

# WAVE Industries

Unit-Dhanaura

CIN No.U74899DL1997PTC091198

Date: 06.12.2022

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

**Subject:** Six monthly compliance Reports of the conditions of Environmental Clearance for Establishment of Proposed 100 KLD Molasses / Cane Syrup Based Distillery along with Co-gen power – 7.0 MW at Khasra No.- 108 in Village: Malasia, Khasra No.- 8,46,47,49,59,60,61,62,63,65,70,70,72 in Village: Musallepur, Tehsil: Dhanaura, District: Amroha, Uttar Pradesh by M/s Wave Industries Private Limited for the period of April, 2022 to September, 2022. *Currently unit is operating at 140 KLD capacity with No Increase in Pollution Load Certificate.*

EC Ref. No.: 401/Parya/SEAC/5834-5510/2019, dated 15<sup>th</sup> October, 2020.

**Reg:** Submission of Six-Monthly Compliance Report for Period of April, 2022 to September, 2022.

Dear Sir,

This is in connection to above mentioned subject we are hereby submitting the six-monthly compliance report of the conditions of Environmental Clearance for Establishment of Proposed 100 KLD Molasses / Cane Syrup Based Distillery along with Co-gen power – 7.0 MW at Khasra No.- 108 in Village: Malasia, Khasra No.- 8,46,47,49,59,60,61,62,63,65,70,70,72 in Village: Musallepur, Tehsil: Dhanaura, District: Amroha, Uttar Pradesh by M/s Wave Industries Private Limited, along with annexures as follows:

1. Copy of Consent to Establish & No increasing pollution load
2. Copy of Environmental Clearance
3. Monitoring Reports

Requesting you to accept the hard and soft copy (CD) reports submitted for information please.

Thanking You,  
Yours sincerely

For WAVE INDUSTRIES PVT. LTD.

  
Authorized Signatory

M/s Wave Industries Private Limited  
B-5, Sector-52, Noida, District-G.B.Nagar

**WAVE INDUSTRIES PVT.LTD.**

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# COMPLIANCE REPORT

**AS PER CONDITIONS STIPULATED  
IN THE ENVIRONMENTAL CLEARANCE  
401/Parya/SEAC/5834-5510/2019,  
Dated 15<sup>th</sup> October,2020**

**Six Monthly Compliance Report  
(April-2022 to September-2022)**

**FOR**

**ESTABLISHMENT OF PROPOSED 100 KLD  
MOLASSES / CANE SYRUP BASED  
DISTILLERY ALONG WITH  
CO-GEN POWER – 7.0 MW**

**AT**

**KHASRA NO. - 108 IN VILLAGE - MALASIA,  
KHASRA NO.-8, 46, 47, 49, 59, 60, 61, 62, 63, 65, 70, 70, 72 IN  
VILLAGE - MUSALLEPUR, TEHSIL - DHANAURA, DISTRICT –  
AMROHA, UTTAR PRADESH**

**SUBMITTED BY**

**M/S WAVE INDUSTRIES PRIVATE LIMITED**

**Registered Address: B-5, Sector-52, Noida,  
District-G.B. Nagar -244231**

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## **CHAPTER-1**

### **INTRODUCTION AND PROJECT DESCRIPTION**

Six monthly environmental compliance/status report is submitted for Environmental Clearance for Establishment of Proposed 100 KLD Molasses / Cane Syrup Based Distillery along with Co-gen power – 7.0 MW at Khasra No.- 108 in Village: Malasia, Khasra No.-8, 46, 47, 49, 59, 60, 61, 62, 63, 65, 70, 70, 72 in Village: Musallepur, Tehsil: Dhanaura, District: Amroha, Uttar Pradesh by **M/s Wave Industries Private Limited** for April-2022 to September-2022. Prior Environment Clearance was obtained from State Level Environment Impact Assessment Authority, Uttar Pradesh wide Ref. no.: **401/Parya/SEAC/5834-5510/2019, dated 15<sup>th</sup> October, 2020**. Consent to Establishment for Air & Water has already been obtained for the project Vide Ref No. - **120757/UPPCB/Bijnore(UPPCBRO)/CTE/JYOTIBAPHULE NAGAR/2021** for validity upto 23/05/2026. No objection certificate for “No increase in pollution load” of Distillery capacity 140 KLD on use of alternative feed stock (B heavy Molasses/Sugar Syrup) has been granted through UPPCB Letter no – **33/UPHOC7/EIA/JYOTIBA PHULE NAGAR/2021 dated 01/09/2021**. Copy of CTE, CTO & NOC is attached here as **Annexure-1**.

No objection certificate for “No increase in pollution load” of Distillery capacity 140 KLD on use of alternative feed stock (B heavy Molasses/Sugar Syrup) has been granted through UPPCB Letter no – 33/UPHOC7/EIA/JYOTIBA PHULE NAGAR/2021 dated 01/09/2021.

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

Environmental mitigation measures described in Environmental Management Plan are being implemented construction phase. **M/s Wave Industries Private Limited Unit Distillery**. Management team is fully conscious about Environmental Management and enhancing green belt development in project surrounding area.

Six monthly compliance/status reports for April-2022 to September-2022 for conditions stipulated in the Environmental Clearance letter issued by SEIAA U.P. are 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:** Establishment of Proposed 100 KLD Molasses / Cane Syrup Based Distillery along with Co-gen power – 7.0 MW at Khasra No.- 108 in Village: Malasia, Khasra No.- 8, 46, 47, 49, 59, 60, 61, 62, 63, 65, 70, 70,7 2 in Village: Musallepur, Tehsil: Dhanaura, District: Amroha, Uttar Pradesh by **M/s Wave Industries Private Limited.**

**Clearance Letter No:** 401/Parya/SEAC/5834-5510/2019, dated 15<sup>th</sup> October, 2020.

**Period of Compliance Report:** (April-2022 to September-2022)

<b>A. STATUTORY COMPLIANCE</b>		
<b>S.No.</b>	<b>Statutory</b>	<b>Compliances</b>
<b>1.</b>	45 days monitoring report of the area for air quality, water quality, Noise level. Besides flora & fauna should be examined twice a week and be submitted within 60 days for a record.	Baseline monitoring already submitted as suggested. Current Monitoring reports are attached as <b>Annexure- 3.</b>
<b>2.</b>	The project proponent shall obtain forest clearance under the of Forest (Conservation) Act, 1986, in case of the diversion of forest of forest land for non-forest purpose involved in the project.	Not Applicable, as there is no forest land involved in this project.
<b>3.</b>	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	Not Applicable, there is no wild life sanctuary within 10 km radius.
<b>4.</b>	The project proponent shall prepare a site-specific conservation plan and wildlife management plan and approved by the chief wildlife warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with six-monthly compliance report. (In case of the presence of schedule -I species in the study area).	No schedule-I species is found in study area, hence this condition is not applicable.
<b>5.</b>	The project proponent shall obtain Consent to Establish/ Operate under the provision of Air	The Consent to Establishment (Air & Water) has been Obtained



	(Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/Committee.	from UPPCB. Unit obtained Copy of CTE attached as <b>Annexure-1</b> .
<b>6.</b>	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.	The point is noted. Will be complied.
<b>7.</b>	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	The point is noted. Will be complied.
<b>II. Air quality monitoring and preservation:</b>		
<b>1.</b>	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	The project is in operation phase; Online-monitoring system for SPM and Discharge (Web Camera) has been installed and connected to CPCB Server.
<b>2.</b>	The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameter relevant to the main pollutant released (e.g. PM <sub>10</sub> and PM <sub>2.5</sub> in reference to PM emission, and SO <sub>2</sub> and NO <sub>x</sub> in reference to SO <sub>2</sub> and NO <sub>x</sub> emission) within and outside the plant area at least at four location (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions. (case to case basis small plants; Manual; Large Plants: Continuous)	Monitoring reports are attached as <b>Annexure- 3</b>

3.	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring of air quality/fugitive emission to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with Six-monthly monitoring	The project is in operation phase, and we are complying with this condition. Stack emission monitoring quality has been done; Monitoring reports are attached as <b>Annexure- 3.</b>
4.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable source, so as to comply prescribed stack emission and fugitive emission standards.	Bag filter has been installed as Air Pollution Control Equipment. To control fugitive dust emission, water sprinkling has been done.
5.	The National Ambient Air Quality Emission Standard issued by the Ministry vide G.S.R No. 826 (E) dated 16 <sup>th</sup> November, 2019 shall be complied with.	Ambient air monitoring has been done as per the guidelines. Ambient air quality level found within NAAQS 2009. Monitoring report attached as <b>Annexure – 3.</b>
6.	Sulphur content should not exceed 0.5% in the coal for use in coal-fired boilers to control particulate emission within permissible limits (as applicable). The gaseous emission shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Online Bagasse / Biomass is being utilized as fuel for Slop fired boiler capacity 45 TPH.
7.	The D.G set shall be equipped with suitable pollution control device and adequate stack height so that the emissions are in conformity with the extant regulation and the guidelines in this regard.	DG set has been installed and acoustic enclosure already provided for reducing the noise pollution.
8.	Storage of raw materials, coal etc shall be either stored in soils or in covered areas to prevent dust pollution and other fugitive emissions.	Complied

**III. Water quality monitoring and preservation**

1.	For online continuous monitoring of effluent, the unit shall install web camera with night vision	Unit has installed OCEMS for the effluent & web camera at drain
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	capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD) and connected to SPCB and CPCB online servers.	carrying the effluent as per CPCB guidelines.
2.	Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises (applicable in case of the projects achieving the ZLD).	In no any case treated water is discharge outside the premises as unit is based on Zero Liquid Discharge. Spent wash generated is being concentrated in MEE then concentrate from MEE is being used as fuel in Incineration boiler.
3.	Process effluent/ any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.	Unit is based on Zero Liquid Discharge strategy, no effluent is discharge outside premises.
4.	The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.	Unit is based on Zero Liquid Discharge strategy, no effluent is discharge outside premises. Complied
5.	Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA In this regard.	Treated Water from Sugar Unit is being utilise as makeup water in Distillery unit. No ground water abstracted for Distillery operation.
6.	Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.	Other effluent generated is being treated in condensate polishing unit.
7.	The company shall harvest rainwater from the roof	Condition noted and same will be

	tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operation within the plant.	complied.
<b>IV. Noise monitoring and prevention</b>		
1.	Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Acoustic enclosure has been provided with DG set.
2.	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.	Noise level has been monitored within premises. Monitoring reports are attached as <b>Annexure-3</b> .
3.	The ambient noise levels should conform to the standards prescribed under E(P) A Rules,1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Point is noted and Monitoring reports are attached as <b>Annexure- 3</b> .
<b>V. Energy Conservation measures</b>		
1.	The energy sources for lighting purposes shall preferably be LED based.	Point is noted and same will be complied.
<b>VI. Waste management</b>		
1.	Hazardous chemicals shall be stored in tank, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.	Point is noted and being complied.
2.	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	Point is noted and complied.
3.	The company shall undertake waste minimization measures as below. a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by products from the process as raw materials or as raw material substitutes in other processes.	Point is noted and same is being complied.

	<p>c. Use of automated filling to minimize spillage.</p> <p>d. Use of close feed system into batch reactors.</p> <p>e. Venting equipment through vapour recovery system.</p> <p>f. Use of high-pressure hoses for equipment clearing to reduce wastewater generation</p>	
<b>VII. Green Belt</b>		
<b>1.</b>	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.	Currently project is under operation phase and unit is developing green belt as per the norms. (Approx. 33% of total area i.e. 6.0 ha).
<b>VIII. Safety, Public hearing and Human health issues</b>		
<b>1.</b>	Emergency preparedness plan based on the Hazard Identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Condition noted and complied.
<b>2.</b>	The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.	Personal Protection Equipment (PPE) has been provided to worker.
<b>3.</b>	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.	The employees/operators will be provided with adequate Personal Protection Equipment (PPE) as per the norms of factory Act.
<b>4.</b>	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied.

5.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Regular Occupation health surveillance of worker has been planned and will be done accordingly.
6.	There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.	Occupational health surveillance of the workers will be done on a regular basis and records will be maintained as per the Factories Act.

**IX. Corporate Environment Responsibility**

1.	The project proponent shall comply with the provision contained in this Ministry OM vide F.No. 22-65/2017 – IA.III dated 1 <sup>st</sup> may 2018, as applicable, regarding Corporate Environment Responsibility.	Point is noted and same shall be complied within five-year plan.
2.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation / violation of the environment/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environment/forest/wildlife norms I conditions and / or shareholders/stake holder. The copy of the board resolution in this regard shall be submitted to the MoEF & CC as a part of six – monthly report.	Point is noted and company’s environmental policy is well documented and made available to all stakeholders.
3.	A separate Environmental cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Point is noted and shall be complied.
4.	Action plan for implementing EMP and	Point is noted and shall be

	environment conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environment protection measures shall be kept in separate account and not to be diverted for any other purpose. Year's wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the six-monthly Compliance Report.	complied.
<b>5.</b>	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Point is noted and complied.
<b>X. Miscellaneous</b>		
<b>1.</b>	If the proposed project is situated in notified area of ground water extraction, where creation of new wells for ground water extraction is not allowed, requirement of fresh water shall be met from alternate water source other than ground water or legally valid source and permission from the competent authority shall be obtained to use it.	Distillery makeup water requirement will be full filled by stored treated water of Sugar unit.
<b>2.</b>	The project shall ensure that the distillery shall be on ZLD basis with incineration of spent wash in slop boiler. As proposed treated waste water should be completely recycled/ reused and ZLD should be achieved. Under no circumstances treated waste water and effluent shall be discharged to any drain/sewer line/inland surface water/Nala etc.	Spent wash will be concentrated in MEE and concentrated Slop will be used as fuel along with bagasse in 45 TPH boiler.
<b>3.</b>	Directions/suggestion given during public hearing and commitment made by the project proponent should be strictly compiled.	Complied.
<b>4.</b>	The project proponent shall make public the environmental clearance granted for their project along with the environmental condition and safeguards at their cost by prominently advertising	Public notice has been published.

	it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	
5.	The copies of the environmental clearance shall be submitted by the project proponent to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Complied. Copy of Environmental Clearance is attached as <b>Annexure- 2.</b>
6.	The project proponent shall upload the status of the compliance of the stipulated environment clearance condition, including results of monitored data and in conditions, including results of monitored data on their website and update the same on half-yearly basis.	Point is noted and shall be complied.
7.	The project proponent shall monitor the criteria pollutants level namely; PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Monitoring reports are attached as <b>Annexure- 3.</b>
8.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the Ministry of Environment, Forest and Climate Change at environmental clearance portal.	Point is noted and shall be complied.
9.	The project proponent shall submit the environmental statement for each financial year in form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently	Point is noted and same will be complied after commissioning of plant.



	and put on the website of the company.	
10.	The project proponent shall inform the Regional Office as well as the Ministry, the date of development work and start of production operation by the project.	Point is noted.
11.	The project authorities must strictly adhere to the stipulation made by the State Pollution Control Board and the State Government.	Point is noted and same will be complied.
12.	The project proponent shall abide by all the commitment and recommendation made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Point is noted.
13.	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).	Point is noted
14.	Concealing factual data or submission of false fabricated data may result in revocation of this environmental clearance and attract action under the provision of Environment (Protection) Act, 1986.	Point is noted and same will be complied.
15.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Point is noted
16.	The Ministry reverse the right to stipulate additional conditions if found necessary.	Point is noted
17.	The company in a time bound manner shall implement these conditions.	Point is noted
18.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. the project authorities should extend full corporation to the officer (s) of the Regional office by furnishing the requisite data/ information/ monitoring reports.	Point is noted

<b>19.</b>	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.	Point is noted.
<b>20.</b>	Any appeal against this EC shall lie with National Green Tribunal, if preferred, with a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Point is noted

**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 (Station No: 1), At Admin Building (Station No: 2) to assess the ambient air quality. Three stations have been selected at 120° from the center. 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 (Station No: 1)	Industrial
2.	AAQ-2	At Admin Building (Station No: 2)	Industrial

**AAQ-1: Near Main Gate (Station No: 1)**

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

**AAQ- 2: At Admin Building (Station No: 2)**

The sampler was placed near the admin office 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 (PM<sub>10</sub>)
- Fine Particulate Matter (PM<sub>2.5</sub>)
- Sulphur Dioxide (SO<sub>2</sub>)
- Oxides of Nitrogen (NO<sub>x</sub>)

The duration of sampling of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> 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 Central Pollution Control Board (CPCB) and 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<sub>2.5</sub> i.e. <2.5 microns), and Respirable Dust Sampler with gaseous sampling attachment was used for sampling Respirable fraction (<10 microns), gaseous pollutants like SO<sub>2</sub>, and NO<sub>x</sub>.

**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 <sub>10</sub> )	Respirable Dust Sampler, with cyclone separator, Gravimetric Method	5.0 - 1200
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	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 at Near Main Gate (Station No: 1)

The detailed on-site monitoring results of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> are presented in **Table-3.3**.

**Table-3.3:**  
**AAQ Results at Near Main Gate (Station No: 1)**

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 <sub>10</sub> )	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m <sup>3</sup>	<b>89.6</b>	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM <sub>2.5</sub> )	IS: 5182 (Part-24): 2019	µg/m <sup>3</sup>	<b>53.55</b>	2.0 - 500	For 24 hour =60
3	Sulphur Dioxides (SO <sub>2</sub> )	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m <sup>3</sup>	<b>14.68</b>	5.0 - 1050	For 24 hour =80
4	Oxides of nitrogen (NO <sub>x</sub> )	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m <sup>3</sup>	<b>22.06</b>	6.0 - 750	For 24 hour =80

### 3.1.4 Ambient Air Quality Monitoring Results at Admin Building (Station No: 2)

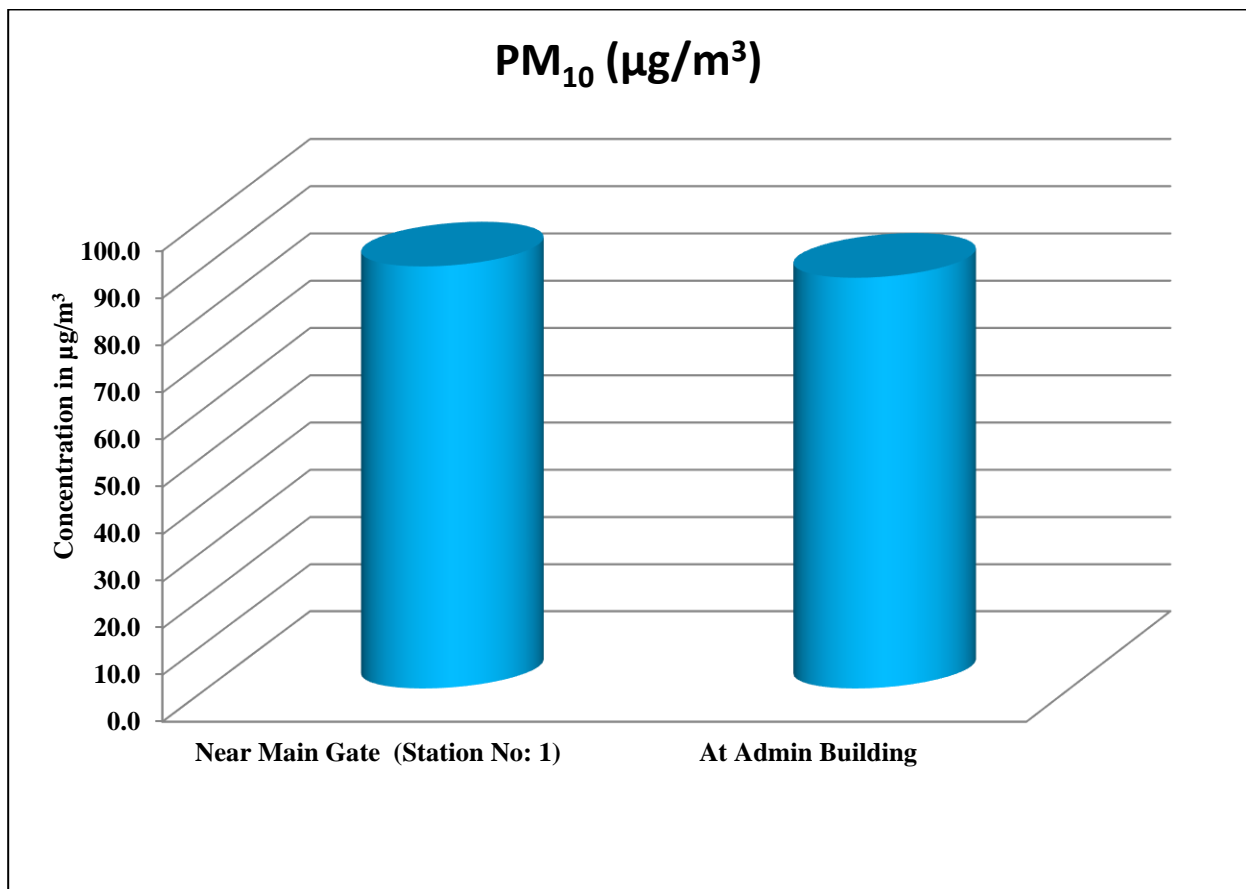
The detailed on-site monitoring results of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> are presented in **Table-3.4**.

**Table-3.4:**  
**AAQ Results at Admin Building (Station No: 2)**

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 <sub>10</sub> )	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m <sup>3</sup>	<b>87.2</b>	5.0 - 1200	For 24 hour =100
2	Particulate matters size less than 2.5 µm (PM <sub>2.5</sub> )	IS: 5182 (Part-24): 2019	µg/m <sup>3</sup>	<b>53.36</b>	2.0 - 500	For 24 hour =60
3	Sulphur Dioxides (SO <sub>2</sub> )	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m <sup>3</sup>	<b>14.55</b>	5.0 - 1050	For 24 hour =80
4	Oxides of nitrogen (NO <sub>x</sub> )	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m <sup>3</sup>	<b>22.68</b>	6.0 - 750	For 24 hour =80

### 3.1.5 Discussion on Ambient Air Quality in the Study Area

The value of PM<sub>10</sub> at Ambient Air Monitoring Station No: 1 & 2 are 89.6 µg/m<sup>3</sup> & 87.2 µg/m<sup>3</sup> which were within permissible limit of 100 µg/m<sup>3</sup> and PM<sub>2.5</sub> levels are 53.55 µg/m<sup>3</sup> at Station No: 1 and 53.36 µg/m<sup>3</sup> at Station No: 2, were also observed within permissible limit of 60 µg/m<sup>3</sup> (for residential, rural and other areas as stipulated in the National Ambient Air Quality Standards). SO<sub>2</sub> ranges between 14.68 µg/m<sup>3</sup> to 14.55 µg/m<sup>3</sup> and NO<sub>x</sub> ranges between 22.06 µg/m<sup>3</sup> to 22.68 µg/m<sup>3</sup> was also observed within the corresponding stipulated limits (Limit for SO<sub>2</sub> and NO<sub>x</sub>; 80 µg/m<sup>3</sup>) at both monitoring locations. Station wise variation of ambient air quality parameters has been graphically shown in **Figure-3.1** to **Figure-3.4**.



**Figure 3.1: Graphs Showing PM<sub>10</sub> Concentration at all sites**

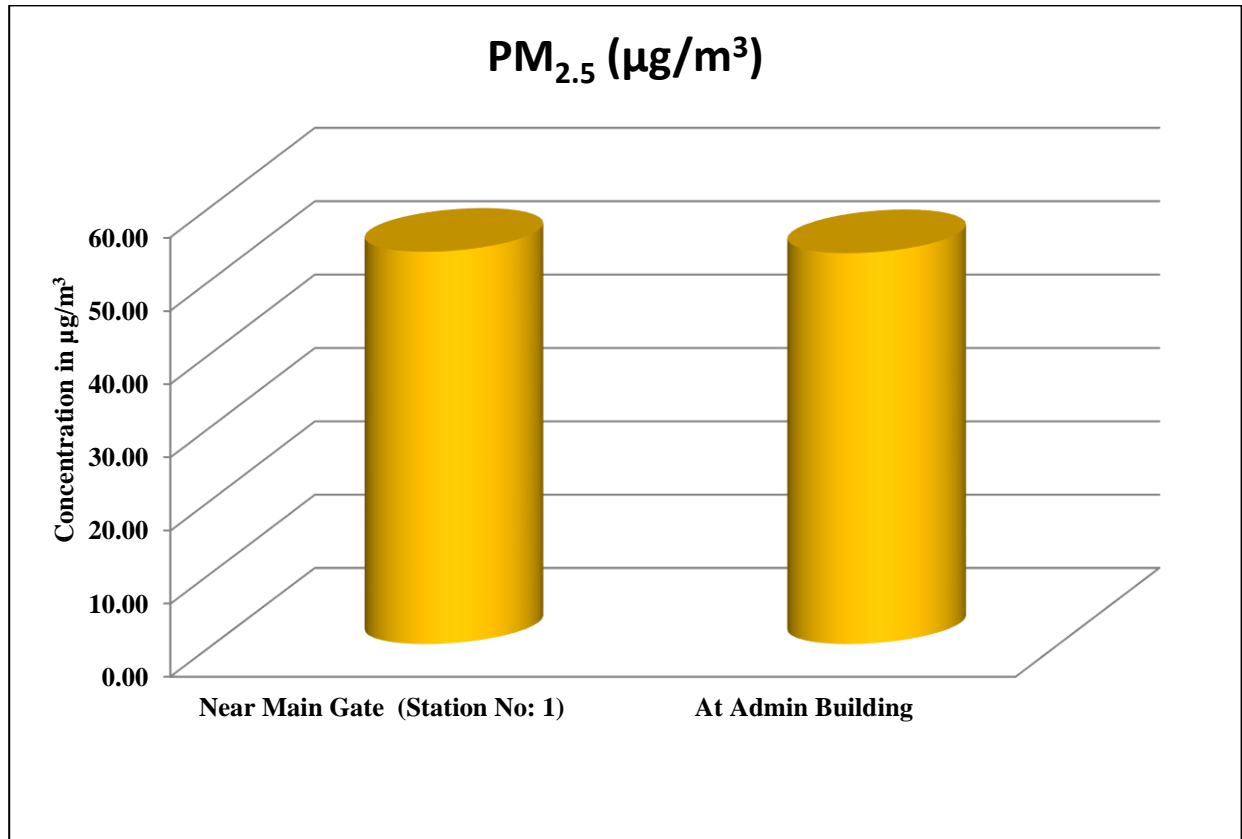


Figure 3.2: Graphs Showing PM<sub>2.5</sub> Concentration at all sites

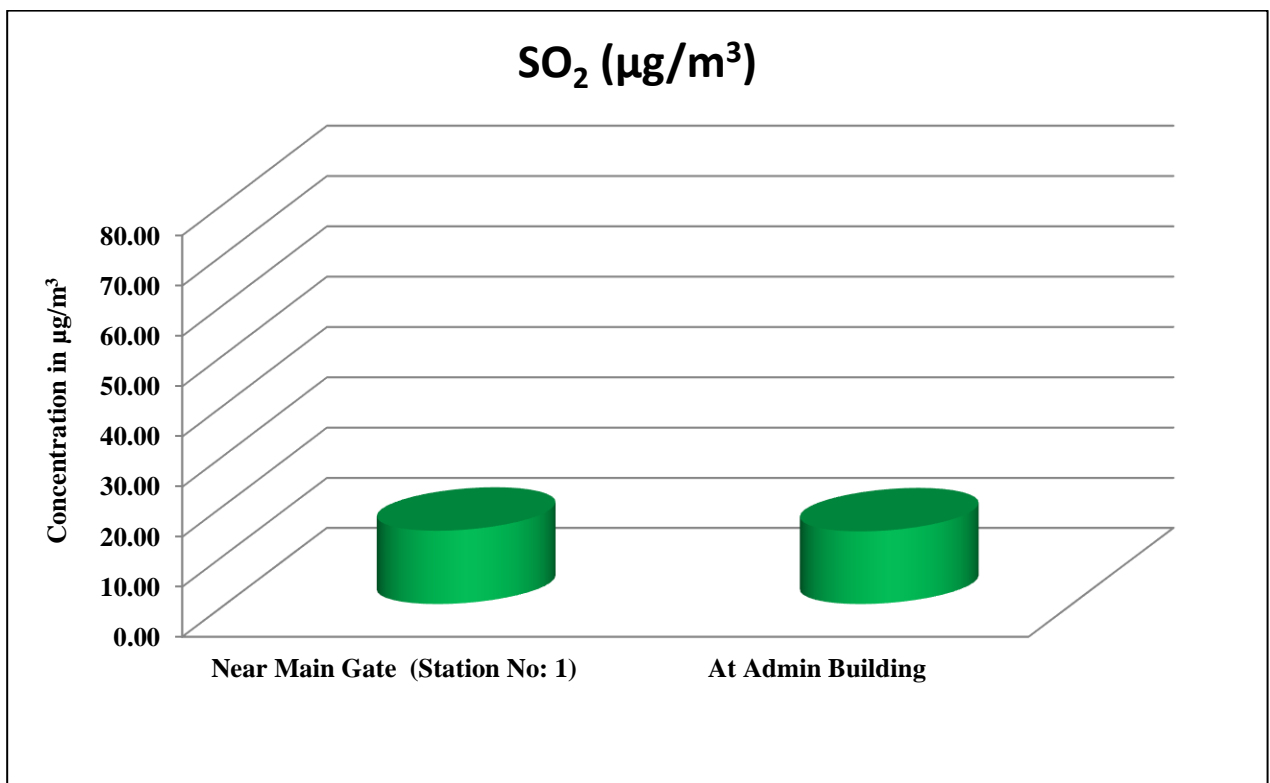


Figure 3.3: Graphs Showing SO<sub>2</sub> Concentration at all sites



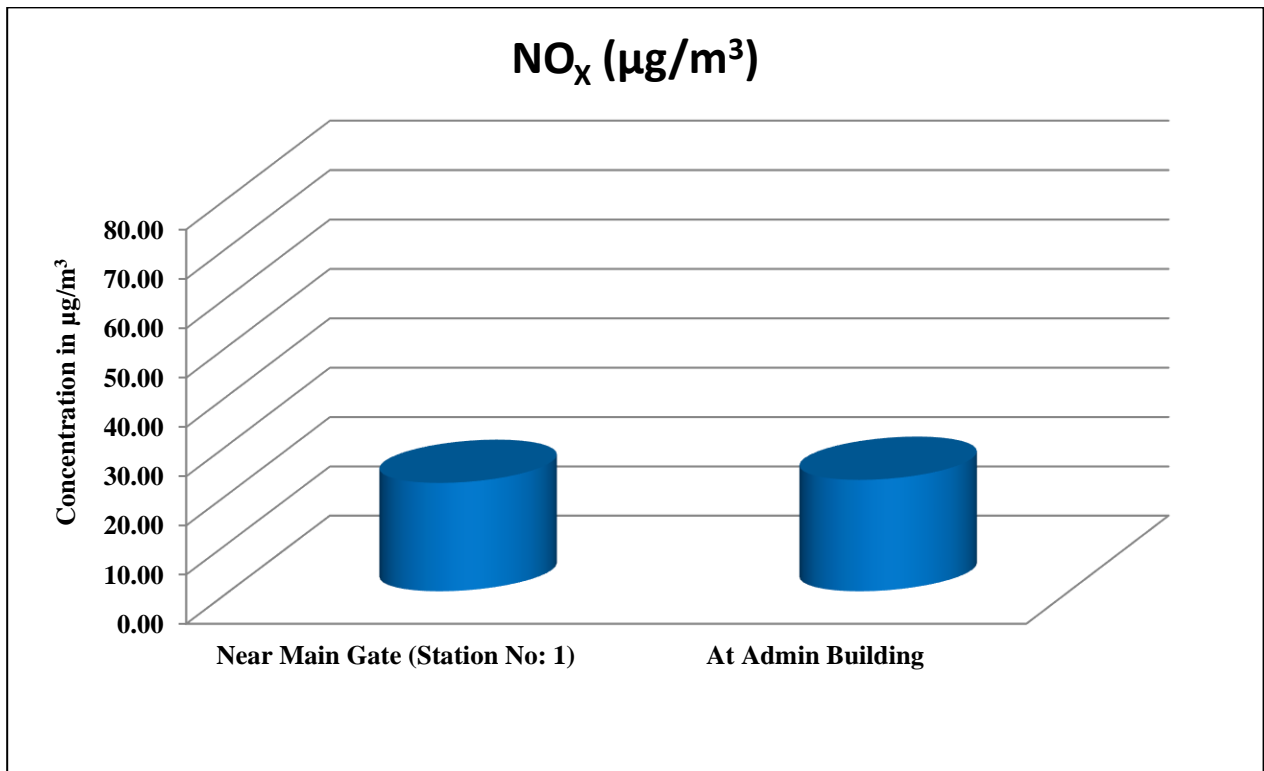


Figure 3.4: Graphs Showing NOx Concentration at all sites

### 3.2 STACK EMISSION MONITORING

Stack Emission monitoring was carried out by EPA approved Laboratory on date 07.09.2022 for the installed 45.0 TPH slop fired boiler (attached with Bag Filters as air pollution control device with a stack height of 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-3.5**

Table-3.5: Details of Stack Emission Monitoring Results

Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing/ Limit of Detection	Standard (as per CPCB)
1	Particulate Matter	mg/Nm <sup>3</sup>	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	44.6	2.0 - 1000	150

### 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 Construction Site due to various construction 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 1 location as given in **Table-3.5**.

**Table-3.6: Details of Ambient Noise Monitoring Stations**

Sr. No	Location Code	Location name and description	Present Land use
1.	NQ-1	Near Project Site	Industrial

### 3.3.2 Methodology of Noise Monitoring

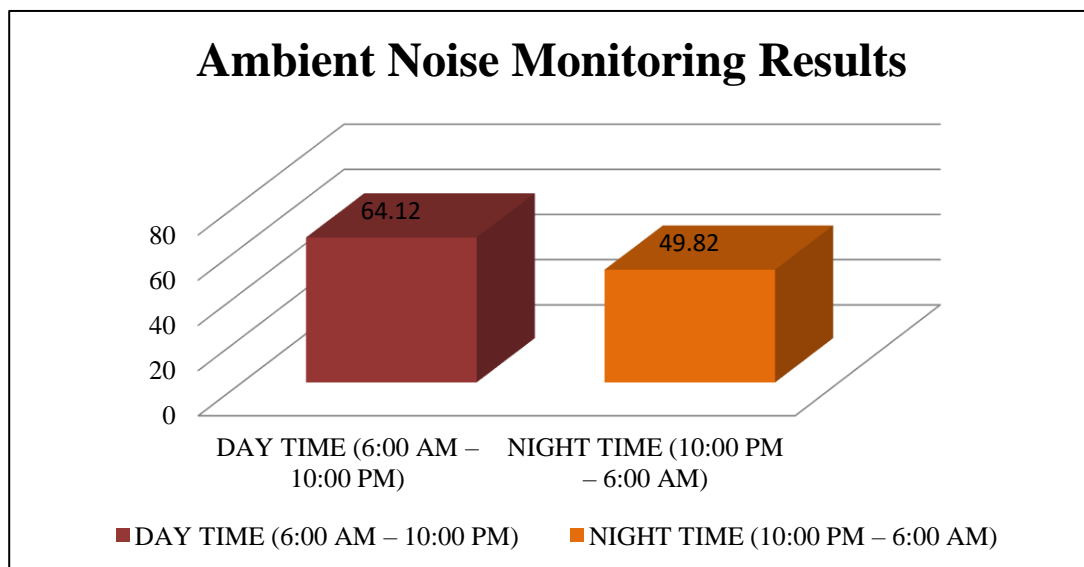
Noise levels were measured using sound level meter. Noise level monitoring was carried out continuously for 24-hours with one-hour interval starting at 06:00 hrs to 06:00 hrs next day. The noise levels were monitored on working days only. During each hour Leq were directly computed by the instrument 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-3.7**. The noise levels are graphically presented in **Figure-3.5**.

**Table-3.7:  
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)	64.12	49.82



**Figure-3.5: Day and Night Time noise Level Near Construction Site**

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

**Silence Zone :** No Silence zone is present within or around the industry.

### 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 64.12 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 49.82 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-3.8**.

**Table-3.8:**  
**Details of Water Quality Monitoring Station**

Sr. No	Location Code	Location name and description	Date of Monitoring
1.	GW-1	Borewell (Near Project Site)	16 <sup>th</sup> April, 2022
2.	GW-1	Borewell (Near Project Site)	13 <sup>th</sup> May, 2022
3.	GW-1	Borewell (Near Project Site)	23 <sup>rd</sup> June, 2022
4.	GW-1	Borewell (Near Project Site)	21 <sup>st</sup> July, 2022
5.	GW-1	Borewell (Near Project Site)	19 <sup>th</sup> August, 2022
6.	GW-1	Borewell (Near Project Site)	08 <sup>th</sup> September, 2022

### 3.4.2 Methodology of ground water Quality Monitoring

Sampling of ground water was carried out on 16.04.2022, 13.05.2022, 23.06.2022, 21.07.2022, 19.08.2022 and 08.09.2022. 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<sub>3</sub>. 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-3.9 to Table-3.14**.

### 3.4.3 Ground water Quality Monitoring Results

The detailed Ground water quality monitoring results are presented in Table-3.9 to Table-3.14.

**Table-3.9: Ground water Quality Results at Borewell (Near Project Site) (April, 2022)**

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	418.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 2	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> 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 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	26.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.37	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 <sub>3</sub>	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	28.4	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	292.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	268.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.11	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.08	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.38	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
30	<i>E. coli</i>	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	<i>T. coli</i>	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-3.10:

Ground water Quality Results at Borewell (Near Project Site) (May, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	424.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 2	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> 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	57.6	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	29.16	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl B	30.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> 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	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	32.0	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	284.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	264.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.15	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.48	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
30	<i>E. coli</i>	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	<i>T. coli</i>	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-3.11:**  
**Ground water Quality Results at Borewell (Near Project Site) (June, 2022)**

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.4	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	420.0	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 2	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> 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	60.8	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	29.16	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl B	28.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F- C	0.341	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 <sub>3</sub>	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	26.2	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	296.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	272.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.08	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.59	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
30	<i>E. coli</i>	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	<i>T. coli</i>	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-3.12:

Ground water Quality Results at Borewell (Near Project Site) (July, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.4	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	432.0	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 2	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> 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	60.8	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl B	32.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F- C	0.38	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 <sub>3</sub>	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	1.02	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	32.0	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	304.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	280.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.13	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.03	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.60	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
30	<i>E. coli</i>	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	<i>T. coli</i>	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 at Borewell (Near Project Site) (August, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	426.8	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 2	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> 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	58.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl B	30.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F- C	0.41	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 <sub>3</sub>	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	30.6	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	284.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	260.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.17	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.71	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
30	<i>E. coli</i>	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	<i>T. coli</i>	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-3.14:

Ground water Quality Results at Borewell (Near Project Site) (September, 2022)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	IS: 3025 (Part-16): 1984 Reaffirmed: 2017	416.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 2	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> 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	59.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl B	26.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F- C	0.39	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 <sub>3</sub>	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001 - 0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	28.0	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	292.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	276.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0
20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.14	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.05	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.52	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
30	<i>E. coli</i>	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	<i>T. coli</i>	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 construction 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-3.15**.

**Table-3.15:**

**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-1<sup>st</sup>, 2<sup>nd</sup> 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 September on 08.09.2022.

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 Spectrophotometer.

#### 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-3.16**.

**Table-3.16:**

**Physico-Chemical Characteristics of Soil at 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	<b>7.3</b>	1 - 14
2	Electrical Conductivity	µmhos/cm	IS: 14767:2000 Reaffirmed:2016	<b>296.0</b>	1.0 - 40000
3	Moisture content	%	IS: 2720 (Part-2): 1973 Reaffirmed: 2015	<b>3.28</b>	1.0 - 50
4	Nitrate as N	kg/Hec	Method manual of soil testing India	<b>295.2</b>	5.0 - 500
5	Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	kg/Hec	Method manual of soil testing India	<b>22.10</b>	1.0 - 2000
6	Potash as K <sub>2</sub> O	kg/Hec	ETRC/ LABSOPS/17, ISSUE NO.1 Dated 10.08.2015	<b>106.8</b>	1.0 - 2000
7	Sulphur	mg/kg	IS:14685: 1999	<b>14.10</b>	5.0 - 100

Reaffirmed: 2014					
8	Boron	mg/kg	ETRC/ LABSOPS/06	<b>BDL</b>	4.0 - 100
9	Copper	mg/kg	ETRC/ LABSOPS/07	<b>0.41</b>	0.3 - 500
10	Zinc	mg/kg	ETRC/ LABSOPS/08	<b>2.38</b>	1.0 - 500
11	Iron	mg/kg	ETRC/ LABSOPS/09	<b>32.14</b>	5.0 - 500
12	Manganese	mg/kg	ETRC/ LABSOPS/10	<b>9.2</b>	5.0 - 500

#### 3.5.4 Discussion on Soil Characteristics in the Study Area

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





उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड  
UTTAR PRADESH POLLUTION CONTROL BOARD

संदर्भ संख्या-

175424/सी-7/जल-931/2022

दिनांक 11/5/22  
पंजीकृत/ई-मेल

सेवा में,

मैसर्स वेव इण्डस्ट्रीज प्रा०लि० (आसवनी इकाई),  
ग्राम मलेसिया, तहसील धनौरा,  
अमरोहा।

**विषय:-** बोर्ड के पत्र संख्या 143237/UPPCB/Bijnore (UPPCBRO)/CTO/ Water/ JYOTIBA PHULE NAGAR/ 2021 दिनांक 24.01.2022 एवं पत्र संख्या 143217/UPPCB/Bijnore (UPPCBRO)/CTO/ air/ JYOTIBA PHULE NAGAR/ 2021 दिनांक 24.01.2022 द्वारा जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1974 यथासंशोधित की धारा 25/26 एवं वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1981 यथासंशोधित की धारा 21/22 के अन्तर्गत निर्गत सशर्त सहमति जल एवं वायु में संशोधन किये जाने के संबंध में।

महोदय,

कृपया उपरोक्त विषयक अपने पत्र दिनांक शून्य का संदर्भ लें, उक्त पत्र के क्रम में बोर्ड के पत्र संख्या 143237/UPPCB/Bijnore (UPPCBRO)/CTO/ Water/ JYOTIBA PHULE NAGAR/ 2021 दिनांक 24.01.2022 एवं पत्र संख्या 143217/UPPCB/Bijnore (UPPCBRO)/CTO/ air/ JYOTIBA PHULE NAGAR/ 2021 दिनांक 24.01.2022 द्वारा जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1974 यथासंशोधित एवं वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1981 यथासंशोधित द्वारा निर्गत सशर्त सहमति जल एवं वायु में निम्नानुसार संशोधन किया जाता है-

1- पत्र संख्या 143237/UPPCB/Bijnore (UPPCBRO)/CTO/Water/JYOTIBA PHULE NAGAR/2021 दिनांक : 24.01.2022 द्वारा निर्गत सशर्त सहमति जल-

**CONDITIONS OF CONSENT**

1- This Consent is valid for 140 KLD Ethanol Production by using B-Heavy Molasses/Sugar Syrup & 7 MW co-generation power and production of Ethyl Alcohol-100 KLD and co-generation power 7 MW by using C-Heavy Molasses.

**SPECIFIC CONDITIONS**

1- This Consent is valid for 140 KLD Ethanol Production by using B-Heavy Molasses/Sugar Syrup & 7 MW co-generation power and production of Ethyl Alcohol-100 KLD and co-generation power 7 MW by using C-Heavy Molasses.

2- पत्र संख्या 143217/UPPCB/Bijnore(UPPCBRO)/CTO/air/JYOTIBA PHULE NAGAR/2021 दिनांक : 24.01.2022 द्वारा निर्गत सशर्त सहमति वायु-

**SPECIFIC CONDITIONS**

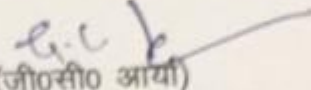
1- This Consent is valid for 140 KLD Ethanol Production by using B-Heavy Molasses/Sugar Syrup & 7 MW co-generation power and production of Ethyl Alcohol-100 KLD and co-generation power 7 MW by using C-Heavy Molasses.

-----P.T.O.

(2)

बोर्ड के पत्र संख्या 143237/UPPCB/Bijnore (UPPCBRO) /CTO/ Water/ JYOTIBA PHULE NAGAR/ 2021 दिनांक 24.01.2022 एवं पत्र संख्या 143217/UPPCB/Bijnore (UPPCBRO) /CTO/ air/ JYOTIBA PHULE NAGAR/ 2021 दिनांक 24.01.2022 द्वारा निर्गत सशर्त सहमति जल एवं वायु जिसकी वैधता 31.12.2022 तक वैध है, की अन्य समस्त शर्तें यथावत रहेगी आपको निर्देशित किया जाता है कि बोर्ड द्वारा निर्गत सशर्त सहमति जल एवं वायु की समस्त शर्तों का अक्षरसः अनुपालन सुनिश्चित करें।

भवदीय

  
(जी०सी० आर्या)

पर्यावरण अभियन्ता, वृत्त-7

प्रतिलिपि : क्षेत्रीय अधिकारी उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड बिजनौर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

पर्यावरण अभियन्ता, वृत्त-7





**UTTAR PRADESH POLLUTION CONTROL BOARD**  
**Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010**

**Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com**

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**CONSENT ORDER**

**Ref No. - 143217/UPPCB/Bijnore(UPPCBRO)/CTO/air/JYOTIBA  
PHULE NAGAR/2021**

**Dated : 24/01/2022**

**To ,**

Shri VIRENDRA SINGH  
M/s WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY  
Village - Malasia. Musallepur, Tehsil - Dhanaura, Distt - Amroha, AMROHA, 244231  
JYOTIBA PHULE NAGAR

**Sub : Consent under section 21/22 of the Air (Prevention and control of Pollution) Act, 1981 (as amended)  
to M/s. WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY**

Reference Application No. 14224658

Dated : 24/01/2022

1. With reference to the application for consent for emission of air pollutants from the plant of M/s WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY. under Air Act 1981. It is being authorised for said emissions, as per the standards, in environment, by the Board as per enclosed conditions .
2. This consent is valid for the period from 01/01/2022 to 31/12/2022 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 21 (6) of the Air (Prevention and Control of Pollution) Act, 1981 as amended.  
This consent is being issued with the permission of competent authority .

**For and on behalf of U.P. Pollution Control Board**

**Chief Environment Officer, Circle-7**

**Enclosed : As above  
(condition of consent):**

Copy to: Regional Officer Bijnore to ensure the compliance of the conditions imposed in the consent order.

**Chief Environment Officer, Circle-7**

## U.P. Pollution Control Board

Dated : 24/01/2022

### CONDITIONS OF CONSENT

- 1(a). The details of Air pollution sources and stacks attached with Boiler

Air Pollution Source Details					
S.No	Air Pollution Source	Type of Fuel	Stack No.	Parameters	Height
1	Boiler of 45 TPH	Slop and Bagasse	01	Particulate Matter	Bag filter as APCS and stack height of 85 meters from ground level

- 1(b) The emissions by various stacks into the environment should be as per the norms of the Board .

Emission Quality Details Detail			
S.No	Stack No	Parameter	Standard
1	01	Particulate Matter	50 mg/Nm <sup>3</sup>

- The equipment for air pollution control system and monitoring, as proposed by the industry and approved by the Board should be installed in their premises itself.
- Industry shall dispose the incineration boiler ash in such a manner so that there should not be any adverse impact on public health at large and on Soil, Water & Air environment.
- The modification or installation in the existing pollution control equipment shall be done only by prior approval of the Board.
- The operation of air pollution control system and maintenance be done in such a way that the quantity of pollutants shall be in accordance with the standards prescribed by the Board/MoEF& CC/or otherwise mandatory.
- Unit shall do provisions for control of fugitive emissions from process as per the norms of the Board/MOEF & CC/or otherwise mandatory.
- The unit shall submit the stack emissions monitoring report within one month from issuance of consent order along with the point wise compliance report of the consent order. Further quarterly monitoring report analysed by Board/NABL accredited laboratory shall be submitted.
- In case of closure directions under section-5 of E (P) Act, 1986 issued by CPCB, this consent will be automatically suspended during the closure period, and will be automatically reinstated with specific conditions as per CPCB revocation orders.
- Industry shall develop and maintain green belt as per the guidelines issued by the Board vide office order dated 16/02/2018, which is available on Board's Website- [www.uppcb.com](http://www.uppcb.com).
- Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.
- Industry shall abide by orders / directions issued by Hon'ble Supreme court, Hon'ble High Court, Hon'ble National Green tribunal, Central Pollution Control Board and U.P Pollution Control Board for protection and safe guard of environment from time to time.

**The Unit will file the renewal application at least 2 months prior to the expiry of this Order.**

**Specific Conditions:**

1. This consent is valid for molasses based distillery and production of Ethyl Alcohol-100 KLD and Co-generation power 7 MW.
2. The industry shall be bound to comply the directions passed by Hon'ble Supreme Court, Hon'ble High Court Allahabad and Hon'ble National Green Tribunal, New Delhi.
3. Spent wash shall be concentrated in MEE's and concentrated spent wash shall be disposed through incineration from 45 TPH slop boiler.
4. The unit shall maintain Zero Liquid Discharge outside the premises.
5. The Unit Shall restrict lined storage capacity to 07 days of spent wash generation
6. Unit shall maintain and operate Air pollution control system i. e. Bag filter and stack height is 85 meter from ground level.
7. Unit shall install online emission monitoring system at the stack of Boiler of 45 TPH and maintain the records, and ensure the connectivity to the servers of CPCB and UPPCB.
8. Unit shall ensure that ambient air quality of nearby areas is not adversely affected due to operation and emissions of the unit.
9. Unit shall comply the provisions of Air (Prevention and Control of Pollution) Act 1981 as Amended and Environment (Protection) Act 1986, and direction issued by Hon'ble National Green Tribunal, New Delhi in Order dated 13.07.2017 in OA no. 200/2014, M.C. Mehta v/s Union of India.
10. The overall noise levels in and around 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 level shall confirm to the standards under the Environment (Protection) Act 1986
11. Unit shall use Bio-briquette as co-fuel with main fuel in the ratio of minimum 20 percent in boiler subject to its availability.
12. Unit shall submit the ambient air quality report and stack report of the air pollution sources from laboratory authorized from MOEF & CC on quarterly basis.
13. Unit shall submit the ambient noise monitoring report of the premises and noise monitoring report of the sources such as boiler, DG set etc. done by laboratory authorized from MOEF & CC in every 3 months.
14. Unit shall develop Green Belt in minimum 33 percent area of Industrial Premises as per the provisions laid down in office order no. H16405/220/2018/02 dated 16-02-2018 of U.P. Pollution Control Board. The copy of said office order is available on the website of U.P. Pollution Control Board [www.uppcb.com](http://www.uppcb.com).
15. Fly ash shall be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with storm water. Direct exposure of workers to fly ash & dust shall be avoided.
16. Industry shall establish Miyawaki forest inside the factory in sufficient area, so that the treated effluent from the ETP shall be used for forestation.
17. This Consent order shall automatically become invalid on issuance of Closure Order by C.P.C.B / UPPCB and further on Revoking of Closure order, the Consent order shall become valid.

**Issued with the permission of competent authority .**

**For and on behalf of U.P. Pollution Control Board .**

**Chief Environment Officer, Circle-7**



**UTTAR PRADESH POLLUTION CONTROL BOARD**  
**Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010**

Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

**CONSENT ORDER**

**Ref No. -**  
**143237/UPPCB/Bijnore(UPPCBRO)/CTO/water/**  
**JYOTIBA PHULE NAGAR/2021**

**Dated : 24/01/2022**

**To ,**

Shri VIRENDRA SINGH  
M/s WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY  
Village - Malasia. Musallepur, Tehsil - Dhanaura, Distt - Amroha, AMROHA, 244231  
JYOTIBA PHULE NAGAR

**Sub : Consent under Section 25/26 of The Water (Prevention and control of Pollution) Act, 1974 (as amended) for discharge of effluent to M/s. WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY**

**Reference Application No :14227129**

**Dated :24/01/2022**

1. For disposal of effluent into water body or drain or land under The Water (Prevention and control of Pollution) Act, 1974 as amended (here in after referred as the act ) M/s. WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY is hereby authorized by the board for discharge of their industrial effluent generated through ETP for irrigation/river through drain and disposal of domestic effluent through septic tank/soak pit subject to general and special conditions mentioned in the annexure ,in reference to their foresaid application .
2. This consent is valid for the period from 01/01/2022 to 31/12/2022 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 27(2) of the Water (Prevention and Control of Pollution) Act, 1974 as amended .

This consent is being issued with the permission of competent authority .

**For and on behalf of U.P. Pollution Control Board**

**Chief Environment Officer, Circle-7**

**Enclosed : As above**  
**(condition of consent):**

Copy to: Regional Officer, Bijnore to ensure the compliance of the conditions imposed in the consent order.

**Chief Environment Officer, Circle-7**

## U.P. POLLUTION CONTROL BOARD, LUCKNOW

### Annexure to Consent issued to M/s.WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY vide

Consent Order No. 14227129/ Water

Dated : 24/01/2022

#### CONDITIONS OF CONSENT

1. This consent is valid only for the approved production capacity of Ethyl Alcohol-100 KLD and Co-generation power 7 MW.
2. The quantity of maximum daily effluent discharge should not be more than the following :

<b>Effluent Discharge Details</b>			
<b>S.No</b>	<b>Kind of Effluent</b>	<b>Maximum daily discharge,KL/day</b>	<b>Treatment facility and discharge point</b>
1	Domestic	20 KLD	STP
2	Industrial	ZLD	ETP

3. Arrangement should be made for collection of water used in process and domestic effluent separately in closed water supply system. It should be ensured that domestic effluent should not be discharged in storm water drain.
- 4(a) The domestic effluent should be treated in treatment plant so that the treated effluent should be in conformity with the following norms.

<b>Domestic Effluent</b>		
<b>S.No</b>	<b>Parameter</b>	<b>Standard</b>
1	Total Suspended Solids	100mg/l
2	BOD	30mg/l
3	COD	250mg/l
4	Oil & Grease	10mg/l
5	Quantity of Discharge	20 KLD

5. The other pollutant for which norms have not been prescribed, the same should not be more than the norms prescribed for the water used in manufacturing process of the industry.
6. The method for collecting industrial and domestic effluent and its analysis should be as per legal Indian standards and its subsequent amendments/standards prescribed under the Environment (Protection) Act, 1986.
7. The industry shall not discharge any trade effluent outside the premises and Zero Liquid Discharge (ZLD) shall be maintained all the time.
8. Molasses shall not be stored in kachcha pits.
9. If UPPCB or CPCB issues closure order against the industry, this consent shall remain suspended for the period till closure order is revoked, after which the consent will be effective again for the remaining period.
10. The unit should be operated in such a way so that there is no adverse impact on public and environment.
11. Unit must maintain on line connectivity of mass flow meters at the inlet and outlet of MEE and web cameras installed at the final outlet, MEE and Bio Compost yard and connected with server of CPCB and UPPCB.
12. The unit shall ensure deployment of qualified staff for self monitoring mechanism on 24 X7 hours basis.
13. Volume of spent wash shall be reduced to 40 % minimum and solid concentration shall be maintained minimum 30% at the outlet of MEE.
14. Unit shall identify recipient drains/rivulets and their upstream & downstream locations in consultation with UPPCB and shall carry out monthly monitoring of identified recipient drains at upstream & downstream location through recognized lab under Environment (Protection) Act, 1986 and shall submit the analysis report on monthly basis by 10th of every month to CPCB and UPPCB.

15. The storage facility provided for spent wash shall be properly lined and made impermeable and the storage capacity at any stage shall not exceed 07 days equivalent of production in case of incineration boiler and 30 days equivalent of production in case of bio composting.
16. Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.
17. Industry shall ensure to send monthly reports regarding spent wash storage and details of spent wash in each lagoon constructed in industry.
18. The Unit will file the renewal application at least 2 months prior to the expiry of this Order.

**Specific Conditions:**

1. This consent is valid for molasses based distillery and production of Ethyl Alcohol-100 KLD and Co-generation power 7 MW.
2. This Consent to Operate shall be effected from directions passed by Hon'ble High Court Allahabad and Hon'ble National Green Tribunal, New Delhi.
3. Unit shall take ground water for domestic purpose from sister sugar unit and industrial water shall be used from treated water of ETP of sister sugar unit. Unit shall not dig any tube well in the distillery unit.
4. Domestic effluent 20 KLD shall be disposed through STP and treated water shall be used in irrigation on land.
5. Unit Shall restrict lined storage capacity to 07 days of spent wash generation.
6. Unit shall identify recipient drains/ rivulets and their u/s & d/s location in consultation with UPPCB and shall carry out monthly monitoring of identified recipient drains at u/s & d/s location through lab recognized under Environment (Protection) Act,1986 and shall submit the analysis report on monthly basis by 10th of every month to CPCB and UPPCB.
7. Unit must strictly maintain zero liquid discharge of effluent outside premises into drain/river/water body and on land.
8. Unit must operate and maintain properly the installed flow meter and web camera with and shall ensure on line connectivity of flow meter and web camera with server of CPCB and UPPCB.
9. Unit shall develop Green Belt in minimum 33 percent area of Industrial Premises as per the provisions laid down in office order no. H16405/220/2018/02 dated 16-02-2018 of U.P. Pollution Control Board. The copy of said office order is available on the website of U.P. Pollution Control Board [www.uppcb.com](http://www.uppcb.com).
10. Process effluent / any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
11. The overall noise levels in and around 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 level shall conform to the standards under the Environment (Protection) Act 1986.
12. Unit shall make temporary storage facility for storage of hazardous waste in the premises before it will send to TSDF as per the provisions of Hazardous and Other Waste (Management and Transboundary Movement)Rules 2016.
13. Unit shall comply the provisions of Hazardous and Other Waste (Management and Transboundary Movement)Rules 2016 and shall obtain authorization for disposal of hazardous waste.
14. Unit shall install the board showing daily environmental statement ie chemicals used in the treatment of effluent , flow meter reading , hazardous waste generated and send to TSDF etc.at the main gate of the unit.
15. Unit shall comply the provisions of Water (Prevention and Control of Pollution) Act 1974 as Amended and Environment (Protection) Act 1986, and direction issued by Hon'ble National Green Tribunal, New Delhi in Order dated 13.07.2017 in OA no. 200/2014, M.C. Mehta v/s Union of India.
16. Unit shall submit ground water quality monitoring report and effluent monitoring report done by MoEF & CC approved laboratory in every 3 months.
17. This Consent order shall automatically become invalid on issuance of Closure Order by C.P.C.B / UPPCB and further on Revoking of Closure order, the Consent order shall become valid.

**Issued with the permission of competent authority .**

**For and on behalf of U.P. Pollution Control Board .**



**Chief Environment Officer, Circle-7**



**UTTAR PRADESH POLLUTION CONTROL BOARD**  
**Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010**

Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

**Ref No. - 33/UPHOC7/EIA/JYOTIBA PHULE NAGAR/2021**

**Dated:- 01/09/2021**

**To ,**

Shri VIRENDRA SINGH  
M/s WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY  
Village - Malasia. Musallepur, Tehsil - Dhanaura, Distt - Amroha, AMROHA, 244231  
JYOTIBA PHULE NAGAR

**Sub :** Certificate of “No Increase in Pollution Load” in compliance of notification issued by Ministry of Environment Forest & Climate Change, Government of India, vide its notification no. S.O. 980(E) 2nd March, 2021

Sir.

Kindly refer to the application dt 01/09/2021 related to sector Distillery for obtaining “No Increase in Pollution Load Certificate” in compliance of notification issued by Ministry of Environment Forest & Climate Change, Government of India, vide its notification no. S.O. 980(E) 2nd March, 2021.

That Ministry of Environment Forest & Climate Change, Government of India, vide its notification no. S.O. 980(E) 2nd March, 2021 exempted the requirement for prior Environmental Clearance for cases of change in raw material mix without change in the quantity and pollution load as prescribed in the Environmental clearance of the project. The said provisions made in notification dated 2nd March, 2021 are as below

Existing projects (having Prior Environmental Clearance) with no increase in pollution loads: Any increase in production capacity in respect of processing or production or manufacturing sectors (listed against item numbers 2, 3, 4 and 5 in the Schedule to this notification) with or without any change in (i) raw material-mix or (ii) quantities within products or (iii) number of products including new products falling in the same category or (iv) configuration of the plant or process or operations in existing area or in area contiguous to the existing area (for which prior environmental clearance has been granted) shall be exempt from the requirement of Prior Environmental Clearance provided that there is no increase in pollution load (derived on the basis of such Prior Environmental Clearance)

In compliance of the provisions of the notification no. S.O. 980(E) 2nd March, 2021, the applicant has submitted the the following documents

1. “No Increase In Pollution Load” certificate from the Environmental Auditor or reputed institutions empanelled by the State Pollution Control Board or Pollution Control Committee or Central Pollution Control Board or Ministry of Environment, Forest and Climate Change
2. Last Consent to Operate certificate for the project or activity.
3. Online system generated acknowledgement of uploading of intimation and “No Increase In Pollution Load” certificate on PARIVESH Portal
4. Scan Copy of form only submitted for “No Increase In Pollution Load” certificate on PARIVESH Portal

After the examination of the documents submitted by the applicant “No Increase in Pollution Load Certificate” is hereby issued with the following observation and conditions with the approval of competent authority

**Obervation and Conditions**

The report regarding "No Increase in Pollution Load has been submitted by the Project Proponent, prepared by Environmental Auditor and NABET approved expert for distillery project .

The proposal submitted by Environmental Auditor and NABET approved expert has evaluated and concluded that the raw material mix shall be associated with following aspects related to pollution load.

I. The Project under consideration is for expansion of Distillery unit by M/s Wave Industries Pvt Ltd, Unit – Distillery at village- Malasia, Musallepur, Tehsil - Dhanaura, District – J.P. Nagar, Uttar Pradesh - 244231, due to use of alternative Feed Stock (B heavy Molasses / Sugar Syrup) from 100 KLD to 140 KLD in place of C-heavy molasses.

II. The raw material consumption will be reduced by 120 TPD during Mode 2 (B heavy Molasses) and reduce by 153 TPD during Mode 3 (Sugar Syrup) operation respectively against 40 % increase of production capacity as B-Heavy molasses and Sugar syrup has higher sugar percentage.

III. Unit will install CPU of capacity 1500 cubic meter/day, Reverse Osmosis System to enable recycling of MEE condensate, boiler blow down etc. in order to fulfill the needs of additional fresh water.

IV. No additional fresh water shall be required for B Heavy Molasses based operation. Although during sugar syrup based operation, fresh water requirement will be reduced from 620 KLD to 593 KLD.

V. Pollutant load like BOD, COD, TDS and TSS in effluent will be reduced during B Heavy Molasses and Sugar Syrup based operation.

VI. Total BOD load during C Heavy Molasses based operation is 81900 kg/day which will be reduced to 63840 Kg/day during B Heavy Molasses based operation and 45500 kg/day during Sugar syrup based operation.

VII. Total COD load during C Heavy Molasses based operation is 136500 kg/day which will be reduced to 106400 Kg/day during B Heavy Molasses based operation and 91000 kg/day during Sugar syrup based operation.

VIII. Total TDS load during C Heavy Molasses based operation is 91000 kg/day which will be reduced to 75285 Kg/day during B Heavy Molasses based operation and 70000 kg/day during Sugar syrup based operation.

IX. Total TSS load during C Heavy Molasses based operation is 8400 kg/day which will be reduced to 6895 Kg/day during B Heavy Molasses based operation and 5600 kg/day during Sugar syrup based operation.

X. Total generation of fly ash shall be reduced during Mode – 2 (B- heavy molasses) and Mode – 3 (Sugar syrup) based operation; reduction will be approx. – 17.54 TPD and 28.28 TPD respectively.

XI. Spent wash generation will be same during B Heavy Molasses based operation and reduced by 15 KLD during Sugar syrup based operation. Total Pollutant load during B heavy Molasses and sugar syrup based operation will be reduced in comparison to C heavy Molasses based operation.

XII. Concentrated spent wash generation will be reduced during B - heavy Molasses based operation by 106 TPD and during Sugar Syrup based operation by 171 TPD.

XIII. There shall not be any incremental rise with respect to air pollution in view of the fact that Air Pollution Control System (Bag filters) shall keep particulate matter below 150 mg/Nm<sup>3</sup>.

XIV. Total emission load from the stack will be reduced with reduction in Slop quantity during B Heavy Molasses / Sugar Syrup based operation. Slop is having more solid and Sulphur content in comparison to Bagasse.

XV. Total PM Load during C Heavy Molasses based operation is 136.38 kg/day which will be reduced to 106.9 Kg/day during B Heavy Molasses based operation and 99.4 kg/day during Sugar syrup based operation.

XVI. Total NO<sub>2</sub> load during C Heavy Molasses based operation is 126.3 kg/day which will be reduced to 124.9 Kg/day during B Heavy Molasses based operation and 122.08 kg/day during Sugar syrup based operation.

XVII. Total SO<sub>2</sub> load during C Heavy Molasses based operation is 141.8 kg/day which will be reduced to 71.5 Kg/day during B Heavy Molasses based operation and 50.15 kg/day during Sugar syrup based operation.

XVIII. Unit will adopt Concentration followed by Incineration technology to achieve Zero Liquid Discharge and same will be done for B- heavy Molasses / sugar syrup based operation. Thus resulting in no increment with respect to water pollution.

Hence, in view of the above facts, the UPPCB is of the view that the project of Ethanol Capacity Expansion proposed by M/s Wave Industries Pvt Ltd, Unit – Distillery, at village- Malasia, Musallepur, Tehsil - Dhanaura, District – J.P. Nagar, Uttar Pradesh due to use of alternative Feed Stock B heavy Molasses / Sugar Syrup as raw material shall result in "No Increase in Pollution Load", hence the project is recommended subject to the condition that the project is implemented strictly in accordance with the Technical details submitted by the proponent before the Board. The Project Proponent shall ensure strict compliance of the following conditions:

1. Due to change in raw material from C-Heavy molasses to B-Heavy molasses / Sugar Syrup based expansion of Ethanol production capacity from 100 KLD to 140 KLD shall result in No Increase in Pollution load subject to the condition that the project is implemented strictly in accordance with the technical details submitted by the Project Proponent in the Board.

2. The Project Proponent shall submit the validation report for B – Heavy Molasses / Sugar Syrup based 140 KLD Ethanol productions from any reputed Institute empaneled by UPPCB within 03 months after starting B-Heavy molasses / Sugar syrup based operation.

3. The unit shall restrict the spent wash storage capacity to 07 days only (B-Heavy molasses / Sugar Syrup).

4. The unit should submit monthly data of following to UPPCB:

- a. Fresh water consumption
- b. Ethanol Production
- c. Spent wash generation
- d. Slop generation
- e. Condensate generation
- f. Feed quantity of slop into incinerator
- g. Yeast sludge generation
- h. Boiler ash generation
- i. Quantity of Spent lees generation, recycle/reuse and treatment in CPU
- j. Quantity of effluent received into CPU, details of reuse/recycle etc.
- k. Steam generation, fuel consumption

5. The unit shall ensure to obtain fresh consent (Water and Air) under the provision of Water (Prevention and control of Pollution) Act, 1974 and Air (Prevention and control of Pollution) Act, 1981 for the proposed production of 140KLD Alcohol from UPPCB before starting production of Alcohol based on B-Heavy molasses / Sugar syrup.

6. No industrial effluent shall be discharge from the factory premises.

7. The spent wash generated during use of raw material as B-heavy molasses/Sugar Syrup shall be consumed completely in the Slop Boiler.

8. Bio composting shall not be done in the industry.

Hence, in view of the above facts, the UPPCB is of the view that the project of Ethanol Capacity Expansion proposed by M/s Wave Industries Pvt Ltd, Unit – Distillery at village- Malasia, Musallepur, Tehsil - Dhanaura, District – J.P. Nagar, Uttar Pradesh due to use of alternative feed stock B-heavy Molasses / Sugar Syrup as raw material shall result in "No Increase in Pollution Load" subject to the condition that the project is implemented strictly in accordance with the

Technical details submitted before the Board.

In view of the conclusion and remarks made by the Board, the unit is hereby directed to apply afresh for obtaining amended Consent to Operate under the provisions of Water (Prevention and Control of Pollution) Act, 1974 as amended and Air (Prevention and Control of Pollution) Act, 1981 as amended for the proposed production of 140 KLD Rectified Spirit/Extra Neutral Alcohol/Absolute Alcohol from B-heavy molasses / Sugar Syrup and also to comply with the conditions as above.

**Chief Environmental Officer**

**(Circle-7)**

**Copy**  
:

Regional Officer, UPPCB, Bijnor with direction to monitor the compliance of the conditions.

**Chief Environmental Officer**

**(Circle-7)**



**UTTAR PRADESH POLLUTION CONTROL BOARD**  
**Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010**

Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

**Validity Period :23/05/2021 To 23/05/2026**

**Ref No. - 120757/UPPCB/Bijnore(UPPCBRO)/CTE/JYOTIBA PHULE NAGAR/2021**

**Dated:- 27/05/2021**

**To ,**

Shri VIRENDRA SINGH  
M/s WAVE INDUSTRIES PRIVATE LIMITED UNIT DISTILLERY  
Village - Malasia. Musallepur, Tehsil - Dhanaura, Distt - Amroha,AMROHA,244231  
JYOTIBA PHULE NAGAR

**Sub :** Consent to Establish for New Unit/Expansion/Diversification under the provisions of Water (Prevention and control of pollution) Act, 1974 as amended and Air (Prevention and control of Polution) Act, 1981 as amended.

Please refer to your Application Form No.- 11282049 dated - 03/02/2021. After examining the application with respect to pollution angle, Consent to Establish (CTE) is granted subject to the compliance of following conditions :

1. Consent to Establish is being issued for following specific details :

A- Site along with geo-coordinates :

B- Main Raw Material :

Main Raw Material Details		
Name of Raw Material	Raw Material Unit Name	Raw Material Quantity
Molasses - 465 MTPD	Metric Tonnes/Day	465

C- Product with capacity :

Product Detail	
Name of Product	Product Quantity
RS /ENA/Ethanol 100 KLD	3100

D- By-Product if any with capacity :

By Product Detail			
Name of By Product	Unit Name	Licence Product Capacity	Install Product Capacity
0	Metric Tonnes/Day	0	0

E- Water Requirement (in KLD) and its Source :

Source of Water Details		
Source Type	Name of Source	Quantity (KL/D)
Ground Water (within premises)	Borewell	20.0
Other	Treated water of sugar unit	600.0

F- Quantity of effluent (In KLD) :

<b>Effluent Details</b>	
<b>Source Consumption</b>	<b>Quantity (KL/D)</b>
Domestic	20.0
Industrial	600.0

G- Fuel used in the equipment/machinery Name and Quantity (per day) :

<b>Fuel Consumption Details</b>		
<b>Fuel</b>	<b>Consumption(tpd/kld)</b>	<b>Use</b>
Others	300	Used as fuel in slop fired boiler
Others	150	Used as supporting fuel in boiler.

For any change in above mentioned parameters, it will be mandatory to obtain Consent to Establish again. No further expansion or modification in the plant shall be carried out without prior approval of U.P. Pollution Control Board.

2. You are directed to furnish the progress of Establishment of plant and machinery, green belt, Effluent Treatment Plant and Air pollution control devices, by 10th day of completion of subsequent quarter in the Board.
3. Copy of the work order/purchase order, regarding instruction and supply of proposed Effluent Treatment Plant/Sewerage Treatment Plant /Air Pollution control System shall be submitted by the industry within three months to the Board.
4. Industry will not start its operation, unless CTO is obtained under water (Prevention and control of Pollution) Act, 1974 and Air (Prevention and control of Pollution) Act, 1981 from the Board.
5. It is mandatory to submit Air and Water consent Application complete in all respect, four months before start of operation, to the U.P. Pollution Control Board.
6. Legal action under water (Prevention and control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 may be initiated against the industry without any prior information, in case of non compliance of above conditions.
7. The industry shall install facilities to ensure Zero Liquid Discharge (ZLD) such as Multi Effect Evaporator (MEE), Condensate Polishing Unit(CPU) and Slop/ incineration boiler etc .
8. Industry shall develop proper green belt and rain water harvesting system as per guidelines. For green belt at least 8 feet height plants should be planted which shall be properly protected as proper irrigation and maturing arrangements shall be made. For the development of the green belt the guidelines issued vide Board office order no. H10405/220/2018/02 Dt. 16-02-2018 shall be complied.

**Specific Conditions:**



1. This Consent to Establish is valid for setting up Molasses/ Cane Syrup based Distillery unit with Ethyl Alcohol 100 KLD capacity and 7 MW cogeneration power at Village Malaisia and Musallapur Tehsil Dhanaura District Amroha.
2. Distillery unit shall be based on Molasses / Cane syrup based (465 MTD) only.
3. Unit shall submit the adequacy/validation report of Institute of repute regarding fulfillment of water requirement for Distillery plant from Sugar unit within 03 months as imposed in the Environmental Clearance.
4. This Consent to Establish order shall be affected by the directions of Hon'ble High Court Allahabad in PIL 1399/2020 Rajpal singh vs State of UP and Others.
5. Unit must strictly maintain zero liquid discharge of effluent outside premises into drain/river/water body and on land.
6. Unit shall comply with the conditions imposed in the Environmental Clearance issued by State Level Environment Impact Assessment Authority, Uttar Pradesh vide Letter number 401/Parya/SEAC/5834 -5510/2019 dated 15.10.2020.
7. Unit shall fulfill the fresh water requirement from the treated water of ETP of sister sugar unit M/s Wave Industries Limited , Malaisia, Dhanaura Amroha.
8. Total Fresh water requirement shall be 620 KLD (Industrial Used 600 KLD and 20 KLD for domestic purpose). Waste Water generation spent wash 700 KLD shall be concentrated in MEE and then disposed in the Incineration Boiler. Domestic effluent 12 KLD shall be disposed through septic tank soak pit.
9. Treated water from Condensate Polishing Unit shall be recycle in cooling tower and fermentation.
10. Spent wash generation 700 KLD shall be disposed through Zero liquid discharge system comprising of MEE, Slop fired Incineration Boiler and Condensate Polishing unit for 852 KLD other effluent. The unit shall install Slop boiler of 45 TPH in which Slop 300 KLD shall be main fuel and Bagasse 150 TPD shall be the auxilliary fuel to maintain the Zero Liquid Discharge. The Incineration Boiler shall be provided with Bag Filter and stack of 72 meter from ground level.
11. Hazardous Waste oil 1100 litre per annum and chemical containers shall be disposed through authorized recyclers/TSDF.
12. Fermenter sludge from fermentation process 10 TPD shall be mixed with Ash and shall be used as manure.
13. Unit shall develop Green Belt in minimum 33 percent area of Industrial Premises as per the provisions laid down in office order no. H16405/220/2018/02 dated 16-02-2018 of U.P. Pollution Control Board. The copy of said office order is available on the website of U.P. Pollution Control Board [www.uppcb.com](http://www.uppcb.com).
14. Unit shall identify recipient drains/ rivulets and their u/s & d/s location in consultation with UPPCB and shall carry out monthly monitoring of identified recipient drains at u/s & d/s location through lab recognized under Environment (Protection) Act, 1986 and shall submit the analysis report on monthly basis by 10th of every month to CPCB and UPPCB.
15. Unit shall restrict lined storage capacity to 07 days equivalent of concentrated spent wash generation.
16. Online stack emission monitoring system shall be installed at the stack of Incineration boiler and unit shall ensure the connectivity with the servers of CPCB and UPPCB.
17. Ash disposal shall be done in environmentally safe manner and fly ash rules shall be complied.
18. The overall noise levels in and around 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 level shall confirm to the standards under the Environment (Protection) Act 1986.
19. Unit shall comply the provisions of Water (Prevention and Control of Pollution) Act 1974 as amended, Air (Prevention and Control of Pollution) Act 1981 amended and Environment (Protection) Act 1986, and direction issued by Hon'ble National Green Tribunal, New Delhi and Hon'ble Courts.
20. Unit shall submit the bank guarantee of Rs 1000000/ (Rs. Ten Lakh Only) for the compliance of above conditions within 15 days from the date of issue of this order, failing which this order shall be deemed invalid.

Please note that consent to Establish will be revoked, in case of, non compliance of any of the above mentioned conditions. Board reserves its right for amendment or cancellation of any of the conditions specified above. Industry is directed to submit its first compliance report regarding above mentioned specific and general conditions till 27/06/2021 in this office. Ensure to submit the regular compliance report otherwise this Consent to Establish will be revoked.

**Chief Environment Officer**

Dated:- 27/05/2021

**Copy To -**

Regional Officer Bijnore to ensure the compliance of the conditions imposed in the consent order.

**Chief Environment Officer**

# State Level Environment Impact Assessment Authority, Uttar Pradesh

## Directorate of Environment, U.P.

Vineet Khand-1, Gomti Nagar, Lucknow - 226 010

Phone : 91-522-2300 541, Fax : 91-522-2300 543

E-mail : doeuplko@yahoo.com

Website : www.seiaaup.com

To,

Shri D.S. Bindra,  
Director,  
M/s Wave Industries Pvt.Ltd,  
B-5, Sector-52, Noida,  
District- G.B. Nagar-244231

Ref. No. 401 /Parya/SEAC/5834-5510/2019

Date: 15 October, 2020

**Sub: Environmental Clearance for Establishment of new Molasses / Cane Syrup based Distillery having Capacity: 100 KLD along with 7.0 MW co-gen power at Khasra No.- 108 in village Malasia, 8, 46, 47, 49, 59, 60, 61, 62, 63, 65, 70, 72 in Village-Musallepur, Tehsil - Dhanaura, District- J.P. Nagar, U.P, M/s Wave Industries Pvt. Ltd.**

Dear Sir,

Please refer to your application/letters 13-02-2020, 19-05-2020, 15-09-2020 & 22-09-2020 addressed to the Chairman/Secretary, State Level Environment Impact Assessment Authority (SEIAA) and Director, Directorate of Environment Govt. of UP on the subject as above. The State Level Expert Appraisal Committee considered the matter in its meetings held on dated 23-09-2020 and SEIAA in its meeting dated 12-10-2020.

A presentation was made by the project proponent along with their consultant M/s Environmental & Technical Research Centre. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Establishment of new Molasses / Cane Syrup based Distillery having Capacity: 100 KLD along with 7.0 MW co-gen power at Khasra No.- 108 in village Malasia, 8, 46, 47, 49, 59, 60, 61, 62, 63, 65, 70, 72 in Village-Musallepur, Tehsil - Dhanaura, District- J.P. Nagar, U.P, M/s Wave Industries Pvt. Ltd.
2. The terms of reference in the matter were issued by SEIAA, U.P. vide letter no. 167/Parya/SEAC/5510/2018 dated 30/06/2020.
3. Public hearing was organized on 20/08/2020. Final EIA report submitted by the project proponent on 15/09/2020.
4. Salient features of the project:

Sr. No.	Attributes	Proposed Distillery Unit
1	Proposed capacity of Plant	100 KLD (Molasses/Cane Syrup Based)
2	Co gen Power	7.0 MW
3	Total project area	17.75 Hectare
4	Total project cost	Rs. 17891.0 Lakhs
5	No of working days	365 Days /Annum
6	Raw material and its Quantity	Molasses /Cane Syrup-465 MT/Day. (214.4 Liters of Alcohol can be obtained 1 ton of molasses.)
7	Power Requirement	2860 KWH Source - Co Generation Power Plant-7.0 MW
8	Steam Requirement	28 TPH
9	Man Power Requirement	Directly Employment : 55 nos. Indirect employment : 100 nos.
10	Fuel Requirement	SLOP : 300 KLD along with Bagasse : 150 TPD
11	Boiler Detail	Proposed : 01 no of 45 TPH (Slop fired boiler)
12	Fresh Water Requirement	Total Fresh Water requirement : 620 KLD Industrial Use: 600 KLD (@ 6.0 KL/KL of Product) Domestic Use: 20 KLD
13	Waste Water Generation	Spent Wash Generation-700 KLD
14	Treatment Technology	Spent wash will be concentrate in Multi effect evaporation and then concentration from MEE will be used as fuel in incineration





		boiler of capacity 45 TPH along with bagasse/ other biomass. Other Effluent: Secondary effluent like MEE condensate and blow down, lees will be treated in Secondary ETP and reutilized in process and other use.
15	Air Pollution Control Equipment	Bag Filter along with Stack of height 72 Meters.

5. Land use details:

Sr No	Land use	Area (sqm)	Area in %
1	Roof Top	30505.0	17.2
2	Green Belt	60000.0	33.8
3	Road and Paved	21300.0	12.0
4	Open area	65695.0	37.0
	Grand Total	177500	100

6. Raw material required with daily consumption and transport:

Particular	Daily Requirements	Source of raw material & Mode of Transportation
1. Molasses	465 MT/ day	Adjacent sugar mills/ By road
2. Others Chemicals Required		30.0 days storage will be provided and raw material will be transported through Tankers.
Sulphuric Acid	800.0 kg/Day	
Sodium Hydroxide (Caustic)	1600.0 Kg/Day	
Enzymes	6.0 kg/Day	
NH <sub>2</sub> -CO- NH <sub>2</sub> (Nutrient : 46% N <sub>2</sub> )	340.0 Kg/Day	
Antifoam Agent	120.0 Kg/Day	

7. Water requirement details:

Particular	Quantity	Remarks
Total Water Requirement	2669.0 KLD	Maximum fresh water requirement of water in day will be 620 KLD.
Total treated and process water for recycling	2049.0 KLD	
Fresh Water Requirement	600.0 KLD	
Domestic water requirement	20.0 KLD	
Source of Fresh Water	Treated water from ETP of Sugar.	
Industrial Waste Water Generation (Spent wash)	700.0 KLD.	Spent wash will be concentrated in MEE and concentrated Slop will be used as fuel along with bagasse in 45 TPH boiler.
Domestic Waste Water Generation	12.0 KLD	Domestic waste water will be disposed through septic tank and Soak pit
Other Effluent Generation	852 KLD	Secondary Effluent Treatment Plant will be constructed for the treatment of other effluent which include MEE condensate, Spent Lease, Floor washing, Reject, Blow downs etc.

8. Solid waste details:

Process Waste			
S. No.	Solid waste	Quantity during Molasses based operation	Method of disposal
1	Fermenter Sludge	10 MT/Day	Fermenter Sludge recovered from fermenter process will also be used 100 % as manure due to its good nutritive value..

Hazardous Waste Generation and Management			
S. No.	Solid waste	Quantity	Method of disposal
1.	Used Oil	1100 Liters / Annum	The used oil will be Sold to the vendors authorised by UPPCB for the treatment of the same.
2.	Chemical Containers	-	Will be sent to TSDF

9. The project proposal falls under category 5 (g) of EIA Notification, 2006 (as amended).





Based on the recommendations of the State Level Expert Appraisal Committee Meeting (SEAC) held on 23-09-2020 the State Level Environment Impact Assessment Authority (SEIAA) in its Meeting held 12-10-2020 and decided to grant the Environmental Clearance for proposed project along with subject to the effective implementation of the following general & specific conditions:-

**I. Statutory compliance:**

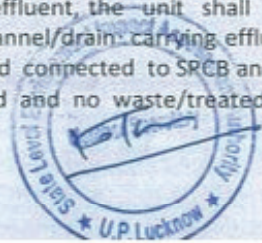
1. 45 days monitoring report of the area for air quality, water quality, Noise level. Besides flora & fauna should be examined twice a week and be submitted within 60 days for a record.
2. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
3. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
4. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six - monthly compliance report. (In case of the presence of schedule-I species in the study area).
5. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
6. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
7. The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989

**II. Air quality monitoring and preservation:**

1. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
2. The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions. (case to case basis small plants: Manual; Large plants: Continuous).
3. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six- monthly monitoring report.
4. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
5. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
6. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
7. The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.
8. Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.

**III. Water quality monitoring and preservation:**

1. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD) and connected to SPCB and CPCB online servers.
2. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the





- premises (applicable in case of the projects achieving the ZLD).
3. Process effluent /any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
  4. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.
  5. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.
  6. Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.
  7. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.

**IV. Noise monitoring and prevention:**

1. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
2. 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.
3. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

**V. Energy Conservation measures:**

1. The energy sources for lighting purposes shall preferably be LED based.

**VI. Waste management:**

1. Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
2. Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
3. The company shall undertake waste minimization measures as below :-
  - i. Metering and control of quantities of active ingredients to minimize waste .
  - ii. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
  - iii. Use of automated filling to minimize spillage.
  - iv. Use of Close Feed system into batch reactors.
  - v. Venting equipment through vapour recovery system.
  - vi. Use of high pressure hoses for equipment clearing to reduce wastewater generation

**VII. Green Belt:**

1. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.

**VIII. Safety, Public hearing and Human health issues:**

1. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
2. The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
3. 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.
4. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
5. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
6. There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places

**IX. Corporate Environment Responsibility:**

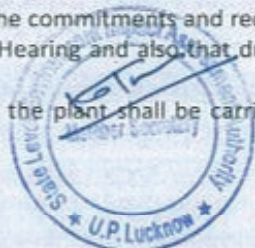




1. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
2. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation/violation of the environmental / forest /wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental/ forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
3. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
4. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
5. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

**X. Miscellaneous:**

1. If the proposed project is situated in notified area of ground water extraction, where creation of new wells for ground water extraction is not allowed, requirement of fresh water shall be met from alternate water sources other than ground water or legally valid source and permission from the competent authority shall be obtained to use it.
2. The project proponent shall ensure that the distillery shall be on ZLD basis with incineration of spent wash in slop boiler. As proposed treated waste water should be completely recycled /reused and ZLD should be achieved. Under no circumstances treated waste water and effluent shall be discharged to any drain/sewer line/ inland surface water/Nala etc.
3. Directions/suggestions given during public hearing and commitment made by the project proponent should be strictly complied.
4. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
5. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
6. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
7. The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
8. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
9. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
10. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
11. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
12. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
13. No further expansion or modifications in the plant shall be carried out without prior approval of the





Ministry of Environment, Forests and Climate Change (MoEF&CC).

14. Concealing factual data or submission of false /fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
15. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
16. The Ministry reserves the right to stipulate additional conditions if found necessary.
17. The Company in a time bound manner shall implement these conditions.
18. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
19. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
20. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Concealing factual data and information or submission of false/fabricated data and failure to comply with any of the conditions stipulated in the Prior Environmental Clearance attract action under the provision of Environmental (Protection) Act, 1986.

This Environmental Clearance is subject to ownership of the site by the project proponents in confirmation with approved Master Plan for G.B. Nagar. In case of violation; it would not be effective and would automatically be stand cancelled.

The project proponent has to ensure that the proposed site is not a part of any no- development zone as required/prescribed/identified under law. In case of the violation this permission shall automatically deemed to be cancelled. Also, in the event of any dispute on ownership or land use of the proposed site, this Clearance shall automatically deemed to be cancelled.

The project proponent has to mandatorily submit the compliance of specific conditions no- 1, 3, 4 & 5 given in E.C. letter within 3 months, failing which the Clearance shall automatically deemed to be cancelled.

Further project proponent has to submit the regular 6 monthly compliance report regarding general & specific conditions as specified in the E.C. letter and comply the provision of EIA notification 2006 (as Amended).

These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006 including the amendments and rules made thereafter.


  
(Ashish Tiwari)

Member Secretary, SEIAA

No...../Parya/SEAC/5834-5510/2019 Dated: As above

**Copy with enclosure for information and necessary action to:**

1. The Principal Secretary, Department of Environment, Govt. of Uttar Pradesh, Lucknow.
2. Advisor, IA Division, Ministry of Environment, Forests & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi.
3. Additional Director, Regional Office, Ministry of Environment & Forests, (Central Region), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow.
4. District Magistrate J.P. Nagar.
5. The Member Secretary, U.P. Pollution Control Board, TC-12V, Paryavaran Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow.
6. Copy to Web Master/ guard file.

  
(Ashish Tiwari)  
Member Secretary, SEIAA





# ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

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ETRC/PM14/TEST-REP/FT/17

## TEST REPORT WATER ANALYSIS

Test Report Ref No.: ETRC/2004/10594/2022	Date of Report: 20/04/2022
Name /Address/Type of Industry	M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231

### SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Borewell (Near Project Site)	6	Sample Collected By	Industry Self
3	Sample received date	16.04.2022	7	Analysis Start Date	16.04.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	19.04.2022

### TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2.0 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2540 C IS: 3025 (Part-16): 1984 Reaffirmed: 2017	418.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Ca, B IS: 3025 (Part-40): 1991 Reaffirmed: 2019	56.0	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	26.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.37	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- NO <sub>3</sub> <sup>-</sup> IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	28.4	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	292.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	268.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0



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## Test Report Ref No.: ETRC/2004/10594/2022

20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.11	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.08	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.38	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
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 constituting to the results.
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- Complain register is available in our laboratory.

  
**Authorized Signatory**  
**(Sandeep Kr Verma)**  
**Lab-Incharge**



  
**Authorized Signatory**  
**(Ritu Garg)**  
**QM**



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ETRC/PM14/TES-REP/FT/17

## TEST REPORT WATER ANALYSIS

<b>Test Report Ref No.:</b> ETRC/1805/10595/2022	<b>Date of Report:</b> 18/05/2022
<b>Name /Address/Type of Industry</b>	<b>M/s Wave Industries Private Limited</b> <b>Unit: Distillery</b> <b>Village: Malasia, Musallepur, Tehsil: Dhanaura</b> <b>District: Amroha (J.P. Nagar) U.P. - 244231</b>

### SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Borewell (Near Project Site)	6	Sample Collected By	Industry Self
3	Sample received date	13.05.2022	7	Analysis Start Date	13.05.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	17.05.2022

### TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2.0 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2540 C IS: 3025 (Part-16): 1984 Reaffirmed: 2017	424.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Ca, B IS: 3025 (Part-40): 1991 Reaffirmed: 2019	57.6	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	29.16	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	30.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.40	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- NO <sub>3</sub> <sup>-</sup> IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	32.0	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	284.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	264.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0



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## Test Report Ref No.: ETRC/1805/10595/2022

20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.15	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.48	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
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.
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- Complain register is available in our laboratory.

  
**Authorized Signatory**  
**(Sandeep Kr Verma)**  
**Lab-Incharge**



  
**Authorized Signatory**  
**(Ritu Garg)**  
**QM**





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ETRC/PM14/TEST-REP/FT/17

## TEST REPORT WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/6530/2022	Date of Report: 21/12/2022
Name /Address/Type of Industry	M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231

### SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Borewell (Near Project Site)	6	Sample Collected By	Industry Self
3	Sample received date	23.06.2022	7	Analysis Start Date	23.06.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	27.06.2022

### TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.4	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2.0 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2540 C IS: 3025 (Part-16): 1984 Reaffirmed: 2017	420.0	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Ca, B IS: 3025 (Part-40): 1991 Reaffirmed: 2019	60.8	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	29.16	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	28.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.341	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- NO <sub>3</sub> <sup>-</sup> IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	26.2	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	296.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	272.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0



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20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.08	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.59	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
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	


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

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**Authorized Signatory**  
**(Sandeep Kr Verma)**  
**Lab-Incharge**



  
**Authorized Signatory**  
**(Ritu Garg)**  
**QM**





# ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory: 2/261, Vishwas Khand, Gomti Nagar, Lucknow- 226 010 (U.P.)

Email : ETRCLTH@YAHOO.IN, Web: www.etrccindia.com

ISO 9001:2015, ISO 14001 : 2015, OHSAS 18001 : 2007

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ETRC/PM14/TEST-REP/FT/17

## TEST REPORT WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/6695/2022	Date of Report: 25/07/2022
Name /Address/Type of Industry	M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231

### SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Borewell (Near Project Site)	6	Sample Collected By	Industry Self
3	Sample received date	21.07.2022	7	Analysis Start Date	21.07.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	25.07.2022

### TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.4	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2.0 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2540 C IS: 3025 (Part-16): 1984 Reaffirmed: 2017	432.0	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Ca, B IS: 3025 (Part-40): 1991 Reaffirmed: 2019	60.8	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	32.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.38	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- NO <sub>3</sub> <sup>-</sup> IS: 3025 (Part-34): 1986 Reaffirmed: 2019	1.02	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	32.0	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	304.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	280.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0



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20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.13	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.03	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.60	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
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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**Lab-Incharge**



  
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ETRC/PM14/TEST-REP/FT/17

## TEST REPORT WATER ANALYSIS

Test Report Ref No.: ETRC/2308/10596/2022	Date of Report: 23/08/2022
Name /Address/Type of Industry	M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231

### SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Borewell (Near Project Site)	6	Sample Collected By	ETRC, Lucknow
3	Sample received date	19.08.2022	7	Analysis Start Date	19.08.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	22.08.2022

### TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2.0 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2540 C IS: 3025 (Part-16): 1984 Reaffirmed: 2017	426.8	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Ca, B IS: 3025 (Part-40): 1991 Reaffirmed: 2019	58.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	30.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.41	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- NO <sub>3</sub> <sup>-</sup> IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	30.6	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	284.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	260.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0





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## Test Report Ref No.: ETRC/2308/10596/2022

20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.17	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.04	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.71	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
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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ETRC/PM14/TES-REP/FT/37

## TEST REPORT AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1509/10597/2022		Date of Report: 15/09/2022	
Name /Address/Type of Industry		M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231	
Monitored by		ETRC, Lucknow	
Location of Sampling points		Near Main Gate	
Sr. No.	GENERAL OBSERVATIONS	DETAILS-PM <sub>10</sub>	DETAILS-PM <sub>2.5</sub>
(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	58	58
(d)	Average ambient temperature (°C)	28	28
(e)	Time of Sampling Started (Hours)	10:24 am (07.09.2022)	10:24 am (07.09.2022)
(f)	Time of Sampling completed (Hours)	10:06 am (08.09.2022)	10:06 am (08.09.2022)
(g)	Total time of sampling (Minutes)	24 hour (1423 minutes)	24 hour (1423 minutes)
(f)	Average Air sampling rate (m <sup>3</sup> /minute)	1.145	NA
(g)	TOTAL VOLUME OF AIR SAMPLED		
	• PM (m <sup>3</sup> )	• 1629.564	• 23.714
	• GAS (liter)	• 711.6	

### TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Standard as per NAAQS; dated 18/11/ 2009
1	Particulate matters size less than 10 µm (PM <sub>10</sub> )	IS: 5182 (Part - 23): 2006 Reaffirmed: 2017	µg/m <sup>3</sup>	89.6	For 24 hour = 100
2	Particulate matters size less than 2.5 µm (PM <sub>2.5</sub> )	IS: 5182 (Part - 24): 2019	µg/m <sup>3</sup>	53.55	For 24 hour = 60
3	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (Part - 2): 2001 Reaffirmed: 2017	µg/m <sup>3</sup>	14.68	For 24 hour = 80
4	Oxides of Nitrogen (NO <sub>x</sub> )	IS: 5182 (Part - 6): 2006 Reaffirmed-2017	µg/m <sup>3</sup>	22.06	For 24 hour = 80

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

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ETRC/PM14/TES-REP/FT/37

## TEST REPORT AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1509/10598/2022		Date of Report: 15/09/2022	
Name /Address/Type of Industry		M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231	
Monitored by		ETRC, Lucknow	
Location of Sampling points		At Admin Building	
Sr. No.	GENERAL OBSERVATIONS	DETAILS-PM <sub>10</sub>	DETAILS-PM <sub>2.5</sub>
(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	58	58
(d)	Average ambient temperature (°C)	28	28
(e)	Time of Sampling Started (Hours)	10:34 am (07.09.2022)	10:34 am (07.09.2022)
(f)	Time of Sampling completed (Hours)	10:18 am (08.09.2022)	10:18 am (08.09.2022)
(g)	Total time of sampling (Minutes)	24 hour (1408 minutes)	24 hour (1408 minutes)
(f)	Average Air sampling rate (m <sup>3</sup> /minute)	1.165	NA
(g)	<b>TOTAL VOLUME OF AIR SAMPLED</b> <ul style="list-style-type: none"><li>PM (m<sup>3</sup>)</li><li>GAS (liter)</li></ul>	<ul style="list-style-type: none"><li>1639.854</li><li>703.8</li></ul>	<ul style="list-style-type: none"><li>23.426</li></ul>

### TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Standard as per NAAQS; dated 18/11/ 2009
1	Particulate matters size less than 10 µm (PM <sub>10</sub> )	IS: 5182 (Part - 23): 2006 Reaffirmed: 2017	µg/m <sup>3</sup>	87.2	For 24 hour = 100
2	Particulate matters size less than 2.5 µm (PM <sub>2.5</sub> )	IS: 5182 (Part - 24): 2019	µg/m <sup>3</sup>	53.36	For 24 hour = 60
3	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (Part - 2): 2001 Reaffirmed: 2017	µg/m <sup>3</sup>	14.55	For 24 hour = 80
4	Oxides of Nitrogen (NO <sub>x</sub> )	IS: 5182 (Part - 6): 2006 Reaffirmed-2017	µg/m <sup>3</sup>	22.68	For 24 hour = 80

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

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ETRC/PM14/TES-REP/FT/36

## TEST REPORT STACK EMISSION MONITORING AND ANALYSIS REPORT

<b>Test Report Ref No.:</b> ETRC/1509/10599/2022		<b>Date of Report:</b> 15/09/2022
<b>Name /Address/Type of Industry</b>		<b>M/s Wave Industries Private Limited</b> <b>Unit: Distillery</b> <b>Village: Malasia, Musallepur, Tehsil: Dhanaura</b> <b>District: Amroha (J.P. Nagar) U.P. - 244231</b>
<b>Monitored by</b>		<b>ETRC, Lucknow</b>
<b>Sr. No.</b>	<b>GENERAL INFORMATION</b>	<b>DETAILS</b>
1.(a)	Date of monitoring	07.09.2022
(b)	Stack material	RCC
(c)	Height of stack from ground level	85.0 mts
(d)	Source to which stack attached	Boiler
(e)	No of boiler attached with capacity	01 No. (45.0 TPH)
(f)	Type and quantity of fuel used	Slop & Bagasse
(g)	Details of APCS installed	Bag Filters
2.	<b>PARAMETERS</b>	<b>VALUES</b>
(a)	Ambient temperature (°C)	34.0
(b)	Stack gas temperature (°C)	127.0
(c)	Stack gas velocity (m/sec)	11.82
(d)	Flow rate (LPM)	17
(e)	Sampling time (minutes)	61
(f)	Volume of air sampled (liters)	1037

### TEST RESULT


Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing / Limit of Detection	Standard (as per CPCB)
1	<b>Particulate Matter</b>	mg/Nm <sup>3</sup>	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	<b>44.6</b>	2.0 - 1000	50

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

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**(Sandeep Kr Verma)**  
**Lab-Incharge**



  
**Authorized Signatory**  
**(Ritu Garg)**  
**QM**





# ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory: 2/261, Vishwas Khand, Gomti Nagar, Lucknow- 226 010 (U.P.)

Email : ETRCLTH@YAHOO.IN, Web: www.etrccindia.com

ISO 9001:2015, ISO 14001 : 2015, OHSAS 18001 : 2007

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## TEST REPORT AMBIENT NOISE MONITORING AND ANALYSIS REPORT

Test Report Ref No.: ETRC/1509/10600/2022		Date of Report: 15/09/2022
Name /Address/Type of Industry		M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231
Monitored by		ETRC, Lucknow
Sr. No.	GENERAL INFORMATION	DETAILS
(a)	Date of monitoring	07/09/2022 (6:00 AM) to 08/09/2022 (6:00 AM)
(b)	Sample Description	Ambient Noise
(c)	Sampling Location	Near Project Site
(d)	Environmental Condition	Normal

### TEST RESULT

Ambient Noise Level				
Sr. No.	Parameter	Unit	Results	Results
			DAY TIME (6:00 AM - 10:00 PM)	NIGHT TIME (10:00 PM - 6:00 AM)
1	Equivalent sound level	dB(A)	64.12	49.82

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

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

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ETRC/PM14/TEST-REP/FT/17

## TEST REPORT WATER ANALYSIS

Test Report Ref No.: ETRC/1509/10601/2022	Date of Report: 15/09/2022
Name /Address/Type of Industry	M/s Wave Industries Private Limited Unit: Distillery Village: Malasia, Musallepur, Tehsil: Dhanaura District: Amroha (J.P. Nagar) U.P. - 244231

### SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	Borewell (Near Project Site)	6	Sample Collected By	Industry Self
3	Sample received date	08.09.2022	7	Analysis Start Date	08.09.2022
4	Sample Quantity	5.0 liters	8	Analysis End Date	14.09.2022

### TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
<b>Physico-chemical Parameters</b>							
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 <sup>rd</sup> Ed. 2017-4500 H <sup>+</sup>	7.5	1 - 14	6.5-8.5	No Relaxation
4	Turbidity	NTU	APHA 23 <sup>rd</sup> Ed. 2017-2130 B	BDL	2.0 - 40	1	5
5	Total Dissolved Solids (TDS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2540 C IS: 3025 (Part-16): 1984 Reaffirmed: 2017	414.6	10 - 5000	500	2000
6	Ammonia (as total ammonia-N)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-NH <sub>3</sub> F	BDL	0.5 - 10	0.5	No Relaxation
7	Anionic Detergents (as MBAS)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5540 C	BDL	0.05 - 0.5	0.2	1.0
8	Calcium as Ca	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Ca, B IS: 3025 (Part-40): 1991 Reaffirmed: 2019	59.2	2.0 - 600	75	200
9	Magnesium as Mg	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3500 Mg, B	31.10	0.1 - 200	30	100
10	Chloride as Cl	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> B	26.0	2.0 - 2000	250	1000
11	Fluoride as F	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500 F <sup>-</sup> C	0.39	0.02 - 5.0	1.0	1.5
12	Free Residual Chlorine	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500-Cl <sup>-</sup> IS: 3025 (Part-26): 1986 Reaffirmed: 2019	BDL	0.1 - 5.0	0.2	1.0
13	Nitrate as NO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- NO <sub>3</sub> <sup>-</sup> IS: 3025 (Part-34): 1986 Reaffirmed: 2019	BDL	1.0 - 70	45	No Relaxation
14	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-5530 C	BDL	0.001-0.005	0.001	0.002
15	Sulphate as SO <sub>4</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-4500- SO <sub>4</sub> <sup>2-</sup>	28.0	1.0 - 500	200	400
16	Alkalinity as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2320 B	292.0	2.0 - 1000	200	600
17	Total Hardness as CaCO <sub>3</sub>	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-2340 C	276.0	5.0 - 800	200	600
18	Aluminium as Al	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.015 - 5.0	0.03	0.2
19	Boron as B	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.5	1.0



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## Test Report Ref No.: ETRC/1509/10601/2022

20	Copper as Cu	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 10	0.05	1.5
21	Iron as Fe	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.14	0.05 - 20	0.3	No Relaxation
22	Manganese as Mn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.05	0.02 - 5.0	0.1	0.3
23	Zinc as Zn	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	0.52	0.05 - 15	5	15
24	Cadmium as Cd	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 2.0	0.003	No Relaxation
25	Lead as Pb	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.01 - 10	0.01	No Relaxation
26	Mercury as Hg	µg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.5 - 1000	1.0	No Relaxation
27	Nickel as Ni	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.05 - 5.0	0.02	No Relaxation
28	Arsenic as As	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.02 - 2.0	0.01	0.05
29	Total Chromium	mg/l	APHA 23 <sup>rd</sup> Ed. 2017-3120 B (ICP-OES)	BDL	0.03 - 5.0	0.05	No Relaxation
<b>Microbiological Parameters</b>							
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	

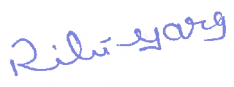
BDL=Below Detection Limit

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ETRC/PM14/TEST-REP/FT/38

## TEST REPORT SOIL ANALYSIS

<b>Test Report Ref No.:</b> ETRC/1509/10602/2022	<b>Date of Report:</b> 15/09/2022
<b>Name /Address/Type of Industry</b>	<b>M/s Wave Industries Private Limited</b> <b>Unit: Distillery</b> <b>Village: Malasia, Musallepur, Tehsil: Dhanaura</b> <b>District: Amroha (J.P. Nagar) U.P. - 244231</b>

### 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	08.09.2022	7	Analysis Start Date	08.09.2022
4	Sample Quantity	500 gm	8	Analysis End Date	14.09.2022

### TEST REPORT

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	296.0	1 - 40000
3	Moisture content	%	IS :2720 (Part -2):1973 Reaffirmed:2015	3.28	1.0 - 50
4	Nitrate as N	kg/Hec	Method manual of Soil testing India	295.2	5.0 - 500
5	Phosphorus as P <sub>2</sub> O <sub>5</sub>	kg/Hec	Method manual of Soil testing India	22.10	1.0 - 2000
6	Potash as K <sub>2</sub> O	kg/Hec	Method manual of Soil testing India	106.8	1.0 - 2000
7	Sulphur	mg/kg	IS: 14685: 1999 Reaffirmed:2014	14.10	5.0 - 100
8	Boron	mg/kg	ETRC/ LABSOPS/06	BDL	4.0 - 100
9	Copper	mg/kg	ETRC/ LABSOPS/07	0.41	0.3 - 500
10	Zinc	mg/kg	ETRC/ LABSOPS/08	2.38	1.0 - 500
11	Iron	mg/kg	ETRC/ LABSOPS/09	32.14	5.0 - 500
12	Manganese	mg/kg	ETRC/ LABSOPS/10	9.2	5.0 - 500

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