



# Hindustan Urvarak & Rasayan Limited

(A Joint Venture of NTPC, CIL, IOCL, FCIL & HFCL)

Barauni, Urvarak Nagar, Begusarai-851115 (Bihar)

Ref. No.: HURL/BR/EC/C/01

Date: 29/11/2023

To,

**Regional Office (Eastern Central Zone)**

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

**Subject:** Regarding submission of Six months EC compliance report on PARIVESH portal by of M/s Hindustan Urvarak & Rasayan Limited (HURL)- Barauni Compliance Report for April-2023 to September-2023.

Ref: (i) MoEF&CC, Environmental Clearance Letter No. J-11011/371/2016-I All (i) dated: 29.08.2017.

Dear Sir,

With reference to the subject as mentioned above, please find attached herewith the Six months EC compliance report for the period October-2022 to March-2023 with all annexures and same have been uploaded on PARIVESH portal.

For & on behalf of HURL Barauni,

(Karanam Manoranjan Babu)  
Vice President (TS & Production)

Encl: As above.

CC: Regional officer,  
Bihar State Pollution Control Board  
Barauni Industrial area  
Begusarai.

CC: Regional Directorate – KOLKATA  
Central Pollution Control Board,  
Ministry of Environment, Forest and Climate Change, Govt. of India,  
'South end Conclave' Block-502, 5<sup>th</sup> & 6<sup>th</sup> Floor, 1582,  
Razidanga, Main Road, Kolkata-700107

| Sl. No. | EC Conditions   | Self-Declaration | Compliance status   |
|---------|---|------------------|---|
| (A)     | <b>Specific Conditions</b>  |                  |   |
| 1.      | Emissions limits for the pollutants from the DG sets and the stack height, shall be in conformity with the extant statutory regulations and/or the CPCB guidelines in this regard.  | Complied         | Diesel Generator Sets are being used only in case of total Power Failure for safe shutdown of the Plants. Normally, the Complex Power requirement is being met from NBPDC and Natural Gas based HURL own Captive Power Generation (2 Gas Turbines). Adequate stack height provided to ensure the statutory regulations & guidelines.  |
| 2.      | To control source emissions, scrubber and/or other suitable pollution control device shall be installed to meet the prescribed Particulate Matter emission norms of 50 mg/Nm <sup>3</sup> , and also the NAAQS.   | Complied         | This has been addressed in the Feasibility Report of the project during design stage of the plant itself and shall be complied during operation phase. Design considerations include scrubbers, adequate height of prilling tower and other gas sensors/control measures in the plant to meet emission norms as per NAAQS. AAQ analysis report is attached as <b>Annexure-I</b>   |
| 3.      | Fresh water requirement shall not exceed 5.36 cum/ton of Urea production. Fresh water shall be sourced from River Ganga only after the required permission from the concerned authority. During construction phase, ground water may be used after prior permission in this regard from the concerned regulatory authority. | Complied         | Fresh water supply is sourced from river Ganga. Requisite NOC has been accorded by Central Water Commission (CWC). However, it is ensured that the fresh water requirement does not exceed 5.36 cum/ton of Urea production.   |
| 4.      | As already committed by the project proponent, no waste/treated water shall be discharged outside to ensure ZLD. The effluent discharge, if any, shall meet the standards for 'Nitrogenous Fertilizer Industry' prescribed under the Environment (Protection) Rules, 1986.  | Agree to Comply  | Presently ZLD Commissioning activity is at the final stage. As the Project is based on Zero liquid discharge concept entire wastewater generated will be treated upto tertiary level in ETP inside the plant and being sent to RO for further reuse.  |
| 5.      | The project proponent shall develop greenbelt in an area of 33% i.e., nearly 116 acres out of 350 acres of plant area of the project. The green belt of 30 m width around periphery shall be provided.  | Agree to Comply  | Presently new peripheral boundaries and internal roads are partially developed. Tree plantation around periphery will be complied as per the given condition after completion of roads and boundary wall work.<br><br>Budgetary offer for plantation inside the plant has been received from the State Forest Department (DFO Begusarai). This proposal will be submitted to the Competent Authority for further approval. Within the plant premises, approximately 41.30 acres of land has been designated for the creation of a green belt, out of a total area of approximately 116 acres. |
| 6.      | 5000 trees per year in 5 years shall be planted in nearby villages with the consultation of the villagers. Survival rate of plants shall be reported to RO, MoEF & CC in 6 monthly compliance report.   | Complied         | Plantation work is awarded to State Forest dept on depositary work basis. 25000 plats planted by State Forest dept. (DFO Begusarai) in FY 2022-23 and survival rate of plants in Oct 2023 attached as <b>Annexure-II</b>  |
| 7.      | All the commitments made during the Public Hearing/ Public Consultation meeting held on 29th April, 2017 shall be satisfactorily implemented and adequate budget provision shall be made accordingly.   | Agree to Comply  | All the commitments made during Public Hearing/Public Consultation meeting held on 27th April, 2017 are being complied for which adequate budget was considered in the project cost.  |
| 8.      | At least 2.5 % of the total cost of the project shall be earmarked towards the  | Agree to Comply  | The Enterprise Social Commitment (ESC) will be implemented according to the specified conditions  |

*[Handwritten signature]*

*[Handwritten signature]*

|     |  |                 |   |
|-----|--|-----------------|---|
|     | Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's Regional Office at Ranchi. Implementation of such program shall be ensured accordingly in a time bound manner.           |                 | outlined by the Project. HURL is responsible for developing a detailed action plan and budget. Currently, HURL management is reviewing a proposal titled "Improvement/Augmentation of Education & Related Infrastructure" for selected Government Schools in Barauni, Begusarai district, under the Corporate Environmental Responsibility (CER) initiative. The site-level committee has recommended an estimated cost of Rs. 20,92,56892/- (Rupees twenty crores ninety-two lakhs fifty-six thousand eight hundred ninety-one only) for this project, which is under consideration.   |
| 9.  | A regular environment manager having post graduate qualification in environmental sciences/ environmental engineering to be appointed for looking after the environmental management activities of the proposed plant.   | Agree to Comply | The environmental management activities of the plant are being looked after by a permanent Manager level officer Mr. Srinu Pitta. Environmental Monitoring work has been outsourced to an external agency. Action has also been taken for further strengthening the team.   |
| 10. | Continuous online (24x7) monitoring system for emissions and effluent generation shall be installed for flow/discharge measurement and the pollutants concentration within the plant. Data shall be uploaded on company's website and provided to the respective RO of MoEF&CC, CPCB and SPCB. | Agree to Comply | Continuous online(24x7) monitoring system for stacks emissions has been installed at site. Its Connectivity with server is under progress (at CPCB). At present manual display board for environment data (EC required data) display has been installed and data is being updated regularly.  |
| 11. | The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.  | Complied        | Plant is equipped with adequate measures for control of failures/ hazards. Firefighting facilities are implemented as per norms.  |
| 12. | Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.  | Complied        | Regular health check-up/monitoring of the commissioning laborers are being done and records have been maintained for the same. All the workers are ensured to be equipped with PPEs such as helmets, hand gloves, boots etc. before entering into plant site.   |
| 13. | Storage of hazardous raw material shall not exceed more than 7 days.   | Complied        | Storage of raw materials addressed in the Feasibility Report and EIA (HAZID & ENVID) report of the Project, being complied with the stated condition.   |
| 14. | Urea dust shall be controlled by prescribed standard technique.  | Complied        | This is addressed while designing the prilling tower w.r.t height of UPT, gas sensors, manual PM monitoring etc. to control emission of urea dust and subsequent loss/ environmental pollution. The urea dust concentration is less than 50 mg/Nm <sup>3</sup> or below 0.5 Kg/MT of urea produced.<br>Following control measures adopted to ensure the above concentration:<br><ul style="list-style-type: none"> <li>• Provided adequate free fall height</li> <li>• Maintaining the moisture content in the melt below 0.5% to increase prill strength.</li> <li>• Prilling Tower of special design installed to maintain uniform and low velocity profile of cooling air.</li> <li>• The louvers of the prilling tower designed in such a way that</li> </ul> |

*[Handwritten signature]*

*[Handwritten signature]*

|            |  |                 |   |
|------------|--|-----------------|---|
|            | creche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.   |                 | been kept at designated places and being disposed as per provisions of Construction and Demolition Waste Management Rules, 2016.  |
| <b>(B)</b> | <b>General Conditions</b>  |                 |   |
| 1.         | The project authorities shall strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.  | Complied        | It is being complied regularly.   |
| 2.         | No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any. | Complied        | Noted, there is no further expansion or modifications in the plant is envisaged at this stage. However, as and when required, a fresh reference shall be made to the MoEF&CC, Gov. of India.  |
| 3.         | The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.   | Complied        | The locations of ambient air quality monitoring have been decided in consultation with the Bihar State Pollution Control Board (BSPCB) and HURL officials for monitoring of Air Quality during construction /commissioning phase. 06 Nos. of AAQMS have been installed in the project area, out of which one station is selected in up-wind (East) and one station is selected in down-wind (West) directions.                            |
| 4.         | The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 18th November, 2009 shall be followed.   | Complied        | Being Complied.   |
| 5.         | The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).   | Complied        | The noise levels are maintained within the standard prescribed limits by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. (Data attached as <b>Annexure-1</b> )  |
| 6.         | The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.  | Being to Comply | Rain water harvesting system is provided to collect water from all the plant buildings viz. admin, control rooms and laboratory as well as surface run off to ensure effective rain water harvesting and subsequent ground water recharge. As per envisaged plan, buildings like control room, operator room, maintenance building, canteen, laboratory building etc. will be having rain water harvesting facility. These are completed. |
| 7.         | Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and   | Agree to Comply | All Employees are imparted training on safety and health aspects of chemicals handling.   |

*[Handwritten signature]*

*[Handwritten signature]*

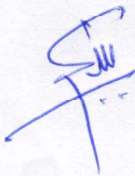
|     |   |          |  |
|-----|---|----------|--|
|     |   |          | <p>the air entering the louvers located in the bottom of PT shall generate low velocity cooled air.</p> <ul style="list-style-type: none"> <li>• Maintaining optimum melt temperature</li> <li>• Use of special design prilling buckets, etc.</li> </ul> <p>Besides above, all safety valves exhaust, which operates during occasional upsets, connected to Blow-down Stacks and the inerts shall be vented through 93-m high Vent Stacks.</p>   |
| 15. | In Urea Plant, particulate emissions shall not exceed 50 mg/Nm <sup>3</sup> , Monitoring of Prilling Tower shall be carried out as per CPCB guidelines.   | Complied | <p>Particulate Emissions are within the 50 mg/Nm<sup>3</sup>. Urea Prilling tower Emissions are being monitored as per the CPCB Guidelines. Emission Monitoring report attached as Annexure-I.</p>   |
| 16. | The levels of PM <sub>10</sub> (Urea dust), SO <sub>2</sub> , NO <sub>x</sub> , Ammonia, Ozone and HC shall be monitored in the ambient air and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MoEF&CC, the respective Zonal office of CPCB and the SPCB. | Complied | <p>The levels of PM<sub>10</sub> (Urea dust), SO<sub>x</sub>, NO<sub>x</sub>, Ammonia, Ozone and HC in the ambient air are being monitored since the construction phase by external agencies, having CPCB recognized laboratories. (Monitoring Report for April 2023 to September 2023 attached as <b>Annexure- I</b>).</p> <p>Currently monitoring data is updated manually at outside of Plant Gate.</p> <p>Six monthly compliance reports with monitoring results are uploaded on HURL's website and its regular updating is done periodically. Simultaneously, every six-monthly compliance report is also being sent to the Regional office of MoEF&amp;CC, the respective Zonal office of MoEF&amp;CC and BSPCB as per stated condition.</p> |
| 17. | In plant, control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals / materials, multi cyclone separator and water sprinkling system. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored. The emissions shall conform to the limits stipulated by the SPCB. | Complied | <p>The water sprinkling is being done on regular basis for dust suppression in and around site. Air Quality is being monitored in work zone environment as per monitoring plan for assessment of pollution level during the operation phase (<b>Annexure-I</b>). The technology has inherent design features for minimum gaseous emissions. Gaseous raw materials, Liquid product, gaseous product, urea product and chemicals are handled in the closed system. Fugitive emission surveys are carried out to monitor emission in the work zone environment, product area etc. and are regularly monitored. Fugitive emissions monitored confirm the emission limits stipulated by as per SPCB norms.</p>  |
| 18. | The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous waste "(Management, Handling and Trans-Boundary Movement) Rules, 2016 and amended as on date for management of Hazardous wastes. Measures shall be taken for fire 'fighting facilities in case of emergency.   | Complied | <p>Authorization has been obtained from BSPCB for Authorization for collection, storage and disposal of hazardous waste under the Hazardous &amp; other Waste (Management, Handling and Trans-Boundary Movement) Rules, 2016. Adequate fire-fighting facilities have been provided and maintained for meeting the emergencies</p>  |
| 19. | Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile sewage treatment plant, safe drinking water, medical health care,   | Complied | <p>The plant is at the operation stage. However, all necessary compliances were ensured during the construction phase.</p> <p>Majority of the construction wastes have been removed in an environmentally friendly manner. However, the remaining construction wastes had</p>  |

*[Handwritten signature]*

*[Handwritten signature]*

|     |  |                 |  |
|-----|--|-----------------|--|
|     | routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.  |                 | Pre-employment and routine periodical medical examinations for all employees is being undertaken on regular basis.   |
| 8.  | The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing shall be implemented.  | Agree to Comply | This condition will be complied in totality as stated. HURL has taken care of compliance with all the pollution control measures at every single step wherever suggested/possible at design stage itself. This includes provision of suitable UPT, scrubbers, stacks, ETP with ZLD, equipment's with acoustic enclosures, development of green belt/ green cover, rain water harvesting system etc. The effective implementation of all env. Pollution control measures have been ensured in operational phase.  |
| 9.  | The company shall undertake all relevant measures for improving the socioeconomic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.   | Agree to Comply | CSR activities are being undertaken as and when applicable. However, some initiatives are under implementation as well as under consideration aimed at improving the socio-economic conditions of the surrounding area, as part of fulfilment of the obligations under ESC/ PH issues.   |
| 10. | The company shall undertake all eco-developmental measures including community welfare measures for overall improvement of the environment.  | Agree to Comply | All eco-developmental measures including community welfare measures for overall improvement of the environment will be undertaken by involving local villages and administration as per rule and Government guidelines.  |
| 11. | A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.  | Being to Comply | The EC conditions relating to establishment of Environmental Cell have been complied with and the following arrangement for environment cell is in place.<br>1) At present environment cell is headed by Mr. K M Babu, V P (Technical Services & Production), who is reporting to Mr. Sanjai Kumar Gupta, HURL Barauni Project Head.<br>&<br>2) Mr. Srinu Pitta, Manager (Env. & QC)<br>3) Mr. Harjeet Singh, AM (Env. & QC)<br>Full-fledged laboratory facilities are established to carry out the Environmental Management and Monitoring functions. |
| 12. | The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management pollution control measures shall not be diverted for any other purpose. | Agree to Comply | Being Complied.  |
| 13. | A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions,   | Complied        | Complied.  |

|     |   |          |   |
|-----|---|----------|---|
|     | representations, if any, were received while processing the proposal.   |          |   |
| 14. | The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six-monthly compliance status reports shall be posted on the website of the company.  | Complied | Being Complied. Regularly six-monthly compliance report is being submitted to MOEF & CC zonal office (both in hard copies as well as by-mail) and posted on the website of the company. |
| 15. | The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by-mail.   | Complied | Being Complied.   |
| 16. | The project proponent shall inform the public that the project has been accorded' environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <a href="http://moef.nic.in">http://moef.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry. | Complied | Complied.   |
| 17. | The project authorities 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 and the date of start of the project.  | Complied | Complied.   |



W. R. Balay

Environmental Monitoring for New Ammonia Urea Plant of M/s HURL at Barauni (April 2023)



**TABLE- 3.4**  
**Ambient Air Quality Monitoring Data**

Period of Monitoring: April 2023  
Location: Admn. Building HURL (SA1)

| DAY                               | DATE        | Parameters                                       |   |   |   |   |  |                                  |   |                                       |                                  |                                  |                                      |
|-----------------------------------|-------------|--|---|---|---|---|--|----------------------------------|---|---------------------------------------|----------------------------------|----------------------------------|--------------------------------------|
|                                   |             | PM <sub>10</sub><br>( $\mu\text{g}/\text{m}^3$ ) | PM <sub>2.5</sub><br>( $\mu\text{g}/\text{m}^3$ ) | SO <sub>2</sub><br>( $\mu\text{g}/\text{m}^3$ ) | NO <sub>x</sub><br>( $\mu\text{g}/\text{m}^3$ ) | C <sub>6</sub> H <sub>6</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Benzo<br>(a)pyrene<br>( $\text{ng}/\text{m}^3$ ) | CO<br>( $\text{mg}/\text{m}^3$ ) | NH <sub>3</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Ozone<br>( $\mu\text{g}/\text{m}^3$ ) | Ni<br>( $\text{ng}/\text{m}^3$ ) | As<br>( $\text{ng}/\text{m}^3$ ) | Lead<br>( $\mu\text{g}/\text{m}^3$ ) |
| <b>NAAQ Standards</b>             |             | <b>100</b>                                       | <b>60</b>   | <b>80</b>                                       | <b>80</b>                                       | <b>05</b>   | <b>01</b>  | <b>02</b>                        | <b>400</b>                                      | <b>180</b>                            | <b>20</b>                        | <b>06</b>                        | <b>1.0</b>                           |
| Mon/Tue                           | 03/04.04.23 | 144  | 70  | 13.5  | 24.4  | <0.01   | <0.01  | 0.38                             | 131.4   | 17.6                                  | BDL                              | BDL                              | BDL                                  |
| Fri/Sat                           | 07/08.04.23 | 128  | 60  | 11.6  | 19.2  | <0.01   | <0.01  | 0.33                             | 115.2   | 16.8                                  | BDL                              | BDL                              | BDL                                  |
| Mon/Tue                           | 10/11.04.23 | 146  | 71  | 13.8  | 24.7  | <0.01   | <0.01  | 0.41                             | 142.0   | 19.8                                  | BDL                              | BDL                              | BDL                                  |
| Fri/Sat                           | 14/15.04.23 | 128  | 62  | 14.8  | 24.0  | <0.01   | <0.01  | 0.60                             | 236.2   | 20.9                                  | BDL                              | BDL                              | BDL                                  |
| Mon/Tue                           | 17/18.04.23 | 110  | 54  | 12.3  | 19.4  | <0.01   | <0.01  | 0.53                             | 157.9   | 17.5                                  | BDL                              | BDL                              | BDL                                  |
| Fri/Sat                           | 21/22.04.23 | 132  | 63  | 13.8  | 22.2  | <0.01   | <0.01  | 0.37                             | 102.2   | 16.0                                  | BDL                              | BDL                              | BDL                                  |
| Mon/Tue                           | 24/25.04.23 | 100  | 50  | 11.3  | 18.8  | <0.01   | <0.01  | 0.61                             | 155.6   | 20.7                                  | BDL                              | BDL                              | BDL                                  |
| Fri/Sat                           | 28/29.04.23 | 136  | 68  | 15.3  | 23.9  | <0.01   | <0.01  | 0.54                             | 190.0   | 18.8                                  | BDL                              | BDL                              | BDL                                  |
| <b>No. of observations</b>        |             | <b>8</b>   | <b>8</b>  | <b>8</b>  | <b>8</b>  | <b>8</b>  | <b>8</b>   | <b>8</b>                         | <b>8</b>  | <b>8</b>                              | <b>8</b>                         | <b>8</b>                         | <b>8</b>                             |
| <b>Min. Concentration</b>         |             | <b>100</b>                                       | <b>50</b>   | <b>11.3</b>                                     | <b>18.8</b>                                     | <b>&lt;0.01</b>   | <b>&lt;0.01</b>                                  | <b>0.33</b>                      | <b>102.2</b>                                    | <b>16.0</b>                           | <b>BDL</b>                       | <b>BDL</b>                       | <b>BDL</b>                           |
| <b>Max. Concentration</b>         |             | <b>146</b>                                       | <b>71</b>   | <b>15.3</b>                                     | <b>24.7</b>                                     | <b>&lt;0.01</b>   | <b>&lt;0.01</b>                                  | <b>0.61</b>                      | <b>236.2</b>                                    | <b>20.9</b>                           | <b>BDL</b>                       | <b>BDL</b>                       | <b>BDL</b>                           |
| <b>Average</b>                    |             | <b>127.9</b>                                     | <b>62.3</b>                                       | <b>13.3</b>                                     | <b>22.1</b>                                     | <b>&lt;0.01</b>   | <b>&lt;0.01</b>                                  | <b>0.47</b>                      | <b>153.8</b>                                    | <b>18.5</b>                           | <b>BDL</b>                       | <b>BDL</b>                       | <b>BDL</b>                           |
| <b>98<sup>th</sup> percentile</b> |             | <b>146.0</b>                                     | <b>70.7</b>                                       | <b>15.2</b>                                     | <b>24.7</b>                                     | <b>&lt;0.01</b>   | <b>&lt;0.01</b>                                  | <b>0.61</b>                      | <b>229.7</b>                                    | <b>20.8</b>                           | <b>BDL</b>                       | <b>BDL</b>                       | <b>BDL</b>                           |

NOTE: BDL = Below Detection Limit

Handwritten signature and stamp: (Seal of the State Pollution Control Board, Bihar) and (Seal of the State Pollution Control Board, Bihar) dated 03/04/2023.

Handwritten signature.





Environmental Monitoring for New Ammonia Urea Plant of M/s HURL at Barauni  
(April 2023)



**TABLE - 3.5**  
**Ambient Air Quality Monitoring Data**

Period of Monitoring: April 2023  
Location: Simariya Village (SAZ)

| DAY                               | DATE        | Parameters                                       |   |   |   |   |  |                            |   |                                       |                            |                            |                                      |
|-----------------------------------|-------------|--|---|---|---|---|--|----------------------------|---|---------------------------------------|----------------------------|----------------------------|--------------------------------------|
|                                   |             | PM <sub>10</sub><br>( $\mu\text{g}/\text{m}^3$ ) | PM <sub>2.5</sub><br>( $\mu\text{g}/\text{m}^3$ ) | SO <sub>2</sub><br>( $\mu\text{g}/\text{m}^3$ ) | NO <sub>x</sub><br>( $\mu\text{g}/\text{m}^3$ ) | C <sub>6</sub> H <sub>6</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Benzo<br>(a)pyrene<br>(ng/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Ozone<br>( $\mu\text{g}/\text{m}^3$ ) | Ni<br>(ng/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | Lead<br>( $\mu\text{g}/\text{m}^3$ ) |
| <b>NAAQ Standards</b>             |             | 100  | 60  | 80  | 80  | 05  | 01   | 02                         | 400   | 180                                   | 20                         | 06                         | 1.0                                  |
| Mon/Tue                           | 03/04.04.23 | 129  | 64  | 13.4  | 23.1  | <0.01   | <0.01                                      | 0.30                       | <20   | 17.5                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                           | 07/08.04.23 | 123  | 60  | 14.7  | 20.7  | <0.01   | <0.01                                      | 0.27                       | <20   | 16.5                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                           | 10/11.04.23 | 116  | 57  | 15.3  | 30.5  | <0.01   | <0.01                                      | 0.52                       | <20   | 22.8                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                           | 14/15.04.23 | 115  | 55  | 17.4  | 23.5  | <0.01   | <0.01                                      | 0.58                       | <20   | 20.2                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                           | 17/18.04.23 | 120  | 58  | 14.3  | 16.0  | <0.01   | <0.01                                      | 0.45                       | <20   | 18.9                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                           | 21/22.04.23 | 124  | 63  | 13.7  | 16.6  | <0.01   | <0.01                                      | 0.25                       | <20   | 19.2                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                           | 24/25.04.23 | 106  | 54  | 12.4  | 16.8  | <0.01   | <0.01                                      | 0.47                       | <20   | 22.3                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                           | 28/29.04.23 | 113  | 56  | 15.0  | 22.4  | <0.01   | <0.01                                      | 0.51                       | <20   | 18.9                                  | BDL                        | BDL                        | BDL                                  |
| <b>No. of observations</b>        |             | 8  | 8   | 8   | 8   | 8   | 8  | 8                          | 8   | 8                                     | 8                          | 8                          | 8                                    |
| <b>Min. Concentration</b>         |             | 106  | 54  | 12.4  | 16.0  | <0.01   | <0.01                                      | 0.25                       | <20   | 16.5                                  | BDL                        | BDL                        | BDL                                  |
| <b>Max. Concentration</b>         |             | 129  | 64  | 17.4  | 30.5  | <0.01   | <0.01                                      | 0.58                       | <20   | 22.8                                  | BDL                        | BDL                        | BDL                                  |
| <b>Average</b>                    |             | 118.3  | 58.5  | 14.5  | 21.2  | <0.01   | <0.01                                      | 0.42                       | <20   | 19.5                                  | BDL                        | BDL                        | BDL                                  |
| <b>98<sup>th</sup> percentile</b> |             | 128.1  | 64.0  | 17.1  | 29.5  | <0.01   | <0.01                                      | 0.57                       | <20   | 22.7                                  | BDL                        | BDL                        | BDL                                  |

NOTE: BDL = Below Detection Limit

*Handwritten signature and stamp:*  
 (Stamp: District Pollution Control Officer, Barauni, Munger District, Bihar)  
 (Stamp: District Pollution Control Officer, Barauni, Munger District, Bihar)  
 (Stamp: District Pollution Control Officer, Barauni, Munger District, Bihar)



Environmental Monitoring for New Ammonia Urea Plant of M/s HURL at Barauni  
(April 2023)



**TABLE - 3.6**  
**Ambient Air Quality Monitoring Data**

Period of Monitoring: April 2023  
Location: HURL Township (SA3)

| DAY                               | DATE        | Parameters                               |   |   |   |   |  |                            |   |                               |                            |                            |                              |
|-----------------------------------|-------------|--|---|---|---|---|--|----------------------------|---|-------------------------------|----------------------------|----------------------------|------------------------------|
|                                   |             | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | Benzo<br>(a)pyrene<br>(ng/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | Ozone<br>(µg/m <sup>3</sup> ) | Ni<br>(ng/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | Lead<br>(µg/m <sup>3</sup> ) |
| <b>NAAQ Standards</b>             |             | 100                                      | 60  | 80                                      | 80                                      | 05  | 01   | 02                         | 400                                     | 180                           | 20                         | 06                         | 1.0                          |
| Mon/Tue                           | 03/04.04.23 | 102                                      | 50  | 12.3                                    | 19.3                                    | <0.01   | <0.01                                      | 0.27                       | <20                                     | 15.4                          | BDL                        | BDL                        | BDL                          |
| Fri/Sat                           | 07/08.04.23 | 108                                      | 53  | 11.9                                    | 18.5                                    | <0.01   | <0.01                                      | 0.25                       | <20                                     | 16.1                          | BDL                        | BDL                        | BDL                          |
| Mon/Tue                           | 10/11.04.23 | 113                                      | 56  | 15.3                                    | 23.4                                    | <0.01   | <0.01                                      | 0.32                       | <20                                     | 17.9                          | BDL                        | BDL                        | BDL                          |
| Fri/Sat                           | 14/15.04.23 | 105                                      | 51  | 16.0                                    | 21.5                                    | <0.01   | <0.01                                      | 0.43                       | <20                                     | 18.0                          | BDL                        | BDL                        | BDL                          |
| Mon/Tue                           | 17/18.04.23 | 95                                       | 49  | 13.0                                    | 16.4                                    | <0.01   | <0.01                                      | 0.33                       | <20                                     | 18.2                          | BDL                        | BDL                        | BDL                          |
| Fri/Sat                           | 21/22.04.23 | 117                                      | 58  | 11.3                                    | 15.8                                    | <0.01   | <0.01                                      | 0.20                       | <20                                     | 15.7                          | BDL                        | BDL                        | BDL                          |
| Mon/Tue                           | 24/25.04.23 | 90                                       | 46  | 10.8                                    | 14.9                                    | <0.01   | <0.01                                      | 0.29                       | <20                                     | 19.0                          | BDL                        | BDL                        | BDL                          |
| Fri/Sat                           | 28/29.04.23 | 110                                      | 56  | 13.0                                    | 19.6                                    | <0.01   | <0.01                                      | 0.42                       | <20                                     | 17.5                          | BDL                        | BDL                        | BDL                          |
| <b>No. of observations</b>        |             | 8  | 8   | 8                                       | 8                                       | 8   | 8  | 8                          | 8                                       | 8                             | 8                          | 8                          | 8                            |
| <b>Min. Concentration</b>         |             | 90                                       | 46  | 10.8                                    | 14.9                                    | <0.01   | <0.01                                      | 0.20                       | <20                                     | 15.4                          | BDL                        | BDL                        | BDL                          |
| <b>Max. Concentration</b>         |             | 117                                      | 58  | 16.0                                    | 23.4                                    | <0.01   | <0.01                                      | 0.43                       | <20                                     | 19.0                          | BDL                        | BDL                        | BDL                          |
| <b>Average</b>                    |             | 105.1                                    | 52.4                                      | 12.9                                    | 18.7                                    | <0.01   | <0.01                                      | 0.31                       | <20                                     | 17.2                          | BDL                        | BDL                        | BDL                          |
| <b>98<sup>th</sup> percentile</b> |             | 116.5                                    | 57.8                                      | 15.9                                    | 23.1                                    | <0.01   | <0.01                                      | 0.42                       | <20                                     | 18.9                          | BDL                        | BDL                        | BDL                          |

NOTE: BDL = Below Detection Limit

*Handwritten signature and text:*  
 20/04/23  
 Mr. ...  
 (Name of the person in charge of the monitoring station)  
 (Name of the person in charge of the monitoring station)  
 (Name of the person in charge of the monitoring station)  
 (Name of the person in charge of the monitoring station)

*Handwritten signature:*  
 Mr. ...



Environmental Monitoring for New Ammonia Urea Plant of M/s HURL at Barauni  
(April 2023)



**TABLE - 3.7**  
**Ambient Air Quality Monitoring Data**

Period of Monitoring: April 2023  
Location: Chakballi - Mahana Road (SA4)

| DAY                         | DATE        | Parameters                                       |   |   |   |   |  |                            |   |                                       |                            |                            |                                      |
|-----------------------------|-------------|--|---|---|---|---|--|----------------------------|---|---------------------------------------|----------------------------|----------------------------|--------------------------------------|
|                             |             | PM <sub>10</sub><br>( $\mu\text{g}/\text{m}^3$ ) | PM <sub>2.5</sub><br>( $\mu\text{g}/\text{m}^3$ ) | SO <sub>2</sub><br>( $\mu\text{g}/\text{m}^3$ ) | NO <sub>x</sub><br>( $\mu\text{g}/\text{m}^3$ ) | C <sub>6</sub> H <sub>6</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Benzo<br>(a)pyrene<br>(ng/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Ozone<br>( $\mu\text{g}/\text{m}^3$ ) | Ni<br>(ng/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | Lead<br>( $\mu\text{g}/\text{m}^3$ ) |
| NAAQ Standards              |             | 100  | 60  | 80  | 80  | 05  | 01   | 02                         | 400   | 180                                   | 20                         | 06                         | 1.0                                  |
| Mon/Tue                     | 03/04.04.23 | 162  | 78  | 16.0  | 25.4  | <0.01   | <0.01                                      | 0.41                       | 130.0   | 18.4                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 07/08.04.23 | 141  | 68  | 14.3  | 24.3  | <0.01   | <0.01                                      | 0.36                       | 164.9   | 19.3                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                     | 10/11.04.23 | 184  | 90  | 17.1  | 27.0  | <0.01   | <0.01                                      | 0.40                       | 131.0   | 21.0                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 14/15.04.23 | 159  | 77  | 16.6  | 25.9  | <0.01   | <0.01                                      | 0.58                       | 170.3   | 19.5                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                     | 17/18.04.23 | 176  | 85  | 14.5  | 20.7  | <0.01   | <0.01                                      | 0.41                       | 123.8   | 21.7                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 21/22.04.23 | 155  | 75  | 13.7  | 21.0  | <0.01   | <0.01                                      | 0.43                       | 134.6   | 18.4                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                     | 24/25.04.23 | 132  | 65  | 12.6  | 20.3  | <0.01   | <0.01                                      | 0.35                       | 125.7   | 22.1                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 28/29.04.23 | 177  | 84  | 17.8  | 25.4  | <0.01   | <0.01                                      | 0.58                       | 176.0   | 21.1                                  | BDL                        | BDL                        | BDL                                  |
| No. of observations         |             | 8  | 8   | 8   | 8   | 8   | 8  | 8                          | 8   | 8                                     | 8                          | 8                          | 8                                    |
| Min. Concentration          |             | 132  | 65  | 12.6  | 20.3  | <0.01   | <0.01                                      | 0.35                       | 123.8   | 18.4                                  | BDL                        | BDL                        | BDL                                  |
| Max. Concentration          |             | 184  | 90  | 17.8  | 27.0  | <0.01   | <0.01                                      | 0.58                       | 176.0   | 22.1                                  | BDL                        | BDL                        | BDL                                  |
| Average                     |             | 160.8  | 77.8  | 15.3  | 23.8  | <0.01   | <0.01                                      | 0.44                       | 144.5   | 20.2                                  | BDL                        | BDL                        | BDL                                  |
| 98 <sup>th</sup> percentile |             | 182.7  | 89.3  | 17.7  | 26.8  | <0.01   | <0.01                                      | 0.58                       | 175.2   | 22.0                                  | BDL                        | BDL                        | BDL                                  |

NOTE: BDL = Below Detection Limit

Handwritten signature and stamp in Hindi, including the text "पर्यावरण विभाग" (Environmental Department) and "राज्य प्रदूषण नियंत्रण बोर्ड" (State Pollution Control Board).



Environmental Monitoring for New Anmonia Urea Plant of M/s HURL at Barauni  
(April 2023)



**TABLE - 3.8**  
**Ambient Air Quality Monitoring Data**

Period of Monitoring: April 2023  
Location: Chakiya Village (SA5)

| DAY                         | DATE        | Parameters                                       |   |   |   |   |  |                            |   |                                       |                            |                            |                                      |
|-----------------------------|-------------|--|---|---|---|---|--|----------------------------|---|---------------------------------------|----------------------------|----------------------------|--------------------------------------|
|                             |             | PM <sub>10</sub><br>( $\mu\text{g}/\text{m}^3$ ) | PM <sub>2.5</sub><br>( $\mu\text{g}/\text{m}^3$ ) | SO <sub>2</sub><br>( $\mu\text{g}/\text{m}^3$ ) | NO <sub>x</sub><br>( $\mu\text{g}/\text{m}^3$ ) | C <sub>4</sub> H <sub>6</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Benzo<br>(a)pyrene<br>(ng/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>( $\mu\text{g}/\text{m}^3$ ) | Ozone<br>( $\mu\text{g}/\text{m}^3$ ) | Ni<br>(ng/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | Lead<br>( $\mu\text{g}/\text{m}^3$ ) |
| NAAQ Standards              |             | 100  | 60  | 80  | 80  | 05  | 01   | 02                         | 400   | 180                                   | 20                         | 06                         | 1.0                                  |
| Mon/Tue                     | 03/04.04.23 | 116  | 57  | 14.9  | 30.5  | <0.01   | <0.01                                      | 0.43                       | 37.6  | 19.7                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 07/08.04.23 | 125  | 61  | 14.7  | 24.2  | <0.01   | <0.01                                      | 0.34                       | 38.6  | 18.5                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                     | 10/11.04.23 | 137  | 68  | 16.8  | 28.5  | <0.01   | <0.01                                      | 0.46                       | 24.7  | 21.9                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 14/15.04.23 | 115  | 62  | 17.3  | 29.3  | <0.01   | <0.01                                      | 0.77                       | 41.2  | 22.2                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                     | 17/18.04.23 | 128  | 64  | 15.1  | 22.0  | <0.01   | <0.01                                      | 0.38                       | 31.3  | 24.1                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 21/22.04.23 | 133  | 68  | 14.1  | 22.4  | <0.01   | <0.01                                      | 0.55                       | 30.3  | 18.2                                  | BDL                        | BDL                        | BDL                                  |
| Mon/Tue                     | 24/25.04.23 | 105  | 56  | 15.6  | 26.3  | <0.01   | <0.01                                      | 0.44                       | 25.4  | 20.0                                  | BDL                        | BDL                        | BDL                                  |
| Fri/Sat                     | 28/29.04.23 | 122  | 66  | 16.5  | 32.1  | <0.01   | <0.01                                      | 0.71                       | 42.0  | 25.4                                  | BDL                        | BDL                        | BDL                                  |
| No. of observations         |             | 8  | 8   | 8   | 8   | 8   | 8  | 8                          | 8   | 8                                     | 8                          | 8                          | 8                                    |
| Min. Concentration          |             | 105  | 56  | 14.1  | 22.0  | <0.01   | <0.01                                      | 0.34                       | 24.7  | 18.2                                  | BDL                        | BDL                        | BDL                                  |
| Max. Concentration          |             | 137  | 68  | 17.3  | 32.1  | <0.01   | <0.01                                      | 0.77                       | 42.0  | 25.4                                  | BDL                        | BDL                        | BDL                                  |
| Average                     |             | 122.8  | 62.6  | 15.6  | 26.9  | <0.01   | <0.01                                      | 0.51                       | 33.9  | 21.3                                  | BDL                        | BDL                        | BDL                                  |
| 98 <sup>th</sup> percentile |             | 136.2  | 67.8  | 17.2  | 31.9  | <0.01   | <0.01                                      | 0.76                       | 41.9  | 25.2                                  | BDL                        | BDL                        | BDL                                  |

NOTE: BDL = Below Detection Limit

*Handwritten signature*

*Handwritten text in Hindi:*  
 वातावरण परीक्षण प्रयोगशाला  
 राष्ट्रीय वातावरण संरक्षण प्राधिकरण  
 (एन.ए.पी.ए.)  
 नई दिल्ली



Environmental Monitoring for New Ammororia Urea Plant of M/s HURL at Barauni  
(April 2023)

**TABLE - 3.9**  
**Ambient Air Quality Monitoring Data**

Period of Monitoring: April 2023  
Location: Bihat Village (SA6)

| DAY                         | DATE        | Parameters                               |   |   |   |   |  |                            |   |                               |                            |                            |                              |     |     |
|-----------------------------|-------------|--|---|---|---|---|--|----------------------------|---|-------------------------------|----------------------------|----------------------------|------------------------------|-----|-----|
|                             |             | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | Benzo<br>(a)pyrene<br>(ng/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | Ozone<br>(µg/m <sup>3</sup> ) | Ni<br>(ng/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | Lead<br>(µg/m <sup>3</sup> ) |     |     |
| NAAQ Standards              | →           | 100                                      | 60  | 80                                      | 80                                      | 80  | 80   | 05                         | 01                                      | 02                            | 400                        | 180                        | 20                           | 06  | 1.0 |
| Mon/Tue                     | 03/04.04.23 | 116                                      | 52  | 16.0                                    | 23.4                                    | <0.01   | <0.01                                      | <0.01                      | 0.53                                    | 35.5                          | 18.5                       | BDL                        | BDL                          | BDL | BDL |
| Fri/Sat                     | 07/08.04.23 | 120                                      | 57  | 14.7                                    | 21.5                                    | <0.01   | <0.01                                      | <0.01                      | 0.41                                    | 48.6                          | 23.6                       | BDL                        | BDL                          | BDL | BDL |
| Mon/Tue                     | 10/11.04.23 | 134                                      | 67  | 17.8                                    | 34.0                                    | <0.01   | <0.01                                      | <0.01                      | 0.59                                    | 31.6                          | 21.3                       | BDL                        | BDL                          | BDL | BDL |
| Fri/Sat                     | 14/15.04.23 | 106                                      | 52  | 13.9                                    | 24.5                                    | <0.01   | <0.01                                      | <0.01                      | 0.61                                    | 36.6                          | 21.1                       | BDL                        | BDL                          | BDL | BDL |
| Mon/Tue                     | 17/18.04.23 | 130                                      | 66  | 15.5                                    | 26.5                                    | <0.01   | <0.01                                      | <0.01                      | 0.50                                    | 42.0                          | 24.0                       | BDL                        | BDL                          | BDL | BDL |
| Fri/Sat                     | 21/22.04.23 | 138                                      | 68  | 15.0                                    | 24.1                                    | <0.01   | <0.01                                      | <0.01                      | 0.47                                    | 36.5                          | 17.8                       | BDL                        | BDL                          | BDL | BDL |
| Mon/Tue                     | 24/25.04.23 | 102                                      | 52  | 14.4                                    | 22.9                                    | <0.01   | <0.01                                      | <0.01                      | 0.54                                    | 39.7                          | 22.5                       | BDL                        | BDL                          | BDL | BDL |
| Fri/Sat                     | 28/29.04.23 | 121                                      | 61  | 17.8                                    | 24.6                                    | <0.01   | <0.01                                      | <0.01                      | 0.65                                    | 39.4                          | 22.4                       | BDL                        | BDL                          | BDL | BDL |
| No. of observations         |             | 8  | 8   | 8                                       | 8                                       | 8   | 8  | 8                          | 8                                       | 8                             | 8                          | 8                          | 8                            | 8   | 8   |
| Min. Concentration          |             | 102                                      | 52  | 13.9                                    | 21.5                                    | <0.01   | <0.01                                      | <0.01                      | 0.41                                    | 31.5                          | 17.8                       | BDL                        | BDL                          | BDL | BDL |
| Max. Concentration          |             | 138                                      | 68  | 17.8                                    | 34.0                                    | <0.01   | <0.01                                      | <0.01                      | 0.65                                    | 48.6                          | 24.0                       | BDL                        | BDL                          | BDL | BDL |
| Average                     |             | 120.8                                    | 59.4                                      | 15.6                                    | 25.2                                    | <0.01   | <0.01                                      | <0.01                      | 0.54                                    | 38.7                          | 21.4                       | BDL                        | BDL                          | BDL | BDL |
| 98 <sup>th</sup> percentile |             | 137.1                                    | 67.6                                      | 17.8                                    | 33.0                                    | <0.01   | <0.01                                      | <0.01                      | 0.64                                    | 47.7                          | 24.0                       | BDL                        | BDL                          | BDL | BDL |

NOTE: BDL = Below Detection Limit

*(Handwritten signature and stamp)*  
 (Signature)  
 (Stamp: Environmental Monitoring for New Ammororia Urea Plant of M/s HURL at Barauni, April 2023)



#### 4.2 Characterization of Ground Water Samples

The physico-chemical characteristics of 03 nos. of ground water samples are given hereunder:

**Table - 4.2**

#### PHYSICO-CHEMICAL CHARACTERISTICS OF GROUND WATER SAMPLES

Date of Sample Collection: 29-04-2023

(Results are expressed in mg/l, unless otherwise stated)

| Sl. No              | Parameters  | Analysis Results     |                                 |                                   | Requirement (Acceptable / Permissible Limits) (IS:10500:2012) |
|---------------------|---|----------------------|---------------------------------|-----------------------------------|---|
|                     |   | HURL-Bore Well (GW1) | Hand Pump - HURL Township (GW2) | Hand Pump - Chakiya Village (GW3) |   |
| <b>PHYSICAL</b>     |   |                      |                                 |                                   |   |
| 1                   | pH  | 7.5                  | 7.3                             | 7.4                               | 6.5-8.5   |
| 2                   | Temperature (°C)                                      | 28.7                 | 28.2                            | 28.5                              | -   |
| 3                   | Colour, HU  | <5                   | <5                              | <5                                | 5/15  |
| 4                   | Odour   | Agreeable            | Agreeable                       | Agreeable                         | Agreeable   |
| 5                   | Taste   | Agreeable            | Agreeable                       | Agreeable                         | Agreeable   |
| 6                   | Turbidity (NTU)                                       | <1                   | <1                              | <1                                | 1/5   |
| 7                   | Total Suspended Solid                                 | NT                   | NT                              | NT                                | -   |
| 8                   | Total Dissolved Solids                                | 280                  | 760                             | 410                               | 500/2000  |
| <b>CHEMICAL</b>     |   |                      |                                 |                                   |   |
| 1                   | P- Alkalinity as CaCO <sub>3</sub>                    | NIL                  | NIL                             | NIL                               | -   |
| 2                   | Total Alkalinity as CaCO <sub>3</sub>                 | 152                  | 540                             | 324                               | 200/600   |
| 3                   | Chloride as Cl  | 36                   | 58                              | 22                                | 250/1000  |
| 4                   | Sulphate as SO <sub>4</sub>                           | 40                   | 82                              | 36                                | 200/400   |
| 5                   | Nitrate as NO <sub>3</sub>                            | 1.6                  | 2.4                             | 2.0                               | 45/NR   |
| 6                   | Fluoride as F   | <0.4                 | <0.4                            | <0.4                              | 1.0/1.5   |
| 7                   | Total Hardness as CaCO <sub>3</sub>                   | 168                  | 476                             | 292                               | 200/600   |
| 8                   | Ca. Hardness as CaCO <sub>3</sub>                     | 96                   | 320                             | 190                               | 75/200  |
| 9                   | Mg. Hardness as CaCO <sub>3</sub>                     | 72                   | 156                             | 102                               | 30/100**  |
| 10                  | Sodium as Na  | 33                   | 100                             | 44                                | -   |
| 11                  | Potassium as K  | 4                    | 13                              | 6                                 | -   |
| 12                  | Silica as SiO <sub>2</sub>                            | 12                   | 8                               | 10                                | -   |
| 13                  | Iron as Fe  | 0.23                 | 0.52                            | 0.65                              | 0.3/NR  |
| <b>HEAVY METALS</b> |   |                      |                                 |                                   |   |
| 1                   | Manganese as Mn                                       | BDL                  | BDL                             | BDL                               | 0.1/0.3   |
| 2                   | Total Chromium as Cr                                  | BDL                  | BDL                             | BDL                               | 0.05/NR   |
| 3                   | Lead as Pb  | BDL                  | BDL                             | BDL                               | 0.01/NR   |
| 4                   | Zinc as Zn  | 0.20                 | 0.22                            | 0.26                              | 5.0/15  |
| 5                   | Cadmium as Cd   | BDL                  | BDL                             | BDL                               | 0.003/NR  |
| 6                   | Copper as Cu  | BDL                  | BDL                             | BDL                               | 0.05/1.5  |
| 7                   | Nickel as Ni  | BDL                  | BDL                             | BDL                               | 0.02/NR   |
| 8                   | Arsenic as As   | BDL                  | BDL                             | BDL                               | 0.01/0.05   |
| 9                   | Selenium as Se  | BDL                  | BDL                             | BDL                               | 0.01/NR   |
| <b>OTHERS</b>       |   |                      |                                 |                                   |   |
| 1                   | Mineral Oil   | Absent               | Absent                          | Absent                            | 0.5/NR  |
| 2                   | Phenolic Compound as C <sub>6</sub> H <sub>5</sub> OH | BDL                  | BDL                             | BDL                               | 0.001/0.002   |
| 3                   | Coliform (MPN/100ml)                                  | <100                 | <100                            | <100                              | -   |

आफीस डीकर  
सरकारी निरलेखक  
पर्यावरणीय प्रदूषण शाखा  
(केन्द्रीय प्रदूषण नियंत्रण बोर्ड)  
प्रोजेक्ट्स एण्ड रेगुलेशन डिविजन लिमिटेड  
(भारत सरकार का उपक्रम)

*(Handwritten signature)*



#### 4.3 Results & Discussion

The range of concentration of important parameters of 03 nos. of ground water samples were observed as follows:

**TABLE - 4.3**  
Ground Water Quality at a Glance in Comparison to IS: 10500 (2012)

| Parameters                            | Range of recorded Concentration<br>(Results expressed in mg/l except<br>pH) |      |  | No. of<br>Samples<br>exceeding<br>Acceptable<br>limits as per<br>IS:10500:2012 | No. of<br>Samples<br>exceeding<br>Permissible<br>Limits as per<br>IS:10500:2012 |
|---------------------------------------|---|------|--|--|---|
|                                       | Min.  | Max  | Requirement<br>(Acceptable /<br>Permissible)<br>Limits (IS:10500:2012) |  |   |
| pH                                    | 7.3   | 7.5  | 6.5 - 8.5  | 3/3  | 0/3   |
| Total Dissolved Solids                | 280   | 760  | 500 / 2000   | 1/3  | 0/3   |
| Total Alkalinity as CaCO <sub>3</sub> | 152   | 540  | 200 / 600  | 2/3  | 0/3   |
| Total Hardness, as CaCO <sub>3</sub>  | 168   | 476  | 200 / 600  | 2/3  | 0/3   |
| Chloride as Cl                        | 22  | 58   | 250 / 1000   | 0/3  | 0/3   |
| Sulphate as SO <sub>4</sub>           | 40  | 82   | 200 / 400  | 0/3  | 0/3   |
| Nitrate as NO <sub>3</sub>            | 1.6   | 2.4  | 45 / NR  | 0/3  | 0/3   |
| Iron as Fe                            | 0.23  | 0.65 | 0.3 / NR   | 2/3  | -   |

The physico-chemical characteristics of the ground water samples were in good agreement with IS:10500 (2012). All the parameters are within the limits specified under Drinking Water Standard (IS:10500-2012). As regards heavy metals, Fe has been recorded with higher concentration and crossed the acceptable limit at all the locations. The ground water after proper filtration and disinfection can be safely used for potable and drinking purposes.



## 5.2 Characterization of Surface Water Samples

The physico-chemical characteristics of 03 nos. of Surface water samples are given hereunder:

**Table - 5.2**  
**PHYSICO-CHEMICAL CHARACTERISTICS OF SURFACE WATER SAMPLES**  
Date of Sample Collection: 29-04-2023

(Results are expressed in mg/l, unless otherwise stated)

| Sl. No.             | Parameters                              | Ganga River SW1 | Bihat Village (Pond) SW2 | Baya Nala SW3 | Requirement (Acceptable / Permissible Limits) (IS:10500:2012) |
|---------------------|---|-----------------|--------------------------|---------------|---|
| <b>PHYSICAL</b>     |   |                 |                          |               |   |
| 1                   | Temperature (°C)                        |                 |                          |               |   |
| 2                   | Colour, HU                              | 28.3            | 28.0                     | 28.1          | -   |
| 3                   | Turbidity (NTU)                         | <5              | <5                       | <5            | 5/25  |
| 4                   | pH                                      | 6               | 8                        | 10            | 1/5   |
| 5                   | Total Dissolved Solids                  | 7.2             | 7.6                      | 7.4           | 6.5-8.5   |
| 6                   | Suspended Solids                        | 200             | 650                      | 540           | 500/2000  |
| <b>CHEMICAL</b>     |   |                 |                          |               |   |
| 1                   | Total Alkalinity as CaCO <sub>3</sub>   |                 |                          |               |   |
| 2                   | Chloride as Cl                          | 140             | 326                      | 300           | 200/600   |
| 3                   | Sulphate as SO <sub>4</sub>             | 20              | 136                      | 110           | 250/1000  |
| 4                   | Nitrate as NO <sub>3</sub>              | 14              | 54                       | 32            | 200/400   |
| 5                   | Fluoride as F                           | 1.3             | 3.6                      | 2.6           | 45/NR   |
| 6                   | Total Hardness as CaCO <sub>3</sub>     | <0.4            | <0.4                     | <0.4          | 1.0/1.5   |
| 7                   | Calcium Hardness as CaCO <sub>3</sub>   | 150             | 192                      | 176           | 200/600   |
| 8                   | Magnesium Hardness as CaCO <sub>3</sub> | 76              | 130                      | 106           | 75/200  |
| 9                   | Dissolve Oxygen (DO)                    | 74              | 62                       | 70            | 30/100 <sup>mm</sup>  |
| 10                  | COD                                     | 7.2             | 6.6                      | 6.4           | -   |
| 11                  | BOD <sub>5</sub> (3 days at 27°C)       | 3.8             | 12.6                     | 9.5           | -   |
| 12                  | Sodium as Na                            | 1.4             | 4.1                      | 3.0           | -   |
| 13                  | Potassium as K                          | 15              | 165                      | 135           | -   |
| <b>HEAVY METALS</b> |   |                 |                          |               |   |
| 1                   | Iron as Fe                              |                 |                          |               |   |
| 2                   | Manganese as Mn                         | 0.10            | 0.18                     | 0.14          | 0.3/NR  |
| 3                   | Total Chromium as Cr                    | BDL             | BDL                      | BDL           | 0.1/0.3   |
| 4                   | Lead as Pb                              | BDL             | BDL                      | BDL           | 0.05/NR   |
| 5                   | Zinc as Zn                              | BDL             | BDL                      | BDL           | 0.01/NR   |
| 6                   | Cadmium as Cd                           | 0.16            | 0.38                     | 0.30          | 5.0/15  |
| 7                   | Copper as Cu                            | BDL             | BDL                      | BDL           | 0.003/NR  |
| 8                   | Nickel as Ni                            | BDL             | BDL                      | BDL           | 0.05/1.5  |
| 9                   | Arsenic as As                           | BDL             | BDL                      | BDL           | 0.02/NR   |
| 10                  | Selenium as Se                          | BDL             | BDL                      | BDL           | 0.01/0.05   |
| <b>OTHERS</b>       |   |                 |                          |               |   |
| 1                   | Mineral Oil                             |                 |                          |               |   |
| 2                   | Phenolic Compounds                      | BDL             | BDL                      | BDL           | 0.5/NR  |
| 3                   | Coliform Organisms (MPN/100ml)          | 690             | 900                      | 1040          | 0.001/0.002   |

*[Handwritten signature]*





### 5.3 Results & Discussion

All the physico-chemical characteristics of 03 nos. of surface water samples showed great resemblance with respect to the characteristics like temperature, turbidity, pH, colour, odour, chloride, sulphate, total alkalinity, total hardness, TDS and heavy metals, etc. The range of concentrations of the parameters of surface water characteristics were observed as follows:

**TABLE - 5.3**  
**Surface Water Quality at a Glance**

| Parameters                            | Range of recorded Concentration (Results expressed in mg/l except pH) |      |   | No. of Samples exceeding Acceptable limits as per IS:10500:2012 | No. of Samples exceeding Permissible Limits as per IS:10500:2012 |
|---------------------------------------|---|------|---|---|--|
|                                       | Min.  | Max. | Requirement (Acceptable / Permissible) Limits (IS:10500:2012) |   |  |
| pH                                    | 7.2   | 7.6  | 6.5-8.5   | 3/3   | 0/3  |
| Turbidity                             | 6   | 10   | 1/5   | 3/3   | 3/3  |
| Total Dissolved Solids                | 200   | 650  | 500 / 2000  | 2/3   | 0/3  |
| Total Alkalinity as CaCO <sub>3</sub> | 140   | 326  | 200 / 600   | 2/3   | 0/3  |
| Total Hardness, as CaCO <sub>3</sub>  | 150   | 192  | 200 / 600   | 0/3   | 0/3  |
| Chloride as Cl                        | 20  | 136  | 250 / 1000  | 0/3   | 0/3  |
| Sulphate as SO <sub>4</sub>           | 14  | 54   | 200 / 400   | 0/3   | 0/3  |
| Nitrate as NO <sub>3</sub>            | 1.3   | 3.6  | 45/NR   | 0/3   | 0/3  |
| Iron as Fe                            | 0.10  | 0.18 | 0.3 / NR  | 0/3   | -  |

**TABLE - 5.4**  
**Characterization of SWQ as per Bathing Standard Prescribed by CPCB (Series PCLS:02/2010)**

| Criteria                       | Prescribed Limit                      | Remarks                           |
|--------------------------------|---------------------------------------|-----------------------------------|
| Coliform MPN/100 ml            | Desirable - 500<br>Permissible - 2500 | Recommended                       |
| pH                             | 6.5-8.0                               | Slightly higher than the Standard |
| DO                             | 5 mg/l or more                        | Recommended                       |
| BOD <sub>3 days at 27° C</sub> | 3 mg/l or less                        | No SW recommended for bathing     |



## 6.2 Results

The recorded results are as follows.

**Table - 6.2**  
**AMBIENT NOISE LEVEL DATA DURING DAY TIME (HOURLY)**

| Time (Hrs)            | Noise Level, dB(A) |                 |                 |                 |                 |                 |
|-----------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                       | SN <sub>1</sub>    | SN <sub>2</sub> | SN <sub>3</sub> | SN <sub>4</sub> | SN <sub>5</sub> | SN <sub>6</sub> |
| 6.00-7.00             | 49.1               | 46.3            | 45.1            | 46.7            | 47.2            | 47.5            |
| 7.00-8.00             | 50.4               | 46.9            | 45.6            | 47.6            | 48.3            | 48.1            |
| 8.00-9.00             | 50.9               | 47.5            | 46.8            | 48.4            | 48.9            | 48.7            |
| 9.00-10.00            | 50.1               | 48.3            | 48.1            | 49.2            | 51.2            | 50.5            |
| 10.00-11.00           | 52.2               | 49.7            | 50.7            | 50.7            | 52.7            | 51.6            |
| 11.00-12.00           | 53.8               | 52.0            | 52.6            | 53.1            | 54.1            | 53.8            |
| 12.00-13.00           | 54.8               | 54.0            | 53.9            | 55.0            | 56.1            | 55.7            |
| 13.00-14.00           | 56.6               | 55.8            | 54.8            | 56.9            | 58.0            | 57.6            |
| 14.00-15.00           | 59.6               | 56.2            | 55.4            | 57.3            | 57.5            | 57.8            |
| 15.00-16.00           | 58.3               | 55.2            | 53.4            | 56.3            | 57.4            | 57.0            |
| 16.00-17.00           | 57.0               | 54.8            | 52.1            | 55.9            | 57.0            | 56.6            |
| 17.00-18.00           | 54.4               | 52.2            | 50.2            | 53.3            | 54.3            | 54.0            |
| 18.00-19.00           | 54.0               | 50.5            | 47.5            | 51.5            | 52.5            | 52.2            |
| 19.00-20.00           | 53.6               | 48.5            | 46.3            | 48.9            | 49.9            | 50.1            |
| 20.00-21.00           | 52.3               | 47.5            | 45.6            | 48.0            | 49.0            | 49.2            |
| 21.00-22.00           | 51.8               | 47.0            | 44.6            | 47.4            | 47.9            | 48.3            |
| Minimum               | 49.1               | 46.3            | 44.6            | 46.7            | 47.2            | 47.5            |
| Maximum               | 59.6               | 56.2            | 55.4            | 57.3            | 58.0            | 57.8            |
| Average               | 53.7               | 50.8            | 49.6            | 51.7            | 52.6            | 52.4            |
| L <sub>eq</sub> (Day) | 54.7               | 52.1            | 51.0            | 53.1            | 54.1            | 53.8            |

**Table - 6.3**  
**AMBIENT NOISE LEVEL DATA DURING NIGHT TIME**

| Time (Hrs)              | Noise Level, dB(A) |                 |                 |                 |                 |                 |
|-------------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                         | SN <sub>1</sub>    | SN <sub>2</sub> | SN <sub>3</sub> | SN <sub>4</sub> | SN <sub>5</sub> | SN <sub>6</sub> |
| 22.00-23.00             | 49.9               | 45.7            | 43.8            | 46.6            | 44.7            | 46.5            |
| 23.00-24.00             | 47.8               | 44.7            | 42.5            | 46.1            | 43.4            | 44.6            |
| 24.00-1.00              | 46.9               | 43.0            | 41.3            | 44.3            | 43.0            | 44.1            |
| 1.00-2.00               | 44.0               | 42.3            | 41.2            | 42.7            | 42.5            | 42.5            |
| 2.00-3.00               | 45.2               | 43.6            | 41.1            | 43.9            | 42.5            | 42.7            |
| 3.00-4.00               | 45.8               | 44.0            | 41.4            | 44.4            | 43.3            | 43.3            |
| 4.00-5.00               | 46.5               | 44.6            | 42.3            | 45.0            | 44.3            | 43.9            |
| 5.00-6.00               | 47.5               | 45.1            | 43.2            | 45.6            | 45.9            | 45.9            |
| Minimum                 | 44.0               | 42.3            | 41.1            | 42.7            | 42.5            | 42.5            |
| Maximum                 | 49.9               | 45.7            | 43.8            | 46.6            | 45.9            | 46.5            |
| Average                 | 46.7               | 44.1            | 42.1            | 44.8            | 43.7            | 44.2            |
| L <sub>eq</sub> (Night) | 47.0               | 44.2            | 42.2            | 45.0            | 43.8            | 44.4            |



Environmental Monitoring for New Ammonia Urea Plant of M/s HURL at Barauni  
(April 2023)

पर्यावरण  
PDIL

**TABLE - 6.4**  
**AMBIENT NOISE LEVEL DATA - AROUND BOUNDARY WALLS**

| Sl. No. | Name of Location  | Noise Level, dB(A) |       |
|---------|-------------------|--------------------|-------|
|         |                   | Day                | Night |
| 1.      | Eastern Boundary  | 55.8               | 45.4  |
| 2.      | Western Boundary  | 56.3               | 45.1  |
| 3.      | Northern Boundary | 57.2               | 48.8  |
| 4.      | Southern Boundary | 56.0               | 46.5  |

**Table - 6.5**  
**SUMMARY OF AMBIENT NOISE LEVEL**

| Sampling Locations        | 24-hrs Avg $L_{eq}$ Value dB(A) | Day time $L_{eq}$ Value dB(A) | Night time $L_{eq}$ Value dB(A) | Prescribed Limits in dB(A) as per NAAQS |          |            |
|---------------------------|---------------------------------|-------------------------------|---------------------------------|---|----------|------------|
|                           |                                 |                               |                                 | Category of Area                        | Day Time | Night Time |
| Admn. Building HURL (SN1) | 53.3                            | 54.7                          | 47.0                            | Industrial Area                         | 75       | 70         |
| Simariya Village (SN2)    | 50.7                            | 52.1                          | 44.2                            | Residential Area                        | 55       | 45         |
| HURL Township (SN3)       | 49.5                            | 51.0                          | 42.2                            | Residential Area                        | 55       | 45         |
| Mahana Village (SN4)      | 51.7                            | 53.1                          | 45.0                            | Residential Area                        | 55       | 45         |
| Chakiya Village (SN5)     | 52.5                            | 54.1                          | 43.8                            | Residential Area                        | 55       | 45         |
| Bihat Village(SN6)        | 52.3                            | 53.8                          | 44.4                            | Residential Area                        | 55       | 45         |

### 6.3 STANDARD FOR NOISE

The Government of India, in exercise of its power under section 16(2)(h) of the Air (Prevention and Control of Pollution) Act 1981, notified the ambient air quality standards in respect of noise (which has been included as an air pollutant under section 20 of the Amended Air Act of 1987) as follows:

**Table - 6.6**

| Area | Category of Area | Limits in Decibels, dB (A) |            |
|------|------------------|----------------------------|------------|
|      |                  | Day Time                   | Night Time |
| A    | Industrial Area  | 75                         | 70         |
| B    | Commercial Area  | 65                         | 55         |
| C    | Residential Area | 55                         | 45         |
| D    | Silence Zone     | 50                         | 40         |

**NOTE:**

1. Day Time is reckoned between 6 AM and 10 PM.
2. Night Time is reckoned between 10 PM and 6 AM.

**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

This Compliance Report is the fulfilments of the condition of the Environmental Clearance (EC) vide File No.EC [IA/BR/IND2/61377/2016, J-11011/371/2016-IA II (I)] for the period of May 2023 to September 2023 This report has been prepared by Nitya Laboratories by collecting respective samples in consultation with the State Pollution Control Board (SPCB) officials and Hindustan Urvarak and Rasayan Limited (HURL) officials During the above mentioned period the analysis of the environmental parameters has been conducted by the MOEF&CC recognized Laboratory at Nitya Laboratories, Jammu .

The proposed project is located at Barauni and was commissioned on 18 November 2022 with the capacity of 2200MTPD Ammonia and 3850MTPD Urea in the District Begusarai in the state of Bihar. The commercial production has started from 19 November 2022 with the board name APNA UREA. The area falls in the agricultural belt of the Bihar.

The compliance report fulfils the 19 Nos of Specific Conditions and 17 Nos. of General Conditions led by Ministry of Environment, Forests and Climate Change Rainwater Harvesting and Ground Water charging has been proposed as per Standard Guidelines:

- Guidelines on Artificial Recharge of Water, Central Water Ground Board, Ministry of Water Resources, Gol (2000)
- Manual on Artificial Recharge of Ground Water, Central Water Ground Board, Ministry of Water Resources, Gol (2007)
- Rain Water Harvesting and Conservation Manual Consultancy Services Organization, CPWD, Gol (2002)

The Environmental Monitoring report of 6 months w.r.t Air, Water and Noise have been presented separately with the average values. The environmental conditions and the compliance have been found normal as per the Standards. The Air Quality results have been presented through a self-explanatory table with the NAAQ Standards w.r.t the parameter  $PM_{10}$ ,  $PM_{2.5}$ ,  $NO_x$ ,  $SO_x$ ,  $C_6H_6$ , CO, Benzo(a) pyrene (BAP),  $NH_3$ , Ozone, Nickel, Arsenic and Lead. Three sets each of Ground Water Samples and Surface Water Samples have been collected, analyzed in a self-explanatory table, and compared with Drinking Water Standards (IS:10500:2012) The analysis consists of eight nos. of physical parameters, thirteen no's of chemical parameters, nine no's of Heavy metals and three no's of miscellaneous parameters. Noise Quality has also been measured at six different locations in the periphery of the project area. The results have been presented through self-explanatory table consisting of the Standard NAAQS w.r.t noise.

The above report with respect to Air, Water and Noise represents the average values of different sampling stations collected at different time during the study period of May 2023 to September 2023.

**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABGARH, FARIDABAD - 121004, HARYANA, INDIA  
+91-129-2241021 +91-9013591021, +91-9013552273 labsnitya@gmail.com www.nityalab.com



Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni

**TABLE-1**

Location of Air Quality Monitoring Stations

| Sr. No. | Location of Station            | Frequency    |
|---------|--------------------------------|--------------|
| 1.      | HURL Admin Building(SA1)0      | Twice a Week |
| 2.      | Simariya Village(SA2)          | Twice a Week |
| 3.      | HURL Residential Township(SA3) | Twice a Week |
| 4.      | Chackbali Refinery Road(SA4)   | Twice a Week |
| 5.      | Chakiya Village (SA5)          | Twice a Week |
| 6.      | Bihat Village (SA6)            | Twice a Week |

HURL BARAUNI, AIR QUALITY DATA – (May 2023 to September 2023)

| Month    | Parameters      | NAAQS     | HURL Admin Building(SA1) | Simariya Village(SA2) | HURL Residential Township(SA3) | Chackbali Refinery Road(SA4) | Chakiya Village (SA5) | Bihat Village (SA6) |
|----------|-----------------|-----------|--------------------------|-----------------------|--------------------------------|------------------------------|-----------------------|---------------------|
|          |                 | Standards |                          |                       |                                |                              |                       |                     |
| May 2023 | PM10            | 100       | 89.67                    | 87.68                 | 90.85                          | 88.56                        | 89.10                 | 91.69               |
|          | PM2.5           | 60        | 50.12                    | 51.69                 | 45.69                          | 48.65                        | 52.08                 | 54.38               |
|          | SO <sub>2</sub> | 80        | 16.20                    | 17.66                 | 16.96                          | 18.16                        | 20.76                 | 21.45               |
|          | NO <sub>x</sub> | 80        | 26.57                    | 22.46                 | 24.56                          | 25.69                        | 28.66                 | 26.46               |
|          | C6H6            | 5         | ND                       | ND                    | ND                             | ND                           | ND                    | ND                  |
|          | BAP             | 1         | ND                       | ND                    | ND                             | ND                           | ND                    | ND                  |
|          | CO              | 2         | 0.42                     | 0.39                  | 0.38                           | 0.40                         | 0.51                  | 0.55                |
|          | NH <sub>3</sub> | 400       | 139.66                   | 12.66                 | 11.66                          | 136.62                       | 28.56                 | 33.20               |
|          | Ozone           | 180       | 20.26                    | 23.58                 | 21.69                          | 24.26                        | 26.36                 | 25.86               |
|          | Ni              | 20        | ND                       | ND                    | ND                             | ND                           | ND                    | ND                  |
|          | As              | 6         | ND                       | ND                    | ND                             | ND                           | ND                    | ND                  |
|          | Pb              | 1         | ND                       | ND                    | ND                             | ND                           | ND                    | ND                  |



**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com

**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

|           |                          |                          |     |        |       |       |        |       |       |
|-----------|--------------------------|--------------------------|-----|--------|-------|-------|--------|-------|-------|
| June 2023 | PM10                     | $\mu\text{g}/\text{m}^3$ | 100 | 93.71  | 91.63 | 91.58 | 93.1   | 92.5  | 93.11 |
|           | PM2.5                    |                          | 60  | 52.67  | 50.96 | 48.24 | 53.43  | 51.47 | 50.16 |
|           | SO <sub>2</sub>          |                          | 80  | 18.17  | 18.52 | 17.78 | 19.02  | 19.17 | 19.63 |
|           | NO <sub>x</sub>          |                          | 80  | 27.18  | 24.45 | 22.2  | 27.6   | 30.25 | 27.87 |
|           | C6H6                     |                          | 5   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | BAP                      | $\text{ng}/\text{m}^3$   | 1   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | CO                       | $\text{mg}/\text{m}^3$   | 2   | 0.43   | 0.47  | 0.39  | 0.45   | 0.53  | 0.52  |
|           | NH <sub>3</sub>          | $\mu\text{g}/\text{m}^3$ | 400 | 142.13 | 13.05 | 13.87 | 139.8  | 30.11 | 34.4  |
|           | Ozone                    |                          | 180 | 22.14  | 22.54 | 20.58 | 23.08  | 24.72 | 24.33 |
|           | Ni                       | $\text{ng}/\text{m}^3$   | 20  | ND     | ND    | ND    | ND     | ND    | ND    |
|           | As                       |                          | 6   | ND     | ND    | ND    | ND     | ND    | ND    |
| Pb        | $\mu\text{g}/\text{m}^3$ | 1                        | ND  | ND     | ND    | ND    | ND     | ND    |       |
| July 2023 | PM10                     | $\mu\text{g}/\text{m}^3$ | 100 | 69.70  | 69.77 | 69.71 | 70.01  | 69.81 | 69.82 |
|           | PM2.5                    |                          | 60  | 45.80  | 43.83 | 43.34 | 45.21  | 44.47 | 43.95 |
|           | SO <sub>2</sub>          |                          | 80  | 13.22  | 13.49 | 13.30 | 14.21  | 14.14 | 14.91 |
|           | NO <sub>x</sub>          |                          | 80  | 22.48  | 19.16 | 17.56 | 22.60  | 25.58 | 22.73 |
|           | C6H6                     |                          | 5   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | BAP                      | $\text{ng}/\text{m}^3$   | 1   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | CO                       | $\text{mg}/\text{m}^3$   | 2   | 0.27   | 0.28  | 0.26  | 0.27   | 0.35  | 0.30  |
|           | NH <sub>3</sub>          | $\mu\text{g}/\text{m}^3$ | 400 | 137.07 | 10.65 | 10.88 | 134.91 | 25.05 | 29.23 |
|           | Ozone                    |                          | 180 | 17.15  | 17.38 | 15.46 | 17.71  | 19.60 | 19.40 |
|           | Ni                       | $\text{ng}/\text{m}^3$   | 20  | ND     | ND    | ND    | ND     | ND    | ND    |
|           | As                       |                          | 6   | ND     | ND    | ND    | ND     | ND    | ND    |
| Pb        | $\mu\text{g}/\text{m}^3$ | 1                        | ND  | ND     | ND    | ND    | ND     | ND    |       |

|          |                 |                          |     |        |       |       |       |       |       |
|----------|-----------------|--------------------------|-----|--------|-------|-------|-------|-------|-------|
| Aug 2023 | PM10            | $\mu\text{g}/\text{m}^3$ | 100 | 67.47  | 67.70 | 67.82 | 67.93 | 67.70 | 67.71 |
|          | PM2.5           |                          | 60  | 44.08  | 42.13 | 41.97 | 43.73 | 42.70 | 41.95 |
|          | SO <sub>2</sub> |                          | 80  | 11.37  | 11.91 | 12.20 | 12.50 | 12.55 | 13.01 |
|          | NO <sub>x</sub> |                          | 80  | 20.36  | 17.30 | 15.96 | 21.31 | 24.08 | 20.97 |
|          | C6H6            |                          | 5   | ND     | ND    | ND    | ND    | ND    | ND    |
|          | BAP             | $\text{ng}/\text{m}^3$   | 1   | ND     | ND    | ND    | ND    | ND    | ND    |
|          | CO              | $\text{mg}/\text{m}^3$   | 2   | 0.23   | 0.23  | 0.22  | 0.20  | 0.25  | 0.23  |
|          | NH <sub>3</sub> | $\mu\text{g}/\text{m}^3$ | 400 | 138.76 | 10.50 | 10.65 | 75.48 | 23.38 | 27.82 |
|          | Ozone           |                          | 180 | 15.36  | 15.97 | 14.30 | 16.47 | 18.15 | 17.77 |
|          | Ni              | $\text{ng}/\text{m}^3$   | 20  | ND     | ND    | ND    | ND    | ND    | ND    |
|          | As              |                          | 6   | ND     | ND    | ND    | ND    | ND    | ND    |

**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

43, PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com

*(Handwritten signature)*



**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

|           | Pb    | µg/m3 | 1   | ND     | ND    | ND    | ND     | ND    | ND    |
|-----------|-------|-------|-----|--------|-------|-------|--------|-------|-------|
| Sep. 2023 | PM10  | µg/m3 | 100 | 64.66  | 64.40 | 64.78 | 64.81  | 64.67 | 64.82 |
|           | PM2.5 |       | 60  | 41.45  | 38.46 | 39.00 | 40.55  | 39.53 | 38.83 |
|           | SO2   |       | 80  | 12.97  | 12.16 | 11.06 | 11.86  | 11.66 | 11.17 |
|           | NOx   |       | 80  | 18.21  | 14.87 | 13.37 | 18.25  | 21.52 | 17.65 |
|           | C6H6  |       | 5   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | BAP   | ng/m3 | 1   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | CO    | mg/m3 | 2   | 0.18   | 0.18  | 0.17  | 0.16   | 0.20  | 0.19  |
|           | NH3   | µg/m3 | 400 | 51.91  | 12.36 | 10.78 | 72.36  | 20.70 | 24.53 |
|           | Ozone |       | 180 | 12.96  | 13.55 | 11.47 | 13.52  | 15.22 | 15.32 |
|           | Ni    | ng/m3 | 20  | ND     | ND    | ND    | ND     | ND    | ND    |
|           | As    |       | 6   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | Pb    | µg/m3 | 1   | ND     | ND    | ND    | ND     | ND    | ND    |
| Aver age  | PM10  | µg/m3 | 100 | 77.08  | 76.23 | 76.90 | 76.88  | 77.10 | 77.43 |
|           | PM2.5 |       | 60  | 46.82  | 45.56 | 43.26 | 46.36  | 45.15 | 44.46 |
|           | SO2   |       | 80  | 14.46  | 15.10 | 14.36 | 14.90  | 15.26 | 14.90 |
|           | NOx   |       | 80  | 27.01  | 19.80 | 18.45 | 20.32  | 23.40 | 22.49 |
|           | C6H6  |       | 5   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | BAP   | ng/m3 | 1   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | CO    | mg/m3 | 2   | 0.30   | 0.26  | 0.28  | 0.23   | 0.30  | 0.29  |
|           | NH3   | µg/m3 | 400 | 121.56 | 10.36 | 11.36 | 111.83 | 27.56 | 28.61 |
|           | Ozone |       | 180 | 18.56  | 18.20 | 17.80 | 19.10  | 19.56 | 18.85 |
|           | Ni    | ng/m3 | 20  | ND     | ND    | ND    | ND     | ND    | ND    |
|           | As    |       | 6   | ND     | ND    | ND    | ND     | ND    | ND    |
|           | Pb    | µg/m3 | 1   | ND     | ND    | ND    | ND     | ND    | ND    |



**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com

**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

**TABLE - 2**

**Noise Monitoring Assessment Schedule**

| Sr. No. | Source                       | Frequency       |
|---------|------------------------------|-----------------|
| 1.      | HURL Admin Building (SN 1)   | Once in a Month |
| 2.      | HURL Simariya Village (SN 2) | Once in a Month |
| 3.      | HURL Township (SN 3)         | Once in a Month |
| 4.      | HURL Mahna Village (SN 4)    | Once in a Month |
| 5.      | HURL Chakiya Village (SN 5)  | Once in a Month |
| 6.      | Near Bihat Village (SN 6)    | Once in a Month |

**HURL BARAUNI, NOISE DATA (May 2023 to September 2023)**

| Month     | Parameters                      | Prescribed Limits in db(A) as per NAAQS Ind./Res. Area | HURL Admin Building(S A1) | Simariya Village(S A2) | HURL Residential Township (SA3) | Chackba li Refinery Road(SA4) | Chaki ya Villag e (SA5) | Bihat Village (SA6) |
|-----------|---------------------------------|--|---------------------------|------------------------|---------------------------------|-------------------------------|-------------------------|---------------------|
| May-2023  | 24 hrs. Avg Leq Value db (A)    | -  | 48.60                     | 48.94                  | 45.13                           | 47.44                         | 42.90                   | 56.52               |
|           | Day time Avg Leq Value db (A)   | 75/55/65   | 52.63                     | 54.69                  | 46.37                           | 50.69                         | 45.69                   | 60.36               |
|           | Night time Avg Leq Value db (A) | 70/45/55   | 44.58                     | 43.20                  | 43.89                           | 44.23                         | 40.12                   | 52.69               |
| June-2023 | 24 hrs. Avg Leq Value db (A)    | -  | 49.90                     | 50.72                  | 44.30                           | 46.09                         | 42.05                   | 54.88               |
|           | Day time Avg Leq Value db (A)   | 75/55/65   | 54.54                     | 56.08                  | 45.23                           | 49.74                         | 44.53                   | 58.90               |
|           | Night time Avg Leq Value db (A) | 70/45/55   | 43.65                     | 45.36                  | 43.37                           | 42.45                         | 41.56                   | 50.86               |
| July-2023 | 24 hrs. Avg Leq Value db (A)    | -  | 68.04                     | 64.25                  | 65.85                           | 58.87                         | 59.70                   | 56.30               |
|           | Day time Avg Leq Value db (A)   | 75/55/65   | 71.89                     | 68.90                  | 70.12                           | 63.96                         | 65.42                   | 60.45               |

**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

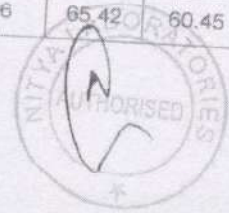
Plot No. 118, Church Road, Behind Kausik Vatika, Bhagat Singh Colony, Ballabgarh, Faridabad - 121004, Haryana, India

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com





**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023 for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

|          |                                 |          |       |       |       |       |       |       |
|----------|---------------------------------|----------|-------|-------|-------|-------|-------|-------|
|          | Night time Avg Leq Value db (A) | 70/45/55 | 64.21 | 59.10 | 61.58 | 53.78 | 53.98 | 52.16 |
| Aug-2023 | 24 hrs. Avg Leq Value db (A)    | -        | 69.32 | 65.98 | 67.58 | 58.93 | 61.33 | 56.66 |
|          | Day time Avg Leq Value db (A)   | 75/55/65 | 72.66 | 70.12 | 71.96 | 65.74 | 67.41 | 61.98 |
|          | Night time Avg Leq Value db (A) | 70/45/55 | 65.98 | 61.85 | 63.20 | 52.13 | 55.26 | 51.35 |
| Sep-2023 | 24 hrs. Avg Leq Value db (A)    | -        | 70.23 | 68.05 | 65.44 | 61.04 | 61.10 | 59.09 |
|          | Day time Avg Leq Value db (A)   | 75/55/65 | 73.69 | 72.65 | 69.98 | 67.85 | 65.89 | 63.98 |
|          | Night time Avg Leq Value db (A) | 70/45/55 | 66.78 | 63.69 | 60.39 | 54.23 | 57.46 | 54.21 |
| Average  | 24 hrs. Avg Leq Value db (A)    | -        | 64.98 | 63.90 | 61.54 | 57.50 | 57.99 | 57.14 |
|          | Day time Avg Leq Value db (A)   | 75/55/65 | 69.75 | 67.69 | 65.12 | 62.90 | 64.63 | 61.60 |
|          | Night time Avg Leq Value db (A) | 70/45/55 | 60.22 | 60.12 | 57.96 | 52.14 | 51.36 | 52.69 |



**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com

**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

**TABLE - 3**

**Ground Water Quality Assessment Schedule**

| Sr. No. | Source                      | Parameters       | Frequency       |
|---------|-----------------------------|------------------|-----------------|
| 1.      | HURL Plant (Bore-well)      | As per IS: 10500 | Once in a Month |
| 2.      | HURL Township (Hand Pump)   | As per IS: 10500 | Once in a Month |
| 3.      | Chakiya Village (Hand Pump) | As per IS: 10500 | Once in a Month |

**HURL BARAUNI, GROUND WATER QUALITY DATA AVERAGE RESULT (May 2023 to September 2023)**

(Results are expressed in mg/l, unless otherwise stated)

| Sr. No.         | Parameters                               | Average Analysis Results          |  |  | Requirement<br>(Acceptable)/Permissible<br>Limits (IS:10500:2012) |
|-----------------|--|-----------------------------------|--|--|---|
|                 |  | HURL Plant<br>(Bore-<br>well)GW-1 | HURL<br>Township<br>(Hand<br>Pump)GW-<br>2 | Chakiya<br>Village<br>(Hand<br>Pump)GW-<br>3 |   |
| <b>PHYSICAL</b> |  |                                   |  |  |   |
| 1.0             | pH                                       | 7.14                              | 7.24                                       | 6.92   | 6.5-8.5   |
| 2.0             | Temperature                              | 26.62                             | 28.1                                       | 26.10  | -   |
| 3.0             | Colour                                   | <5                                | <5   | <5   | 5/15  |
| 4.0             | Odour                                    | ND                                | ND   | ND   | Agreeable   |
| 5.0             | Taste                                    | ND                                | ND   | ND   | Agreeable   |
| 6.0             | Turbidity (NTU)                          | ND                                | ND   | ND   | 1/5   |
| 7.0             | Total Suspended Solids                   | 15                                | 24   | 30.75  | -   |
| 8.0             | Total Dissolved Solids                   | 1070                              | 531.5                                      | 620  | 500/2000  |
| <b>CHEMICAL</b> |  |                                   |  |  |   |
| 1.0             | P-Alkalinity as (CaCO <sub>3</sub> )     | ND                                | ND   | ND   | -   |
| 2.0             | Total Alkalinity as (CaCO <sub>3</sub> ) | 323.6                             | 376.25                                     | 280  | 200/600   |

**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

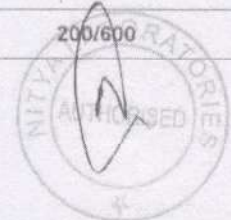
PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com



**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

|                     |   |        |        |        |             |
|---------------------|---|--------|--------|--------|-------------|
| 3.0                 | Chloride as Cl  | 60     | 42.50  | 63.75  | 250/1000    |
| 4.0                 | Sulphate as (SO <sub>4</sub> )                        | 21.24  | 24.88  | 63.25  | 200/400     |
| 5.0                 | Nitrate as (NO <sub>3</sub> )                         | 0.77   | 0.56   | 1.13   | 45/NR       |
| 6.0                 | Fluoride as (F)                                       | ND     | ND     | ND     | 1.0/1.5     |
| 7.0                 | Total Hardness as (CaCO <sub>3</sub> )                | 310    | 296.25 | 260    | 200/600     |
| 8.0                 | Calcium as Ca   | 128.6  | 91.25  | 93.75  | -           |
| 9.0                 | Magnesium as Mg                                       | 64.86  | 45.20  | 46.80  | -           |
| 10.0                | Sodium as Na  | 33.94  | 21.38  | 37.77  | -           |
| 11.0                | Potassium as K  | 3.42   | 1.99   | 5.37   | -           |
| 12.0                | Silica as SiO <sub>2</sub>                            | 23.25  | 14.37  | 17.90  | -           |
| 13.0                | Iron as Fe  | ND     | 0.21   | 0.28   | 0.3/NR      |
| <b>HEAVY METALS</b> |   |        |        |        |             |
| 1.0                 | Manganese as Mn                                       | ND     | ND     | ND     | 0.1/0.3     |
| 2.0                 | Total Chromium as Cr                                  | ND     | ND     | ND     | 0.05/NR     |
| 3.0                 | Lead as Pb  | ND     | ND     | ND     | 0.01/NR     |
| 4.0                 | Zinc as Zn  | 0.37   | ND     | 0.17   | 5.0/15      |
| 5.0                 | Cadmium as Cd   | ND     | ND     | ND     | 0.003/NR    |
| 6.0                 | Copper as Cu  | ND     | ND     | ND     | 0.05/1.5    |
| 7.0                 | Nickel as Ni  | ND     | ND     | ND     | 0.02/NR     |
| 8.0                 | Arsenic as As   | ND     | ND     | ND     | 0.01        |
| 9.0                 | Selenium as Se  | ND     | ND     | ND     | 0.01/NR     |
| <b>OTHERS</b>       |   |        |        |        |             |
| 1.0                 | Oil & Grease  | ND     | ND     | ND     | 0.01/0.03   |
| 2.0                 | Phenolic compound as C <sub>6</sub> H <sub>6</sub> OH | ND     | ND     | ND     | 0.001/0.002 |
| 3.0                 | Total Coliform (MPN/100 ml)                           | Absent | Absent | Absent | -           |

NR= No Relaxation, \*Calcium as Ca, \*\* Magnesium as



**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com

Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia – Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni

TABLE - 4

Surface Water Quality Assessment Schedule

| Sr. No. | Source               | Parameters       | Frequency       |
|---------|----------------------|------------------|-----------------|
| 1.      | Ganga River          | As per IS: 10500 | Once in a Month |
| 2.      | Bihat Village (Pond) | As per IS: 10500 | Once in a Month |
| 3.      | Baya Nallah          | As per IS: 10500 | Once in a Month |

**HURL BARAUNI, Surface Water Quality Data Average Result (May 2023 to September 2023)**  
(Results are expressed in mg/l, unless otherwise stated)

| Sr. No.         | Parameters                               | Average Analysis Results |                            |                   | Requirement (Acceptable)/Permissible Limits (IS: 10500:2012) |
|-----------------|--|--------------------------|----------------------------|-------------------|--|
|                 |  | Ganga River (SW1)        | Bihat Village (Pond) (SW2) | Baya Nallah (SW3) |  |
| <b>PHYSICAL</b> |  |                          |                            |                   |  |
| 1.0             | pH                                       | 7.38                     | 7.59                       | 7.79              | 6.5-8.5  |
| 2.0             | Temperature                              | 27.58                    | 27.92                      | 26.90             | -  |
| 3.0             | Colour                                   | <5                       | 38.20                      | <5                | 5/15   |
| 4.0             | Turbidity (NTU)                          | 36                       | 39.40                      | <1                | 1/5  |
| 5.0             | Total Suspended Solids                   | 13.40                    | 42.16                      | 18.10             | -  |
| 6.0             | Total Dissolved Solids                   | 285                      | 1060.40                    | 255.80            | 500/2000   |
| <b>CHEMICAL</b> |  |                          |                            |                   |  |
| 1.0             | Total Alkalinity as (CaCO <sub>3</sub> ) | 163.40                   | 334                        | 159.80            | 200/600  |
| 2.0             | Chloride as Cl                           | 34.60                    | 298                        | 33.20             | 250/1000   |
| 3.0             | Sulphate as (SO <sub>4</sub> )           | 17.38                    | 28.88                      | 14.24             | 200/400  |
| 4.0             | Nitrate as (NO <sub>3</sub> )            | 1.27                     | 0.61                       | 0.35              | 45/NR  |
| 5.0             | Fluoride as (F)                          | ND                       | ND                         | ND                | 1.0/1.5  |
| 6.0             | Total Hardness as (CaCO <sub>3</sub> )   | 175.80                   | 254.20                     | 162.60            | 200/600  |

**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com



**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

|                     |   |       |        |       |             |
|---------------------|---|-------|--------|-------|-------------|
| 7.0                 | Calcium as Ca   | 86.6  | 85.40  | 93.80 | -           |
| 8.0                 | Magnesium as Mg                                       | 20.42 | 43.47  | 5.92  | -           |
| 9.0                 | Dissolved Oxygen                                      | 4.86  | 2.78   | 4.34  | -           |
| 10.0                | COD   | 23.20 | 139.60 | 42    | -           |
| 11.0                | BOD (3 days at 27°C)                                  | 4.66  | 31.40  | 8.80  | -           |
| 12.0                | Sodium as Na  | 34.58 | 37.60  | 28.30 | -           |
| 13.0                | Potassium as K  | 3.08  | 2.88   | 1.89  | -           |
| <b>HEAVY METALS</b> |   |       |        |       |             |
| 1.0                 | Iron as Fe  | 0.14  | ND     | ND    | 0.3/NR      |
| 2.0                 | Manganese as Mn                                       | ND    | ND     | ND    | 0.1/0.3     |
| 3.0                 | Total Chromium as Cr                                  | ND    | ND     | ND    | 0.05/NR     |
| 4.0                 | Lead as Pb  | ND    | ND     | ND    | 0.01/NR     |
| 5.0                 | Zinc as Zn  | 0.35  | 0.28   | 0.31  | 5.0/15      |
| 6.0                 | Cadmium as Cd   | ND    | ND     | ND    | 0.003/NR    |
| 7.0                 | Copper as Cu  | ND    | ND     | ND    | 0.05/1.5    |
| 8.0                 | Nickel as Ni  | ND    | ND     | ND    | 0.02/NR     |
| 9.0                 | Arsenic as As   | ND    | ND     | ND    | 0.01        |
| 10.0                | Selenium as Se  | ND    | ND     | ND    | 0.01/NR     |
| <b>OTHERS</b>       |   |       |        |       |             |
| 1.0                 | Oil & Grease  | ND    | ND     | ND    | 0.01/0.03   |
| 2.0                 | Phenolic compound as C <sub>6</sub> H <sub>5</sub> OH | ND    | ND     | ND    | 0.001/0.002 |
| 3.0                 | Total Coliform (MPN/100 ml)                           | 394   | 836    | 1156  | -           |

NR= No Relaxation, \*Calcium as Ca, \*\* Magnesium as Mg



**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

Plot No. 118, Church Road, Behind Kausik Vatika, Bhagat Singh Colony, Ballabgarh, Faridabad - 121004, Haryana, India

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com

**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

TABLE - 5

**Flue Gas Monitoring Assessment Schedule**

| Sr. No. | Source           | Parameters                                  | Frequency        |
|---------|------------------|---|------------------|
| 1.      | Primary Reformer | SPM, SO <sub>x</sub> , NO <sub>x</sub> & CO | Twice in a Month |
| 2.      | Prill Tower      | SPM & Ammonia                               | Twice in a Month |
| 3.      | HRSG-1           | SPM, SO <sub>x</sub> , NO <sub>x</sub> & CO | Twice in a Month |
| 4.      | HRSG-2           | SPM, SO <sub>x</sub> , NO <sub>x</sub> & CO | Twice in a Month |

**HURL BARAUNI, Flue Gas Monitoring Data Average Result (May 2023 to September 2023)**  
(Results are expressed in mg/l, unless otherwise stated)

| Month     | Parameters      |                    | NAAQS     | Primary Reformer | HRSG-1    | HRSG-2    |
|-----------|-----------------|--------------------|-----------|------------------|-----------|-----------|
|           |                 |                    | Standards |                  |           |           |
| May 2023  | PM10            | mg/Nm <sup>3</sup> | -         | 6.4              | ND (DL-5) | ND (DL-5) |
|           | NO <sub>x</sub> |                    | -         | 58               | 80        | 93        |
|           | SO <sub>2</sub> |                    | -         | ND (DL-1)        | ND (DL-1) | ND (DL-1) |
|           | CO              |                    | -         | 9                | 22        | 26        |
| June 2023 | PM10            | mg/Nm <sup>3</sup> | -         | 5.8              | ND (DL-5) | ND (DL-5) |
|           | NO <sub>x</sub> |                    | -         | 298              | 88        | 115       |
|           | SO <sub>2</sub> |                    | -         | ND (DL-1)        | 3         | 9         |
|           | CO              |                    | -         | 212              | 9         | 12        |
| July 2023 | PM10            | mg/Nm <sup>3</sup> | -         | ND (DL-5)        | ND (DL-5) | ND (DL-5) |
|           | NO <sub>x</sub> |                    | -         | 61               | 85        | 97        |
|           | SO <sub>2</sub> |                    | -         | ND (DL-1)        | ND (DL-1) | ND (DL-1) |
|           | CO              |                    | -         | 7                | 29        | 23        |
| Aug 2023  | PM10            | mg/Nm <sup>3</sup> | -         | ND (DL-5)        | ND (DL-5) | ND (DL-5) |
|           | NO <sub>x</sub> |                    | -         | 73               | 85        | 88        |
|           | SO <sub>2</sub> |                    | -         | 3                | 3         | 5         |
|           | CO              |                    | -         | ND (DL-1)        | 33        | 20        |

**CORPORATE OFFICE & CENTRAL LABORATORIES :-**

PLOT NO. 118, CHURCH ROAD, BEHIND KAUSIK VATIKA, BHAGAT SINGH COLONY, BALLABHGARH, FARIDABAD - 121004, HARYANA, INDIA

+91-129-2241021

+91-9013591021, +91-9013552273

labsnitya@gmail.com

www.nityalab.com



**Env. STATEMENT for CTO Compliance for the period May 2023 – September 2023  
for Ammonia –Urea (2200 MTPD & 3850 MTPD) plant of HURL at Barauni**

|          |                 |                    |   |           |           |           |
|----------|-----------------|--------------------|---|-----------|-----------|-----------|
| Sep 2023 | PM10            | mg/Nm <sup>3</sup> | - | ND (DL-5) | ND (DL-5) | ND (DL-5) |
|          | NO <sub>x</sub> |                    | - | 68        | 101       | 98        |
|          | SO <sub>2</sub> |                    | - | 3         | 6         | 9         |
|          | CO              |                    | - | ND (DL-1) | 9         | 10        |
| Average  | PM10            | mg/Nm <sup>3</sup> | - | 6.1       | ND (DL-5) | ND (DL-5) |
|          | NO <sub>x</sub> |                    | - | 114.50    | 89.40     | 98.40     |
|          | SO <sub>2</sub> |                    | - | 3.0       | 5.74      | 7.66      |
|          | CO              |                    | - | 9.50      | 20.4      | 14.60     |

**HURL BARAUNI, Flue Gas Monitoring Data Average Result (May 2023 to September 2023)**  
(Results are expressed in mg/l, unless otherwise stated)

| Month     | Parameters      |                    | NAAQS     | Prill Tower |
|-----------|-----------------|--------------------|-----------|-------------|
|           |                 |                    | Standards |             |
| May 2023  | PM10            | mg/Nm <sup>3</sup> | -         | 45          |
|           | NH <sub>3</sub> |                    | -         | 78          |
| June 2023 | PM10            | mg/Nm <sup>3</sup> | -         | 62          |
|           | NH <sub>3</sub> |                    | -         | -           |
| July 2023 | PM10            | mg/Nm <sup>3</sup> | -         | 49          |
|           | NH <sub>3</sub> |                    | -         | 86          |
| Aug 2023  | PM10            | mg/Nm <sup>3</sup> | -         | 46          |
|           | NH <sub>3</sub> |                    | -         | 81          |
| Sep 2023  | PM10            | mg/Nm <sup>3</sup> | -         | 42          |
|           | NH <sub>3</sub> |                    | -         | 74          |
| Average   | PM10            | mg/Nm <sup>3</sup> | -         | 48.48       |
|           | NH <sub>3</sub> |                    | -         | 79.75       |



**CORPORATE OFFICE & CENTRAL LABORATORY**

Plot No. 118, Church Road, Behind Kausik Vatika, Bhagat Singh Colony, Ballabgarh, Faridabad - 121004, Haryana, India.

+91-129-3241031

+91-9013591021, +91-9013592073


labnitya@gmail.com

www.nityalab.com

बेगूसराय वन प्रमंडल, बेगूसराय  
अक्टूबर, 23 के आधार पर उत्तरजीविता प्रतिवेदन

HURL योजना

| क्र०                        | प्रमंडल का नाम | जिला का नाम | योजना का नाम / निधि का नाम | वृक्षारोपण स्थल का नाम                      | वृक्षारोपण वर्ष | क्षेत्रफल (है० मी० लम्बाई (कि०मी० मी०) | रोपित पौधों की संख्या | उत्तरजीविता पौधों की संख्या (अक्टूबर, 2023) | उत्तरजीविता प्रतिशत (अक्टूबर, 2023) | अभियुक्ति। |
|-----------------------------|----------------|-------------|----------------------------|---|-----------------|--|-----------------------|---|-------------------------------------|------------|
| 1                           | 2              | 3           | 4                          | 5   | 6               | 7                                      | 8                     | 9   | 10                                  | 11         |
| <b>HURL योजना</b>           |                |             |                            |   |                 |  |                       |   |                                     |            |
| 1                           | बेगूसराय       | बेगूसराय    | HURL योजना                 | जानीपुर ढाला से साहेबपुरकमाल तक (खाउन साईड) | 2022-23         | 7                                      | 5000                  | 4654  | 93.08                               |            |
| 2                           |                |             |                            | रेलवे साहेबपुरकमाल से चौकी ढाला (खाउन साईड) |                 | 4                                      | 5500                  | 4980  | 90.55                               |            |
| 3                           |                |             |                            | रेलवे चौकी ढाला से उमेश नगर (दोनों साईड)    |                 | 4                                      | 9500                  | 9082  | 95.60                               |            |
| 4                           |                |             |                            | रेलवे शाहपुर ढाला से सुरदासा ढला (अप साईड)  |                 | 5                                      | 5000                  | 4672  | 93.44                               |            |
| <b>HURL योजना का कुल :-</b> |                |             |                            |   |                 | <b>20</b>                              | <b>25000</b>          | <b>23388</b>                                | <b>93.55</b>                        |            |

  
वन प्रमंडल पदाधिकारी,  
बेगूसराय वन प्रमंडल, बेगूसराय।

