatpur, Tehsil: Nazibabad

District: Bijnor (Uttar Pradesh) - 246732

For Submission to:

**Ministry of Environment, Forest & Climate Change (Regional
Office, Lucknow)**

Submitted By:

M/s Uttam Sugar Mills Limited

(Distillery Division)

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CHAPTER-1: INTRODUCTION AND PROJECT DESCRIPTION

Six monthly environmental compliance/status report is submitted for Expansion of Molasses based Distillery from 75 KLD to 150 KLD by M/s Uttam Sugar Mills Limited (Distillery Division) for September, 2021. The Project is located at Village: Barkatpur, Tehsil: Nazibabad, District: Bijnor (Uttar Pradesh)- 246732. Prior Environment Clearance was obtained from Ministry of Environment & Forests (MoEF&CC) wide letter no. J-11011/169/2014-IA II (I), dated 19th August, 2016. Consent to operate for Air has already been obtained for the project Vide Ref No.141363/UPPCB/Bijnor(UPPCBRO)/CTO/air/BJNOR/2021 dated 13.04.2021 and Consent to operate for Water Vide RefNo. 108621/UPPCB/BJNOR(UPPCBRO)/CTO/water/BJNOR/2021 dated 16.12.2021 for validity upto 31/12/2022. Copy of CTO is attached here as **Annexure-1**.

Specific and general conditions stipulated in Environment Clearance have been complied during construction and post construction phases.

Environmental mitigation measures described in Environmental Management Plan are being implemented operation phase. M/s Uttam Sugar Mills Limited (Distillery Division) management team is fully conscious about Environmental Management and enhancing green belt development in project surrounding area.

Six monthly compliance/status reports for October, 2021 to March, 2022 for conditions stipulated in the Environmental Clearance letter issued by MoEF is enclosed as **Annexure-2**. Photographs view of implemented mitigation measures are also attached for the ready reference as Photo Documentation.

**CHAPTER-2:
COMPLIANCE OF STIPULATED CONDITIONS OF
ENVIRONMENTAL CLEARANCE**

Name of the Project: Expansion of Molasses based Distillery from 75 KLD to 150 KLD at Village: Barkatpur, Tehsil: Nazibabad, District: Bijnor (Uttar Pradesh) - 246732 by M/s Uttam Sugar Mills Limited (Distillery Division).

Clearance Letter No: J-11011/169/2014-1A II (I) dated 19th August 2016

Period of Compliance Report: (October, 2021 to March, 2022)

SPECIFIC CONDITION

Sr. No	Condition	Compliance
(i)	Distillery unit shall be based on molasses based only and no grain-based distillery unit shall be operated.	It is being complied. Distillery Unit is based on molasses as raw material only
(ii)	Bag filter along with stack of adequate height shall be provided to bagasse/coal fired boiler to control particulate emission within 50mg/Nm ³ . The gaseous emissions should be dispersed through stack of adequate height as per CPCB/SPCB/ guidelines.	Complied. ESP along with stack of adequate height 85 Mtr has already been provided attached to respective boiler to control particulate emissions within 50 mg/NM ³ . Continuous online monitoring system for stack emissions has already been installed. Continuous online Stack Monitoring results are enclosed as Annexure-3.
(iii)	In plant, Control Measures for checking fugitive emissions from all the vulnerable sources shall be provided Fugitive emissions shall be controlled by providing closed storage, closed handling & Conveyance of chemicals /materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provide at loading and unloading areas to control dust emission. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored and records shall be maintained. The emissions shall conform to the limits imposed by UP Pollution Control Board (UPPCB).	<ul style="list-style-type: none"> • Complied. The fugitive emissions limits are being maintained within the limit as imposed by UP Pollution Control Board (UPPCB). • Dust collection system provided in incineration Boiler as ESP Fuel handling systems are installed. • Closed fuel conveying system is installed. • Raw material stored in closed and covered storage. • Water sprinkling systems has been provided. Moving water sprinkling system is in practice through the tankers.
(iv)	Company shall follow good management practices viz. collection of waste yeast sludge from fermentation section in a closed system and	It is being complied. 1. Waste sludge and spent wash are

	<p>proper disposal ,reduced volume of effluent by adopting strategic approaches ,closed drains carrying spent wash to the treatment units, minimization of fugitive emissions from anaerobic treatment , minimum retention of treated & untreated spent wash in the lagoons, effective composting of the spent wash by controlled effluent spraying through mechanical system to avoid spillages & over application ,blending of sludge in correct proportion with press mud, and properly finished compost and green belt development with suitable plantation in and around the treatment units to mitigate odour from the distillery unit .</p>	<p>transported through closed pipelines and will be used with the proportionate quantity of press mud/Ash for the making manure.</p> <p>2. Spent wash is being concentrated in MEE and is being used into the Boiler as Slop for the incineration. Spent lees and condensate water after treatment in CPU is being recycled back in process.</p> <ul style="list-style-type: none"> 33% greenbelt/plantation has already been developed all around the plant boundary helps in reducing the mitigate odor, noise level, arresting dust and improves the environment in surrounding. Green Belt Photographs is attached Annexure-4.
(v)	<p>Pucca approach road to project site shall be constructed prior to commencing construction activity of the main distillery so as to avoid fugitive emissions</p>	<p>Complied. RCC approach roads are constructed and maintained with mobile water sprinkling system to avoid fugitive emission.</p>
(vi)	<p>The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB guidelines, Acoustic enclosure shall be provided to the DG set to mitigate the noise pollution.</p>	<p>Unit has no DG set& is being maintained by the sugar mill.</p>
(vii)	<p>The Company shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on its website and shall update the same periodically, it shall simultaneously by sent Regional office of MOEF, the respective Zonal office of CPCB and the SPCB. The levels of PM₁₀ PM_{2.5}, SO₂, NO_x, Co and HC (Methane) in ambient air shall be monitored and displayed at a convenient location near the main gate of the company and at important public places.</p>	<p>Complied. Compliance report of EC is regularly being submitted to MoEF & CC Regional office. Certified compliance report of EC shall be uploaded on company website. The ambient air quality monitoring has been carried out on plant site and the monitoring results are enclosed as Annexure-3.</p>
(viii)	<p>Total fresh water requirement from ground water source for distillery shall not exceed 1452 m³/day and prior permission shall be obtained from SGWA/CGWA. Water consumption shall be reduced by adopting 3R's (Reduce, reuse and</p>	<ul style="list-style-type: none"> It is being complied. Total fresh water requirement from the Bore well for distillery has never exceeded 600 m³ per day. Valid permission for the withdrawal of water has already been obtained

	recycle) concept in the process. Effort shall be made to use recycled water from sugar and condensate of MEE for the Co-generation power unit.	from the competent authority UPGWD Efforts has been made for 3R's (Reduce, reuse and recycle) concept in the process. UPGWD NOC Annexure-5.
(ix)	Spent wash generation from molasses-based distillery shall not exceed 8KL/KL of alcohol. The spent wash from molasses-based distillery shall be treated in bio-methanation reactor Treated spent wash will be evaporated in MEE and concentrated spent wash will be bio-composted by mixing with press mud generated from sugar unit to achieve 'Zero' discharge Evaporator condensate shall be treated in polishing pond and recycled /reused in process. Sewage shall be treated in the STP. NO. Effluent shall be discharged outside the premises and 'Zero' discharge shall be maintained.	Spent wash generation from molasses has not exceeded 8 KL/KL of alcohol production. The Spent wash from molasses-based distillery is being concentrated in MEE and is being used in incineration Boiler as fuel. Spent lees and condensate water after treatment with CPU is being recycled back in process for molasses dilution and cooling towers etc. No effluent is being/will be discharged outside the Distillery.
(x)	Automatic/Online monitoring system (24x7 monitoring devices) for flow measurement and relevant pollutants in the treatment system to be installed. the data to be made available to the respective SPCB and in the Company's website.	Installed & data are easily available on SPCB/CPCB and in the Company's website. We have already provided the user id & password to CPCB/UPPCB. Photographs attached Annexure-6.
(xi)	As proposed, no effluent from distillery and co-generation power plant shall be discharged outside the premises and 'Zero' discharge shall be adopted.	ZLD is being maintained No effluent is being/will be discharged outside the Distillery.
(xii)	Process effluent /any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	It is being complied. Separate lines constructed for process storm water and concentrated slop is being sent to the incineration Boiler
(xiii)	Spent wash shall be stored in impervious RCC lagoons with proper lining with HDPE and shall be kept in proper condition to prevent ground water pollution. The storage of spent wash shall not exceed 15 days capacity.	The spent wash is stored in impervious lagoon of RCC with HDPE lining and are kept in proper condition to prevent ground water pollution. As Per the CPCB recommendations, storage is not exceeding 07 days capacity.
(xiv)	Adequate numbers of ground water quality monitoring stations by providing piezometers around the project area shall be set up. Sampling and trend analysis monitoring must be made on	09 Number of piezometers are installed around the project area. Report is being submitted on monthly basis to the Ministry's and Regional office at Lucknow and SPCB.

	monthly a basis and report submitted to SPCB and this Ministry. The ground water quality monitoring for pH, BOD,COD, Chloride, Sulphate and total dissolved solids shall be monitored sampling and trend analysis monitoring must be made on monthly basis and report submitted to the Ministry's Regional Office at Lucknow and SPCB.	Annexure-7.
(xv)	Bagasse storage should be done in such a way that it does not get air borne or fly around due to wind, boiler ash shall be stored separately as per CPCB guidelines so that it shall not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust shall be avoided.	Complied. 1. Unit has made arrangement to store the bagasse in covered area to avoid fly due to wind and sprinkling water around the premises/ bagasse stored area. 2. Storage of bagasse is maintained scientifically in covered area with the adoption of sprinkling system along with covered conveying. 3. Fly ash is being stored separately as per CPCB guidelines. 4. Ash from the boiler is utilized in the bio composting process.
(xvi)	Boiler ash shall be stored separately as per CPCB guidelines so that it shall not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust shall be avoided. Bagasse ash and coal shall be stored separately.	Ash disposal is being done in the environmentally save manner as per CPCB guidelines without affecting the air quality during wind or water regime during rainy season. Complied.
(xvii)	Firefighting system shall be as per the norms and cover all the areas where alcohol is produced handled and stored. Provision of foam system for firefighting shall be made to control fire from the alcohol storage tank.	Complied. Full-fledged firefighting system is installed to cover complete distillery, sugar & Co- generation power plant. Photographs of firefighting have been attached. The complete protection system comprise of :- a) Fire Hydrant b) Portable Fire Extinguisher c) Portable chemical Fire extinguisher d) Fire detection and Alarm system
(xviii)	Risk assessment shall be carried to assess the fire and explosion risk due to storage of alcohol and report submitted to the ministry and its regional office at Lucknow within six month.	Being complied. We have already taken measures towards alcohol storage and approved drawing from Petroleum and Explosive Safety Organization is attached herewith. Letter of approved drawing has been

		attached as Annexure-8.
(xix)	Occupational health surveillance programmed shall be undertaken as regular exercise for all the employees. the first aid facilities in the occupational health centre shall be strengthened and the regular medical test records of each employee shall be maintained separately.	It is being complied. Company has regularly conducted occupational health surveillance programmed once in year for all the employees & first aid facilities in the occupational health centre is strengthened with proper record. Sample Health reports have been attached as Annexure-9.
(xx)	Dedicated parking facility for loading and unloading of materials shall be provided in the factory premises Unit shall develop and implement good traffic management system for their incoming and outgoing vehicles to avoid congestion on the public road.	It is being complied. Dedicated parking facility has already been provided in the factory premises for loading & unloading of materials and first come and first out system is ensured by the way of digitalization.
(xxi)	As proposed, green belt over 16.5 acres of the total project area shall be developed within plant premises with at least 10 meter wide green belt on all sides along the periphery of the project area, in downward direction, and along road sides etc, selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	It is being complied. Greenbelt has been developed as per the CPCB guidelines. Area of the plantation developed at our unit is approx. 33% of the total plant area.
(xxii)	All the commitments made during the public Hearing /Public Consultation meeting held on 7 th November, 2015 should be satisfactory implemented and adequate budget provision should be made accordingly.	It is being complied.
(xxiii)	At least 5% of the total cost of the project shall be earmarked towards the Enterprise social commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the ministry's Regional office at Lucknow. Implementation of such program shall be ensured accordingly in a time bound manner	It is being complied.
(xxiv)	The Company shall submit within three months their policy towards corporate Environment Responsibility which shall inter -alia address (i) standard operating process/procedure to being into focus any infringement /deviation /violation of environmental or forest norms /conditions ,(ii) Hierarchical system or Administrative order of the company to deal with environmental issues	It is being complied.

	and ensuring compliance to the environmental clearance conditions and (iii) system of reporting of non-compliance /violation environmental norms to the Board of Directors of the company and /or stakeholders or shareholders.	
(XXV)	Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project, All the construction wastes shall be managed so the there is no impact on the surrounding environment.	Complied. Construction work is over.

GENERAL CONDITION

Sr. No	Condition	Compliance
(i)	The project authorities must strictly adhere to the stipulations made by the U.P. Pollution Control Board (UPPCB), State Government and any other statutory authority.	Agreed for Compliance.
(ii)	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment and forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Agreed for compliance.
(iii)	The locations of ambient air quality monitoring stations shall be decided in consultation with the SPCB and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Agreed & Complied. The ambient Air Quality Monitoring Station is already installed. Ambient air analysis report Annexure-3
(iv)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise	Agreed and complied. The overall noise levels is being maintained within norms (Noise Monitoring Report) Annexure-3.

	levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz.75 dBA(day time) and 70 dBA(night time).	
(v)	The company shall harvest rainwater from the roof –tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.	Rain water from the roof tops of the buildings is being harvested rainwater from the roof –tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.
(vi)	During transfer of materials, spillages shall be avoided and garland drains be constructed to avoid mixing of accidental spillages with domestic wastewater and storm water drains.	Complied. Constructed garland drains to avoid mixing of accidental spillages with domestic wastewater & storm water drains.
(vii)	Usage of personnel protection Equipments by all employees/works shall be ensured.	It is being complied.
(viii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied. Periodically training to all employees on safety & health aspects is provided regularly under the supervision of Safety committee.
(ix)	The Company shall also comply with all the environmental protection measures and safeguards proposed in the project report submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented. -	It is being complied.
(x)	The Company shall undertake CSR activities and all relevant measures for improving the socio-economic conditions of the surrounding area.	It is being complied.
(xi)	The company shall undertake eco- developmental measures including community welfare measures in the project area for the overall improvement of the environment	It is being complied.
(xii)	A separate Environmental Management cell equipped with full-fledged laboratory facilities	It is being complied.

	shall be set up to carry out the Environmental Management and monitoring functions	
(xiii)	The company shall earmark sufficient funds for recurring cost per annum to implement the conditions stipulated by the ministry of environment and forests as well as the state Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	The funds earmarked for environmental protection measures are kept in a separate account and never spend on other purposes.
(xiv)	A copy of the clearance letter shall be sent by the project proponent to concerned panchayat, Zila praised / Municipal Corporation. Urban local body and the local NGO, is any from who suggestions/ representations, if any, were received while processing the proposal.	complied
(xv)	The Project Proponent shall also submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional office of MOEF the respective zonal office of CPCB and the state pollution control Board. A copy of Environmental Clearance and six-monthly compliance status reports shall be posted on the website of the company.	We are submitting six monthly compliance reports along with monitoring results to the concerned authorities, and same will also be posted on the website of the company.
(xvi)	The Environmental statement for each financial year ending 31 st march in form-V as is mandated shall be submitted to the state pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Lucknow Regional office of Moef by E-mail.	We are submitting the environmental statement report for each financial year on 31 st March, Form-V to the state pollution control board as prescribed under the environment (protection) Rules, the status of compliance of environmental clearance conditions and shall also is being sent to the Lucknow Regional office of MoEF by E-mail.
(xvii)	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This	We have already published the accordance of Environmental Clearance in two local newspapers before completion of the project.

	shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned regional office of the ministry.	
(xviii)	The Project authorities shall inform the Regional office as well as the Ministry, the date financial closure and final approval of the project by the concerned authorities and the start of the project.	complied

CHAPTER-3: DETAILS OF ENVIRONMENTAL MONITORING

3.1 AMBIENT AIR QUALITY MONITORING

3.1.1 Ambient air Quality Monitoring Stations

Ambient air quality monitoring has been carried out Near Main Gate, and Near Admin Office to assess the ambient air quality. This will enable to have analytical understanding about air quality and the changes in the air environment in the study area with respect to the condition prevailing. The locations of the ambient air quality monitoring stations are given in Table-3.1.

Table-3.1: Details of Ambient Air Quality Monitoring Stations

Sr. No	Location Code	Location Name/Description	Environmental Setting of surrounding
1.	AAQ-1	Near Main Gate	Industrial
2.	AAQ-2	Near ETP	Industrial
3.	AAQ-3	Near Storage Godown	Industrial

AAQ-1: Near Main Gate

The sampler was placed Near Main Gate and was free from any obstructions. Surroundings of the sampling site represent industrial environmental setting.

AAQ- 2: Near ETP

The sampler was placed Near ETP and was free from any obstructions. Surroundings of the sampling site represent industrial environmental setting.

AAQ- 3: Near Storage Godown

The sampler was placed Near Storage Godown and was free from any obstructions. Surroundings of the sampling site represent industrial environmental setting.

3.1.2 Ambient Air Quality Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

- Respirable Suspended Particulate Matter (PM₁₀)
- Fine Particulate Matter (PM_{2.5})
- Sulphur Dioxide (SO₂)
- Oxides of Nitrogen (NO_x)

The duration of sampling of PM₁₀, PM_{2.5}, SO₂ and NO_x was 24 hourly continuous sampling per day duration monitoring. The monitoring was conducted for one day at the location. This is to allow a comparison with the National Ambient Air Quality Standards.

The air samples were analyzed as per standard methods specified by Indian Standards (IS: 5182). The techniques used for ambient air quality monitoring and minimum detectable levels are given in Table-3.2.

Fine Particulate Sampler instruments have been used for monitoring Particulate Matter 2.5 (PM_{2.5} i.e. <2.5 microns), and Respirable Dust Sampler with gaseous sampling attachment

was used for sampling Respirable fraction (<10 microns), gaseous pollutants like SO₂ and NO_x.

Table-3.2: Techniques used for Ambient Air Quality Monitoring

Sr. No	Parameter	Technique	Range of testing /limit of detection
1.	Respirable Suspended Particulate Matter (PM ₁₀)	Respirable Dust Sampler, with cyclone separator, Gravimetric Method	5.0 - 1200
2.	Fine Particulate Matter (PM _{2.5})	Fine Particulate Sampler, Gravimetric Method	2.0 - 500
3.	Sulphur dioxide	Modified West and Gaeke	5.0 - 1050
4.	Oxides of Nitrogen	Jacob & Hochheiser	6.0 - 750

3.1.3 Ambient Air Quality Monitoring Results Near Main Gate

The detailed on-site monitoring results of PM₁₀, PM_{2.5}, SO₂ and NO_x are presented in Table-3.3.

Table-3.3: Ambient Air Quality Monitoring Results Near Main Gate

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/2009
1	Particulate matters size less than 10 µm (PM ₁₀)	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m ³	89.3	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM _{2.5})	IS: 5182 (Part-24): 2019	µg/m ³	53.32	2.0 - 500	For 24 hour =60
3	Sulphur Dioxides (SO ₂)	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m ³	14.50	5.0 - 1050	For 24 hour =80
4	Oxides of nitrogen (NO _x)	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m ³	22.82	6.0 - 750	For 24 hour =80

3.1.4 Ambient Air Quality Monitoring Results Near ETP

The detailed on-site monitoring results of PM₁₀, PM_{2.5}, SO₂ and NO_x are presented in Table-3.4.

Table-3.4: Ambient Air Quality Monitoring Results Near ETP

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/2009
1	Particulate matters size less than 10 µm (PM ₁₀)	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m ³	85.0	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM _{2.5})	IS: 5182 (Part-24): 2019	µg/m ³	50.21	2.0 - 500	For 24 hour =60
3	Sulphur Dioxides (SO ₂)	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m ³	13.86	5.0 - 1050	For 24 hour =80
4	Oxides of nitrogen (NO _x)	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m ³	20.58	6.0 - 750	For 24 hour =80

3.1.5 Ambient Air Quality Monitoring Results Near Storage Godown

The detailed on-site monitoring results of PM₁₀, PM_{2.5}, SO₂ and NO_x are presented in Table-3.5

Table-3.5: Ambient Air Quality Monitoring Results Near Storage Godown

Sr. No	Particulars	Protocol	Unit	Result	Range of testing limit of detection	Standard as per NAAQS: dated 18/11/ 2009
1	Particulate matters size less than 10 µm (PM ₁₀)	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m ³	83.0	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM _{2.5})	IS: 5182 (Part-24): 2019	µg/m ³	48.42	2.0 - 500	For 24 hour =60
3	Sulphur Dioxides (SO ₂)	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m ³	12.93	5.0 - 1050	For 24 hour =80
4	Oxides of nitrogen (NO _x)	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m ³	19.42	6.0 - 750	For 24 hour =80

3.1.6 Discussion on Ambient Air Quality in the Study Area

The value of PM₁₀ at Ambient Air Monitoring Station No: 1, 2&3 are 89.3µg/m³, 85.0µg/m³&83.0µg/m³ respectively which were within permissible limit of 100 µg/m³ and PM_{2.5} levels are 53.32µg/m³Near Main Gate, 50.21µg/m³Near ETP and 48.42µg/m³Near Storage Godown, were also observed within permissible limit of 60 µg/m³ (for residential, rural and other areas as stipulated in the National Ambient Air Quality Standards). SO₂ ranges between 12.93 µg/m³ to 14.50 µg/m³ and NO_x ranges between 19.42 µg/m³ to 22.82 µg/m³ was also observed within the corresponding stipulated limits (Limit for SO₂ and NO_x; 80 µg/m³) at all of the 03 monitoring locations. Station wise variation of ambient air quality parameters has been graphically shown in Figure-3.1 to 3.4.

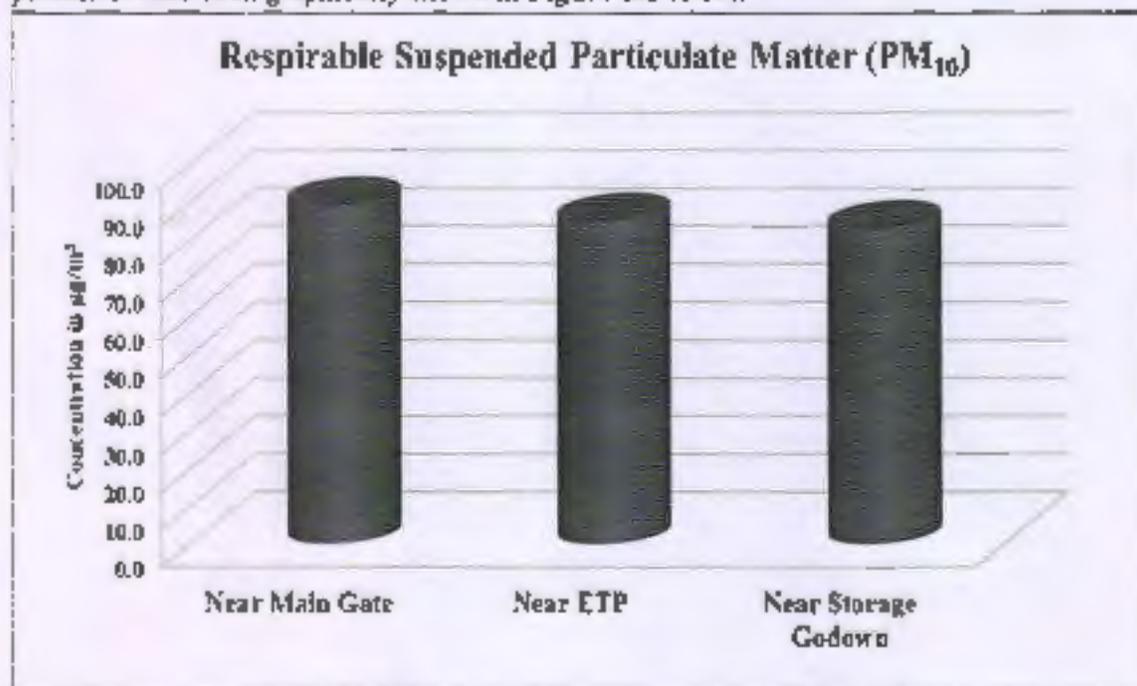


Figure-3.1: Graphs Showing PM₁₀ Concentration at all sites

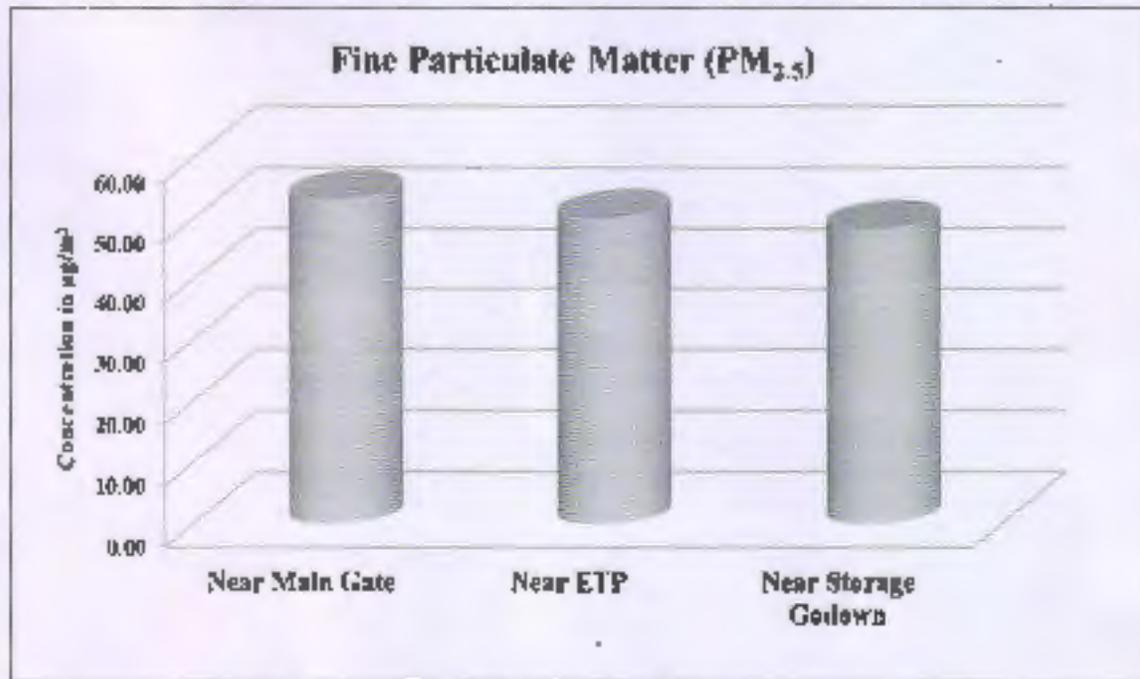


Figure-3.2: Graphs Showing PM_{2.5} Concentration at all sites

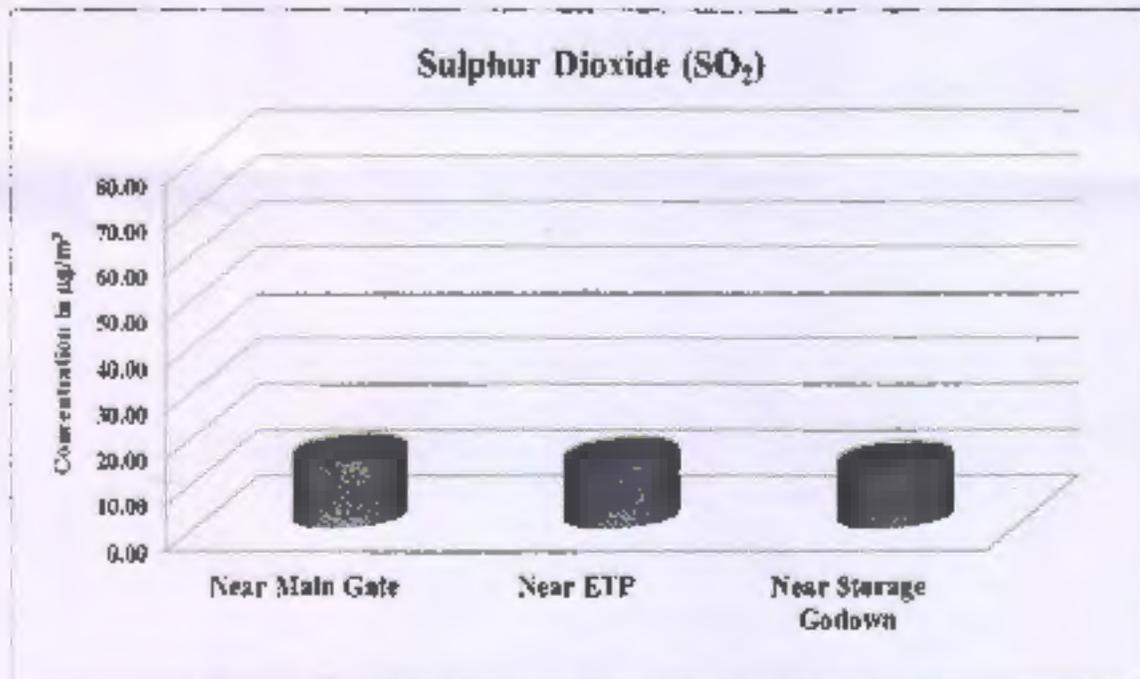


Figure-3.3: Graphs Showing SO₂ Concentration at all sites

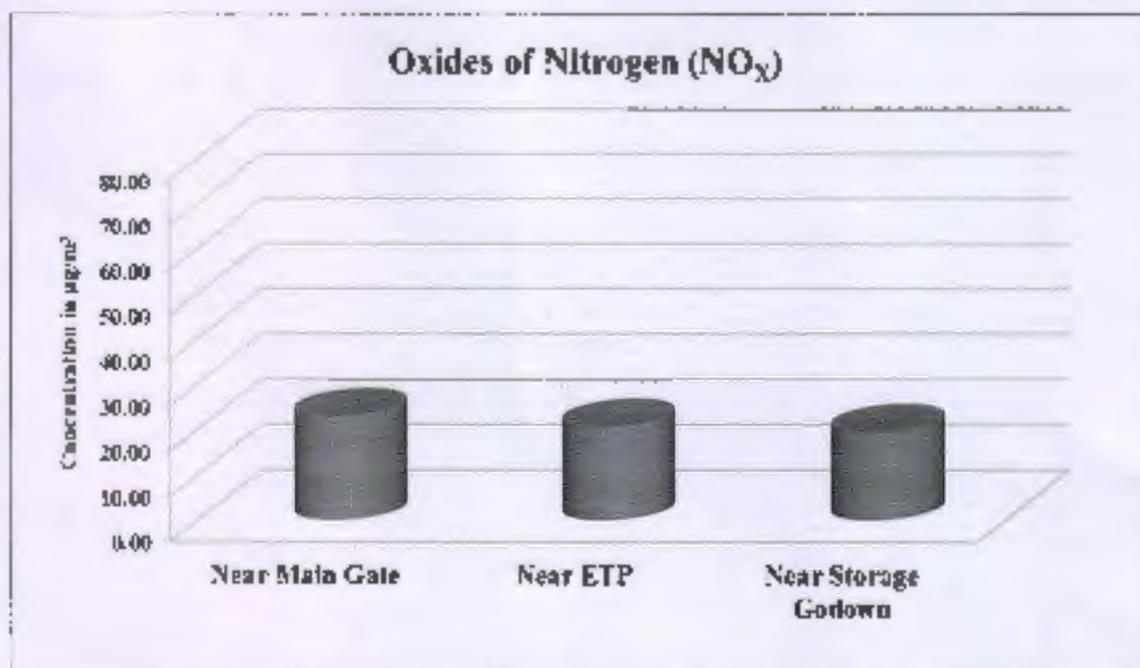


Figure 3.4: Graphs Showing NO_x Concentration at all sites

3.2 STACK EMISSION MONITORING

Stack Emission monitoring was carried out by EPA approved Laboratory on date 15.03.2022 for 02 No. of stack attached with 35.0 TPH & 60.0 TPH boilers (Wet Scrubber (with 35.0 TPH) and ESP (with 60 TPH) are used as Air Pollution Control Device with a stack height of 50.0 meter & 85.0 meter).

3.2.1 Stack Emission Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

- Particulate Matter (PM)

The Method used for Stack Emission monitoring and range of testing with CPCB standard are given in Table-3.6

Table-3.6: Details of Stack Emission Monitoring Results

Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing/ Limit of Detection	Standard (as per CPCB)
Stack No. 1						
1	Particulate Matter	mg/Nm ³	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	81.6	2.0 - 1000	150
Stack No. 2						
2	Particulate Matter	mg/Nm ³	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	48.0	2.0 - 1000	50

3.3 AMBIENT NOISE MONITORING

3.3.1 Ambient Noise Monitoring Locations

The main objective of noise monitoring in the study area is to assess the present ambient noise levels near project site due to various Industrial activities and increased vehicular movement. A preliminary reconnaissance survey has been undertaken to identify the major

noise generating sources in the area. Ambient noise monitoring was conducted at 01 location as given in Table-3.7.

Table-3.7: Details of Ambient Noise Monitoring Stations

Sr. No	Location Code	Location name and description	Date of Monitoring
1.	NQ-1	Near Admin Building	24/03/2022 to 25/03/2022

3.3.2 Methodology of Noise Monitoring

Noise levels were measured using sound level meter. Noise level monitoring was carried out continuously for 24-hours with one hour interval starting at 06:00 hrs to 06:00 hrs next day. The noise levels were monitored on working days only. During each hour Leq were directly computed by the instrument based on the sound pressure levels. Monitoring was carried out at 'A' response.

3.3.3 Ambient Noise Monitoring Results

The location wise ambient noise monitoring results is summarized in Table-3.8. The noise levels are graphically presented in Figure-3.5.

Table-3.8: Ambient Noise Monitoring Results

Ambient Noise Level				
Sr. No.	Parameter	Unit	Results DAY TIME (6:00 AM - 10:00 PM)	Results NIGHT TIME (10:00 PM - 6:00 AM)
1	Equivalent sound level	dB(A)	62.05	49.86

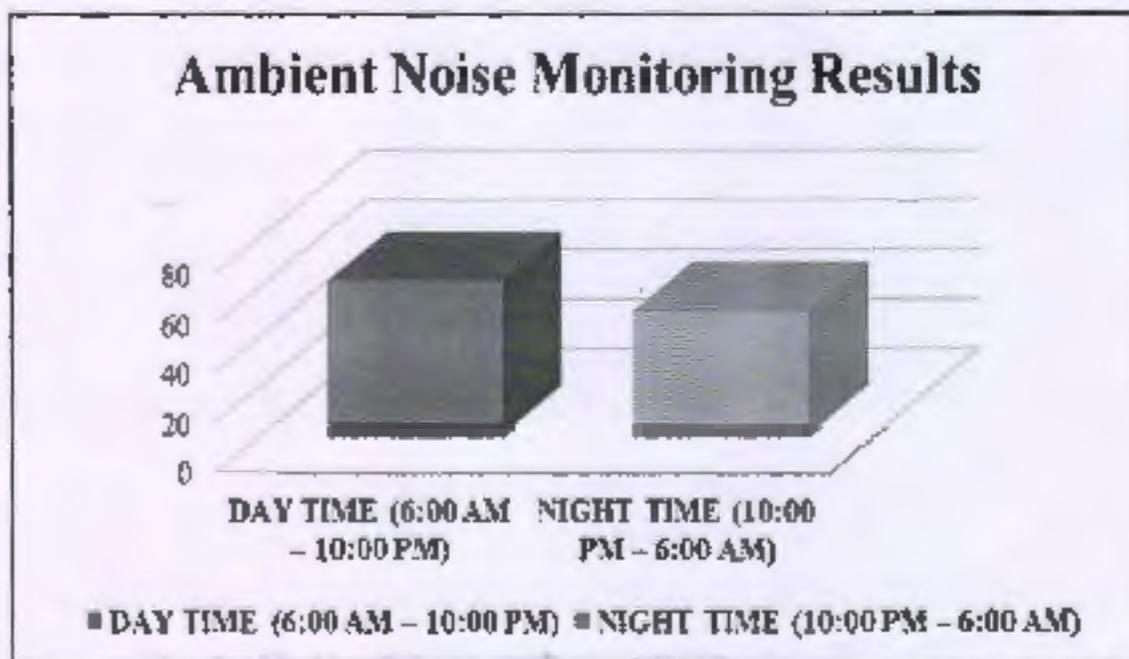


Figure 3.5: Day and Night Time noise Level Near Admin Building

Table-3.9: Noise Standards as per CPCB Schedule rule 3(1) and 4(1)

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

3.3.4 Discussion on Ambient Noise Levels in the Study Area

Day Time Noise Levels (L_{day}):

The day time noise level at monitoring station was found 62.05 dB(A), which is within limits prescribed for industrial area i.e. 75 db (A).

Night Time Noise Levels (L_{night}):

The night time noise level at monitoring station was found 49.86 dB(A), which is within limit prescribed for industrial area i.e. 70 dB (A).

3.4 GROUND WATER QUALITY MONITORING

3.4.1 Ground water Quality Monitoring Locations

Keeping in view the importance of ground water, sample of ground water was collected from the project site for the assessment of impacts of the project on the groundwater quality.

Water sample was collected from the project site. The sample was analyzed for various parameters to compare with the standards for Ground water as per IS: 10500 for Groundwater sources. The details of water sampling locations are given in Table-3.10.

Table-3.10: Details of Water Quality Monitoring Station

Sr. No	Location Code	Location name and description	Date of Sampling
1.	GW-1	Tubwell Water	12 th October, 2021
3.	GW-1	Tubwell Water	11 th November, 2021
5.	GW-1	Tubwell Water	16 th December, 2021
7.	GW-1	Tubwell Water	05 th January, 2022
9.	GW-1	Tubwell Water	14 th February, 2022
11.	GW-1	Tubwell Water	25 th March, 2022

3.4.2 Methodology of ground water Quality Monitoring

Sampling of ground water was carried out on 12.10.2021, 11.11.2021, 16.12.2021, 05.01.2022, 14.02.2022 and 25.03.2022. Samples were collected as grab sample and sampling forms are filled in as per the sampling plan. The preservative sample were properly added to preserve as per standard operating procedures (SOP) and stored immediately in ice boxes, which were ensured for appropriate temperatures. Sample for chemical analysis was collected in polyethylene carboys. Sample collected for metal content were acidified to ≤ 2 pH with 1 ml HNO_3 . A sample for bacteriological analysis was collected in sterilized glass bottles.

Soon after the completion of sampling, chain of custody sheets for the samples are filled in and then they were transported by road to Environmental & Technical Research Centre, Lucknow for further analysis. Proper care was taken during packing and transportation of samples. All the samples reached the central laboratory within the holding times for different parameters. After ensuring the same the samples were forwarded immediately for analysis. The samples were analyzed as per the standard procedures specified in 'Standard Methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA) and CPCB. The analytical techniques and the test methods adopted for testing of ground water are given in Table-3.11 to Table-3.16.

3.4.3 Ground water Quality Monitoring Results

The detailed Ground water quality monitoring results are presented in Table-3.11 to Table-3.16.

Table-3.11: Ground water Quality Results of Tubewell Water
(October, 2021)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /Limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 100	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H ⁺	7.6	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	<2.0	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part-16): 1984 Reaffirmed: 2017	364.7	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	<0.5	0.5- 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	<0.05	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	44.8	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	27.21	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	28.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.27	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	<0.1	0.1-5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	<1.0	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	<0.001	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	31.26	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	248.4	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	224.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.015	0.015-5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.17	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.02	0.02- 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.56	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.005	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.01	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.5	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.02	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

Table-3.13: Ground water Quality Results of Tubewell Water
(November, 2021)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard IS:800: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hzon	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 100	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H	7.6	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	<2.0	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	412.8	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NO ₃ F	<0.5	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	<0.05	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	51.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	34.02	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	32.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.40	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	<0.1	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	<1.0	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	<0.001	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	34.82	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2120 B	276.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2140 C	268.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.015	0.015-5.0	0.05	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.11	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.03	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-4120 B (ICP-OES)	0.86	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.005	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.01	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.5	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-4120 B (ICP-OES)	<0.02	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	> 2 MPN Present or Absent per 100 ml	Should not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	> 2 MPN Present or Absent per 100 ml	Should not be detected in any 100 ml sample	

Table-3.15: Ground water Quality Results of Tubewell Water
(December, 2021)

Sr. No	Test Parameter	Unit	Principle/Test Method	Result	Range of testing limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 100	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H ⁺	7.7	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	<2.0	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	435.0	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ N	<0.5	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	<0.05	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-80): 1991 Reaffirmed: 2019	41.6	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg. B	24.3	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	36.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.44	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	<0.1	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	<1.0	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	<0.001	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	48.18	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	218.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	204.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.015	0.015-5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.16	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.05	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	1.19	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.01	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.5	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.02	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	> 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	> 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

Table 3.17: Ground water Quality Results of Tubewell Water
(January, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 100	5	15
2	Odour	.	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	.	APHA 23 rd Ed. 2017-4500 H ⁺	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	<2.0	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	428.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	<0.5	0.5 - 30	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	<0.05	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	43.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	27.23	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	30.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.42	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3024 (Part-26): 1986 Reaffirmed: 2019	<0.1	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	<1.0	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	<0.001	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	36.64	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	232.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	220.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.015	0.015-5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.13	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.05	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.86	0.05 - 15	1	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.01	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.5	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.02	0.02 - 2.0	0.01	0.01
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 3.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≥ 2 MPN Present or Absent per 100 ml	Should not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≥ 2 MPN Present or Absent per 100 ml	Should not be detected in any 100 ml sample	

Table 3.19: Ground water Quality Results of Tubewell Water
(February, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	India Standard IS:4000: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 100	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H ⁺	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	<2.0	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	404.2	10 - 3000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	<0.5	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	<0.05	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	56.0	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	32.0	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	28.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.35	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	<0.1	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3023 (Part-34): 1986 Reaffirmed: 2019	<1.0	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	<0.001	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	28.0	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2330 B	289.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	372.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.015	0.015-5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.10	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.04	0.02- 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.93	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.01	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.5	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.02	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1984 Reaffirmed: 2019	Absent	> 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1984 Reaffirmed: 2019	Absent	> 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

Table-3.21 Ground water Quality Results of Tubewell Water
(March, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 14500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 100	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 IF	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	<2.0	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	378.5	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	<0.5	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	<0.05	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	49.6	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	34.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.43	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	<0.1	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	<1.0	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	<0.001	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	32.52	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	272.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	252.0	3.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.015	0.015-5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.10	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.02	0.02- 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.55	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.01	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.5	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.05	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.02	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	<0.03	0.03 - 5.0	0.01	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≥ 1 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≥ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

3.5 SOIL MONITORING

3.5.1 Soil Monitoring Locations

The objective of the soil monitoring is to identify the impacts of ongoing project activities on soil quality and also predict impacts, which have arisen due to execution of various constructions allied activities. Accordingly, a study of assessment of the soil quality has been carried out.

To assess impacts of ongoing project activities on the soil in the area, the Physico-chemical characteristics of soils were examined by obtaining soil samples from selected points and analysis of the same. Single sample of soil was collected from the project site for studying soil characteristics, the location of which is listed in Table-3.23.

Table-3.23: Details of Soil Monitoring Stations

Sr. No	Location Code	Location name and description
1.	SQ-1	Near Project Site

3.5.2 Methodology of Soil Monitoring

The sampling has been done in line with IS: 2720 & Methods of Soil Analysis, Part-1st, 2nd Edition, 1986 of American Society for Agronomy and Soil Science Society of America. The homogenized samples were analyzed for physical and chemical characteristics (physical, chemical and heavy metal concentrations). The soil samples were collected in the month of March on 25.03.2022.

The samples have been analyzed as per the established scientific methods for Physico-chemical parameters. The heavy metals have been analyzed by using Atomic Absorption Spectro-photometer.

3.5.3 Soil Monitoring Results

Single sample of soil is collected from the site to check the quality of soil of the study area. The Physico-chemical characteristics of the soil, as obtained from the analysis of the soil sample, are presented in Table-3.24.

Table-3.24: Physico-Chemical Characteristics of Soil Near Project Site

Sr. No.	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection
1	pH	-	IS: 2720 (Part-26): 1987 Reaffirmed: 2016	7.3	1 - 14
2	Electrical Conductivity	µmhos/cm	IS: 14767:2000 Reaffirmed:2016	292.0	1.0 - 40000
3	Moisture content	%	IS: 2720 (Part-2): 1973 Reaffirmed: 2015	3.42	1.0 - 50
4	Sulphur	Kg/Hec	IS:14685: 1999 Reaffirmed: 2014	14.32	5.0 - 100
5	Boron	mg/kg	ETRC/ LABSOPS/06	<4.0	4.0 - 100
6	Copper	mg/kg	ETRC/ LABSOPS/07	0.37	0.3 - 500
7	Zinc	mg/kg	ETRC/ LABSOPS/08	1.42	1.0 - 500
8	Iron	mg/kg	ETRC/ LABSOPS/09	14.14	5.0 - 500
9	Manganese	mg/kg	ETRC/ LABSOPS/10	7.25	5.0 - 500

3.5.4 Discussion on Soil Characteristics in the Near Project Site

The soil in study area is characterized by moderate organic content. The soil quality in the project area has not been affected by the project activities.







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ETRC/PM14/TEB-REP/T/17

TEST REPORT WATER ANALYSIS

Test Report Ref No. ETRC/EPA/6051/2022	Date of Report: 28/03/2022
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bitran District: Bijnor (U.P.) - 245732

SAMPLE DETAILS

1	Water/Waste Water	Ground Water	6	Packing Condition	Sealed
2	Sample Description	Tubewell Water	6	Sample Collected By	Industry Self
3	Sample received date	25.03.2022	7	Analysis Start Date	25.03.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	28.03.2022

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing (limit of detection)	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 30	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	378.5	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	BDL	0.5 - 2.0	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017 3540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	49.6	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	31.18	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	34.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.43	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-28): 1988 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1988 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	32.92	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	272.6	2.0 - 1000	200	800
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	252.0	5.0 - 800	200	800
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.10	0.05 - 20	0.3	No Relaxation



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22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.02	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.55	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	± 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	± 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

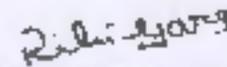
BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment contributing to the results.
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 Authorized Signatory
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ETRC/PM14/YES-REP/FT/38

TEST REPORT SOIL ANALYSIS

Test Report Ref No. ETRC/EPA/6052/2022	Date of Report: 26/03/2022
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bilran District: Bijnor (U.P.) - 246732

SAMPLE DETAILS

1	Sampling Location	Near Project Site	5	Packing Condition	Sealed
2	Sample Description	Soil Sample	6	Sample Collected By	ETRC, Lucknow
3	Sample received date	25.03.2022	7	Analysis Start Date	25.03.2022
4	Sample Quantity	500 gms	8	Analysis End Date	28.03.2022

TEST REPORT

Sr. No.	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /Limit of detection
1	pH		IS: 2720 (Part-25):1987 Reaffirmed:2016	7.3	1 - 14
2	Electrical Conductivity	µmhos/cm	IS: 14787:2000 Reaffirmed:2015	292.0	1.0 - 40000
3	Moisture content	%	IS :2720 (Part -2): 1973 Reaffirmed:2015	3.42	1.0 - 50
4	Sulphur	Kg/Hec	IS :14865:1999 Reaffirmed:2014	14.32	5.0 - 100
5	Boron	mg/kg	ETRC/ LABSOPS/06	BDL	4.0 - 100
6	Copper	mg/kg	ETRC/ LABSOPS/07	0.37	0.3 - 500
7	Zinc	mg/kg	ETRC/ LABSOPS/08	1.42	1.0 - 500
8	Iron	mg/kg	ETRC/ LABSOPS/09	14.14	5.0 - 500
9	Manganese	mg/kg	ETRC/ LABSOPS/10	7.25	5.0 - 500

BDL = Below Detection Limit

END OF REPORT

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that the data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items listed.
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TEST REPORT WATER ANALYSIS

Test Report Ref No. ETRC/1610/10056/2021	Date of Report: 16/10/2021
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Biran District: Bijnor (U.P.) - 246732

SAMPLE DETAILS

1	Water/Waste Water	Ground Water	6	Packing Condition	Sealed
2	Sample Description	Tubewell Water	6	Sample Collected By	Industry Self
3	Sample received date	12.10.2021	7	Analysis Start Date	12.10.2021
4	Sample Quantity	5.0 liters	8	Analysis End Date	16.10.2021

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /Limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 30	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H ⁺	7.6	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-15): 1984 Reaffirmed: 2017	364.7	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	BDL	0.5 - 2.0	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1981 Reaffirmed: 2019	44.8	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg, B	27.21	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	28.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.27	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3026 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500-SO ₄ ²⁻	31.28	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2020 B	248.0	2.0 - 1000	200	500
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	224.0	5.0 - 800	200	500
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.17	0.05 - 20	0.3	No Relaxation



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22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.02	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.96	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

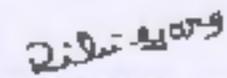
BDL-Below Detection Limit

..... END OF REPORT

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 Authorized Signatory
 (Ritu Garg)
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ETRC/PM14/TE/REP/FT/17

TEST REPORT WATER ANALYSIS

Test Report Ref No. ETRC/17/11/10057/2021	Date of Report: 17/11/2021
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sahelpur Bitran District: Bijnor (U.P.) - 246732

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Tubewell Water	6	Sample Collected By	Industry Self
3	Sample received date	11.11.2021	7	Analysis Start Date	11.11.2021
4	Sample Quantity	5.0 liters	8	Analysis End Date	16.11.2021

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 30	5	15
2	Odour	-	IS: 3025 (Part-6): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H	7.6	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-18): 1984 Reaffirmed: 2017	412.8	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	BDL	0.5 - 2.0	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	51.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg. B	34.82	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	32.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.40	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1988 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ C	34.82	1.0 - 600	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	276.8	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	288.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.11	0.05 - 20	0.3	No Relaxation



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22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.03	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.06	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
26	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
25	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation

Microbiological Parameters

30	E. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample
31	T. coli	MPN/100 ml	IS: 1622 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample

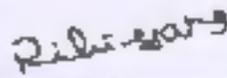
BDL=Below Detection Limit

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 (Sandeep Kr Verma)
 Lab-Incharge




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 (Ritu Garg)
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TEST REPORT WATER ANALYSIS

Test Report Ref No. ETRC/EPA/5406/2021	Date of Report: 21/12/2021
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Biltran District: Bijnor (U.P.) - 246732

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Tubewell Water	6	Sample Collected By	Industry Self
3	Sample received date	16.12.2021	7	Analysis Start Date	16.12.2021
4	Sample Quantity	5.0 liters	8	Analysis End Date	20.12.2021

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing limit of detection	Indian Standard IS:600: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5-30	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H	7.7	1-14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	BDL	2-40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	435.0	10-5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	BDL	0.5-2.0	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	BDL	0.05-0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	41.8	2.0-600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3500 Mg. B	24.3	0.1-200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	35.0	2.0-2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.44	0.02-5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-28): 1986 Reaffirmed: 2019	BDL	0.1-5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0-70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	48.18	1.0-500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	219.0	2.0-1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	204.0	5.0-600	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.015-5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05-2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03-10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.16	0.05-20	0.3	No Relaxation



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22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.06	0.02 - 6.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	1.19	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1022 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1022 - 1981 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

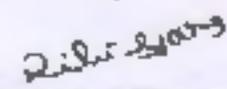
BDL-Below Detection Limit

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TEST REPORT WATER ANALYSIS

Test Report Ref No. ETRC/1101/10058/2022	Date of Report: 11/01/2022
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bitran District: Bijnor (U.P.) - 246732

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	6	Packing Condition	Sealed
2	Sample Description	Tubewell Water	6	Sample Collected By	Industry Self
3	Sample received date	05.01.2022	7	Analysis Start Date	05.01.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	10.01.2022

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /Limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 30	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H	7.9	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	428.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	BDL	0.5 - 2.0	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	BDL	0.05 - 0.6	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3026 (Part-40): 1991 Reaffirmed: 2019	43.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3600 Mg, B	27.21	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	30.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.42	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3026 (Part-28): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3026 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	36.64	1.0 - 600	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	232.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	220.0	5.0 - 600	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.13	0.05 - 20	0.3	No Relaxation



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Test Report Ref No. ETRC/T101/10058/2022

22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.05	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.05	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1622 - 1991 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1622 - 1991 Reaffirmed: 2019	Absent	≤ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

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ETRC/PM14/TEB-REP/FT/17

TEST REPORT WATER ANALYSIS

Test Report Ref No. ETRC/EPA/5745/2022	Date of Report: 19/02/2022
Name /Address/Type of Industry	M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bitran District: Bijnor (U.P.) - 246732

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Tubwell Water	6	Sample Collected By	Industry Self
3	Sample received date	14.02.2022	7	Analysis Start Date	14.02.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	18.02.2022

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	Colour	Hazen	IS: 3025 (Part-4): 1983 Reaffirmed: 2017	<5.0	5 - 30	5	15
2	Odour	-	IS: 3025 (Part-5): 1983 Reaffirmed: 2017	Agreeable	Qualitative	Agreeable	Agreeable
3	pH	-	APHA 23 rd Ed. 2017-4500 H ⁺	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 rd Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	444.2	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 rd Ed. 2017-4500-NH ₃ F	BDL	0.5 - 2.0	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 rd Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	56.0	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 rd Ed. 2017-3600 Mg, B	32.0	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 rd Ed. 2017-4500-Cl B	28.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 rd Ed. 2017-4500 F C	0.35	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO ₃	mg/l	IS: 3025 (Part-34): 1988 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C ₆ H ₅ OH)	mg/l	APHA 23 rd Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO ₄	mg/l	APHA 23 rd Ed. 2017-4500- SO ₄ ²⁻	28.0	1.0 - 500	200	400
16	Alkalinity as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2320 B	248.0	2.0 - 1000	200	600
17	Total Hardness as CaCO ₃	mg/l	APHA 23 rd Ed. 2017-2340 C	272.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.10	0.05 - 20	0.3	No Relaxation



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Test Report Ref No. ETRC/EPA/5745/2022

22	Manganese as Mn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 6.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	0.93	0.05 - 16	5	15
24	Cadmium as Cd	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 rd Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	E. coli	MPN/100 ml	IS: 1822 - 1981 Reaffirmed: 2019	Absent	≥ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	
31	T. coli	MPN/100 ml	IS: 1822 - 1981 Reaffirmed: 2019	Absent	≥ 2 MPN Present or Absent per 100 ml	Shall not be detected in any 100 ml sample	

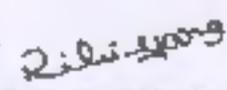
BDL=Below Detection Limit

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ETRC/PM14/TEC-REP/FT/37

TEST REPORT AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No. ETRC/EPA/8045/2022		Date of Report: 28/03/2022	
Name /Address/Type of Industry		M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bitran District: Bijnor (U.P.) - 246732	
Monitored by		ETRC, Lucknow	
Location of Sampling points		Near Main Gate	
Sr. No.	GENERAL OBSERVATIONS	DETAILS-PM ₁₀	DETAILS-PM _{2.5}
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	54	54
(d)	Average ambient temperature (°C)	30	30
(e)	Time of Sampling Started (Hours)	10:28 am (23.03.2022)	10:28 am (23.03.2022)
(f)	Time of Sampling completed (Hours)	10:19 am (24.03.2022)	10:19 am (24.03.2022)
(g)	Total time of sampling (Minutes)	24 hour (1429 minutes)	24 hour (1429 minutes)
2	Average Air sampling rate for PM (m ³ /minute)	1.296	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	TOTAL VOLUME OF AIR SAMPLED		
	• PM	• 1850.814	• 23.820
	• GAS	• 714.6	

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing limit of detection	Standard as per NAAQS; dated 18/11/2009
1	Particulate matters size less than 10 µm (PM ₁₀)	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m ³	89.3	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM _{2.5})	IS: 5182 (Part-24): 2019	µg/m ³	53.32	2.0 - 500	For 24 hour =60
3	Sulphur Dioxide (SO ₂)	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m ³	14.50	5.0 - 1050	For 24 hour =80
4	Oxides of Nitrogen (NO _x)	IS: 5182 (Part-8): 2006 Reaffirmed: 2017	µg/m ³	22.82	8.0 - 750	For 24 hour =80

----- END OF REPORT -----

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Lab-In-charge



Authorized Signatory
(Ritu Gang)
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ETRC/PM14/TE5-REP/FT/37

TEST REPORT AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No. ETRC/EPA/8046/2022		Date of Report: 28/03/2022	
Name /Address/Type of Industry		M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bitran District: Bijnor (U.P.) - 246732	
Monitored by		ETRC, Lucknow	
Location of Sampling points		Near ETP	
Sr. No.	GENERAL OBSERVATIONS	DETAILS-PM ₁₀	DETAILS-PM _{2.5}
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	54	54
(d)	Average ambient temperature (°C)	30	30
(e)	Time of Sampling Started (Hours)	10:46 am (23.03.2022)	10:48 am (23.03.2022)
(f)	Time of Sampling completed (Hours)	10:26 am (24.03.2022)	10:26 am (24.03.2022)
(g)	Total time of sampling (Minutes)	24 hour (1422 minutes)	24 hour (1422 minutes)
2	Average Air sampling rate for PM (m ³ /minute)	1.180	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	TOTAL VOLUME OF AIR SAMPLED		
	• PM	• 1549.62	• 23.702
	• GAS	• 711.0	

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/2009
1	Particulate matters size less than 10 µm (PM ₁₀)	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m ³	85.0	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM _{2.5})	IS: 5182 (Part-24): 2019	µg/m ³	80.21	2.0 - 500	For 24 hour =60
3	Sulphur Dioxide (SO ₂)	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m ³	13.86	5.0 - 1050	For 24 hour =80
4	Oxides of Nitrogen (NO _x)	IS: 5182 (Part-8): 2008 Reaffirmed: 2017	µg/m ³	20.58	5.0 - 750	For 24 hour =80

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TEST REPORT AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No. ETRC/EPA/6047/2022		Date of Report: 28/03/2022	
Name /Address/Type of Industry		M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabaipur Bitran District: Bijnor (U.P.) - 246732	
Monitored by		ETRC, Lucknow	
Location of Sampling points		Near Storage Godown	
Sr. No.	GENERAL OBSERVATIONS	DETAILS-PM ₁₀	DETAILS-PM _{2.5}
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	54	54
(d)	Average ambient temperature (°C)	30	30
(e)	Time of Sampling Started (Hours)	10:30 am (24.03.2022)	10:30 am (24.03.2022)
(f)	Time of Sampling completed (Hours)	10:22 am (25.03.2022)	10:22 am (25.03.2022)
(g)	Total time of sampling (Minutes)	24 hour (1426 minutes)	24 hour (1425 minutes)
2	Average Air sampling rate for PM (m ³ /minute)	1.175	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	TOTAL VOLUME OF AIR SAMPLED		
	• PM	• 1674.375	• 23.750
	• GAS	• 712.5	

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing limit of detection	Standard as per NAAQS; dated 18/11/2009
1	Particulate matters size less than 10 µm (PM ₁₀)	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m ³	83.0	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM _{2.5})	IS: 5182 (Part-24): 2019	µg/m ³	48.42	2.0 - 500	For 24 hour =50
3	Sulphur Dioxide (SO ₂)	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m ³	12.83	5.0 - 1050	For 24 hour =80
4	Oxides of Nitrogen (NO _x)	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m ³	19.42	6.0 - 750	For 24 hour =80

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ETRC/PM 14/TEB-REP/FT/36

TEST REPORT

STACK EMISSION MONITORING AND ANALYSIS REPORT

Stack No. 2

Test Report Ref No. ETRC/EPA/6049/2022		Date of Report: 28/03/2022
Name /Address/Type of Industry		M/s Utam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bilran District: Bijnor (U.P.) - 246732
Monitored by		ETRC, Lucknow
Sr. No.	GENERAL INFORMATION	DETAILS
1(a)	Date of monitoring	24.03.2022
(b)	Stack material	RCC
(c)	Height of stack from ground level	85.0 mts
(d)	Source to which stack attached	Boiler
(e)	No of Source attached with capacity	01 No. (60.0 TPH)
(f)	Type and quantity of fuel used	Bagasse + Slop
(g)	Details of APCS installed	ESP
2.	PARAMETERS	VALUES
(a)	Ambient temperature (°C)	36.0
(b)	Stack gas temperature (°C)	125.0
(c)	Stack gas velocity (m/sec)	11.79
(d)	Flow rate (LPM)	17
(e)	Sampling time (minutes)	60
(f)	Volume of air sampled (liters)	1020

TEST RESULT

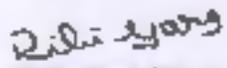
Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing / Limit of Detection	Standard (as per CPCB)
1	Particulate Matter	mg/Nm ³	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	48.0	2.0 - 1000	50

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TEST REPORT

STACK EMISSION MONITORING AND ANALYSIS REPORT

Stack No. 1

Test Report Ref No. ETRC/EPA/6048/2022		Date of Report: 28/03/2022
Name /Address/Type of Industry		M/s Uttam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabalpur Bitran District: Bijnor (U.P.) - 246732
Monitored by		ETRC, Lucknow
Sr. No.	GENERAL INFORMATION	DETAILS
1.(a)	Date of monitoring	24.0.2022
(b)	Stack material	MS
(c)	Height of stack from ground level	50.0 mts
(d)	Source to which stack attached	Boiler
(e)	No of Source attached with capacity	01 No. (35.0 TPH)
(f)	Type and quantity of fuel used	Bagasse + Biogas
(g)	Details of APCS installed	Wet scrubber
2.	PARAMETERS	VALUES
(a)	Ambient temperature (°C)	33.0
(b)	Stack gas temperature (°C)	129.0
(c)	Stack gas velocity (m/sec)	11.84
(d)	Flow rate (LPM)	17
(e)	Sampling time (minutes)	62
(f)	Volume of air sampled (liters)	1054

TEST RESULT

Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing / Limit of Detection	Standard (as per CPCB)
1	Particulate Matter	mg/Nm ³	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	81.6	2.0 - 1000	150

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TEST REPORT AMBIENT NOISE MONITORING AND ANALYSIS REPORT

Test Report Ref No. ETRC/EPA/6050/2022		Date of Report: 28/03/2022
Name /Address/Type of Industry		M/s Udam Sugar Mills Limited Unit: Barkatpur, Distillery Division Village Barkatpur, P.O. Sabulpur Bitran District: Bijnor (U.P.) - 246732
Monitored by		ETRC, Lucknow
Sr. No.	GENERAL INFORMATION	DETAILS
(a)	Date of monitoring	24/03/2022 (6:00 AM) to 25/03/2022 (6:00 AM)
(b)	Sample Description	Ambient Noise
(c)	Sampling Location	Near Admin Building
(d)	Environmental Condition	Normal

TEST RESULT

Sr. No.	Parameter	Unit	Ambient Noise Level	
			Results DAY TIME (6:00 AM - 10:00 PM)	Results NIGHT TIME (10:00 PM - 6:00 AM)
1	Equivalent sound level	dB(A)	62.05	49.86

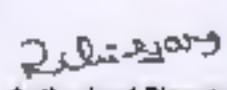
Noise Standards as per CPCB Schedule rule 3(1) and 4(1)			
Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	55	55
C	Residential Area	55	45
D	Silence Zone	50	40

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that the data reflects our best effort to generate accurate results for the samples mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameters analyzed in the results and/or the performance of the equipment contributing to the results.
- All disputes subject to Lucknow Jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.


Authorized Signatory
(Sandeep Kr Verma)
Lab-In-charge




Authorized Signatory
(Ritu Garg)
QM