STATUS OF COMPLIANCE TO CONDITIONS OF ENVIRONMENTAL CLEARANCES ACCORDED TO GAIL PATA

FOR THE PERIOD APRIL 2024 TO SEPTEMBER 2024

GAIL (INDIA) LIMITED
PATA PETROCHEMICAL COMPLEX

SD & ENVIRONMENT DEPARTMENT
GAIL PATA

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Environment Clearances accorded to GAIL (India) Limited, Pata as on 30th September, 2024 are as follows:

A. Letter No. J-11011/22/90-IA-II, Dated-30/03/1992 for GAIL, **Pata Petrochemical Project.**
B. Letter No. J-11011/29/96-IA-II (I), Dated 16/01/1997 for **LPG Recovery Facility**.
C. Letter No. J-11011/237/2003-IA-II (I), Dated 19/04/2004 for **LLDPE Debottlenecking Project.**
D. Letter No. J-11011/143/2004 – IA II (I), Dated 12/01/2005 for **HDPE Expansion & 5th Furnace Project.**
E. Letter No. J-11011/595/2010-IA II (I), Dated 23/05/2012 for **Expansion of Petrochemical Complex project.**
F. Letter No. J-11011/595/2010-IA(II)I, Dated 16/10/2020 for **Polypropylene Expansion Project**

Name of the Project: GAIL, Pata Petrochemical Project **Project Code:** NIL
Clearance Number: J-11011/22/90-IA-II, Dated 30/03/1992
Period of Compliance: April 2024 to September 2024

Sr. No.	Condition no.	Conditions	Compliance Status
1.	i.	The Project Authority must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	All the stipulations made by the State Pollution Control Board and the State Government are adhered to. Compliance to conditions of Consent to Operate have been sent to the Uttar Pradesh Pollution Control Board.
2.	ii.	Any expansion of the plant either with the existing product mix or new products can be taken up only with the prior approval of this Ministry	Any expansion of the plant is taken up only after obtaining prior approval of the Ministry. GAIL Pata has been accorded 6 ECs for different expansions as mentioned above (A, B, C, D, E & F).
3.	iii.	The project Authority must submit comprehensive EIA report for the proposed activity along with any future activity proposed / approved by this Ministry within one month.	Comprehensive EIA study was done by NEERI for the proposed plant in July 1991. Report of the study was submitted to MoEF&CC.
4.	iv.	Rehabilitation of the families whose land has been acquired for the above petrochemical complex etc. should be handled in association with the State Government authorities as	The rehabilitation package has been developed by GAIL Pata in association with the State Government Authorities and same has been implemented as per statutory norms / guidelines.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Condition no.	Conditions	Compliance Status
		per their statutory norms / guidelines.	
5.	v.	The gaseous emissions from various process units should conform to the standard prescribed by the concerned authorities from time to time. At no time the emission level should go beyond the stipulated standards. In the event of the failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restarted until the control measures are rectified to achieve the desired efficiency.	The gaseous emissions from various process units are monitored through advanced monitoring techniques and conform to the standard prescribed by the statutory authorities. Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is sent to CPCB and UPPCB through web based system. Mitigatory control methods have been adopted at design stage in order to reduce the load of gaseous emissions from process units. However, it is pertinent to mention here that GAIL, Pata uses Natural gas as fuel, which is one of the cleanest fuel available.
6 (a).	vi (a).	Six ambient air quality monitoring stations should be set up in the downwind direction as well as where maximum ground level concentration of NOx and HC is anticipated in consultation with State Pollution Control Board. Monitoring should be continuous for SO_2, NO_x, HC and CO in at least three sites as indicated in the EIA report submitted to the Ministry. Monitoring network should be designed taking into account land use pattern, location of stacks, meteorological and topographical features including the modelling exercise / calculations.	Five fixed real time ambient air quality monitoring station and Two nos. third party ambient air quality monitoring stations (within and outside the premises) have been setup. In addition, 1 No. Mobile Van having real time ambient air quality monitoring station is also in use for monitoring of ambient air quality. Monitoring of ambient air quality is continuous for SO_2, NO_2, Total Hydrocarbons, CO, PM_{10}, $PM_{2.5}$ and Benzene at five fixed real time ambient air quality monitoring stations and one mobile van. The ambient air quality monitoring stations are installed by considering location of existing stacks, wind direction, air modelling studies carried out by NEERI during EIA studies and other topographical features. Ambient air monitoring stations are regularly inspected by the UPPCB officials during their visits and no observations have been made till date with respect to locations/sampling points.

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Sr. No.	Condition no.	Conditions	Compliance Status
6 (b).	vi (b).	All the stacks of the plant must be provided with automatic stack emission monitoring equipment. Stack emission and ambient air quality data must be submitted to State Pollution Control Board once in three months and this ministry in six months along with statistical analysis.	All the stacks of the plant are equipped with automatic stack emission monitoring equipment i.e. Online Continuous Emission Monitoring System (OCEMS). Presently the stacks are also connected to CPCB and UPPCB servers for continuous online monitoring of parameters viz. CO, SO_2, NO_x and PM. Data of stack emission and ambient air for the period April 2024 to September 2024, monitored by MoEF&CC approved and NABL accredited third party is enclosed as Annexure-1.
7 (a).	vii (a).	Fugitive emissions should be controlled and regularly monitored and data recorded.	Fugitive emissions are monitored and controlled through Leak Detection and Repair program as per OISD-GDN-224.
7 (b).	Vii (b).	Fugitive emission of HC from storage tanks should be controlled through proper tank design and subsequent preventive measures as mentioned below and maintenance schedules. i) Provision of floating roof tanks for volatile products. ii) Replacement of gland packing of pumps by means of mechanical seals; and iii) Use of submerged filling in product loading gantries.	The steps taken to control fugitive emissions at GAIL Pata include: i) Floating roof tanks have been provided for volatile products like GHU Light Cut, GHU Fuel Oil, Hexane, Hexene-1 & Cyclo Hexane. ii) All the pumps have been provided with mechanical seals for pumping C2C3, Ethylene, C4 Mix, Butene-1, Propylene, Naphtha, MFO, Hexane & Cyclo Hexane. iii) Submerged filling is used in liquid product loading gantries.
8.	viii.	Low NO_x burners should be used to limit NO_x emissions.	Low NO_x burners are used in all the Furnaces and Boilers.
9.	ix.	Flare system should be designed for smokeless burning with adequate steam for all normal venting and flaring.	Flare system is designed for smokeless burning with adequate steam for all normal venting and flaring. Flare stacks have also been provided with adequate heights to ensure effective dispersion of emissions.
10.	x.	Loading / Unloading and transportation of products may be restricted to daytime	Loading / Unloading of LHC is carried out in accordance with PESO approval.

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		periods. Loading facilities should have vapour return circuits.	Loading facilities for liquid products are provided with vapour return circuits.
11.	xi.	There should be no change in the stack design, without the approval of the State Pollution Control Board. Alternate pollution control system and proper design in the stack should be provided to take care of excess emissions due to failure in any system of the plant.	It is confirmed that so far there has been no need for any change in the stack design. All the stacks have been suitably designed to be able to take care of excess emissions due to failure in any system of the plant. Height of all the stacks in the complex is as per standard height of more than 30 meters.
12.	xii.	An all-weather station for wind speed & direction, temperature and rainfall should be installed within the petrochemical premises.	All weather station for monitoring of wind speed & direction, temperature, rainfall and relative humidity has been installed within the petrochemical premises.
13.	xiii.	Exploitation of ground water in the area should be carried as per the recommendations contained in the report of the Central Ground Water Board on Hydro-geological investigations.	The water consumption for the plant is met through Canal water (Etawah Branch of Lower Ganga Canal system through Burhadana Distributory). There is no exploitation of ground water in the complex.
14.	xiv.	Treatment and disposal facilities for liquid effluent should be completed along with commissioning of process units. Sufficient surface aerators with proper spacing in the aeration basin of the activated sludge extended aeration units should be provided to maintain desired DO concentration of more than 1.0 mg/L.	Waste Water Treatment plant having 2 nos. 150 m^3/hr capacity chains is functional and treating combined (domestic + industrial) effluents from various process units. Based on the design organic load, four nos. 30 HP aerators are provided in the aeration basin, which help in maintaining DO concentration of more than 1.0 mg/L.
15.	xv.	The project authorities must recycle the wastewater to the maximum extent possible. The final treated effluent should conform to the prescribed MINAS standards.	Maximum recycle of treated effluent is done for use of water in horticulture purposes. The final treated effluent conforms to the prescribed standards.
16.	xvi.	Complete recycling of wastewater under normal	Maximum recycle of Waste water is done for use in horticulture purpose. Two

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Sr. No.	Condition no.	Conditions	Compliance Status
		operation through irrigation applications; green belt maintenance, firefighting etc. may be planned for aiming at zero discharge. In case of failure of ETP, effluent should be collected and stored in Guard Pond(s) for a minimum of 7 days and should not be disposed off unless the treatment facilities are restarted and desired efficiency is achieved.	number guard ponds of 33,600 m^3 capacity have been provided to deal with any emergency situations for 7 days.
17.	xvii.	Disposal in the Sengar River should be at a depth along riverbed for better mixing. During lean flow periods of the river and ETP under normal operation, the treated effluent after reuse for green belt development and firewater make up should be discharged in Sengar River through a closed pipeline at controlled rate depending on the river flow.	A part of treated effluent is recycled for horticulture purpose and the balance treated effluent is discharged to Sengar river through 8 km long closed pipeline at the end of which is specially designed diffuser arrangement along stream bed to ensure thorough mixing. During lean flow period, controlled discharge of treated effluent is ensured.
18.	xviii.	Performance studies of each of the effluent / Sewage treatment plant should be undertaken at regular intervals. Also proper maintenance schedule of polishing lagoon be planned and implemented.	Regular performance of the wastewater treatment plant is monitored by checking samples at intermittent units. De-silting of guard pond is done on regular basis.
19.	xix.	Sludge recirculation to aeration basin from final clarifier should be planned for maintaining the desired MLSS concentration.	The WWTP has been designed for recirculation of sludge in aeration tank. Extended Aeration mode of treatment is adapted from the various forms of activated sludge processes. Desired MLSS concentration as designed is maintained.
20.	xx.	Adequate number of effluent quality monitoring stations should be set up in consultation with U.P. Pollution Control Board. Final effluent discharge should be	Effluent quality monitoring station has been set up at final discharge point. Continuous online monitoring of the effluent parameters like pH, BOD, COD, TSS, TOC & Flow is done at the final discharge point and data is transmitted

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Sr. No.	Condition no.	Conditions	Compliance Status
		daily monitored for BOD, suspended solids, phenol, sulphide and Oil & Grease. Wastewater should also be analysed regularly for other parameters listed in MINAS and stipulated by the State & Central Pollution Control Board. The effluent monitored data along with its statistical analysis and interpretation in the form of a report should be submitted to this ministry regularly once in six months and to the State Pollution Control Board once in three months.	to CPCB and UPPCB on real time basis through web based server systems. In addition, final effluent discharge is monitored daily for pH, COD, BOD, TSS, Phenol, Sulfide and Oil & Grease by NABL accredited inhouse laboratory. Further, wastewater quality monitoring is also regularly being carried out by Third Party monitoring agency. Effluent quality data for the period April 2024 to September 2024 monitored by MoEF&CC approved and NABL accredited third party is enclosed as Annexure-2.
21.	xxi.	Monitoring of noise levels should be regularly carried out to assess the efficiency of maintenance schedules undertaken to reduce noise levels and noise protection measures.	Noise levels are regularly monitored on monthly basis. Remedial actions and maintenance schedules for equipment are ensured to maintain noise levels as per prescribed standards.
22.	xxii.	The project authorities must prepare a well-designed scheme for solid waste disposal based on comprehensive EIA study and submit the same to this Ministry within six months. Ground water near solid waste disposal site as well as around petrochemical complex should be regularly monitored and data recorded.	Solid waste disposal scheme based on comprehensive EIA study has already been submitted to the ministry. There is no solid waste disposal site within the complex, however, ground water quality within and outside the complex is regularly monitored.
23.	xxiii.	A green belt development plan should be finalized and submitted to this ministry within six months for approval. The width of green belt adequate to attenuate noise, H_2S and HC from Fugitive Sources etc. Storage dumping yards should also be brought under plantation. As	Green belt development Plan has already been submitted to the ministry. Presently 210 Hectares of peripheral green belt/area has been developed in the premises. Project laydown areas are also taken up for plantation. Regular maintenance and plantation of tree saplings in and around the plant complex is done and also mass tree plantation programs are organized.

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Sr. No.	Condition no.	Conditions	Compliance Status
		and when necessary, sludge disposal sites should be reclaimed for growing trees.	There is no sludge disposal site inside the plant battery limit.
24.	xxiv.	A detailed risk analysis report based on maximum credible accident analysis should be carried out within a period of six months of the issue of this letter of approval. This study apart from other factors should also consider the following: a) Stability Condition 'F' b) Fire and hazard impact zone should not cross the plant boundaries under worst possibilities. Based on this, a Disaster management plan should be prepared and after approval by the concerned nodal agency, the same must be submitted to this ministry by December 1992.	Detailed Risk analysis for Petrochemical Complex & expansions plant has been carried out. Emergency Response and Disaster Management Plan (ERDMP) of GAIL Pata Plant has been developed through PNGRB accredited agency M/s Certification Engineers International Limited and implemented at GAIL, Pata and valid up till 04.04.2025. Copy of ERDMP has been submitted to PNGRB & other district authorities.
25.	xxv.	The Storage tank and sphere must conform to the stipulations made by the chief inspector of factories, controller of explosives etc. wherever required, it should be supplemented by OISD Codes.	Storage tanks and sphere are designed based on applicable OISD GDN-118 and are having valid approval of chief inspector of factories and statutory body (PESO).
26.	xxvi.	During site preparations, care should be taken to stabilize the sites before onset of monsoon. Further, during the construction phase, necessary and adequate steps should be taken to provide sanitation facilities and noise protection devices and fuel to the workers. The petrol and diesel run machinery should be maintained as per standards.	All necessary precautions are taken during site preparation and construction phase.
27.	xxvii.	A separate Environmental Management Cell with	A full-fledged Environmental Management Cell is in place to undertake

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<table>
<tr><th>Sr. No.</th><th>Condition no.</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td></td><td></td><td>suitably qualified staff to carry out various functions should be set up under the control of Senior Executive who will report directly to the head of the organization.</td><td>environment and sustainable development related functions.</td></tr>
<tr><td>28.</td><td>xxviii.</td><td>The project authority must set up a separate laboratory facility for collection and analysis of samples under the supervision of competent technical personnel who will directly report to the Chief Executive.</td><td>Full-fledged Laboratory set up exists in the plant premises under the supervision of competent technical personnel. The Laboratory is NABL accredited.</td></tr>
<tr><td>29.</td><td>xxix.</td><td>The project authorities must take adequate steps to ensure that the movement of raw materials and products would not disturb smooth flow of traffic in the area and would avoid towns.</td><td>Raw material for the petrochemical project is Natural Gas, received through cross country HVJ Pipeline. Also dedicated freight route and tanker parking areas have been developed for tankers and trucks, engaged in carrying products from the plant premises.</td></tr>
<tr><td>30 (1).</td><td>xxx (1).</td><td>The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this ministry.</td><td>Dedicated funds are earmarked for the environmental protection measures. Details of expenditure on environmental protection measures at GAIL Pata is as below:
<table>
<tr><td>Description</td><td>FY 2023-24 (Rs.)</td></tr>
<tr><td>Treatment and disposal of waste</td><td>7,60,12,662</td></tr>
<tr><td>Depreciation and maintenance cost of equipments used in pollution control</td><td>2,31,91,026</td></tr>
<tr><td>External services for environmental management</td><td>29,02,961</td></tr>
<tr><td>External certification of management systems</td><td>5,84,052</td></tr>
<tr><td>Cost of Personnel for general environmental management activities</td><td>12,49,85,005</td></tr>
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Sr. No.	Condition no.	Conditions	Compliance Status
			Extra expenditures for installing cleaner technologies: 33,47,406 Other environmental costs: 8,77,54,229 Total: **31,87,77,341**
30 (2).	xxx (2).	The Ministry or any other competent authority may stipulate any further conditions after reviewing the comprehensive impact assessment report prepared by project authorities or due to any change in the pollution scenario" of the area in question.	The condition is noted for needful compliance and implementations.
30 (3).	xxx (3).	The Ministry may revoke clearance if implementation of the condition is not satisfactory.	The condition is noted and suitable compliance to all the conditions is ensured.
30 (4).	xxx (4).	The above condition will be enforced interalia along with Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, and Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments.	It is always ensured that the above conditions are enforced interalia along with Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, and Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments as applicable.

Name of the Project: LPG Recovery Facility **Project Code:** NIL
Clearance Number: J-11011/29/96-IA.II (I) Dated 16/01/1997
Period of Compliance: April 2024 to September 2024

Sr. No.	Condition No.	Conditions	Compliance Status
31	i.	The project authority must strictly adhere to the terms and conditions stipulated by the Ministry while granting environmental clearance to the petro-chemical complex vide O.M. No. J-11011/22/90-IA.II dated 30.03.1992.	Compliance to the conditions of environmental clearance granted to the petrochemical complex vide O.M. No. J-11011/22/90-IA.II dated 30.03.1992 is provided at Sr. No. 1 to 30 above.

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Sr. No.	Condition No.	Conditions	Compliance Status
32	ii.	The project authority must strictly comply with the stipulations made by state pollution control board and state government.	All the stipulations made by the State Pollution Control Board and the State Government are adhered to. Compliance to conditions of Consent to Operate have been sent to the Uttar Pradesh Pollution Control Board.
33	iii.	Any expansion of the plant can be taken up only with prior approval of this ministry.	Any expansion of the plant is taken up only after obtaining prior approval of the Ministry. GAIL Pata has been accorded 6 ECs for different expansions as mentioned above (A, B, C, D, E & F).
34	iv.	The hazardous wastes including residual solvents, spent activated carbon, ETP sludge etc. shall be handled as per hazardous wastes (Management and Handling) rules, 1989 and necessary approval from UPPCB in this regard must be obtained.	All hazardous wastes generated at the complex are handled as per the provisions laid under the latest Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016. GAIL Pata has been accorded Consolidated Consent and Authorization from Uttar Pradesh Pollution Control Board vide Authorization No. 191217/UPPCB/ KanpurDehat (UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025. All the hazardous wastes generated are disposed as per the directions mentioned in the authorization.
35	v.	Handling, Manufacturing, storage and transportation of hazardous chemicals must be carried out in accordance with the manufacture, storage and import of hazardous chemicals rules, 1989 as amended in October, 1994. Necessary approvals from Chief controller of explosives/ Chief inspector of factories must be obtained as per regulations.	All applicable provisions of the manufacture, storage and import of hazardous chemicals rules, 1989 as amended in October, 1994 are suitably followed. All necessary approvals from Petroleum & Explosives Safety Organization /Chief inspector of factories have been obtained and are in place.
36	vi.	The project authorities must setup adequate facilities for collections and analysis of samples (air, water and noise parameters), monitoring of environmental quality parameters and carry out time	Five fixed real time ambient air quality monitoring station and Two portable third party ambient air quality monitoring stations (within and outside the premises) have been setup. In addition, 1 No.

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Sr. No.	Condition No.	Conditions	Compliance Status
		bound action plans related to environmental management and pollution control.	Mobile Van having real time ambient air quality monitoring station is also in use for monitoring of ambient air quality. In addition, Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is transmitted to CPCB and UPPCB through web based system. Noise levels are also regularly monitored in ambient as well as work zone areas. Continuous online monitoring of the effluent parameters like pH, BOD, COD, TSS, TOC & Flow is done at the final discharge point and data is transmitted to CPCB and UPPCB on real time basis through web based server systems. In addition, final effluent discharge is monitored daily for pH, COD, BOD, TSS, Phenol, Sulfide and Oil & Grease by NABL accredited inhouse laboratory. Further, wastewater quality monitoring is also regularly being carried out by MoEF&CC approved and NABL accredited Third Party monitoring agency. A full-fledged NABL accredited Laboratory set up exists in the plant premises under the supervision of competent technical personnel.
37	vii.	The fund earmarked for the environmental protection measures shall not be diverted for other purposes and year wise expenditure reported to this ministry of proper monitoring of the project implementation.	The dedicated funds are earmarked for the environmental protection measures. Details of year wise expenditure on environmental protection measures are regularly reported to the ministry.
38	viii.	Six-monthly progress report on the implementation status of environmental conditions mentioned above must be submitted to ministry / CPCB and State Pollution Control Board regularly. The project will be	Six-monthly progress report on the implementation status of environmental conditions is regularly submitted to the Regional Offices of MoEF&CC & CPCB and to the UPPCB.

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Sr. No.	Condition No.	Conditions	Compliance Status
		monitored intralia by ministry's regional office at Lucknow.	

Name of the Project: LLDPE Debottlenecking Project
Project Code: UP-IND-62-164- 2004
Clearance Number: J-11011/237/2003-IA.II (I) Dated 19/04/2004
Period of Compliance: April 2024 to September 2024

Sr. No.	Cond. No.	Conditions	Compliance Status
Specific Conditions:			
39	(i)	The gaseous emissions (SO_2, NO_x and HC, HCI, Cl_2) from the various process units shall conform to the standards prescribed under Environment (Protection) Act, 1986 or norms stipulated by the SPCB's whichever is more stringent. At no time, the emission level shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	The gaseous emissions from various process units are monitored through advanced monitoring techniques and conform to the standard prescribed under Environment (Protection) Rules, 1986 and amendments thereof for Petrochemical industry. Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is transmitted to CPCB and UPPCB through web based system. Mitigatory control methods have been adopted at design stage in order to reduce the load of gaseous emissions from process units. It is always ensured that in any such event of failure of pollution control system(s), the respective unit is not restarted until the control measures are rectified to achieve the desired efficiency. It is pertinent to mention that GAIL Pata uses Natural gas as a fuel, which is one of the cleanest fuel available.
40	(ii)	Adequate number of ambient air quality monitoring stations shall be set up in consultation with SPCB, based on the occurrence of maximum ground level concentration and downwind direction of wind. The monitoring network shall be decided based on modelling exercise to represent short term GLCs. Continuous online stack monitoring	Five fixed real time ambient air quality monitoring station and Two third party portable ambient air quality monitoring stations (within and outside the premises) have been setup. In addition, 1 No. Mobile Van having real time ambient air quality monitoring station is also in use for monitoring of ambient air quality. The ambient air quality monitoring stations

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		equipment shall be installed for all the stacks in the petrochemical plant. The company shall install low NOx burners in cracker furnaces.	are installed by considering location of existing stacks, wind direction, air modelling studies carried out during EIA studies and other topographical features. Ambient air monitoring stations are regularly inspected by the UPPCB officials during their visits and no observations have been made till date with respect to locations/sampling points. All the stacks of the plant are equipped with automatic stack emission monitoring equipment i.e. Online Continuous Emission Monitoring System (OCEMS). Low NOx burners have also been installed in all furnaces and boilers.
41	(iii)	For control of fugitive emissions, the company shall provide for a main flare system and an auxiliary flare system, and route all Unsaturated hydrocarbons to the flare system. The flare system shall be designed for smokeless burning. All the pumps and other equipment, where there is a likelihood of hydrocarbon leakages shall be provided with LEL indicators, and also provide for immediate isolation of such equipment, in case of a leakage. The product loading gantry shall be connected to the product sphere in closed circuit through the vapour arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records maintained.	The complex has been provided with a main flare system and an auxiliary flare system. The Flare system is designed for smokeless burning with adequate steam for all normal venting and flaring. LEL indicators & open path gas detection system have been provided in storage and process areas for detection of any hydrocarbon leakages. The product loading gantry is connected to the product sphere in closed circuit through the vapour arm connected to the tanker for all liquid products. Fugitive emissions are monitored and controlled through Leak Detection and Repair (LDAR) program as per OISD-GDN-224.
42	(iv)	The wastewater generated (2864 m^3/d) shall be treated in the wastewater treatment plant. The treated wastewater, meeting the norms, shall be used for green belt development within the plant premises, or discharged into Sengar river, about 8 km. away in a closed	The wastewater generated is treated in the wastewater treatment plant. Part of the treated wastewater, meeting the norms, is used for horticulture purpose and balance water is discharged to Sengar river through an 8 kms long closed pipeline at the end of which a

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		pipeline through a well-designed diffuser. The company shall undertake measures to maximize recycling of treated wastewater and work towards achieving zero discharge.	specially designed diffuser is installed to ensure thorough mixing. Towards the measures for maximizing recycling of treated wastewater and achieving zero discharge, GAIL Pata has started implementation of ZLD project.
43	(v)	The non-hazardous solid waste generated (spent alumina and silica gel) shall be sold to approved parties. For management of the hazardous solid wastes (3.85 TPD of ETP sludge and tar), the company shall install an incinerator for tar, design a landfill for sludge, and explore bioremediation of the sludge.	The non-hazardous solid waste generated (spent alumina and silica gel) is sold to recyclers. GAIL Pata has been accorded Consolidated Consent and Authorization from Uttar Pradesh Pollution Control Board vide Authorization No. 191217/UPPCB/ KanpurDehat(UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025. In view of this, Sludge and tar waste are being disposed through approved TSDF as prescribed by Uttar Pradesh Pollution Control Board.
44	(vi)	All the recommendations of the Charter on Corporate Responsibility for Environmental Protection (CREP) for the petrochemical sector shall be strictly implemented.	The recommendations of the Charter on Corporate Responsibility for Environmental Protection (CREP) for the petrochemical sector are already implemented and regularly followed.
45	(vii)	Green belt of adequate width and density shall be provided to mitigate the effects of fugitive emission all around the plant. A minimum of 25% of the area shall be developed as green belt with local species in consultation with the DFO, and as per CPCB's guidelines.	Green belt of adequate width and density has been provided all around the plant to mitigate the effects of fugitive emission. Presently 36% area of the premises has been developed as peripheral green belt/area with native species. Project laydown areas are also taken up for plantation. Regular maintenance and plantation of tree saplings in and around the plant complex is done and also mass tree plantation programs are organized.
46	(viii)	The company shall obtain necessary approval for drawl of groundwater from the concerned State agency.	The water consumption for the plant is met through Canal water (Etawah Branch of Lower Ganga Canal system through Burhadana Distributory). There is no drawl of ground water in the complex.

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Sr. No.	Cond. No.	Conditions	Compliance Status
47	(ix)	The company shall undertake rainwater-harvesting measures to harvest the rain water for their own utilization as well as to recharge the groundwater table.	Rain Water harvesting measures have been implemented in all the major buildings at GAIL, Pata for recharging of ground water table. In addition, a natural pond inside the premises is used for rain water harvesting for utilization of water from the pond as per requirement.
48	(x)	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers and Employees is done on a regular basis (6 monthly basis for workers and on annual basis for employees) and records maintained as per the Factories Act and OISD-GDN-166.

Sr. No.	Cond. No.	Conditions	Compliance Status
General Conditions			
49	(i)	The project authorities shall strictly adhere to the stipulations made by the Uttar Pradesh State Pollution Control Board and the State Government.	All the stipulations made by the State Pollution Control Board and the State Government are adhered to. Compliance to conditions of Consolidated Consent and Authorization are sent to the Uttar Pradesh Pollution Control Board.
50	(ii)	At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the respective unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	The condition is noted and complied as per prescribed limit.
51	(iii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Any expansion of the plant is taken up only after obtaining prior approval of the Ministry. GAIL Pata has been accorded 6 ECs for different expansions as mentioned above (A, B, C, D, E & F).

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52	(iv)	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended on 3rd October 1994 and 6th January 2000. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives. Fire Safety Inspectorate etc. shall be obtained wherever applicable.	All applicable provisions of the manufacture, storage and import of hazardous chemicals rules, 1989 as amended on 3rd October 1994 and 6th January 2000 are suitably followed. All necessary approvals from Petroleum & Explosives Safety Organization, Chief inspector of factories and Fire safety inspectorate have been obtained and are in place.
53	(v)	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules 1989 as amended in January 2000, wherever applicable. Authorization from the State Pollution Control Board must be obtained for collections/treatment/ Storage / disposal of hazardous wastes.	All the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the latest Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 are strictly complied with. GAIL Pata has been accorded Consolidated Consent and Authorization from Uttar Pradesh Pollution Control Board vide Authorization No. 191217/UPPCB/ KanpurDehat(UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025.
54	(vi)	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) 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 EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	All sources of noise generation have been provided with suitable noise control measures including acoustic hoods, silencers, enclosures etc. as applicable to maintain overall noise levels in and around the plant area within the standards. Noise levels are regularly monitored in ambient and work zone areas to ensure that noise levels are within prescribed standards.
55	(vii)	A separate Environment Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the environmental management and monitoring functions.	A full-fledged Environmental Management Cell is in place to undertake environment and sustainable development related functions. Full-fledged NABL accredited Laboratory set up also exists in the plant premises under the supervision of competent technical personnel.
56	(viii)	The project authorities shall provide adequate funds both recurring and non-recurring, to implement the	Adequate dedicated funds are earmarked for the environmental protection measures and to

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		conditions stipulated by the Ministry of Environment & Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	implement the conditions stipulated by the Ministry of Environment & Forests as well as the State Government.
57	(ix)	The implementation of the project vis-à-vis environmental action plans shall be monitored by Ministry's Regional Office at Lucknow/State Pollution Control Board /Central Pollution Control Board. A six monthly compliance status report shall be submitted to monitoring agencies.	Six-monthly compliance status report on the implementation status of environmental conditions is regularly submitted to the Regional Offices of MoEF&CC & CPCB and to the UPPCB.
58	(x)	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 State Pollution Control Board / Committee and may also be seen at website of the Ministry at http://envfor.nic.in. 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 Ministry's Regional office at Lucknow.	The matter was suitably advertised in the local newspapers that are widely circulated in the region as per requirement.

Name of the Project: HDPE Expansion & 5th Furnace Project
Project Code: UP-67/173-2005
Clearance Number: J-11011/143/2004 – IA II (I) Dated 12/01/2005
Period of Compliance: April 2024 to September 2024

Specific Conditions:

Sr. No.	Cond. No.	Conditions	Compliance Status
59	(i)	All the measures detailed in the EMP shall be taken to control the point/stack and fugitive gaseous emissions from the proposed facilities namely, Gas Cracker Furnace (GCF) and process and storage units etc. for ensuring that the ambient air quality	The point/stack and fugitive gaseous emissions have been controlled by adopting mitigatory control methods at design stage in order to reduce the load of gaseous emissions from process units. Also the point/stack and fugitive gaseous emissions from

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		around Pata due to the expansion is maintained at the predicted 24 hourly average maximum concentration levels and shall not exceed for the worst scenario predicted for SO_2 (12 $\mu g/m^3$); NO_x (25 $\mu g/m^3$) and CO (2 mg/m^3).	various process units are monitored through advanced monitoring techniques and conform to the standards prescribed under Environment (Protection) Rules, 1986 and amendments thereof for Petrochemical industry and norms stipulated by the UPPCB. In addition, Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is transmitted to CPCB and UPPCB through web based system.
60	(ii)	The location of the three existing ambient air quality monitoring stations along with the mobile unit shall be reviewed in consultation with SPCB, based on the occurrence of maximum ground level concentration and downwind direction of wind. The monitoring protocol shall ensure continuous monitoring of all the parameters.	Five fixed real time ambient air quality monitoring station and Two third party portable ambient air quality monitoring stations (within and outside the premises) have been setup. In addition, 1 No. Mobile Van having real time ambient air quality monitoring station is also in use for monitoring of ambient air quality. Monitoring of ambient air quality is continuous for SO_2, NO_2, Total Hydrocarbons, CO, PM_{10}, $PM_{2.5}$ and Benzene/VOC at five fixed real time ambient air quality monitoring stations and one mobile van. The ambient air quality monitoring stations are installed by considering location of existing stacks, wind direction, air modelling studies carried out during EIA studies and other topographical features. Ambient air monitoring stations are regularly inspected by the UPPCB officials during their visits and no observations have been made till date with respect to locations/sampling points.
61	(iii)	The practice of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hr time weighted average of 90 db (A).	All required measures have been undertaken during design stage of plant to limit noise exposure for personnel as per prescribed standards.
62	(iv)	For control of fugitive emissions, the company shall provide for a main flare system and an auxiliary flare system,	The complex has been provided with a main flare system and an auxiliary flare system. The Flare system is

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		and route all unsaturated hydrocarbons to the flare system. The flare system shall be designed for smokeless burning. All the pumps and other equipment where there is a likelihood of HC leakages shall be provided with LEL indicators and also provide for immediate isolation of such equipment, in case of a leakage. The company shall adopt Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions.	designed for smokeless burning with adequate steam for all normal flaring. LEL indicators & open path gas detection system have been provided in storage, process areas and main flare KODs for detection of any hydrocarbon leakages. The product loading gantry is connected to the product sphere in closed circuit through the vapour arm connected to the tanker for all liquid products. Fugitive emissions are monitored and controlled through Leak Detection and Repair (LDAR) program as per OISD-GDN-224.
63	(v)	The product loading gantry shall be connected to the product sphere in closed circuit through the vapours arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records maintained.	The product loading gantry is connected to the product sphere in closed circuit through the vapour arm connected to the tanker for liquid products. Fugitive emissions are monitored and controlled through Leak Detection and Repair (LDAR) program as per OISD-GDN-224.
64	(vi)	The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.	No halogenated organics are present in any of the streams in this natural gas based petrochemical complex.
65	(vii)	All new standards/norms that are being proposed by the CPCB for petrochemical plants shall be applicable for the proposed expansion unit. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e. TOCs standard and process vent standards for top priority chemicals. The company shall install	Environment monitoring including work area environment w.r.t to Non-VOCs and VOCs monitoring is done through In-house Laboratory and approved third party on a regular basis as per CPCB standards. Online LEL indicators & open path gas detection system have been provided in storage, process areas

		online monitors for VOC measurements. Action on the above should be taken during the detailed design stage of the NCC and intimate to this Ministry.	and main flare KODs for detection of any hydrocarbon leakages.
66	(viii)	The waste water generated (3184 m^3/d) shall be treated in comprehensive waste water treatment plant. As reflected in the EIA /EMP report, the company shall maximize the recycling of treated effluent and treated effluent after conforming to the proposed standards should be used for green belt development. The remaining treated effluent should be discharged into Sengar River about 08 kms away from the plant in a closed pipeline through a well-defined diffuser at a point where dispersion of effluent is rapid and ensures minimum impact on the aquatic ecology.	The wastewater generated is treated in the wastewater treatment plant. Part of the treated wastewater, meeting the norms, is used for horticulture purpose and balance water is discharged to Sengar river through 8 km long closed pipeline at the end of which is specially designed diffuser arrangement along stream bed to ensure thorough mixing.
67	(ix)	The company shall obtain necessary approval from the State Irrigation Department to meet the additional water requirement from the existing canal network.	Necessary approval from the State Irrigation Department has been obtained vide agreement no DG738976, dated 02/05/2017.
68	(x)	The solid waste will be generated in the form of 5 TPA of molecular sieve once in five year and Tar. The company shall incinerate Tar or use it for road making and design a landfill for disposal of molecular sieve.	GAIL Pata has been accorded Consolidated Consent and Authorization from Uttar Pradesh Pollution Control Board vide Authorization No. 191217/UPPCB/ KanpurDehat(UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025. All the waste generated are suitably disposed in environment friendly manner as recommended in Hazardous Waste Authorisation.
69	(xi)	Green belt shall be provided to mitigate the effects of fugitive emissions all around the plant in a minimum of 25% of the plant area in consultation with DFO as per CPCB guidelines.	Green belt of adequate width and density has been provided all around the plant to mitigate the effects of fugitive emission. Presently 36% area of the premises has been developed as peripheral green belt/area with native species. Regular plantation of tree saplings in and around the plant complex is done

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			and also mass tree plantation programs are organized.
70	(xii)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers and Employees is done on a regular basis (6 monthly basis for workers and on annual basis for employees) and records maintained as per the Factories Act and OISD-GDN-166.
71	(xiii)	The Company shall implement all the recommendations made in the EIA /EMP report and risk assessment report.	All the recommendations made in the EIA /EMP report and risk assessment report are being suitably complied.
General Conditions:			
72	(i)	The project authorities must strictly adhere to the stipulations made by the Uttar Pradesh State Pollution Control Board and the State Government.	All the stipulations made by the State Pollution Control Board and the State Government are adhered to. Compliance to conditions of Consolidated Consent and Authorization are sent to the Uttar Pradesh Pollution Control Board.
73	(ii)	No further expansion or modernization in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	Any expansion of the plant is taken up only after obtaining prior approval of the Ministry. GAIL Pata has been accorded 6 ECs for different expansions as mentioned above (A, B, C, D, E & F).
74	(iii)	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	The gaseous emissions from various process units are monitored through advanced monitoring techniques and conform to the standard prescribed by the statutory authorities. Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is transmitted to CPCB and UPPCB through web based system. Mitigatory control methods have been adopted at design stage in order to reduce the load of gaseous emissions from process units. It is pertinent to mention here that GAIL, Pata uses Natural gas as fuel, which is one of the cleanest fuel available.
75	(iv)	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures	All sources of noise generation have been provided with suitable noise control measures including acoustic hoods, silencers, enclosures etc. as

		including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	applicable to maintain overall noise levels in and around the plant area within the standards. Noise levels are regularly monitored in ambient and work zone areas to ensure that noise levels are within prescribed standards.
76	(v)	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the project.	All applicable provisions of the manufacture, storage and import of hazardous chemicals rules, 1989 as amended on 3rd October 1994 and 6th January 2000 are suitably followed. All necessary approvals from Petroleum & Explosives Safety Organization have been obtained and are in place.
77	(vi)	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/ storage/ disposal of hazardous wastes.	All the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the latest Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 are strictly complied with. GAIL Pata has been accorded Hazardous waste authorization for collections / treatment / Storage / disposal of hazardous wastes by UPPCB vide letter no. 191217/UPPCB/ KanpurDehat(UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025.
78	(vii)	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Adequate dedicated funds are earmarked for the environmental protection measures and to implement the conditions stipulated by the Ministry of Environment & Forests as well as the State Government.
79	(viii)	The stipulated conditions will be monitored by the Regional Office of this Ministry at Lucknow/Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.	Six-monthly compliance status report on implementation status of the stipulated conditions along with monitored data is regularly submitted to the Regional Offices of MoEF&CC & CPCB and to the Uttar Pradesh Pollution Control Board.

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80	(ix)	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in. This should 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 should be forwarded to the Regional office	The matter was suitably advertised in the local newspapers that are widely circulated in the region as per requirement.
81	(x)	The Project Authorities should 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 commencing the land development work.	Suitable information as required was communicated to the concerned agencies.

Name of the Project: Expansion of Petrochemical Complex project **Project Code:** NIL
Clearance Number: J-11011/595/2010-IA II (I), Dated 23/05/2012
Period of Compliance: April 2024 to September 2024

Sr. No.	Cond. No.	Conditions	Compliance Status
Specific Conditions:			
82	(i)	All the specific conditions and general conditions specified in the environmental clearances letters accorded vide Ministry's letter nos. J-11011//22/90-IA.II (I) dated 30th March, 1992, J-11011/29/96-IA.II (I) dated 16th January, 1997, J-11011/237/2003-IA.II (I) dated 19th April, 2004 and J-11011/143/2004-IA.II (I) dated 12th January, 2005 should be implemented.	All the specific conditions and general conditions specified in the environmental clearances letters accorded are implemented.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
83	(ii)	M/s GAIL (India) Limited shall comply with the new standards/norms prescribed for petrochemical industry notified under the Environment (Protection) Rules, 1986.	M/s GAIL (India) Limited is complying with the new standards/norms as prescribed for petrochemical industry notified under the Environment (Protection) Rules, 1986.
84	(iii)	The process emissions (Particulate matter, SO_2, NO_x, HC, CO and VOCs) from various units shall conform to all standards prescribed by CPCB / U.P. Pollution Control Board (UPPCB) from time to time. At no time, the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack emissions shall be monitored regularly.	The gaseous emissions from various process units are monitored through advanced monitoring techniques and conform to the standard prescribed for petrochemical industry notified under the Environment (Protection) Rules, 1986. Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is transmitted to CPCB and UPPCB through web based system. Mitigatory control methods have been adopted at design stage in order to reduce the load of gaseous emissions from process units. It is always ensured that in any such event of failure of pollution control system(s), the respective unit is not restarted until the control measures are rectified to achieve the desired efficiency. However, it is pertinent to mention here that GAIL, Pata uses Natural gas as fuel, which is one of the cleanest fuel available.
85	(iv)	OISD guidelines shall be followed for minimum distance between various units.	Minimum distance between various units is ensured as per the OISD-STD-118.
86	(v)	Low NO_x burner shall be installed to control NO_x emissions.	Low NO_x burners are used in all the Furnaces and Boilers.
87	(vi)	As proposed, vapor recovery system shall be provided for product loading gantry.	The product loading gantry is connected to the product sphere in closed circuit through the vapour arm connected to the tanker.
88	(vii)	Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry vide G.S.R. No. 826 (E) dated 16th September, 2009.	Ambient air quality data is collected as per NAAQES standards notified by the Ministry vide G.S.R. No. 826 (E) dated 16th September, 2009.

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
89	(viii)	In-plant control and monitoring measures for checking fugitive emissions from all the vulnerable sources should be provided. Adequate dust suppression systems with water spray should be provided for storage yard, junction houses. Raw material loading and unloading area should be covered and also provided with water spraying system. Fugitive emissions in the work zone environment, product, raw materials storage area etc. should be regularly monitored and records maintained. The emissions should conform to the limits stipulated by the UPPCB.	Fugitive emissions in all the areas of the plant are monitored and controlled through Leak Detection and Repair (LDAR) program as per OISD-GDN-224. In addition, LEL indicators & open path gas detection system have been provided in storage and process areas for detection of any hydrocarbon leakages. Raw material used in the plant is natural gas which is received through cross country pipeline and remains in closed system and as such there is no requirement of any dust suppression system.
90	(ix)	Steps shall be taken to minimize fugitive emissions. Monitoring of fugitive emissions shall be carried out as per guidelines of CPCB by fugitive emissions detector and report shall be submitted to the Ministry's Regional Office at Lucknow.	Fugitive emissions are monitored and controlled through Leak Detection and Repair (LDAR) program as per guidelines of CPCB and OISD-GDN-224. Summary Report of the LDAR monitoring of Q-1 and Q-2 of FY 2024-25 is enclosed as Annexure-3. All the leaks have been suitably attended.
91	(x)	Continuous ambient air quality monitoring stations for PM10, SO2, NOx, CO, HC and VOCs shall be set up in the petrochemical complex in consultation with CPCB/UPPCB. Unit shall follow CPCB/MoEF calibration protocol for the calibration of continuous stack monitoring and ambient air quality monitoring analyzer installed in all stations. Data of stack monitoring and ambient air shall be displayed on web as well as outside the premises at prominent place for public viewing. 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, the respective Zonal Office of CPCB and UPPCB.	Five fixed continuous ambient air quality monitoring stations have been setup in addition to 1 No. Mobile Van for real time monitoring of SO_2, NO_x, Total Hydrocarbons, CO, PM_{10}, $PM_{2.5}$ and VOCs. All the stacks of the plant are equipped with automatic stack emission monitoring equipment i.e. Online Continuous Emission Monitoring System (OCEMS). Calibration of all the monitoring equipment is carried out as per prescribed protocol. Monitored data is displayed outside the premises at prominent place for public viewing and also uploaded on company's website and updated periodically. Data of stack and ambient air monitoring for the period April 2024 to September 2024 is enclosed as Annexure-1.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
92	(xi)	A proper leak detection and repair (LDAR) Program shall be prepared and implemented. Focus shall be given for prevention of fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. A preventive maintenance schedule for each unit shall be prepared and adhered to.	Fugitive emissions are monitored and controlled through Leak Detection and Repair (LDAR) program as per OISD-GDN-224. A preventive maintenance schedule for pumps valves etc. exists and the same is adhered to.
93	(xii)	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.	The gaseous emissions from DG sets are dispersed through adequate stack height as per CPCB standards. Also acoustic enclosures are provided to the DG sets to mitigate the noise pollution.
94	(xiii)	Continuous monitoring system for VOCs at all important places/areas shall be ensured. When monitoring results indicate above permissible limits, effective measures shall be taken immediately.	LEL indicators & open path gas detection system have been provided in storage and process areas for detection of any hydrocarbon leakages.
95	(xiv)	Additional fresh water requirement from canal shall not exceed 1020 m^3/hr and prior permission shall be obtained from the concerned agency. No ground water shall be used.	Necessary approval from the State Irrigation Department has been obtained vide agreement no DG738976, dated 02/05/2017. The water consumption for the plant is completely met through Canal water (Etawah Branch of Lower Ganga Canal system through Burhadana Distributory). No ground water is used in the complex.
96	(xv)	Additional industrial effluent generation due to proposed expansion shall not exceed 64 m^3/hr. Industrial effluents including existing (214 m^3/hr) shall be segregated and treated in the ETP. As proposed, treated effluent (50 m^3/hr) shall be recycled and reused within factory premises. Remaining treated effluent shall be discharged into Sengar River after obtaining prior permission from the UPPCB and meeting the norms prescribed. Water quality of treated effluent should be monitored regularly. Online TOC analyzer, pH meter and	Waste Water Treatment plant having 2 nos. 150 m^3/hr capacity chains is functional for treating combined effluents from various process units. Necessary augmentation to the old ETP Plant has been incorporated with respect to additional waste water generation from the expansion project. Maximum treated water is recycled and reused for horticulture purposes. Balanced treated water is discharged to Sengar river. Necessary approval from UPPCB has been obtained. The treated water Quality is monitored regularly through Online Water Analyser and the flow meter. Also,

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		flow meter shall be installed to monitor the treated water quality before discharge into River. As proposed, sewage shall be transferred to aeration tank along with process wastewater.	parameters of online effluent quality monitoring system are connected with CPCB & UPPCB servers. The sewage water is channelized to the aeration tank of wastewater treatment plant along with Process waste water for further treatment.
97	(xvi)	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Separate storm water drain exists. It has been ensured that process effluent and other waste water are not mixed with storm water. Contaminated Storm Water is treated in Waste Water Treatment plant and is passed through guard pond.
98	(xvii)	The company should obtain authorization for collection, storage and disposal of hazardous waste under the hazardous waste (management, handling and trans-boundary movement) rules, 2008 and amended as on date for management of hazardous wastes and prior permission from UPPCB should be obtained for disposal of solid/hazardous waste in TSDF. Measures should be taken for firefighting facilities in case of emergency. Membership of TSDF for hazardous waste disposal should be obtained and submitted to the regional office at Lucknow.	GAIL Pata has been accorded Consolidated Consent and Authorization from Uttar Pradesh Pollution Control Board vide Authorization No. 191217/UPPCB/ KanpurDehat(UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025. All Hazardous wastes are disposed in line with the recommendations of the hazardous waste authorization accorded by the UPPCB. Firefighting facility is in place at GAIL Pata to handle any emergency. GAIL, Pata is also a permanent member of Uttar Pradesh Waste Management Project (membership no. UPWMP-KNP-HzW – CHW-TSDF – 1268) (Copy enclosed as Annexure-4) for utilizing their common hazardous waste treatment storage disposal facility (CHW-TSDF) to dispose hazardous waste safely & securely and has already been submitted to the regional office.
99	(xviii)	Existing captive secured landfill site shall be designed as per CPCB guidelines. A performance evaluation study for the existing captive secured landfill site shall be carried out and report shall be submitted to the respective regional office of the MoEF, CPCB and UPPCB within three months. All the	Secured landfill site is not in use. However, a scientific solid waste management facility has been developed for intermediate storage of the waste to ensure timely disposal to authorized agencies.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		recommendations made in the study shall be implemented.	
100	(xix)	Piezometer wells shall be installed around secured landfill. Ground water monitoring shall be carried out in every three months and trend analysis shall be carried out and report shall be sent to the CPCB and UPPCB.	Secured landfill site is not in use. However, Piezometer wells are installed for regular sampling and analysis of ground water along with depth by third party environment monitoring agency. Ground water quality monitoring report for the period April 2024 to September 2024, monitored by MoEF&CC approved and NABL accredited third party is enclosed as Annexure-5.
101	xx	Spent catalyst and bottom tank sludge shall be sent to authorized re-processors/ recyclers.	Spent catalysts and Bottom tank sludge are disposed as per recommendations of hazardous waste authorization accorded by UPPCB.
102	(xxi)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in the material handling. Firefighting system should be as per the OISD norms. All the OISD standards shall be followed.	Protection against all Fire Hazards is in place. Firefighting systems are in line as per the OISD-GDN-115 & OISD-GDN-116.
103	(xxii)	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Handling, Manufacturing and storage of all hazardous chemicals are carried out in accordance with the manufacture, storage and import of hazardous chemicals rules, 1989 as amended. Also, Transportation of Hazardous Chemicals is carried out as per the Motor Vehicle Act (MVA), 1989.
104	(xxiii)	The company shall undertake following waste minimization measures:- a) Metering and control of quantities of active ingredients to minimize waste. b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c) Use of automated filling to minimize spillage	a) Complied. Metering and control of quantities of active ingredients is done in order to minimize waste generation. b) Complied. Byproducts generated are used in process to the extent possible or sold to customers. c) Complied. Automated filling is being done to minimize spillage.

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		d) Use of closed Feed system into batch reactors. e) Venting equipment through vapor recovery system f) Use of high pressure hoses for equipment cleaning to reduce wastewater generation.	d) Not Applicable e) Complied. Loading of all liquid products is carried out through vapor recovery system. f) Complied. Cleaning works are carried out using high pressure hoses.
105	(xxiv)	Green belt shall be developed in 33 % area to mitigate the effects of fugitive emissions all around the plant as per CPCB guidelines in consultation with the local DFO. Thick greenbelt with suitable plant species shall be developed around the proposed distillery to mitigate the odor problem.	Green belt of adequate width and density has been provided all around the plant to mitigate the effects of fugitive emission as well as odour if any. Presently 36% area of the premises has been developed as peripheral green belt/area with native species. Regular plantation of tree saplings in and around the plant complex is done and also mass tree plantation programs are organized.
106	(xxv)	Occupational health surveillance program shall be undertaken as regular exercise for all the employees. The first aid facilities in the occupational health center shall be strengthened and the regular medical test records of each employee shall be maintained separately.	Occupational Health Surveillance of the workers and Employees is done on a regular basis (6 monthly basis for workers and on annual basis for employees) and records maintained as per the Factories Act and OISD-GDN-166. The first aid facilities in the occupational health center are regularly reviewed and strengthened as per requirement.
107	(xxvi)	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines are implemented.
108	(xxvii)	All the commitments made during the public hearing/ public consultation meeting held on 5th September, 2011 should be satisfactorily implemented and adequate budget provision should be made accordingly.	All the commitments made during the public hearing/ public consultation meeting held on 5th September, 2011 have been suitably implemented.
109	(xxviii)	Company shall prepare project specific environmental manual and a copy shall be made available at the project site for compliance.	Project specific environmental manual and procedures are in place.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
110	(xxix)	Company should adopt corporate environment policy as per the Ministry's O.M No J-11013/41/2006-IA.II (I) dated 26th April, 2011 and implemented. Under Corporate Social Responsibility (CSR), sufficient budgetary provision should be made for health improvement, education, water and electricity supply etc. in and around the project.	Corporate Sustainable Development Policy and site level Environment Policy exists. GAIL has allocated an annual budget of 2 % of the Average Net Profit during the three immediately preceding financial years for Corporate Social Responsibility (CSR) activities, which is effectively used for carefully chosen programs in the field of community development, education, infrastructure, health care, skill development and environment & sanitation. Socially useful programs have been undertaken in GAIL since its inception in and around the areas adjoining its major work centers.
111	(xxx)	Provision shall be made for the housing for construction labor 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, crèche etc. the housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.	The site has been fully developed and stabilized. All necessary measures are taken in respect of sanitation facilities, hygiene etc. for workers. Mostly Local laborers are deployed to the extent possible.

Sr. No.	Cond. No.	Conditions	Compliance Status
General Conditions			
112	(i)	The project authorities shall strictly adhere to the stipulations made by the U.P Pollution Control Board (UPPCB)	All the stipulations made by the Uttar Pradesh Pollution Control Board are adhered to.
113	(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to the Ministry for clearance, a fresh	Any expansion of the plant is taken up only after obtaining prior approval of the Ministry. GAIL Pata has been accorded 6 ECs for different expansions as mentioned above (A, B, C, D, E & F).

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	
114	(iii)	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.	Five fixed real time ambient air quality monitoring station and Two third party ambient air quality monitoring stations (within and outside the premises) have been setup. In addition, 1 No. Mobile Van having real time ambient air quality monitoring station is also in use for monitoring of ambient air quality. The locations covered by the stations have been fixed considering location of existing stacks, wind direction and other topographical features.
115	(iv)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time)	All sources of noise generation have been provided with suitable noise control measures including acoustic hoods, silencers, enclosures etc. as applicable to maintain overall noise levels in and around the plant area within the standards. Noise levels are regularly monitored in ambient and work zone areas to ensure that noise levels are within prescribed standards.
116	(v)	The company shall harvest rainwater from the rooftops 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 water.	Rain Water harvesting measures have been implemented in all the major buildings at GAIL, Pata for recharging of ground water table. In addition, a natural pond inside the premises is used for rain water harvesting for utilization of water from the pond as per requirement.
116	(vi)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all	Training is imparted to the employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees are also undertaken on regular basis.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		employees on handling of chemicals shall be imparted.	
118	(vii)	The company shall also comply with all the environmental protection measures and safeguards proposed in the document submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.	All the environmental protection measures and safeguards are being complied.
119	(viii)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.	GAIL has allocated an annual budget of 2 % of the Average Net Profit during the three immediately preceding financial years for Corporate Social Responsibility (CSR) activities, which is effectively used for carefully chosen programs in the field of community development, education, infrastructure, health care, skill development and environment & sanitation. Socially useful programs are undertaken by involving local villages and administration.
120	(ix)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	GAIL Pata regularly undertakes developmental and welfare measures in the project area for overall improvement.
121	(x)	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the environmental management and monitoring functions.	A full-fledged Environmental Management Cell is in place to undertake environment and sustainable development related functions. Full-fledged NABL accredited Laboratory set up also exists in the plant premises under the supervision of competent technical personnel.
122	(xi)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the state government along with the	Adequate dedicated funds are earmarked for the environmental protection measures and to implement the conditions stipulated by the Ministry of Environment & Forests as well as the State Government.

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		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.	
123	(xii)	A copy of the clearance letter shall be sent by the project proponent to concerned panchayat, Zila Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/representations, if any were received while processing the proposal.	A copy of the clearance letter was sent to the concerned panchayat.
124	(xiii)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated Environmental Clearance including results of monitored data.	Six monthly reports on the status of compliance of the stipulated Environmental Clearance including results of monitored data is regularly submitted.
125	(xiv)	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 by e-mail.	The environmental statement for each financial year ending 31st March in Form-V is submitted to the Uttar Pradesh Pollution Control Board. A copy of the same is also uploaded on the website of the company along with the status of compliance of environmental clearance conditions and also sent to the Regional Office of MoEF&CC by e-mail. Copy of the Environmental statement for the financial year ending 31st March 2024 is enclosed as Annexure-6.
126	(xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and the copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://envfor.nic.in. 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	The matter was suitably advertised in the local newspapers that are widely circulated in the region as per requirement and a copy of the same was also forwarded to the concerned Regional Office of the Ministry.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		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.	
127	(xvi)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and the final approval of the project by the concerned authorities and the date of start of the project.	Suitable information as required was communicated to the concerned agencies.

Name of the Project: Polypropylene Expansion Project **Project Code:** NIL
Clearance Number: J-11011/595/2010-IA II (I), Dated 16/10/2020
Period of Compliance: April 2024 to September 2024

Sr. No.	Cond. No.	Conditions	Compliance Status
Specific Conditions:			
128	(i)	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, and risk mitigation measures relating to the project shall be implemented.	All the environmental protection measures and safeguards are being fulfilled.
129	(ii)	As committed by the Project proponent, 75 % of the effluent discharged to the river shall be recovered and reused to reduce the fresh water requirement. The total effluent proposed to discharge to the river is 164 cum/hr, out of which 75 % shall be treated through ETP/RO system and reused in the plant/process. Only the remaining 25 % the effluent shall be sent for river discharge after meeting the prescribe standards.	In compliance to this specific condition, action for implementation of following is under progress: • Augmentation of Existing WWTP Equipment's to enhance the efficiency of the treatment units. • To install one no. additional chain of WWTP of capacity 150 m^3/hr. • To install a RO based recycle plant of capacity 450 m^3/hr. • To install a ZLD Plant of 18 m^3/hr. to cater to RO reject.
130	(iii)	Total fresh water requirement shall not exceed 2040 cum/hr, proposed to be met from water supply from	Necessary permission from the State Irrigation Department is already available vide agreement no.

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		the Irrigation Department, Etawah Zone. Necessary permission in this regard shall be obtained from the concerned regulatory authority. The fresh water requirement shall be reduced after installation of rainwater harvesting system in the unit/project area.	DG738976, dated 02/05/2017 (Copy enclosed as Annexure-7). Additional rainwater harvesting structures are under construction in the upcoming Polypropylene unit/project area.
131	(iv)	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MoEF&CC. Outcome from the report to be implemented for conservation scheme.	Comprehensive water audit of GAIL Pata has been carried out by M/s CII Triveni Water Institute, New Delhi during August 2024. The outcome from the report is under implementation.
132	(v)	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Separate storm water drain exists. It is ensured that process effluent and other waste water are not mixed with storm water. Contaminated Storm Water is treated in Waste Water Treatment plant and is passed through guard pond. Action for construction of a new storm water guard pond of capacity 47500 m^3 is under progress.
133	(vi)	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.	Hazardous chemicals being used at GAIL Pata are stored in tanks, tank farms, drums, carboys etc. Flame arresters are provided on tank farm, and solvents are being transferred through pumps. Noted for compliance for new expansion project.
134	(vii)	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry.	All the generated hazardous wastes are being disposed of as per the directions of Hazardous Waste Authorization accorded from Uttar Pradesh Pollution Control Board vide letter no. 191217/UPPCB/ KanpurDehat (UPPCBRO)/CTO/both /AURRAIYA/2023, dated 04.12.2023 and is valid up to 31.12.2025.

Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
			There is no generation of ash from the boilers as natural gas is the source of fuel. Noted for compliance for new expansion project.
135	(viii)	Regular VOC monitoring shall be done at vulnerable points.	VOC monitoring is carried out and controlled through Leak Detection and Repair (LDAR) program as per OISD-GDN-224. Noted for compliance for new expansion project.
136	(ix)	The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.	All the generated hazardous wastes are being disposed off as per the directions of Hazardous Waste Authorization accorded by Uttar Pradesh Pollution Control Board vide letter no. 191217/UPPCB/ KanpurDehat (UPPCBRO) /CTO/both /AURRAIYA/ 2023, dated 04.12.2023 and is valid up to 31.12.2025. The oily sludge is stored in HDPE lined pits inside the plant premises before disposal.
137	(x)	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Oil catchers/oil traps are already available at all possible locations in storm water drainage system inside the factory premises. Noted for compliance for new expansion project.
138	(xi)	The company shall undertake waste minimization measures as below: a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapor recovery system.	a. Complied. Metering and control of quantities of active ingredients is done in order to minimize waste generation. b. Complied. Byproducts generated are used in process to the extent possible or sold to customers. c. Complied. Automated filling is being done to minimize spillage. d. Not Applicable e. Complied. Loading of all liquid products is carried out through vapor recovery system.

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		f. Use of high pressure hoses for equipment cleaning etc. to reduce wastewater generation.	f. Complied. Cleaning works are carried out using high pressure hoses.
139	(xii)	The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.	Green belt of adequate width and density has been provided all around the plant premises. More than 33% area of the premises has been developed as peripheral green belt/area with native species. Regular plantation of tree saplings in and around the plant complex is done and also mass tree plantation programs are organized.
140	(xiii)	As proposed, Rs 4.77 crores shall be allocated for Corporate Environment Responsibility (CER) shall be utilized for meeting the commitment of the socio-economic issues and as per the proposed action plan. The CER plan shall be completed within three year of expansion of the project.	An amount of Rs 4.77 crores has been allocated for Corporate Environment Responsibility (CER) and is being utilized for meeting the commitment of the socio-economic issues.
141	(xiv)	The project proponent shall ensure 70% of the employment to the local people, as per the applicable law. The project proponent shall set up a skill development center/provide skill development training to village people.	It is being ensured that maximum employment is provided to the local people as per the applicable law. Necessary skill development center has been established and skill development training is also imparted to village people.
142	(xv)	A separate Environmental Management Cell (having qualified person with Environmental Science/ Environmental Engineering/ specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	A full-fledged Environmental Management Cell is in place to undertake environment and sustainable development related functions. Full-fledged NABL accredited Laboratory set up also exists in the plant premises under the supervision of competent technical personnel.
143	(xvi)	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.	Protection against all Fire Hazards is in place. Firefighting systems are in line as per the OISD-GDN-115 & OISD-GDN-116. Noted for compliance for new expansion project.
144	(xvii)	Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue	Online Continuous Emission Monitoring System has been provided in all the stacks and real time data is transmitted

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	to CPCB and UPPCB through web based system. Continuous online monitoring of the effluent parameters like pH, BOD, COD, TSS, TOC & Flow is done and data is transmitted to CPCB and UPPCB on real time basis through web based server systems. No additional stack is envisaged for expansion project.
145	(xviii)	PP to set up occupational health Centre for surveillance of the worker's health within and outside the plant on a regular basis. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.	An occupational health center exists within the complex. Occupational Health Surveillance of the workers and Employees is done on a regular basis (6 monthly basis for workers and on annual basis for employees) and records maintained as per the Factories Act and OISD-GDN-166. The health data is suitably used in deploying the duties of the workers. All workers & employees are provided with required safety kits/mask for personal protection.
146	(xix)	The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended time to time shall be followed.	The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended is being followed. Noted for compliance for new expansion project.
147	(xx)	Recommendations of mitigation measures from possible accident shall be implemented based on Risk Assessment studies conducted for worst case scenarios using latest techniques.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines are being implemented suitably.
148	(xxi)	The project proponent shall develop R & D facilities to develop their own technologies for propylene and polypropylene processing.	A dedicated Corporate R&D department exist in GAIL (India) Limited which also caters to the research and development work related to GAIL Pata.

Sr. No.	Cond. No.	Conditions	Compliance Status
General Conditions			
149	(i)	No further expansion or modifications in the plant, other	The condition is noted. Any expansion of the plant is taken up only after

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. 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/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	obtaining prior approval of the Ministry. Noted for compliance for new expansion project.
150	(ii)	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.	Energy source for lighting purpose shall be LED based lighting in the upcoming project. Also, Phase wise replacement of incandescent lamps with LEDs is under progress for the existing facility.
151	(iii)	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).	All sources of noise generation have been provided with suitable noise control measures including acoustic hoods, silencers, enclosures etc. as applicable to maintain overall noise levels in and around the plant area within the standards. Noise levels are regularly monitored in ambient and work zone areas to ensure that noise levels are within prescribed standards. Noted for compliance for new expansion project.
152	(iv)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco-developmental measures including community welfare measures in the	All relevant measures for improving the socio-economic conditions of the surrounding area along with CER activities are being undertaken by involving local villages and administration.

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		project area for the overall improvement of the environment.	
153	(v)	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.	The dedicated funds are earmarked for the environmental protection measures 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.
154	(vi)	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	The condition is not applicable, as there were no suggestions/ representations.
155	(vii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.	Six monthly reports on the status of compliance of the stipulated Environmental Clearance including results of monitored data is regularly submitted to the Regional Offices of MoEF&CC and CPCB and to the UPPCB and the same is also uploaded on the website of the company.
156	(viii)	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	The environmental statement for each financial year ending 31st March in Form-V is submitted to the Uttar Pradesh Pollution Control Board. A copy of the same is also uploaded on the website of the company along with the status of compliance of environmental clearance conditions and also sent to the Regional Office of

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Compliance status to conditions of Environment Clearances at GAIL (India) Limited, Pata, U.P.

Sr. No.	Cond. No.	Conditions	Compliance Status
		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 e-mail.	MoEF&CC by e-mail. Copy of the Environmental statement for the financial year ending 31st March 2024 is enclosed as Annexure-6.
157	(ix)	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 and at https://parivesh.nic.in/. 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.	The matter was suitably advertised in the local newspapers that are widely circulated in the region as per requirement and forwarded to the concerned Regional Office of the Ministry. Copy of the same is enclosed as Annexure-8.
158	(x)	The project authorities shall inform the Regional Office as well 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.	Noted for compliance.
159	(xi)	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	The condition is noted.

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Annexure-1

Stack Monitoring and Ambient Air Quality Monitoring Report for the period April 2024 to September 2024

TABLE-2a: Ambient Air Quality Monitoring Results –AAQ-1: Inside the Complex- PC-1 AAQMS-02

Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO2 (µg/m³)	NO2 (µg/m³)	CO (mg/m³)	NH3 (µg/m³)	O3 (µg/m³)	Lead (µg/m³)	Benzene (µg/m³)	Benzo (a) Pyrene (ng/m³)	Arsenic (As), (ng/m³)	Nickel (Ni), (ng/m³)
01.04.2024	75.3	43.0	13.5	18.9	0.44	11.5	2.7	<0.1	2.4	<0.5	<1.0	<5.0
04.04.2024	72.6	41.7	12.2	15.6	0.51	15.1	3.0	<0.1	2.6	<0.5	<1.0	<5.0
09.04.2024	70.2	37.3	13.4	17.4	0.43	15.7	2.8	<0.1	2.5	<0.5	<1.0	<5.0
11.04.2024	69.2	33.7	11.8	20.7	0.46	14.5	2.6	<0.1	2.5	<0.5	<1.0	<5.0
15.04.2024	76.4	40.0	11.8	20.5	0.59	14.8	2.6	<0.1	2.6	<0.5	<1.0	<5.0
18.04.2024	73.1	39.0	21.8	20.6	0.54	13.9	2.4	<0.1	2.9	<0.5	<1.0	<5.0
23.04.2024	75.4	38.4	15.6	16.2	0.57	15.3	2.5	<0.1	2.7	<0.5	<1.0	<5.0
25.04.2024	65.5	33.8	17.5	21.6	0.53	13.9	2.8	<0.1	3.3	<0.5	<1.0	<5.0
29.04.2024	67.9	32.6	12.8	20.4	0.41	13.0	3.0	<0.1	2.5	<0.5	<1.0	<5.0
Min	***65.5***	***32.6***	***11.8***	***15.6***	***0.41***	***11.5***	***2.4***	***<0.1***	***2.4***	***<0.5***	***<1.0***	***<5.0***
Max	***76.4***	***43.0***	***21.8***	***21.6***	***0.59***	***15.7***	***3.0***	***<0.1***	***3.3***	***<0.5***	***<1.0***	***<5.0***
Mean	***71.7***	***37.7***	***14.5***	***19.1***	***0.50***	***14.2***	***2.7***	***<0.1***	***2.7***	***<0.5***	***<1.0***	***<5.0***
98%ile	***76.3***	***42.8***	***21.1***	***21.4***	***0.59***	***15.7***	***3.0***	***<0.1***	***3.2***	***<0.5***	***<1.0***	***<5.0***
NAAQ Standards	**100**	**60**	**80**	**80**	**2**	**400**	**100**	**1**	**5**	**1**	**6**	**20**

Verified By

10/05/24

Neelima Dalvi
Technical Manager

Issued By

10/05/24

Shradha Kere
Quality Manager

Source Emission Monitoring: Table 5.1A

S. No	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm^3/hr	Stack gas temperature. °C	Particulate Matter (mg/Nm^3)	Sulphur Dioxide (mg/Nm^3)	Oxides of Nitrogen (mg/Nm^3)	Carbon Monoxide (mg/Nm^3)	Oxygen (%)
1	LLDPE-1 -Dowtherm A	30.04.2024	17.53	36901.24	256	4.23	16.7	48.9	13.4	6.8
2	LLDPE-1 -Dowtherm B	30.04.2024	17.16	36412.04	252	4.14	15.4	52.8	21.3	7.2
3	GCU-1- FF-101	27.04.2024	14.92	69479.66	134	4.12	14.7	41.0	20.5	6.3
4	GCU-1- FF-102	27.04.2024	14.80	69400.60	131	4.16	16.0	35.2	21.3	6.5
5	GCU-1- FF-103	27.04.2024	14.68	68528.81	133	4.20	21.6	31.3	17.6	7.1
6	GCU-1- FF-104	27.04.2024	15.99	73679.78	136	4.35	15.4	29.3	15.4	6.8
7	GCU-1- FF-105	Shutdown	-	-	-	-	-	-	-	-
8	GCU-1- FF-106	Shutdown	-	-	-	-	-	-	-	-
9	Power Plant-1- UB-1	30.04.2024	13.64	258471.05	127	4.16	13.5	35.2	20.2	6.8
10	Power Plant-1- UB-2	22.04.2024	14.78	277946.61	138	4.13	14.7	50.8	21.3	6.9
11	Power Plant-1- UB-3	22.04.2024	15.09	280960.24	134	4.04	16.7	43.0	21.5	6.1
12	HRSG- 1	29.04.2024	15.31	483196.57	154	4.00	20.5	62.5	19.6	6.2
13	HRSG- 2	29.04.2024	15.32	486727.49	151	4.23	19.9	52.8	18.4	6.3
Standards						**10**	**50**	**350**	**150**	--
14	Power Plant-2- UB-1	27.04.2024	14.34	271624.53	127	4.00	18.0	48.9	20.5	5.8
15	Power Plant-2- UB-2	26.04.2024	14.74	277905.32	139	4.18	15.4	43.0	22.5	5.1
16	GCU-2- FF-110	Shutdown	-	-	-	-	-	-	-	-
17	GCU-2- FF-120	29.04.2024	14.52	161858.52	135	4.22	15.4	39.1	22.1	6.2
18	GCU-2- FF-130	29.04.2024	15.49	171236.58	130	4.13	18.0	41.0	19.6	7.2
Standards						**5**	**50**	**250**	**100**	--

Verified By
10/5/24
Neelima Dalvi
Technical Manager

Issued By
10/5/24
Shradha Kere
Quality Manager

TABLE-2a: Ambient Air Quality Monitoring Results –AAQ-1: Inside the Complex- PC-2 AAQMS-02

Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO2 (µg/m³)	NO2 (µg/m³)	CO (mg/m³)	NH3 (µg/m³)	O3 (µg/m³)	Lead (µg/m³)	Benzene (µg/m³)	Benzo (a) Pyrene (ng/m³)	Arsenic (As), (ng/m³)	Nickel (Ni), (ng/m³)
02.05.2024	78.4	45.3	13.5	19.9	0.44	12.1	2.8	<0.1	2.5	<0.5	<1.0	<5.0
06.05.2024	74.2	43.0	12.3	15.9	0.51	15.7	3.0	<0.1	2.6	<0.5	<1.0	<5.0
09.05.2024	73.1	38.1	14.0	17.8	0.43	15.7	2.9	<0.1	2.6	<0.5	<1.0	<5.0
14.05.2024	72.9	34.8	12.3	21.2	0.48	14.8	2.6	<0.1	2.7	<0.5	<1.0	<5.0
16.05.2024	80.4	40.0	11.8	21.2	0.6	15.2	2.7	<0.1	2.6	<0.5	<1.0	<5.0
20.05.2024	76.9	40.2	22.7	21.7	0.55	14.0	2.5	<0.1	3.0	<0.5	<1.0	<5.0
24.05.2024	75.4	39.2	15.7	16.4	0.59	15.6	2.5	<0.1	2.7	<0.5	<1.0	<5.0
27.05.2024	67.6	34.9	17.5	21.8	0.56	14.4	2.9	<0.1	3.4	<0.5	<1.0	<5.0
30.05.2024	70.0	34.3	13.4	21.5	0.41	13.3	3.1	<0.1	2.6	<0.5	<1.0	<5.0
Min	***67.6***	***34.3***	***11.8***	***15.9***	***0.41***	***12.1***	***2.5***	***<0.1***	***2.5***	***<0.5***	***<1.0***	***<5.0***
Max	***80.4***	***45.3***	***22.7***	***21.8***	***0.60***	***15.7***	***3.1***	***<0.1***	***3.4***	***<0.5***	***<1.0***	***<5.0***
Mean	***74.3***	***38.9***	***14.8***	***19.7***	***0.51***	***14.5***	***2.8***	***<0.1***	***2.7***	***<0.5***	***<1.0***	***<5.0***
98%ile	***80.1***	***44.9***	***21.9***	***21.8***	***0.60***	***15.7***	***3.1***	***<0.1***	***3.3***	***<0.5***	***<1.0***	***<5.0***
NAAQ Standards	**100**	**60**	**80**	**80**	**2**	**400**	**100**	**1**	**5**	**1**	**6**	**20**

Verified By
10/06/24
Neelima Dalvi
Technical Manager

NETEL (INDIA) LIMITED ★ NETEL RABALE ★ NAVI MUMBAI 400701

Issued By
10/6/24
Shradha Kere
Quality Manager

Source Emission Monitoring: Table 5.1A

S. No.	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm^3/hr	Stack gas temperature. ^oC	Particulate Matter (mg/Nm^3)	Sulphur Dioxide (mg/Nm^3)	Oxides of Nitrogen (mg/Nm^3)	Carbon Monoxide (mg/Nm^3)	Oxygen (%)
1	LLDPE-1 -Dowtherm A	22.05.2024	18.46	38646.47	259	4.7	18.6	54.7	14.1	6.8
2	LLDPE-1 -Dowtherm B	22.05.2024	17.66	37542.52	251	4.9	15.4	41.0	20.4	5.6
3	GCU-1- FF-101	21.05.2024	15.97	74147.52	135	4.9	14.7	48.9	21.3	5.9
4	GCU-1- FF-102	21.05.2024	16.05	74887.55	133	4.0	19.9	39.1	22.0	5.1
5	GCU-1- FF-103	21.05.2024	15.92	74466.45	132	4.3	21.6	37.1	19.4	5.6
6	GCU-1- FF-104	21.05.2024	15.48	72167.90	131	4.9	20.5	35.2	15.4	5.8
7	GCU-1- FF-105	--	-	-	-	-	-	-	-	-
8	GCU-1- FF-106	21.05.2024	16.21	75097.90	136	4.2	15.4	46.9	16.4	6.4
9	Power Plant-1- UB-1	--	-	-	-	-	-	-	-	-
10	Power Plant-1- UB-2	29.05.2024	16.11	305349.50	127	4.2	13.5	41.0	20.0	5.2
11	Power Plant-1- UB-3	29.05.2024	15.92	299321.82	130	4.0	16.7	46.9	19.4	5.9
12	HRSG- 1	15.05.2024	15.69	491632.42	153	4.1	17.3	52.8	21.2	5.6
13	HRSG- 2	15.05.2024	16.94	535835.95	157	4.2	14.7	46.9	21.3	5.4
Standards						**10**	**50**	**350**	**150**	--
14	Power Plant-2- UB-1	07.05.2024	16.03	305227.17	125	4.0	15.4	74.3	20.5	5.1
15	Power Plant-2- UB-2	07.05.2024	15.97	302682.64	127	4.3	16.7	46.9	16.2	7.2
16	GCU-2- FF-110	08.05.2024	15.93	174757.91	133	4.3	16.7	54.7	20.2	6.2
17	GCU-2- FF-120	08.05.2024	14.51	160022.12	131	4.0	13.5	44.9	21.3	6.8
18	GCU-2- FF-130	08.05.2024	14.78	161830.59	134	4.2	20.5	54.7	20.1	6.4
Standards						**5**	**50**	**250**	**100**	--

Verified By
10/5/24
Neelima Dalvi
Technical Manager

Issued By
10/5/24
Shradha Kere
Quality Manager

TABLE-2a: Ambient Air Quality Monitoring Results –AAQ-1: Inside the Complex- PC-1 AAQMS-01

Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO2 (µg/m³)	NO2 (µg/m³)	CO (mg/m³)	NH3 (µg/m³)	O3 (µg/m³)	Lead (µg/m³)	Benzene (µg/m³)	Benzo (a) Pyrene (ng/m³)	Arsenic (As), (ng/m³)	Nickel (Ni), (ng/m³)
03.06.2024	81.7	46.7	14.2	20.7	0.4	12.6	2.9	<0.1	2.5	<0.5	<1.0	<5.0
06.06.2024	78.1	43.9	12.8	16.4	0.5	16.2	3.1	<0.1	2.7	<0.5	<1.0	<5.0
10.06.2024	74.7	40.1	14.6	18.0	0.4	15.7	2.9	<0.1	2.6	<0.5	<1.0	<5.0
13.06.2024	75.2	35.5	12.7	21.8	0.5	15.6	2.7	<0.1	2.7	<0.5	<1.0	<5.0
19.06.2024	80.4	40.4	12.1	21.6	0.6	15.2	2.8	<0.1	2.7	<0.5	<1.0	<5.0
20.06.2024	77.7	41.1	23.2	22.2	0.6	14.5	2.7	<0.1	3.0	<0.5	<1.0	<5.0
24.06.2024	79.4	40.0	16.1	16.5	0.6	16.1	2.5	<0.1	2.8	<0.5	<1.0	<5.0
26.06.2024	70.4	35.6	18.4	22.9	0.6	15.0	3.0	<0.1	3.5	<0.5	<1.0	<5.0
28.06.2024	70.0	34.3	13.9	21.9	0.4	13.4	3.3	<0.1	2.6	<0.5	<1.0	<5.0
Min	**70.0**	**34.3**	**12.1**	**16.4**	**0.42**	**12.6**	**2.5**	**<0.1**	**2.5**	**<0.5**	**<1.0**	**<5.0**
Max	**81.7**	**46.7**	**23.2**	**22.9**	**0.62**	**16.2**	**3.3**	**<0.1**	**3.5**	**<0.5**	**<1.0**	**<5.0**
Mean	**76.4**	**39.7**	**15.3**	**20.2**	**0.52**	**14.9**	**2.9**	**<0.1**	**2.8**	**<0.5**	**<1.0**	**<5.0**
98%ile	**81.5**	**46.3**	**22.5**	**22.8**	**0.62**	**16.2**	**3.2**	**<0.1**	**3.5**	**<0.5**	**<1.0**	**<5.0**
NAAQ Standards	**100**	**60**	**80**	**80**	**2**	**400**	**100**	**1**	**5**	**1**	**6**	**20**

Reviewed by
10/07/24
Neelima Dalvi
Technical Manager

Authorised by
10/7/24
Shradha Kere
Quality Manager

Source Emission Monitoring: Table 5.1A

S. No.	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm^3/hr	Stack gas temperature. ^0C	Particulate Matter (mg/Nm^3)	Sulphur Dioxide (mg/Nm^3)	Oxides of Nitrogen (mg/Nm^3)	Carbon Monoxide (mg/Nm^3)	Oxygen (%)
1	LLDPE-1 -Dowtherm A	27.06.2024	18.22	38651.01	252	4.7	25.6	48.9	15.5	6.2
2	LLDPE-1 -Dowtherm B	27.06.2024	17.23	36976.34	246	4.5	32.1	35.2	18.8	5.6
3	GCU-1- FF-101	26.06.2024	15.55	72925.69	131	4.3	38.5	41.0	20.5	6.3
4	GCU-1- FF-102	26.06.2024	15.98	73.832.66	137	4.2	25.6	46.9	18.6	5.6
5	GCU-1- FF-103	26.06.2024	15.75	73700.83	132	4.1	21.6	50.8	18.2	5.2
6	GCU-1- FF-104	26.06.2024	15.28	71813.78	128	4.5	19.2	31.3	16.6	6.0
7	GCU-1- FF-105	--	-	-	-	-	-	-	-	-
8	GCU-1- FF-106	26.06.2024	16.03	73742.24	139	4.6	38.5	43.0	16.8	6.6
9	Power Plant-1- UB-1	--	-	-	-	-	-	-	-	-
10	Power Plant-1- UB-2	24.06.2024	15.86	298244.47	130	4.3	32.1	46.9	18.5	5.8
11	Power Plant-1- UB-3	--	-	-	-	-	-	-	-	-
12	HRSG- 1	07.06.2024	16.11	499133.93	162	4.4	25.6	48.9	20.0	6.7
13	HRSG- 2	07.06.2024	15.69	493912.4	155	3.9	19.2	43.0	16.2	6.2
Standards						**10**	**50**	**350**	**150**	--
14	Power Plant-2- UB-1	20.06.2024	15.88	298693.84	130	3.8	19.2	62.5	19.2	5.6
15	Power Plant-2- UB-2	20.06.2024	15.60	291718.94	125	4.1	25.6	41.0	22.2	6.8
16	GCU-2- FF-110	21.06.2024	15.65	173873.3	128	4.0	25.6	54.7	18.5	6.0
17	GCU-2- FF-120	21.06.2024	14.61	161861.05	129	4.4	32.1	31.3	17.6	6.5
18	GCU-2- FF-130	21.06.2024	14.98	165195.24	131	4.5	25.6	43.0	19.3	5.8
Standards						**5**	**50**	**250**	**100**	--

Reviewed by
10/6/24
Weelima Dalvi
Technical Manager

Authorised by
10/6/24
Shradha Kere
Quality Manager

TABLE-2a: Ambient Air Quality Monitoring Results –AAQ-1: Inside the Complex- PC-2 AAQMS-01

Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Lead (µg/m³)	Benzene (µg/m³)	Benzo (a) Pyrene (ng/m³)	Arsenic (As), (ng/m³)	Nickel (Ni), (ng/m³)
02.07.2024	75.9	33.5	10.4	18.2	0.33	14.5	3.7	<0.1	2.0	<0.5	<1.0	<5.0
04.07.2024	71.3	39.5	13.2	14.5	0.51	13.6	2.4	<0.1	3.1	<0.5	<1.0	<5.0
08.07.2024	82.4	41.3	15.3	16.3	0.39	13.8	1.8	<0.1	2.2	<0.5	<1.0	<5.0
11.07.2024	68.5	46.2	12.4	20.6	0.42	12.9	2.6	<0.1	1.8	<0.5	<1.0	<5.0
15.07.2024	83.2	34.3	11.8	22.5	0.62	15.2	3.4	<0.1	3.4	<0.5	<1.0	<5.0
18.07.2024	66.5	32.6	10.7	19.6	0.57	16.9	3.9	<0.1	2.5	<0.5	<1.0	<5.0
22.07.2024	75.6	37.8	9.4	16.2	0.48	14.9	2.8	<0.1	2.1	<0.5	<1.0	<5.0
25.07.2024	77.9	40.1	13.2	13.6	0.51	12.5	1.7	<0.1	3.0	<0.5	<1.0	<5.0
29.07.2024	82.6	44.5	12.6	18.7	0.39	14.8	3.4	<0.1	2.7	<0.5	<1.0	<5.0
Min	***66.5***	***32.6***	***9.4***	***13.6***	***0.33***	***12.5***	***1.7***	**<0.1**	***1.8***	**<0.5**	**<1.0**	**<5.0**
Max	***83.2***	***46.2***	***15.3***	***22.5***	***0.62***	***16.9***	***3.9***	**<0.1**	***3.4***	**<0.5**	**<1.0**	**<5.0**
Mean	***76.0***	***38.9***	***12.1***	***17.8***	***0.47***	***14.3***	***2.9***	**<0.1**	***2.5***	**<0.5**	**<1.0**	**<5.0**
98%ile	***83.1***	***45.9***	***15.0***	***22.2***	***0.61***	***16.6***	***3.9***	**<0.1**	***3.4***	**<0.5**	**<1.0**	**<5.0**
NAAQ Standard	**100**	**60**	**80**	**80**	**2**	**400**	**100**	**1**	**5**	**1**	**6**	**20**

Reviewed by

09/08/24

Neelima Dalvi
Technical Manager

Authorised by

09/08/24

Shradha Kere
Quality Manager

Source Emission Monitoring: Table 5.2

S. No.	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm^3/hr	Stack gas temperature. ^0C	Particulate Matter (mg/Nm^3)	Sulphur Dioxide (mg/Nm^3)	Oxides of Nitrogen (mg/Nm^3)	Carbon Monoxide (mg/Nm^3)	Oxygen (%)
1	LLDPE-1 -Dowtherm A	26.07.2024	16.74	35509.48	252	4.1	21.7	32.8	11.6	4.8
2	LLDPE-1 -Dowtherm B	26.07.2024	16.68	35183.00	255	3.8	29.5	42.7	15.8	5.3
3	GCU-1- FF-101	27.07.2024	14.70	68625.87	133	3.9	29.5	33.8	29.3	6.0
4	GCU-1- FF-102	27.07.2024	14.48	68256.07	129	4.7	26.3	40.5	21.6	4.8
5	GCU-1- FF-103	27.07.2024	14.86	69144.35	134	3.2	19.4	43.2	18.9	5.7
6	GCU-1- FF-104	27.07.2024	13.91	64231.74	135	4.1	23.8	38.2	17.6	5.9
7	GCU-1- FF-105	27.07.2024	14.09	66567.67	128	4.0	30.7	44.7	15.2	6.8
8	GCU-1- FF-106	--	-	-	-	-	-	-	-	-
9	Power Plant-1- UB-1	16.07.2024	14.28	272006.25	125	3.0	27.3	34.7	19.2	4.7
10	Power Plant-1- UB-2	--	-	-	-	-	-	-	-	-
11	Power Plant-1- UB-3	30.07.2024	14.68	277475.46	128	3.9	30.8	39.9	22.8	5.1
12	HRSG- 1	09.07.2024	16.05	499338.13	160	4.0	12.8	42.4	17.3	6.8
13	HRSG- 2	09.07.2024	15.17	491942.08	159	3.2	21.5	39.2	15.3	6.9
Standards						10	50	350	150	--
14	Power Plant-2- UB-1	04.07.2024	14.53	277401.30	124	4.7	21.3	44.9	17.3	5.1
15	Power Plant-2- UB-2	04.07.2024	14.47	274100.65	127	4.9	18.4	52.6	20.5	5.2
16	GCU-2- FF-110	17.07.2024	14.72	163175.85	129	3.7	17.9	37.9	12.9	5.9
17	GCU-2- FF-120	17.07.2024	14.39	158629.59	131	4.1	28.7	41.7	22.5	4.9
18	GCU-2- FF-130	17.07.2024	13.82	153503.72	128	5.2	25.1	32.2	18.8	5.3
Standards						5	50	250	100	--

Reviewed by
Neelima Dalvi
Technical Manager

Authorised by
Shradha Kere
Quality Manager

TABLE-2a: Ambient Air Quality Monitoring Results –AAQ-1: Inside the Complex- PC-1 AAQMS-03

Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Lead (µg/m³)	Benzene (µg/m³)	Benzo (a) Pyrene (ng/m³)	Arsenic (As), (ng/m³)	Nickel (Ni), (ng/m³)
01.08.2024	66.2	32.4	11.4	10.2	0.38	10.2	2.1	<0.1	1.7	<0.5	<1.0	<5.0
06.08.2024	73.4	44.3	12.4	14.2	0.46	16.3	3.5	<0.1	1.4	<0.5	<1.0	<5.0
08.08.2024	69.3	48.2	9.2	12.7	0.64	12.5	1.8	<0.1	2.8	<0.5	<1.0	<5.0
12.08.2024	72.4	31.4	13.2	15.7	0.57	9.5	2.7	<0.1	2.9	<0.5	<1.0	<5.0
14.08.2024	78.3	29.3	15.3	18.4	0.38	10.3	2.9	<0.1	2.2	<0.5	<1.0	<5.0
19.08.2024	76.3	37.2	17.3	20.5	0.42	14.2	2.4	<0.1	2.6	<0.5	<1.0	<5.0
22.08.2024	67.3	40.2	19.4	19.4	0.49	12.7	2.2	<0.1	3.2	<0.5	<1.0	<5.0
26.08.2024	71.3	28.3	14.8	16.4	0.52	18.9	3.0	<0.1	3.5	<0.5	<1.0	<5.0
28.08.2024	60.3	32.5	13.7	15.4	0.27	14.8	2.7	<0.1	2.1	<0.5	<1.0	<5.0
Min	***60.3***	***28.3***	***9.2***	***10.2***	***0.27***	***9.5***	***1.8***	**<0.1**	***1.4***	**<0.5**	**<1.0**	**<5.0**
Max	***78.3***	***48.2***	***19.4***	***20.5***	***0.64***	***18.9***	***3.5***	**<0.1**	***3.5***	**<0.5**	**<1.0**	**<5.0**
Mean	***70.5***	***36.0***	***14.1***	***15.9***	***0.46***	***13.3***	***2.6***	**<0.1**	***2.5***	**<0.5**	**<1.0**	**<5.0**
98%ile	***78.0***	***47.6***	***19.1***	***20.3***	***0.63***	***18.5***	***3.4***	**<0.1**	***3.5***	**<0.5**	**<1.0**	**<5.0**
NAAQ Standard	**100**	**60**	**80**	**80**	**2**	**400**	**100**	**1**	**5**	**1**	**6**	**20**

Reviewed by

18/09/24

Neelima Dalvi
Technical Manager

NETEL (INDIA) LIMITED RABALE NAVI MUMBAI 400701

Authorised by

10/9/24

Shradha Kere
Quality Manager

Source Emission Monitoring: Table 5.1A

S. No.	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm^3/hr	Stack gas temperature. ^0C	Particulate Matter (mg/Nm^3)	Sulphur Dioxide (mg/Nm^3)	Oxides of Nitrogen (mg/Nm^3)	Carbon Monoxide (mg/Nm^3)	Oxygen (%)
1	LLDPE-1 -Dowtherm A	30.08.2024	16.13	34293.13	251	4.8	19.8	28.3	19.3	3.1
2	LLDPE-1 -Dowtherm B	30.08.2024	16.41	35003.45	249	4.3	23.6	37.6	13.9	4.2
3	GCU-1- FF-101	28.08.2024	14.20	66414.19	132	3.0	26.2	31.7	25.3	3.7
4	GCU-1- FF-102	28.08.2024	14.70	68420.31	134	4.1	28.9	38.3	24.8	3.8
5	GCU-1- FF-103	--	-	-	-	-	-	-	-	-
6	GCU-1- FF-104	28.08.2024	14.34	66526.18	133	3.9	20.3	28.4	19.4	4.8
7	GCU-1- FF-105	28.08.2024	13.81	65079.61	129	4.0	25.8	41.6	17.5	5.8
8	GCU-1- FF-106	28.08.2024	14.98	70445.13	130	3.7	24.6	36.8	-	-
9	Power Plant-1- UB-1	--	-	-	-	-	-	-	-	-
10	Power Plant-1- UB-2	--	-	-	-	-	-	-	-	-
11	Power Plant-1- UB-3	30.08.2024	14.86	282231.11	126	2.8	29.3	33.9	15.7	3.4
12	HRSG- 1	31.08.2024	15.60	493447.80	153	4.6	13.7	44.3	20.6	5.2
13	HRSG- 2	31.08.2024	14.53	463891.48	149	4.2	19.3	30.5	18.3	5.9
Standards						**10**	**50**	**350**	**150**	**--**
14	Power Plant-2- UB-1	29.08.2024	14.94	284501.30	125	4.8	20.2	40.0	19.3	5.0
15	Power Plant-2- UB-2	29.08.2024	14.18	271488.82	123	4.4	13.8	42.7	24.2	4.3
16	GCU-2- FF-110	27.08.2024	13.72	150982.83	132	4.0	21.8	33.7	19.4	5.2
17	GCU-2- FF-120	27.08.2024	14.52	158912.42	134	4.1	26.8	38.9	24.7	5.1
18	GCU-2- FF-130	27.08.2024	14.15	157161.22	128	3.8	23.5	37.9	12.5	3.8
Standards						**5**	**50**	**250**	**100**	

Reviewed by
10/09/24
Neelima Dalvi
Technical Manager

Authorised by
10/9/24
Shradha Kere
Quality Manager

TABLE-2a: Ambient Air Quality Monitoring Results –AAQ-1: Inside the Complex- PC-1 AAQMS-02

Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Lead (µg/m³)	Benzene (µg/m³)	Benzo (a) Pyrene (ng/m³)	Arsenic (As), (ng/m³)	Nickel (Ni), (ng/m³)
02.09.2024	77.4	40.2	10.5	9.4	0.27	14.6	1.8	<0.1	1.2	<0.5	<1.0	<5.0
05.09.2024	60.3	41.8	14.8	18.9	0.44	13.9	2.4	<0.1	2.8	<0.5	<1.0	<5.0
09.09.2024	69.3	38.5	11.7	19.3	0.38	10.4	2.0	<0.1	2.5	<0.5	<1.0	<5.0
13.09.2024	71.5	35.9	14.7	14.8	0.5	8.3	1.7	<0.1	2.0	<0.5	<1.0	<5.0
17.09.2024	78.3	55.8	10.5	12.9	0.38	16.3	1.4	<0.1	3.6	<0.5	<1.0	<5.0
20.09.2024	64.5	46.9	14.9	14.9	0.41	12.7	1.4	<0.1	3.5	<0.5	<1.0	<5.0
23.09.2024	59.6	38.4	17.8	17.4	0.48	10.5	3.3	<0.1	1.5	<0.5	<1.0	<5.0
25.09.2024	63.9	40.1	17.9	13.8	0.53	9.0	2.1	<0.1	3.8	<0.5	<1.0	<5.0
27.09.2024	70.2	43.8	13.9	10.6	0.25	12.8	1.1	<0.1	1.7	<0.5	<1.0	<5.0
Min	59.6	35.9	10.5	9.4	0.25	8.3	1.1	<0.1	1.2	<0.5	<1.0	<5.0
Max	78.3	55.8	17.9	19.3	0.53	16.3	3.3	<0.1	3.8	<0.5	<1.0	<5.0
Mean	68.3	42.4	14.1	14.7	0.40	12.1	1.9	<0.1	2.5	<0.5	<1.0	<5.0
98%ile	78.2	54.4	17.9	19.2	0.53	16.0	3.2	<0.1	3.8	<0.5	<1.0	<5.0
NAAQ Standard	100	60	80	80	2	400	100	1	5	1	6	20

Reviewed by

10/10/24

Neelima Dalvi
Technical Manager

Authorised by

10/10/24

Shradha Kere
Quality Manager

Source Emission Monitoring: Table 5.1A

S. No.	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm^3/hr	Stack gas temperature. ^0C	Particulate Matter (mg/Nm^3)	Sulphur Dioxide (mg/Nm^3)	Oxides of Nitrogen (mg/Nm^3)	Carbon Monoxide (mg/Nm^3)	Oxygen (%)
1	LLDPE-1 -Dowtherm A	30.09.2024	15.90	33998.66	248	4.6	20.5	24.7	21.7	3.5
2	LLDPE-1 -Dowtherm B	30.09.2024	16.12	34325.90	250	4.0	16.3	31.5	17.3	2.7
3	GCU-1- FF-101	25.09.2024	14.13	66585.86	129	2.9	15.2	36.7	22.7	3.0
4	GCU-1- FF-102	25.09.2024	14.53	68160.55	131	3.8	22.6	30.2	21.0	3.1
5	GCU-1- FF-103	25.09.2024	14.40	67204.69	133	1.8	-	-	-	-
6	GCU-1- FF-104	--	-	-	-	-	-	-	-	-
7	GCU-1- FF-105	25.09.2024	14.27	67606.99	127	4.1	23.1	39.1	16.8	4.2
8	GCU-1- FF-106	--	-	-	-	-	-	-	-	-
9	Power Plant-1- UB-1	--	-	-	-	-	-	-	-	-
10	Power Plant-1- UB-2	--	-	-	-	-	-	-	-	-
11	Power Plant-1- UB-3	28.09.2024	14.62	278421.72	125	3.4	21.7	28.3	11.4	2.7
12	HRSG- 1	10.09.2024	15.28	490202.74	147	4.2	15.6	40.1	23.3	5.0
13	HRSG- 2	10.09.2024	14.81	471807.19	150	2.9	18.2	38.6	24.9	5.7
	Standards					**10**	**50**	**350**	**150**	**--**
14	Power Plant-2- UB-1	09.09.2024	14.02	269746.81	121	3.1	24.1	46.2	22.5	3.7
15	Power Plant-2- UB-2	09.09.2024	14.34	274389.32	123	2.4	19.2	41.4	34.1	4.1
16	GCU-2- FF-110	23.09.2024	14.23	155763.02	134	3.1	19.6	31.2	17.4	4.8
17	GCU-2- FF-120	23.09.2024	14.13	155436.84	132	2.3	23.7	27.8	26.7	4.0
18	GCU-2- FF-130	23.09.2024	13.64	150372.48	131	3.6	22.9	30.4	20.2	5.2
	Standards					**5**	**50**	**250**	**100**	

Reviewed by
10/10/24
Neelima Dalvi
Technical Manager

Authorised by
10/10/24
Shradha Kere
Quality Manager

Annexure-2

Treated Effluent Quality Monitoring Report for the period April 2024 to September 2024

TABLE – 6.5: WASTE WATER ANALYSIS RESULTS- FIRST FORTNIGHT (13.04.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	10	6
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	8.41	8.23
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	85	42
5	Biochemical Oxygen Deman at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	50	22
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	323	52
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	14	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.6	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	1.2	0.5
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.6	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL(<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	12.1	4.2
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	5.8	3.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1428	1242
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	138	86
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	3.2	2.4
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	135	62
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	84.1	16.3
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100ml	-	IS 1622:181	>1600	132
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	4.8	6.2
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	<0.2	<0.2
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.2	0.6
31	Nitrates	mg/l	-	APHA 4500NO2-B	3.2	1.8
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.5	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	26.1	27.6
35	Sodium Absorption Ratio	--	-	By Calculation	ND	5.8

Verified By
Neelima Dalvi
Technical Manager

Issued By
Shradha Kere
Quality Manager

TABLE – 6.6: WASTEWATER ANALYSIS RESULTS- SECOND FORTNIGHT (19.04.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	14	6
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	8.97	7.63
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	68	12
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	76	18
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	242	79
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	12	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.5	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	0.16	0.7
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.8	0.4
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL (<0.02)	BDL (<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	14.6	12.4
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	2.8	<1.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1346	1182
22	Chloride as Cl^-	mg/l	-	APHA 4500-(Cl)-B	126	76
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	3.4	2.8
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	154.2	24.9
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	59.4	23.1
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100 ml	-	IS 1622:181	>1600	176
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	4.8	5.2
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	BDL (<0.2)	BDL(<0.2)
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	2.5	1.2
31	Nitrates as NO_2	mg/l	-	APHA 4500NO2-B	3.6	<0.5
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	2.8	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	26.1	27.8
35	Sodium Absorption Ratio	--	-	By Calculation	ND	5.9

Verified By
Neelima Dalvi
Technical Manager
10/05/24

Issued By
10/05/24
Shradha Kere
Quality Manager

TABLE – 6.5: WASTE WATER ANALYSIS RESULTS- FIRST FORTNIGHT (11.05.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	12	7
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	8.34	7.24
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	76	35
5	Biochemical Oxygen Deman at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	48	24
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	241	68
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	16	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.8	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	1.6	0.7
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.5	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL(<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	12.6	3.8
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	4.9	2.4
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1542	1215
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	142	72
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	3.8	2.2
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	119	54
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	84.6	12.4
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100ml	-	IS 1622:181	>1600	124
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	5.1	6.3
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	<0.2	<0.2
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.4	0.8
31	Nitrates	mg/l	-	APHA 4500NO2-B	2.8	2.1
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.6	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	26.4	27.1
35	Sodium Absorption Ratio	--	-	By Calculation	ND	5.4

Verified By
Neelima Dalvi
Technical Manager
10/06/24

NETEL (INDIA) LIMITED * NETEL RABALE * NAVI MUMBAI 400701

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Issued By
Shradha Kere
Quality Manager

TABLE – 6.6: WASTEWATER ANALYSIS RESULTS- SECOND FORTNIGHT (22.05.2024)

S.No.	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	13	7
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	8.89	7.42
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	62	16
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	78	22
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	284	54
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	16	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.8	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	0.5	0.2
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.6	0.3
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL (<0.02)	BDL (<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	12.6	8.4
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	3.2	<1.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1246	1052
22	Chloride as Cl^-	mg/l	-	APHA 4500-(Cl)-B	132	84
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	4.1	3.2
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	146.3	32.4
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	62.4	22.2
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100 ml	-	IS 1622:181	>1600	162
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	5.2	6.8
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	BDL (<0.2)	BDL(<0.2)
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	2.2	1.6
31	Nitrates as NO_2	mg/l	-	APHA 4500NO2-B	3.1	<0.5
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	2.6	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	26.4	26.9
35	Sodium Absorption Ratio	--	-	By Calculation	ND	5.1

Verified By
Neelima Dalvi
Technical Manager 10/06/24

NETEL (INDIA) LIMITED NAVI MUMBAI 400701

Issued By
Shradha Kere
Quality Manager 10/6/24

TABLE – 6.5: WASTE WATER ANALYSIS RESULTS- FIRST FORTNIGHT (12.06.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	15	9
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.64	7.13
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	82	38
5	Biochemical Oxygen Deman at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	42	20
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	236	54
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	14	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.5	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	1.8	0.4
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.4	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL(<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	14.6	4.2
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	4.9	2.4
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1489	1304
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	126	68
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	3.2	1.9
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	115	48
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	86.9	14.8
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100ml	-	IS 1622:181	>1600	118
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	5.6	6.5
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	<0.2	<0.2
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.0	0.3
31	Nitrates	mg/l	-	APHA 4500NO2-B	3.0	2.4
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.8	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	25.8	26.5
35	Sodium Absorption Ratio	--	-	By Calculation	ND	6.4

Reviewed by
Neelima Dalvi
Technical Manager 10/06/24

Authorised by
Shradha Kere
Quality Manager 10/6/24

TABLE – 6.6: WASTEWATER ANALYSIS RESULTS- SECOND FORTNIGHT (22.06.2024)

S.No.	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	18	5
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.89	7.01
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	75	28
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	68	28
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	276	46
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	17	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.6	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	0.6	0.7
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.2	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL (<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	14.8	8.4
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	3.0	<1.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1226	1021
22	Chloride as Cl^-	mg/l	-	APHA 4500-(Cl)-B	138	70
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	5.2	4.6
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	138.6	36.9
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	57.6	24.4
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100 ml	-	IS 1622:181	>1600	152
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	5.4	6.1
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	BDL (<0.2)	BDL(<0.2)
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	2.3	0.8
31	Nitrates as NO_2	mg/l	-	APHA 4500NO2-B	2.7	<0.5
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	2.3	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	26.4	26.7
35	Sodium Absorption Ratio	-	-	By Calculation	ND	4.6

Reviewed by
Neelima Dalvi
Technical Manager

Authorised by
Shradha Kere
Quality Manager

TABLE - 6.5: WASTE WATER ANALYSIS RESULTS- FIRST FORTNIGHT (08.07.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	16	7
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.94	7.55
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	92	28
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	67	11
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	256	79
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	12	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.8	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	1	0.2
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.5	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL(<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	10.5	2.2
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	6.7	1.8
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1259	852
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	142	47
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	3	1.5
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	142	36
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	90.3	10.6
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100ml	-	IS 1622:181	>1600	95
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	3.5	5.5
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	<0.2	<0.2
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.5	0.4
31	Nitrates	mg/l	-	APHA 4500NO2-B	2.9	2.1
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.3	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	28.2	27.5
35	Sodium Absorption Ratio	--	-	By Calculation	ND	5.2

Reviewed by
Neelima Dalvi
Technical Manager
09/08/24

Authorised by
Shradha Kere
Quality Manager
09/08/24

TABLE – 6.6: WASTEWATER ANALYSIS RESULTS- SECOND FORTNIGHT (22.07.2024)

S.No.	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	15	8
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	8.03	7.24
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	85	24
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	70	10
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	385	84
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	15	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.9	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	0.2	0.3
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.6	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL (<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	12.8	6.4
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	3.5	<1.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1410	984
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	126	65
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	4.2	3.5
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	146.2	28.6
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	64.5	27.7
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100 ml	-	IS 1622:181	>1600	149
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	5	5.9
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	BDL (<0.2)	BDL(<0.2)
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	2	0.6
31	Nitrates as NO_2	mg/l	-	APHA 4500NO2-B	2.4	<0.5
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.4	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	27.1	26.9
35	Sodium Absorption Ratio	-	-	By Calculation	ND	4.1

Reviewed by
Neelima Dalvi
Technical Manager
09/08/24

Authorised by
Shradha Kere
Quality Manager
09/08/24

TABLE – 6.5: WASTE WATER ANALYSIS RESULTS- FIRST FORTNIGHT (12.08.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	13	8
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.70	7.21
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	80	31
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	64	9
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	245	69
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	9	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.6	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	1.3	0.6
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.7	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL(<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	13.2	3.0
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	7.1	2.1
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1059	738
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	138	39
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	2.5	0.9
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	156	31
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	81.5	13.2
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100ml	-	IS 1622:181	>1600	75
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	2.2	5.9
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	<0.2	<0.2
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.8	0.3
31	Nitrates	mg/l	-	APHA 4500NO2-B	3.4	1.8
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.6	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	27.2	26.9
35	Sodium Absorption Ratio	--	-	By Calculation	ND	4.2

Reviewed by
Neelima Dalvi
Technical Manager
10/09/24

NETEL (INDIA) LIMITED * NAVI MUMBAI 400701 *

10/09/24
Authorised by
Shradha Kere
Quality Manager

TABLE – 6.6: WASTEWATER ANALYSIS RESULTS- SECOND FORTNIGHT (24.08.2024)

S.No.	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	14	9
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.92	7.05
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	85	24
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	67	10
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	284	72
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	19	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.7	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	0.3	0.2
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.9	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL (<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	10.4	5.7
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	5.0	<1.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1227	643
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	117	59
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	5.6	3.9
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	132.0	31.8
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	79.1	25.2
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100 ml	-	IS 1622:181	>1600	136
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	3.6	6.3
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	BDL (<0.2)	BDL(<0.2)
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.7	0.8
31	Nitrates as NO_2	mg/l	-	APHA 4500NO2-B	1.6	<0.5
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.9	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	27.4	27.1
35	Sodium Absorption Ratio	--	-	By Calculation	ND	4.9

Reviewed by
Neelima Dalvi
Technical Manager 10/09/24

Authorised by
Shradha Kere
Quality Manager 10/9/24

TABLE – 6.5: WASTE WATER ANALYSIS RESULTS- FIRST FORTNIGHT (13.09.2024)

S.No	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	9	7
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.8	7.6
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	125	48
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	56	7
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	195	60
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	11	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	1.4	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	1.7	0.2
14	Zinc as Zn	mg/l	5	APHA 3111-B	0.9	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL(<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	9.7	2.6
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	6.5	3.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	967	528
22	Chloride as Cl	mg/l	-	APHA 4500-(Cl)-B	128	27
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	3.5	1.2
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	162	29
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	83.5	14.1
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100ml	-	IS 1622:181	>1600	64
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	1.9	4.3
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	<0.2	<0.2
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	0.7	0.2
31	Nitrates	mg/l	-	APHA 4500NO2-B	3.1	1.6
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.3	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp	APHA 2550-B	29.6	28.1
35	Sodium Absorption Ratio	--	-	By Calculation	ND	3.9

Reviewed by
Neelima Dalvi
Technical Manager
10/10/24

Authorised by
Shradha Kere
Quality Manager
10/10/24

TABLE – 6.6: WASTEWATER ANALYSIS RESULTS- SECOND FORTNIGHT (26.09.2024)

S.No.	Parameters	Unit	Standards	Procedure	WWTP Inlet	WWTP Outlet
1	Colour	Hazen	-	IS 3025 (Part 4)	12	10
2	Odour	-	-	APHA 2150-A	Objectionable	Unobjectionable
3	pH at 25 °C	-	6.5-8.5	APHA-4500-H+-B	7.1	6.9
4	Total Suspended Solids	mg/l	100	IS 3025(Part 17)	81	31
5	Biochemical Oxygen Demand at 27°C for 3 days	mg/l	30	IS 3025(Part 44)	62	8
6	Chemical Oxygen Demand	mg/l	250	APHA 5220-B	194	68
7	Oil & Grease	mg/l	10	IS 3025 (Part 39)	14	BDL (<2)
8	Phenolic Compound as C_6H_5OH	mg/l	1	APHA 5530 (D)	BDL(<0.5)	BDL(<0.5)
9	Total Chromium as Cr	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
10	Cadmium as Cd	mg/l	2	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
11	Total Residual Chlorine	mg/l	--	IS 3025 (Part 26)	BDL(<0.1)	BDL(<0.1)
12	Copper	mg/l	3	APHA 3111-B	0.9	<0.04
13	Iron(as Fe)	mg/l	2.0	APHA 3111-B	0.8	0.3
14	Zinc as Zn	mg/l	5	APHA 3111-B	1.4	<0.2
15	Cyanide (as CN)	mg/l	0.2	APHA 4500-CN-	BDL(<0.05)	BDL(<0.05)
16	Lead as Pb	mg/l	0.1	APHA 3111-B	BDL(<0.05)	BDL(<0.05)
17	Nickel as Ni	mg/l	3	APHA 3111-B,23 AAS	BDL(<0.02)	BDL (<0.02)
18	Total Heavy Metals	mg/l	1	By Calculation	BDL(<0.5)	BDL(<0.5)
19	Total Nitrogen as N	mg/l	--	APHA 4500-N-C	9.5	4.2
20	Total phosphorous as P	mg/l	5.0	APHA 4500-P (C)	6.8	<1.0
21	Total dissolved solids	mg/l	2100	APHA 2540-C	1047	596
22	Chloride as Cl^-	mg/l	-	APHA 4500-(Cl)-B	103	48
23	Sulphate as SO_4	mg/l	-	APHA 4500-SO4-B	4.2	3.0
24	Calcium Hardness as $CaCO_3$	mg/l	-	APHA 3500-Ca	141.3	35.2
25	Magnesium Hardness as $CaCO_3$	mg/l	-	APHA 3500 Mg-B	77.8	31.6
26	Hexa valent Chromium	mg/l	0.1	APHA 3500-C	BDL(<0.05)	BDL(<0.05)
27	Total Coliform	MPN/100 ml	-	IS 1622:181	>1600	130
28	Dissolved Oxygen	mg/l	-	APHA 4500-O-B	2.5	5.2
29	Sulphides as S	mg/l	2.0	APHA 4500(SO3)-B	BDL (<0.2)	BDL(<0.2)
30	Fluoride as F	mg/l	-	APHA 4500-F-D,SPANDS	1.2	0.6
31	Nitrates as NO_2	mg/l	-	APHA 4500NO2-B	1.1	<0.5
32	Manganese as Mn	mg/l	2.0	APHA 3111-B	BDL(<0.01)	BDL(<0.01)
33	Turbidity	NTU	1	APHA 2130-B	1.4	<1
34	Temperature	°C	Shall not exceed 5°c above the receiving water temp.	APHA 2550-B	28.2	28.7
35	Sodium Absorption Ratio	--	-	By Calculation	ND	4.2

Reviewed by
Neelima Dalvi
Technical Manager
10/10/24

Authorised by
Shradha Kere
Quality Manager
10/10/24

Annexure-3

Summary Report of the LDAR Monitoring For Q1 and Q2 of FY 2024-25

LDAR VOC MONITORING REPORT

REPORT FOR THE PERIOD QTR-1, FY 2024-25

LEAK SUMMARY

Sr. No.	Unit	Equipment	Tag. No	Components	Line Size	Location	Leak Type	(ppm)	(Kg/Day)	Readings after attending leak		Total saving
										(ppm)	(Kg/Day)	Kg/Day
1	GCU - 2 COLD	Flange	110-PV-42212 U/S Line Drain Flange	Flange	1"	Drain Flange	Flange	7000	0.580	1400	0.155	0.425
2		Flange	110-PV-42405 B D/S Line Drain Flange	Flange	1"	Drain Flange	Flange	7400	0.607	100	0.018	0.589
3		Flange	PSA Inlet Line Drain Flange	Flange	1"	Drain Flange	Flange	3500	0.329	370	0.052	0.277
4		Flange	110-FV-61001 D/S Drain Flange	Flange	1"	Drain Flange	Flange	6000	0.511	800	0.098	0.413
5		Flange	110-FV-81006 D/S Flange	Flange	4"	D/S Flange	Flange	3700	0.344	13	0.003	0.341
6		Flange	110-FV-81006 D/S I/V D/S Flange	Flange	4"	D/S Flange	Flange	8100	0.654	10	0.003	0.651
7		Flange	110-PSV-41402 B U/S I/V D/S Flange	Flange	10"	Outlet Flange	Flange	3100	0.298	40	0.008	0.290
8		Flange	110-PV-10103 A U/S Drain Flange	Flange	1"	Drain Flange	Flange	6500	0.546	220	0.034	0.512
9	GCU - 2 HOT	Flange	10-FG to FF-120 N2 to FG line D/D NRV Flange	Flange	2"	NRV Flange	Flange	3400	0.321	240	0.037	0.284
10		Flange	110-PSV-92101 A U/S I/V U/S Flange	Flange	10"	U/S Flange	Flange	3100	0.298	380	0.053	0.245
11	IOP Storage	Flange	41-SOV-1408 Drain Flange	Flange	1"	Drain Flange	Flange	5300	0.462	310	0.045	0.417
12		Flange	41-SOV-1409 Drain Flange	Flange	1"	Drain Flange	Flange	4700	0.419	1700	0.182	0.237
13		Flange	41-SOV-1408 Drain Flange	Flange	1"	Drain Flange	Flange	3400	0.321	850	0.103	0.218
14		Flange	FV-1301 Drain Flange	Flange	1"	Drain Flange	Flange	3800	0.352	1450	0.160	0.192
15	Loading Gantry	TANK-TS-111	ROV-2301 U/S Flange	Flange	6"	U/S Flange	Flange	4100	0.374	25	0.006	0.368
Total Savings :												5.459

LDAR VOC MONITORING REPORT

REPORT FOR THE PERIOD QTR-2, FY 2024-25

LEAK SUMMARY

Sr. No.	Unit	Equipment	Tag. No	Components	Line Size	Location	Leak Type	(ppm)	(Kg/Day)	Readings after attending leak		Total saving
										(ppm)	(Kg/Day)	Kg/Day
1	GCU - II COLD	Valve	110-FV-85002	Valve	2"	Control Gland	Gland	5000	0.388	590	0.034	0.354
2		Valve	110-FV-85002 D/S I/V	Valve	2"	Isolation Valve	Gland	3300	0.242	73	0.003	0.239
3		Valve	110-FV-51401 Bypass I/V	Valve	4"	Isolation Valve	Gland	4200	0.318	37	0.001	0.317
4		Valve	ISBL 6"-C2+Liquid FROM New Storage line I/V	Valve	6"	Isolation Valve	Gland	6400	0.514	30	0.001	0.513
5		Valve	OSBL 6"-Ethylene PDT-8"-P-170-9603 B1A Line U/S I/V	Valve	6"	Isolation Valve	Gland	5200	0.406	69	0.003	0.403
6		Valve	ISBL 6"C2+ Liq. From Old Storage Line I/V	Valve	6"	Isolation Valve	Gland	5100	0.397	385	0.021	0.376
7		Valve	OSBL 8"-P-170-9644 B1A C2+ Liq. Line I/V	Valve	1"	Isolation Valve	Gland	4500	0.344	137	0.006	0.338
8		Valve	110-FV-81006 D/S I/V	Valve	4"	Isolation Valve	Gland	4400	0.335	1600	0.106	0.229
9		Valve	110-FV-85004	Valve	2"	Control Gland	Gland	3800	0.284	590	0.034	0.250
10		Valve	110-FV-41602	Valve	18"	Control Gland	Gland	6500	0.523	1550	0.102	0.421
11		Valve	110-FV-35601 D/S I/V	Valve	12"	Isolation Valve	Gland	5500	0.432	1950	0.133	0.299
12		Valve	110-FV-43001	Valve	2"	Control Gland	Gland	4700	0.361	1700	0.113	0.248
13		Valve	110-FV-50202 Bypass I/V	Valve	2"	Isolation Valve	Gland	3400	0.250	1352	0.087	0.163
14		Valve	110-PSV-41402 B D/S I/V	Valve	10"	Isolation Valve	Gland	4700	0.361	45	0.002	0.359
15		Valve	110-PSV-60101 D D/S I/V	Valve	16"	Isolation Valve	Gland	4500	0.344	83	0.004	0.340
16		Valve	110-PSV-42001 A D/S I/V	Valve	12"	Isolation Valve	Gland	6000	0.477	125	0.006	0.471
17		Valve	110-PSV-40004 U/S I/V	Valve	3"	Isolation Valve	Gland	4200	0.318	210	0.010	0.308
18		Valve	110-PSV-10403 B U/S I/V	Valve	3"	Isolation Valve	Gland	3100	0.225	45	0.002	0.223
19	GCU -II HOT	Valve	OSBL 4"-P-170-5017-A1A line I/V	Valve	4"	Isolation Valve	Gland	6100	0.487	1230	0.078	0.409
20		Valve	OSBL 2"-ETHYLENE PURGE FROM NEW BUTENE Line I/V	Valve	2"	Isolation Valve	Gland	4300	0.327	1500	0.098	0.229
21		Valve	ISBL 3"-ETHYLENE PURGE FROM EXISTING LLDPE/HDPE Line U/S I/V	Valve	3"	Isolation Valve	Gland	5300	0.415	260	0.013	0.402
22		Valve	12" Fuel Gas Imp/EXP line I/V	Valve	1"	Isolation Valve	Gland	7200	0.588	1830	0.123	0.465
23		Valve	110-FV-42406 U/S Drain I/V	Valve	1"	Isolation Valve	Gland	6400	0.514	65	0.003	0.511
24		Valve	110-FV-42406 D/S I/V	Valve	3"	Isolation Valve	Gland	3800	0.284	480	0.027	0.257
25		Valve	Vent from VV-665 C3R vent line I/V	Valve	1"	Isolation Valve	Gland	3400	0.250	0	0.000	0.250
26		Valve	110-PSV-30201 A D/S I/V	Valve	6"	Isolation Valve	Gland	3100	0.225	15	0.001	0.224
27		Valve	110-PSV-30201 B D/S I/V	Valve	6"	Isolation Valve	Gland	3000	0.217	0	0.000	0.217
28	HDPE-I	Valve	15-PV-7403 U/S I/V	Valve	3"	Isolation Valve	Gland	3200	0.233	62	0.003	0.230
29		Valve	15-FV-2301 U/S I/V	Valve	1"	Isolation Valve	Gland	5100	0.397	680	0.040	0.357
30		Valve	15-FV-2301 D/S I/V	Valve	1"	Isolation Valve	Gland	4700	0.361	225	0.011	0.350
31		Valve	15-TV-2501 U/S I/V	Valve	16"	Isolation Valve	Gland	6100	0.487	320	0.017	0.470
32		Valve	15-TV-2501 D/S I/V	Valve	16"	Isolation Valve	Gland	5400	0.423	800	0.048	0.375
33		Valve	GN-201 Drain I/V	Valve	1"	Isolation Valve	Gland	4200	0.318	180	0.009	0.309

34	GCU - I COLD	Pump Valve	10-PA-402 A DIS I/V	Valve	6"	Isolation Valve	Gland	5200	0.406	69	0.003	0.403
35		Pump Valve	10-PA-402 B DIS I/V	Valve	6"	Isolation Valve	Gland	6000	0.477	310	0.016	0.461
36		Pump Valve	10-PA-406 B DIS I/V	Valve	3"	Isolation Valve	Gland	5400	0.423	0	0.000	0.423
37		Pump Valve	10-PA-603 B Diascharge I/V	Valve	6"	Isolation Valve	Gland	6800	0.551	312	0.016	0.535
38		Valve	10-UV-6002 D/S I/V	Valve	8"	Isolation Valve	Gland	3800	0.284	65	0.003	0.281
39		Valve	10-UV-5101	Valve	8"	Control Valve	Gland	4100	0.309	450	0.025	0.284
40		Valve	10-PV-4701 Drain I/V	Valve	1"	Isolation Valve	Gland	4300	0.327	1618	0.107	0.220
41		Valve	10-FV-4402 Drain I/V	Valve	1"	Isolation Valve	Gland	3300	0.242	1320	0.085	0.157
42		Valve	10-PSV-5601 U/S I/V	Valve	2"	Isolation Valve	Gland	8700	0.729	930	0.057	0.672
43		Flange	10-PSV-4905 U/S I/V	Valve	2"	Isolation Valve	Gland	6400	0.514	93	0.004	0.510
44		Valve	10-PSV-5701 B U/S I/V	Valve	2"	Isolation Valve	Gland	9000	0.758	254	0.013	0.745
45		Valve	10-FV-0403 D/S I/V	Valve	3"	Isolation Valve	Gland	3900	0.292	2500	0.176	0.116
46		Valve	10-PSV-6101 U/S I/V	Valve	10"	Isolation Valve	Gland	7000	0.569	0	0.000	0.569
47		Flange	10-PSV-4502 U/S I/V	Valve	3"	Isolation Valve	Gland	3400	0.250	2800	0.200	0.050
48		Valve	10-PV-6102 U/S I/V	Valve	3"	Isolation Valve	Gland	3700	0.275	166	0.008	0.267
49		PSV	10-PSV-6403 U/S I/V	Valve	6"	Isolation Valve	Gland	5300	0.415	233	0.012	0.403
50	LLDPE-I	Valve	12-FV-1124 1st Drain I/V	Valve	1"	Isolation Valve	Gland	4700	0.361	430	0.024	0.337
51		Valve	12-FV-2053	Valve	6"	Control Valve	Gland	4400	0.335	1533	0.101	0.234
52		Valve	12-FV-2053 U/S I/V	Valve	6"	Isolation Valve	Gland	5000	0.388	710	0.042	0.346
53		Valve	12-FV-2093 U/S I/V	Valve	3"	Isolation Valve	Gland	4200	0.318	400	0.022	0.296
54		Valve	12-FV-2251 Bypass I/V	Valve	4"	Isolation Valve	Gland	5600	0.441	190	0.009	0.432
55		Valve	12-FV-2027 B	Valve	3"	Control Valve	Gland	5200	0.406	280	0.015	0.391
56		Valve	12-FV-2027 B U/S I/V	Valve	3"	Isolation Valve	Gland	3800	0.284	115	0.005	0.279
57		Valve	12-FV-2027 B U/S Line Drain I/V	Valve	1"	Isolation Valve	Gland	3300	0.242	65	0.003	0.239
58		Valve	12-PV-2104 U/S I/V	Valve	3"	Isolation Valve	Gland	4500	0.344	21	0.001	0.343
59		Battery Limit	12-HV-4140 Bypass I/V	Valve	2"	Isolation Valve	Gland	3100	0.225	107	0.005	0.220
60		Battery Limit	Butane Line 3"-P-20661 B1A Line I/V	Valve	3"	Isolation Valve	Gland	4000	0.301	90	0.004	0.297
61	GCU-I HOT	Valve	10-FV-1902 1st Bypass I/V	Valve	2"	Isolation Valve	Gland	3000	0.217	140	0.007	0.210
62		Valve	10-FV-2504	Valve	6"	Control Valve	Gland	8300	0.691	65	0.003	0.688
63		Battery Limit	ISBL MP Ethylene Liquid line I/V	Valve	8"	Isolation Valve	Gland	5300	0.415	1200	0.076	0.339
64		Valve	10-FV-3301 D/S I/V	Valve	14"	Isolation Valve	Gland	3600	0.267	500	0.028	0.239
65		Valve	10-PV-3302	Valve	6"	Control Valve	Gland	4500	0.344	340	0.018	0.326
66		Valve	10-PV-7402	Valve	8"	Control Valve	Gland	5000	0.388	0	0.000	0.388
67		Flange	PSV-7401 A U/S I/V	Valve	8"	Isolation Valve	Gland	6200	0.496	410	0.022	0.474
68		Valve	PSV-7401 B U/S I/V	Valve	8"	Isolation Valve	Gland	5700	0.450	18	0.001	0.449
69		Valve	PSV-4105 A U/S I/V	Valve	8"	Isolation Valve	Gland	8300	0.691	930	0.057	0.634
70		Valve	PSV-4105 C U/S I/V	Valve	8"	Isolation Valve	Gland	5300	0.415	40	0.002	0.413
71		Valve	10-PV-4102	Valve	12"	Control Valve	Gland	6700	0.542	215	0.011	0.531
72		Valve	10-PV-4102 U/S I/V	Valve	12"	Isolation Valve	Gland	7900	0.653	1540	0.101	0.552

73		Valve	10-PV-7403	Valve	16"	Control Valve	Gland	8000	0.663	680	0.040	0.623
74		Valve	VV-310 3"P-10-33707 A13A LINE I/V	Valve	8"	Isolation Valve	Gland	5000	0.388	1140	0.072	0.316
75		Valve	Inlet MOV 4108	Valve	14"	MOV	Gland	5200	0.406	328	0.017	0.389
76		Valve	Outlet MOV 4105	Valve	10"	MOV	Gland	4700	0.361	230	0.012	0.349
77	HDPE - II	Valve	18-HV-1002 U/S I/V	Valve	4"	Isolation Valve	Gland	3200	0.233	195	0.010	0.223
78		Valve	18-PV-2107 U/S I/V	Valve	6"	Isolation Valve	Gland	3000	0.217	460	0.026	0.191
79		Valve	18-PV-2107 D/S I/V	Valve	6"	Isolation Valve	Gland	3000	0.217	262	0.013	0.204
80	LLDPE-II	Valve	102-PA-101 A DIS I/V	Valve	3"	Isolation Valve	Gland	4800	0.370	144	0.007	0.363
81		Valve	102-PV-11101 Bypass I/V	Valve	2"	Isolation Valve	Gland	4200	0.318	51	0.002	0.316
82		Valve	102-HV-21101 U/S I/V	Valve	4"	Isolation Valve	Gland	7100	0.579	1418	0.092	0.487
83		Valve	102-LT-21102 Near (102-VV-202) I/V	Valve	1"	Isolation Valve	Gland	6000	0.477	1840	0.124	0.353
84		Valve	ISBL 3"-P-102-91102 A1A Butene-1 TS-113 Line I/V	Valve	3"	Isolation Valve	Gland	3800	0.284	2180	0.151	0.133
85		Valve	102-P-21503 B1A Ethylene to VV-215 Line I/V	Valve	12"	Isolation Valve	Gland	6400	0.514	1800	0.121	0.393
86		Valve	12"-P-102-91101 B1A Ethylene Supply Line I/V	Valve	10"	Isolation Valve	Gland	9000	0.758	630	0.037	0.721
87		Valve	102-HV-41901 D/S I/V	Valve	3"	Isolation Valve	Gland	5100	0.397	0	0.000	0.397
88	LPG Loading	Valve	3" Liquid Line U/S I/V	Valve	3"	Isolation I/V	Gland	10000	0.855	1250	0.080	0.775
89		SICK BAY	Propane to Gantry 2nd Line I/V	Valve	3"	Isolation I/V	Gland	3800	0.284	160	0.008	0.276
90		Valve	MOV-1801	Valve	4"	MOV	Gland	4000	0.301	240	0.012	0.289
91	IOP Storage	SOV	41-SOV-1408 Drain I/V	Valve	1"	Isolation Valve	Gland	3300	0.242	1370	0.089	0.153
92		SOV	41-SOV-1406 Drain I/V	Valve	1"	Isolation Valve	Gland	4300	0.327	95	0.004	0.323
93		SOV	41-SOV-1403 Drain I/V	Valve	1"	Isolation Valve	Gland	3700	0.275	1050	0.065	0.210
94		Valve	FV-1302 U/S I/V	Valve	4"	Isolation Valve	Gland	4800	0.370	410	0.022	0.348
95		Valve	FV-1301 U/S I/V	Valve	4"	Isolation Valve	Gland	7300	0.597	6000	0.477	0.120
96		Valve	FV-1301 D/S I/V	Valve	4"	Isolation Valve	Gland	5000	0.388	2300	0.160	0.228
97		TANK-TS-111	PSV-2301 U/S I/V	Valve	8"	Isolation Valve	Gland	7400	0.606	230	0.012	0.594
98		ROV	ROV 1411 Drain I/V	Valve	1"	Isolation Valve	Gland	3600	0.267	720	0.043	0.224
99		Valve	43-FV-1102 Bypass I/V	Valve	6"	Isolation Valve	Gland	4500	0.344	1100	0.069	0.275
100		Valve	43-FV-1103 Bypass I/V	Valve	6"	Isolation Valve	Gland	5100	0.397	740	0.044	0.353
101		Valve	43-PV-1401	Valve	6"	Control Valve	Gland	6100	0.487	830	0.050	0.437
102		Valve	43-PV-1401 U/S I/V	Valve	6"	Isolation Valve	Gland	4000	0.301	2100	0.144	0.157
103		Valve	43-PV-1401 D/S I/V	Valve	6"	Isolation Valve	Gland	3400	0.250	1580	0.104	0.146
104		Valve	41-FV-1402 Bypass I/V	Valve	6"	Isolation Valve	Gland	8000	0.663	2580	0.182	0.481
105		Pump	41-PAM -CF-004 B 1st Suction Line I/V	Valve	3"	Isolation Valve	Gland	6300	0.505	145	0.007	0.498
106		Pump	41-PAM -CF-004 A 2nd Suction Line I/V	Valve	3"	Isolation Valve	Gland	7400	0.606	230	0.012	0.594
107	Power Plant - I	Valve	8-FG-2001-A1A Line Bypass I/V	Valve	8"	Isolation Valve	Gland	6100	0.487	1508	0.099	0.388
108		Valve	33-FCV-3861 B	Valve	8"	Control Valve	Gland	4400	0.335	50	0.002	0.333
109		Pump Valve	08-PA-CF-035 B DIS Valve	Valve	4"	Isolation Valve	Gland	4200	0.318	418	0.023	0.295
110		Pump Valve	08-PA-CF-035 B SUC- Valve	Valve	6"	Isolation Valve	Gland	6500	0.523	13	0.000	0.523
111		Flange	PV-3401 U/S I/V	Valve	6"	Isolation Valve	Gland	4100	0.309	207	0.010	0.299

112	GPU - I	Valve	08-FV-3502	Valve	3"	Control Valve	Gland	7000	0.569	2100	0.144	0.425
113		Flange	08-FV-3502 U/S I/V	Valve	3"	Isolation Valve	Gland	3700	0.275	44	0.002	0.273
114		Valve	08-FV-3502 D/S line Drain I/V	Valve	1"	Islation Valve	Gland	3700	0.275	820	0.049	0.226
115		Flange	08-FV-3503 Bypass I/V	Valve	3"	Isolation Valve	Gland	5400	0.423	27	0.001	0.422
116		Valve	08-PSV-1401 U/S I/V	Valve	4"	Isolation Valve	Gland	3700	0.275	248	0.013	0.262
117		Valve	08-FCV-2301	Valve	12"	Control Valve	Gland	6700	0.542	1920	0.130	0.412
118		Valve	08-PSV-1801 A U/S I/V	Valve	10"	Isolation Valve	Gland	7400	0.606	1273	0.082	0.524
119		Valve	08-PSV-1801 B U/S I/V	Valve	10"	Isolation Valve	Gland	6300	0.505	335	0.018	0.487
120		Valve	08-PV-2550 1stU/S I/V	Valve	4"	Isolation Valve	Gland	4400	0.335	1080	0.068	0.267
121		Valve	08-PV-2550 2ndU/S I/V	Valve	4"	Isolation Valve	Gland	5800	0.459	122	0.006	0.453
122		Valve	08-PV-2550 Bypass I/V	Valve	1"	Isolation Valve	Gland	6200	0.496	695	0.041	0.455
123	LPG	Pump Valve	09-PA-CF-20 A DIS Valve	Valve	2"	Isolation Valve	Gland	5200	0.406	431	0.024	0.382
124		valve	09-LV-6301 Bypass I/V	Valve	2"	Isolation Valve	Gland	8000	0.663	540	0.031	0.632
125		valve	09-FV-1404 Bypass I/V	Valve	3"	Isolation Valve	Gland	5700	0.450	1280	0.082	0.368
126		Valve	09-UV-2003	Valve	8"	Control Valve	Gland	7000	0.569	1918	0.130	0.439
127		Valve	09-PV-1401 N D/S Line PT-1405 I/V	Valve	1"	Isolation Valve	Gland	10000	0.855	930	0.057	0.798
128		Valve	09-PV-1401 N D/S I/V	Valve	6"	Isolation Valve	Gland	3700	0.275	2230	0.155	0.120
129		Valve	09-PV-1401 N U/S Line Drain I/V	Valve	1"	Isolation Valve	Gland	4100	0.309	1580	0.104	0.205
130	GPU - II	Pump Valve	108-MOV-6902	Valve	4"	Control Valve	Gland	5200	0.406	29	0.001	0.405
131		valve	108-MOV-6902 D/S I/V	Valve	4"	Isolation Valve	Gland	4700	0.361	18	0.001	0.360
132		valve	FUEL GAS LINE U/S I/V	Valve	3"	Isolation Valve	Gland	3900	0.292	0	0.000	0.292
133		Valve	108-LV-7101 U/S I/V	Valve	4"	Isolation Valve	Gland	4600	0.353	130	0.006	0.347
134		Valve	108-LV-7101 Bypass I/V	Valve	2"	Isolation Valve	Gland	4100	0.309	1785	0.120	0.189
135		Valve	108-LV-7001 Bypass I/V	Valve	8"	Isolation Valve	Gland	3700	0.275	418	0.023	0.252
Total Savings :												48.431

Annexure-4

Membership Certificate of Common Hazardous Waste Treatment Storage Disposal Facility (CHW-TSDF)

U.P Waste Management Project
(A Division of Ramky Enviro Engg. Ltd.)
A -380 Lakhanpur Housing Society,
Nr. Utsav Apartment, Lakhanpur.
Vikas nagar, KANPUR-208024 (Utter Pradesh)
Tel.-Fax. :- 0512-2585076 Email.:- upwmp@ramky.com

Date: 22/12/2012

To,
M/s. GAIL (India) Limited
(A Govt. of India Undertaking – A Navaratna Company)
Pata, (U.P)

Kind Attn: - Mr. R V Sahane

Sub: - Permanent Membership of UPWMP – CHW TSDF, Kanpur Dehat.

Dear Sir,

We thank you and further welcome you as **PERMANENT MEMBER** of Uttar Pradesh Waste Management Project (A Divn of RAMKY Enviro Engineers Ltd.) for utilizing our Common Hazardous Waste Treatment Storage Disposal Facility (CHW-TSDF) to dispose your hazardous waste safely & securely.

Your Permanent Membership Num. is **UPWMP-KNP-HzW – CHW-TSDF – 1268**

We seek your co-operation & assistance to help us meet our common objectives of keeping our Environment Safe and Secure.

We once again thank you and assure of our best services and look forward to an environment friendly relationship.
Please do contact us for any further information and clarification.

Thanking you

Yours truly,

For **Uttar Pradesh Waste Management Project**
(A Divn of **RAMKY** Enviro Engineers Ltd.)
Hari om Sharan Dwivedi.

Hari Om Sharan Dwivedi
AGM – Operation

Annexure-5

Report of Ground Water Monitoring
For the period April 2024 to September 2024

TABLE – 6.4: GROUND WATER ANALYSIS RESULTS (Dated-19.04.2024)

S. No	Parameters	Unit	Acceptable/ Permissible Limit as per IS 10500:2012	Procedure	GW1	GW2
1	Colour	Hazen	5/15	IS 3025 (Part 4)	<5	<5
2	Turbidity	NTU	1/5	IS 3025(Part 10)	2.9	2.5
3	pH at 25 °C	-	6.5-8.5/ No relaxation	IS 3025(Part 11)	6.85	7.23
4	Total dissolved solids	mg/l	500/2000	IS 3025(Part 16)	1248	628
5	Total Alkalinity as $CaCO_3$	mg/l	200/600	IS 3025(Part 23)	24.8	323.1
6	Total Hardness as $CaCO_3$	mg/l	200/600	IS 3025(Part 21)	198.6	425.3
7	Calcium Hardness as $CaCO_3$	mg/l	250	IS 3025 (Part 40)	134	72.1
8	Magnesium Hardness as $CaCO_3$	mg/l	200	IS 3025 (Part 21 & 40)	86.8	121.3
9	Chloride as Cl^-	mg/l	250/1000	IS 3025(Part 32)	342.6	40.8
10	Sulphate as SO_4	mg/l	200/400	IS 3025(Part 24)	364.2	18.6
11	Nitrate as NO_3	mg/l	45/ No relaxation	IS 3025(Part 34)	1.2	0.5
12	Iron as Fe	mg/l	0.3/ No relaxation	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
13	Manganese as Mn	mg/l	0.1/0.3	APHA 3111-B,23rd AAS	BDL(< 0.1)	BDL(< 0.1)
14	Fluoride as F	mg/l	1.0/1.5	IS 3025(Part 60)	0.2	0.4
15	Phenolic Copounds as Phenol	mg/l	0.001/0.002	IS 3025 (Part 43)	BDL(< 0.002)	BDL(< 0.002)
16	Cyanide as CN	mg/l	0.05/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.05)	BDL(< 0.05)
17	Zinc as Zn	mg/l	5/15	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
18	Sulphide as S^{2-}	mg/l	0.05/ No relaxation	IS 3025 (Part 29)	BDL(< 0.2)	BDL(< 0.2)
19	Nickel as Ni	mg/l	0.02/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.02)	BDL(< 0.02)
20	Biochemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 44)	28	12
21	Chemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 58)	96	32
22	Oil & Grease	mg/l	Not Specified	IS 3025 (Part 39)	BDL(<2)	BDL(<2)
23	Total Suspended Solids	mg/l	Not Specified	IS 3025(Part 17)	<5	<5
24	Dissolve Oxygen as O2	mg/l	Not Specified	APHA 4500-O-B	6.2	5.8
25	Total Coliform	MPN/100ml	Absent	IS 1622	<1.8	<1.8

BDL- Below Detection Limit *Source: Netel (India) Limited*

Verified By
19/04/24
Neelima Dalvi
Technical Manager

Issued By
19/05/24
Shradha Kere
Quality Manager

TABLE – 6.4: GROUND WATER ANALYSIS RESULTS (Dated-22.05.2024)

S. No.	Parameters	Unit	Acceptable/ Permissible Limit as per IS 10500:2012	Procedure	GW1	GW2
1	Colour	Hazen	5/15	IS 3025 (Part 4)	<5	<5
2	Turbidity	NTU	1/5	IS 3025(Part 10)	3.1	2.4
3	pH at 25 °C	-	6.5-8.5/ No relaxation	IS 3025(Part 11)	6.97	7.29
4	Total dissolved solids	mg/l	500/2000	IS 3025(Part 16)	1024	876
5	Total Alkalinity as $CaCO_3$	mg/l	200/600	IS 3025(Part 23)	226.4	319.4
6	Total Hardness as $CaCO_3$	mg/l	200/600	IS 3025(Part 21)	284.2	344.6
7	Calcium Hardness as $CaCO_3$	mg/l	250	IS 3025 (Part 40)	124.2	146.3
8	Magnesium Hardness as $CaCO_3$	mg/l	200	IS 3025 (Part 21 & 40)	72.4	98.6
9	Chloride as Cl^-	mg/l	250/1000	IS 3025(Part 32)	248.6	196.3
10	Sulphate as SO_4	mg/l	200/400	IS 3025(Part 24)	165.2	142.2
11	Nitrate as NO_3	mg/l	45/ No relaxation	IS 3025(Part 34)	1.8	0.8
12	Iron as Fe	mg/l	0.3/ No relaxation	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
13	Manganese as Mn	mg/l	0.1/0.3	APHA 3111-B,23rd AAS	BDL(< 0.1)	BDL(< 0.1)
14	Fluoride as F	mg/l	1.0/1.5	IS 3025(Part 60)	0.3	0.2
15	Phenolic Copounds as Phenol	mg/l	0.001/0.002	IS 3025 (Part 43)	BDL(< 0.002)	BDL(< 0.002)
16	Cyanide as CN	mg/l	0.05/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.05)	BDL(< 0.05)
17	Zinc as Zn	mg/l	5/15	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
18	Sulphide as S^{2-}	mg/l	0.05/ No relaxation	IS 3025 (Part 29)	BDL(< 0.2)	BDL(< 0.2)
19	Nickel as Ni	mg/l	0.02/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.02)	BDL(< 0.02)
20	Biochemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 44)	26	10
21	Chemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 58)	89	41
22	Oil & Grease	mg/l	Not Specified	IS 3025 (Part 39)	BDL(<2)	BDL(<2)
23	Total Suspended Solids	mg/l	Not Specified	IS 3025(Part 17)	<5	<5
24	Dissolve Oxygen as O2	mg/l	Not Specified	APHA 4500-O-B	6.4	5.2
25	Total Coliform	MPN/100ml	Absent	IS 1622	<1.8	<1.8

BDL- Below Detection Limit *Source: Netel (India) Limited*

Verified By
16/05/24
Neelima Dalvi
Technical Manager

NETEL (INDIA) LIMITED ★ NETEL RABALE ★ NAVI MUMBAI 400701

Issued By
16/5/24
Shradha Kere
Quality Manager

TABLE – 6.4: GROUND WATER ANALYSIS RESULTS (Dated-12.06.2024)

S. No.	Parameters	Unit	Acceptable/ Permissible Limit as per IS 10500:2012	Procedure	GW1	GW2
1	Colour	Hazen	5/15	IS 3025 (Part 4)	<5	<5
2	Turbidity	NTU	1/5	IS 3025(Part 10)	2.6	3.1
3	pH at 25 °C	-	6.5-8.5/ No relaxation	IS 3025(Part 11)	7.12	6.92
4	Total dissolved solids	mg/l	500/2000	IS 3025(Part 16)	1102	952
5	Total Alkalinity as $CaCO_3$	mg/l	200/600	IS 3025(Part 23)	220.8	308.6
6	Total Hardness as $CaCO_3$	mg/l	200/600	IS 3025(Part 21)	270.6	326.8
7	Calcium Hardness as $CaCO_3$	mg/l	250	IS 3025 (Part 40)	121.5	142.6
8	Magnesium Hardness as $CaCO_3$	mg/l	200	IS 3025 (Part 21 & 40)	58.2	75.6
9	Chloride as Cl^-	mg/l	250/1000	IS 3025(Part 32)	232.1	172.2
10	Sulphate as SO_4	mg/l	200/400	IS 3025(Part 24)	148.6	168.3
11	Nitrate as NO_3	mg/l	45/ No relaxation	IS 3025(Part 34)	1.2	0.6
12	Iron as Fe	mg/l	0.3/ No relaxation	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
13	Manganese as Mn	mg/l	0.1/0.3	APHA 3111-B,23rd AAS	BDL(< 0.1)	BDL(< 0.1)
14	Fluoride as F	mg/l	1.0/1.5	IS 3025(Part 60)	0.2	<0.2
15	Phenolic Compounds as Phenol	mg/l	0.001/0.002	IS 3025 (Part 43)	BDL(< 0.002)	BDL(< 0.002)
16	Cyanide as CN	mg/l	0.05/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.05)	BDL(< 0.05)
17	Zinc as Zn	mg/l	5/15	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
18	Sulphide as S^{2-}	mg/l	0.05/ No relaxation	IS 3025 (Part 29)	BDL(< 0.2)	BDL(< 0.2)
19	Nickel as Ni	mg/l	0.02/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.02)	BDL(< 0.02)
20	Biochemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 44)	28	12
21	Chemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 58)	95	45
22	Oil & Grease	mg/l	Not Specified	IS 3025 (Part 39)	BDL(<2)	BDL(<2)
23	Total Suspended Solids	mg/l	Not Specified	IS 3025(Part 17)	<5	<5
24	Dissolve Oxygen as O2	mg/l	Not Specified	APHA 4500-O-B	6.3	5.4
25	Total Coliform	MPN/100ml	Absent	IS 1622	<1.8	<1.8

BDL- Below Detection Limit *Source: Netel (India) Limited*

Reviewed by
10/07/24
Neelima Dalvi
Technical Manager

Authorised by
10/7/24
Shradha Kere
Quality Manager

TABLE – 6.4: GROUND WATER ANALYSIS RESULTS (Dated-08.07.2024)

S. No.	Parameters	Unit	Acceptable/ Permissible Limit as per IS 10500:2012	Procedure	GW1	GW2
1	Colour	Hazen	5/15	IS 3025 (Part 4)	<5	<5
2	Turbidity	NTU	1/5	IS 3025(Part 10)	3.3	2.7
3	pH at 25 °C	-	6.5-8.5/ No relaxation	IS 3025(Part 11)	6.9	7
4	Total dissolved solids	mg/l	500/2000	IS 3025(Part 16)	912	1050
5	Total Alkalinity as $CaCO_3$	mg/l	200/600	IS 3025(Part 23)	169.2	210
6	Total Hardness as $CaCO_3$	mg/l	200/600	IS 3025(Part 21)	180.3	270.5
7	Calcium Hardness as $CaCO_3$	mg/l	250	IS 3025 (Part 40)	119	95.5
8	Magnesium Hardness as $CaCO_3$	mg/l	200	IS 3025 (Part 21 & 40)	67.7	120.2
9	Chloride as Cl^-	mg/l	250/1000	IS 3025(Part 32)	160.2	74.4
10	Sulphate as SO_4	mg/l	200/400	IS 3025(Part 24)	150.3	183.6
11	Nitrate as NO_3	mg/l	45/ No relaxation	IS 3025(Part 34)	0.4	0.7
12	Iron as Fe	mg/l	0.3/ No relaxation	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
13	Manganese as Mn	mg/l	0.1/0.3	APHA 3111-B,23rd AAS	BDL(< 0.1)	BDL(< 0.1)
14	Fluoride as F	mg/l	1.0/1.5	IS 3025(Part 60)	0.1	0.2
15	Phenolic Copounds as Phenol	mg/l	0.001/0.002	IS 3025 (Part 43)	BDL(< 0.002)	BDL(< 0.002)
16	Cyanide as CN	mg/l	0.05/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.05)	BDL(< 0.05)
17	Zinc as Zn	mg/l	5/15	APHA 3111-B,23rd AAS	BDL (<0.1)	BDL (<0.1)
18	Sulphide as S^{2-}	mg/l	0.05/ No relaxation	IS 3025 (Part 29)	BDL(< 0.2)	BDL(< 0.2)
19	Nickel as Ni	mg/l	0.02/ No relaxation	APHA 3111-B,23rd AAS	BDL(< 0.02)	BDL(< 0.02)
20	Biochemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 44)	22	18
21	Chemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 58)	68	55
22	Oil & Grease	mg/l	Not Specified	IS 3025 (Part 39)	BDL(<2)	BDL(<2)
23	Total Suspended Solids	mg/l	Not Specified	IS 3025(Part 17)	<5	<5
24	Dissolve Oxygen as O2	mg/l	Not Specified	APHA 4500-O-B	5.8	4.7
25	Total Coliform	MPN/100ml	Absent	IS 1622	<1.8	<1.8

BDL- Below Detection Limit *Source: Netel (India) Limited*

Reviewed by
09/08/24
Neelima Dalvi
Technical Manager

Authorised by
09/08/24
Shradha Kere
Quality Manager

TABLE – 6.4: GROUND WATER ANALYSIS RESULTS (Dated-24.08.2024)

S. No.	Parameters	Unit	Acceptable/ Permissible Limit as per IS 10500:2012	Procedure	GW1	GW2
1	Colour	Hazen	5/15	IS 3025 (part 4):2021	<5	<5
2	Turbidity	NTU	1/5	IS 3025 (Part 10) 1984: 2023	1.9	2.5
3	pH at 25 °C	-	6.5-8.5/ No relaxation	IS 3025 (Part 11):2022	6.8	6.5
4	Total dissolved solids	mg/l	500/2000	IS 3025 (Part 16):2023	829	975
5	Total Alkalinity as $CaCO_3$	mg/l	200/600	IS 3025(Part 23):2023	170	195
6	Total Hardness as $CaCO_3$	mg/l	200/600	IS 3025 (part 21) 2009, (RA 2019)	158.2	183.8
7	Calcium Hardness as $CaCO_3$	mg/l	250	APHA 3500-Ca-B,24th Ed:2023	124	108.5
8	Magnesium Hardness as $CaCO_3$	mg/l	200	IS 3025(Part 46):2023	71.5	89.6
9	Chloride as Cl^-	mg/l	250/1000	IS 3025 (Part 32) 1988 (RA 2019)	104.7	91.0
10	Sulphate as SO_4	mg/l	200/400	APHA 4500-SO4 (E), 24th Edition:2023	120.1	129.5
11	Nitrate as NO_3	mg/l	45/ No relaxation	IS 3025(Part 34) 1988, (RA 2019)	0.5	0.4
12	Iron as Fe	mg/l	0.3/ No relaxation	APHA 3111-B, 24th Edition:2023	BDL (<0.1)	BDL (<0.1)
13	Manganese as Mn	mg/l	0.1/0.3	APHA 3111-B, 24th Edition:2023	BDL(< 0.1)	BDL(< 0.1)
14	Fluoride as F	mg/l	1.0/1.5	IS 3025 (Part 60) 2008 (RA 2019)	0.3	0.2
15	Phenolic Copounds as Phenol	mg/l	0.001/0.002	APHA 5530-D, 24th Edition:2023	BDL(< 0.002)	BDL(< 0.002)
16	Cyanide as CN	mg/l	0.05/ No relaxation	IS 3025 (part 27) 1986, (RA 2003)	BDL(< 0.05)	BDL(< 0.05)
17	Zinc as Zn	mg/l	5/15	APHA 3111-B,24th AAS	BDL (<0.1)	BDL (<0.1)
18	Sulphide as S^{2-}	mg/l	0.05/ No relaxation	APHA 4500- S2--F-, 24th Edition:2023	BDL(< 0.2)	BDL(< 0.2)
19	Nickel as Ni	mg/l	0.02/ No relaxation	APHA 3111-B, 24th Edition:2023	BDL(< 0.02)	BDL(< 0.02)
20	Biochemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 44): 2023	17	15
21	Chemical Oxygen Demand	mg/l	Not Specified	IS 3025(Part 58): 2023	79	83
22	Oil & Grease	mg/l	Not Specified	IS 3025(Part 39)2021	BDL(<2)	BDL(<2)
23	Total Suspended Solids	mg/l	Not Specified	IS 3025 (Part 21):2022	<5	<5
24	Dissolve Oxygen as O2	mg/l	Not Specified	APHA 4500- O-B, 24th Ed:2023	3.7	2.8
25	Total Coliform	MPN/100ml	Absent	IS 1622: 1981	<1.8	<1.8

BDL- Below Detection Limit

Reviewed by
10/09/24
Neelima Dalvi
Technical Manager

Authorised by
10/09/24
Shradha Kere
Quality Manager

TABLE – 6.4: GROUND WATER ANALYSIS RESULTS (Dated-26.09.2024)

S. No.	Parameters	Unit	Acceptable/ Permissible Limit as per IS 10500:2012	Procedure	GW1	GW2
1	Colour	Hazen	5/15	IS 3025 (part 4):2021	<5	<5
2	Turbidity	NTU	1/5	IS 3025 (Part 10) 1984: 2023	1.5	1.7
3	pH at 25 °C	-	6.5-8.5/ No relaxation	IS 3025 (Part 11):2022	7.1	6.8
4	Total dissolved solids	mg/l	500/2000	IS 3025 (Part 16):2023	739	710
5	Total Alkalinity as $CaCO_3$	mg/l	200/600	IS 3025(Part 23):2023	145	167
6	Total Hardness as $CaCO_3$	mg/l	200/600	IS 3025 (part 21) 2009, (RA 2019)	172.8	156.1
7	Calcium Hardness as $CaCO_3$	mg/l	250	APHA 3500-Ca-B,24th Ed:2023	129	119
8	Magnesium Hardness as $CaCO_3$	mg/l	200	IS 3025(Part 46):2023	70.6	72.9
9	Chloride as Cl^-	mg/l	250/1000	IS 3025 (Part 32) 1988 (RA 2019)	89.7	100.3
10	Sulphate as SO_4	mg/l	200/400	APHA 4500-S04 (E), 24th Edition:2023	109.3	114.7
11	Nitrate as NO_3	mg/l	45/ No relaxation	IS 3025(Part 34) 1988, (RA 2019)	0.2	0.4
12	Iron as Fe	mg/l	0.3/ No relaxation	APHA 3111-B, 24th Edition:2023	BDL (<0.1)	BDL (<0.1)
13	Manganese as Mn	mg/l	0.1/0.3	APHA 3111-B, 24th Edition:2023	BDL(< 0.1)	BDL(< 0.1)
14	Fluoride as F	mg/l	1.0/1.5	IS 3025 (Part 60) 2008 (RA 2019)	0.1	0.1
15	Phenolic Copounds as Phenol	mg/l	0.001/0.002	APHA 5530-D, 24th Edition:2023	BDL(< 0.002)	BDL(< 0.002)
16	Cyanide as CN	mg/l	0.05/ No relaxation	IS 3025 (part 27) 1986, (RA 2003)	BDL(< 0.05)	BDL(< 0.05)
17	Zinc as Zn	mg/l	5/15	APHA 3111-B,24th AAS	BDL (<0.1)	BDL (<0.1)
18	Sulphide as S^{2-}	mg/l	0.05/ No relaxation	APHA 4500- S2--F-, 24th Edition:2023	BDL(< 0.2)	BDL(< 0.2)
19	Nickel as Ni	mg/l	0.02/ No relaxation	APHA 3111-B, 24th Edition:2023	BDL(< 0.02)	BDL(< 0.02)
20	Biochemical Oxygen Demand	mg/l	Not Specified	IS 3025 (Part 44): 2023	14	12
21	Chemical Oxygen Demand	mg/l	Not Specified	IS 3025(Part 58): 2023	89	81
22	Oil & Grease	mg/l	Not Specified	IS 3025(Part 39)2021	BDL(<2)	BDL(<2)
23	Total Suspended Solids	mg/l	Not Specified	IS 3025 (Part 21):2022	<5	<5
24	Dissolve Oxygen as O2	mg/l	Not Specified	APHA 4500- O-B, 24th Ed:2023	3.0	2.9
25	Total Coliform	MPN/100ml	Absent	IS 1622: 1981	<1.8	<1.8

BDL- Below Detection Limit

Reviewed by
Neelima Dalvi
Technical Manager
10/10/24

Authorised by
Shradha Kere
Quality Manager
10/10/24

Annexure-6

Environmental Statement (Form-V)
for FY 2023-24

[FORM -V]
(See Rule 14)

Environmental Statement for the financial year ending the 31st March 2024.

PART- A

(i) Name and Address of the owner / occupier of the industry operation or process:

Shri Ajay Tripathi
Executive Director (PC-O&M) & OIC
GAIL (India) Limited
Petrochemical Complex
P.O. Pata, District - Auraiya
Uttar Pradesh - 206 241

(ii) Industry Category: Primary – (STC Code-AAACG1209JST006)

(iii) Production Capacity:

Name of Unit	Capacity (MT/Annum)
Polymer (HDPE + LLDPE)	8,10,000
LPG	2,71,059
Propane	1,76,000
Naptha + Pentane	48,686

(iv) Date of the last environmental statement submitted- Submitted for FY 2022-23 on 14.08.2023

(v) Year of establishment- 1999

PART-B

Water and Raw Material Consumption

(i) Water Consumption m^3/day

Process - 11,100 m^3/ day *

Cooling - 22,237 m^3/ day

Domestic - 484 m^3/ day

* *Water consumption in Process includes mainly Demineralized Water & Service Water etc.*

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Name of Product	Process Water Consumption per unit of product output	
	During the Previous Financial Year 2022-23	**During the Current Financial Year 2023-24**
Polymer (HDPE + LLDPE) LPG Propane Naptha + Pentane	3.97 m^3/MT of product	3.67 m^3/MT of product
Total Production	7,18,436 MT	11,03,101 MT
Total Process Water	28,56,106 m^3	40,51,456 m^3

(ii) Raw Material Consumption

Name of Raw Material	Name of Products/unit	Consumption of Raw Material per unit of Output	
		During the Previous financial Year 2022-23	**During the Current Financial Year 2023-24**
Natural Gas*	LPG	469 SCM / MT of LPG	477 SCM / MT of LPG
Natural Gas*	Propane	536 SCM / MT of Propane	536 SCM / MT of Propane
Natural Gas*	Pentane	328 SCM / MT of Pentane	328 SCM / MT of Pentane
Natural Gas*	Naphtha	277 SCM / MT of Naphtha	277 SCM / MT of Naphtha
Ethylene	HDPE	1.024 MT / MT of HDPE	1.025 MT / MT of HDPE
Ethylene	LLDPE	0.972 MT / MT of LLDPE	1.013 MT / MT of LLDPE

**Consumption as Process Gas.*

- Industry may use codes if disclosing details of raw material would violate contractual Obligations, otherwise all industries have to name the raw materials used.

RM

PART-C

Pollution discharged to environment/unit of output
(Parameter as specified in the consent issued)

[illegible]	[illegible]	[illegible]	[illegible]
(a) Water	Qty of Treated water discharged: 3,827 M^3/day	BOD: 18.2 mg/l	0
		COD: 72.9 mg/l	0
		Oil & Grease: <2 mg/l	0
		TSS: 38.4 mg/l	0
(b) Air	Qty of Flue gases discharged: 42,093 MT/day	PM: 3.7 mg/Nm^3	0

**Average data for Financial Year 2023-24.*

PART-D

HAZARDOUS WASTES

(As specified under Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016)

Hazardous Waste	**Total Quantity**	
	During the previous Financial Year (2022-23) (MT)	**During the current Financial Year (2023-24) (MT)**
(a) From process		
Spent Activated Carbon	123.6	108.8
Spent Coke	25.6	8.4
Tar	15.8	13
Spent Resins	30.7	9.8
Waste Mineral Oil	11.2	7.1
Waste Oil	33.6	45.3
Used Lube Oil Filter Cartridges	0.0	0.0
Contaminated Cotton Rags	2.0	1.7
Used Paint Drums	0.0	0.0
Spent Catalysts	222.5	23.1
(b) From pollution control facilities		
WWTP Sludge	2430	793.1
Slop Oil	907.9	923.1

RMA

PART-E

SOLID WASTE

Solid Waste	Total Quantity	
	During the previous Financial Year (2022-23) in MT	During the current Financial Year (2023-24) in MT
(a) From process		
Spent Silica Gel	199.6	0.00
(b) From pollution control facility	-	-
(c) (1) Quantity recycled or re-utilized within the unit	-	-
(2) Sold		
Spent Alumina	966	1169
Metal Scrap	543	810
Plastic Scrap	135	114.3
Wooden Scrap	375	662
Spent Ceramic Materials	15	0.0
Cables scrap	25	14
Waste Cartons	25	91.7
Used Tyres	9.32	0
(3) Disposed	-	-

PART-F

Please specify the characterizations (in terms of composition of quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

TYPICAL CHARACTERISTICS OF HAZARDOUS WASTE

SOLID/SEMI-SOLID:

SL NO.	PARAMETERS	UNIT	TAR	SPENT CARBON	SPENT COKE	OILY SLUDGE
1.	Calorific value	Kcal/Kg	7846.2	5237	689.5	5481
2.	Moisture	%	12.1	27.86	13.2	26.48
3.	Total solids	%	88.65	72.1	86.35	70.8
4.	Volatile solids	%	85.35	63.2	82.52	64.9
5.	Ash contents	%	6.2	0.35	6.8	0.38
6.	Oil & Grease	%	6.18	0.68	7.1	0.54
Mode of Disposal			Through Authorized TSDF			

RJM

LIQUID HAZARDOUS WASTE:

TYPICAL CHARACTERISTICS OF SLOP OIL

SL NO.	PARAMETERS	UNIT	SLOP OIL
1.	Calorific value	Kcal/Kg	876.2
2.	Moisture	%	0.28
3.	Total solids	%	97.3
4.	Volatile solids	%	24.3
5.	Ash contents	%	68.4
6.	Oil & Grease	%	0.67
Mode of Disposal			Through authorized recyclers

Source: Third Party Environment monitoring report by MoEF&CC Authorized and NABL accredited agency.

PART -G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

GAIL Pata is ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001:2018 certified and GreenCo Gold rated company. The following proactive initiatives have been taken for the conservation of Natural Resources:

Water and Wastewater Management:

The water demand of the complex is met by canal water, thereby reducing/eliminating the use of precious groundwater. All the effluent generated from plant premises is routed to Waste Water Treatment Plant situated at GAIL Pata. The effluent is treated to meet the prescribed statutory standards specified by UP State Pollution Control Board (UPPCB). The quality of treated effluent is monitored continuously through online analyzers and data is transmitted to CPCB/UPPCB portal on real-time basis. A part of treated effluent is used in horticulture activities. Membrane Bio Reactor (MBR) based Sewage Treatment Plant has been set up in the GAIL Gaon Township and the treated water is used for irrigation of lawns/gardens etc. GAIL Pata conducts annual Water Audit through an accredited Agency and its recommendations are implemented to improve the efficiency of water usage.

Air Quality Management

GAIL Pata utilizes natural gas, which is considered as one of the cleanest fuels available. All the stacks in the plant have suitable height for proper dispersion of the emitted pollutants. In addition,

RJML

low NOx burners are used in all furnaces and boilers to minimize emissions. The emissions from the stacks are continuously monitored using online analyzers, and the data is transmitted to CPCB/UPPCB portal on real-time basis. Loading facilities are equipped with vapor return circuits. and gas detectors have been installed to ensure timely detection of gas leaks. GAIL Pata carries out Leak Detection & Repair Program (LDAR) for all process units, to detect any fugitive emissions (VOCs) and conserve precious resources while reducing energy consumption.

Biodiversity Management

Regular plantation at GAIL Pata and GAIL Gaon Township is carried out and an extensive greenbelt is being maintained. Mass tree plantation drives are carried out on the occasion of World Environment Day, Van Mahotsav, Birthday Tree Plantation, etc. for increasing awareness among the employees, family members, and other stakeholders. As a result, GAIL Pata have Extensive peripheral greenbelt ~36 % of the total plant area against the mandatory requirement of 33%.

Energy Management

As per requirement of Energy Conservation Act'2001 and PAT Cycle, a dedicated energy management team and an energy management cell exists in the complex comprising of a designated energy manager and other engineers who are involved in monitoring, computation & analysis of energy usages. The team helps in taking timely corrective actions in case of deviation in target performance, conducting energy audits and implementation of energy saving measures for energy efficient operation of the complex. Energy Performance parameters are benchmarked against global standards and are being monitored regularly and reviewed by top management on monthly basis.

External Energy Audits are carried out at specified intervals and Internal Energy Audits are conducted through BEE certified internal energy auditors and energy managers available in the complex. Some of the key initiatives undertaken for energy performance improvement in the last FY 2023-24 are Operational optimization of running equipment, Monitoring/Rectification of leakages/ Passing Valves, Steam Trap Sustenance Management, Phase wise replacement of HPMV lamps with LEDs, Replacement of Old Rewound Motors with Higher Efficiency IE3 class motors. GAIL Pata has recently commissioned 2.64 MWp Roof Top Grid Connected Solar PV Plant for clean energy production. This is the latest addition to the existing Roof Top Grid Connected Solar PV Plant of capacity 5.76 MWp.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution.

- Adequate stacks height has been provided for effective dispersion of pollutants.
- Low NOx burners are used in all the furnaces in the complex.
- Liquid hydrocarbon loading facilities are provided with vapor return circuits.
- Gas detectors have been installed to ensure quick detection of a gas leak.
- Five numbers of fixed Continuous Ambient Air Quality Monitoring Station (CAAQMS) and one mobile van has been installed for ambient air quality monitoring.
- All the boiler and furnace stacks are equipped with on-line analyzers for monitoring stack air quality on continuous basis.

RJM

- Data from EQMS and OCEMS are transmitted on real-time basis to CPCB & SPCB servers.
- Electronic Display board has been installed at plant main gate for public view of ambient air, stack flue gas and treated effluent quality parameters.
- Advanced Daylighting System has been installed in Mechanical Workshop on pilot basis.
- Waste paper collection trays have been installed at various sources of generation and collected paper is sent to recyclers.
- Old critical motors are being replaced with energy efficient motors in a phase wise manner.
- Biodiversity assessment was carried out in the plant as well as township premises and measures are being taken for conservation of identified flora & fauna species.
- GAIL Pata has implemented GreenCo rating system and has been rated "GreenCo Gold" by M/s CII Godrej GBC.
- GAIL Pata has setup a pilot scale plant for utilization of 1 MT of CO_2 per day through microbial route.
- GAIL Pata carried out plantation of 27,900 tree saplings during FY 2023-24.
- Zero Liquid Discharge (ZLD) project is under implementation at GAIL Pata to reduce water footprint of the plant.
- Project for installation of 15 MW floating solar has been approved.

PART-I

Any other particulars for improving the quality of the environment.

GAIL management has already initiated many projects related to the improvement of the quality of the environment some of which are described below:

- Ecological Park has been developed in GAIL Gaon Township by carrying out afforestation, fencing of the demarcated area to avoid unauthorized access, fish seeding in eco-ponds, and random dispersion of seed balls in the area.
- Butterfly garden has been developed in GAIL Gaon township by planting various species of Larval Host Plants and Nectar Plants to attract different species of butterflies.
- Installation of Hand pumps, Solar Home lights through CSR in nearby villages.
- Support towards Construction of CC Roads in nearby villages of Pata Plant
- Organic waste generated from Plant and Township is being converted into compost in Organic Waste Convertor plant installed at both plant and township premises and the compost generated is used as manure in gardens.

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Annexure-7

Agreement with State Irrigation Department regarding Consumption of Fresh Water

उत्तर प्रदेश UTTAR PRADESH

DG 738976

This agreement is made on the .....2nd.....day of May.....Two Thousands....Seventeen..... corresponding to Saka Samvat the .....Fifth.....day of Vaisakha...20..74.....

Between;

The GAIL India Limited (A Government of India Undertaking), a Government Company within the meaning of Companies Act, 2013, through its General Manager, Pata as its Executive Authority having its Corporate Office at 16, Bhikaji Cama Place, R. K. Puram, New Delhi (hereinafter referred to as "the consumer" which expression shall deemed to include its successors, assigns, representatives etc.,) of the One Part; and

The Governor of Uttar Pradesh acting through Superintendent Engineer, Irrigation work circle Etawah, Irrigation Department, Uttar Pradesh, (hereinafter referred to as "the Supplier" which expression shall deem to include its successors, assigns, representatives etc.,) of the other part.

S.E.

GAIL

R. K. MITTAL
General Manager (PC-Ops.)
GAIL (India) Limited
Pata, Dist. Auraiya-206 241 (U.P.) INDIA

11

...क्रमांक.......

स्टाम्प बिक्री की तिथि......अप्रैल/17

...का प्रयोजन......

...का नाम व पूरा पता... राजेश कुमार मित्तल पुत्र रामगोपाल मित्तल
नि० मेल... विविधपुर ... औरैया

...की हस्ताक्षर...

...कुमार मिश्र स्टाम्प वेण्डर
लाइसेंस नं० 103 लाइसेंस अवधि 20
...

कोषागार कार्यालय
25 APR 2017
औरैया

[illegible]

WHEREAS the Consumer is operating a gas based Petro Chemical Plant near Pata in District Auriaya on the right bank of Burhadana Distributory of Etawah Branch Canal and it has requested to the Irrigation Department, Government of Uttar Pradesh (herein after called "the Government") for permission to draw 30 cusec water from Etawah branch canal system through Buradana Distributory during its running days according to the roster for the use of non-irrigation purpose in Petro chemical complex at Pata.

An agreement was made between Gail, Pata and irrigation department on 04.10.2014 for supply of 13 cusec irrigation canal water and now Gail, Pata requires additional 17 cusec for its expansion project.

After this agreement for supply of 30 cusec irrigation canal water comes into force, all previous agreements including agreement for supply of 13 cusec irrigation canal water with State Irrigation Department will cease to exist.

AND WHEREAS at the request of the Consumer, the Supplier has agreed to supply 30 cusec of non-potable water in bulk to the Consumer from the Etawah Branch of Lower Ganga Canal system through Burhadana Distributory for use in Petro Chemical Complex at Pata, District Auraiya by means of Cross regulator on Burhadana Distributory and suitable intake structure constructed by the Consumer.

AND WHEREAS, in this regard, an agreement dated 05/07/2012 was executed between the consumer and the Irrigation department and in furtherance of the same, the consumer has deposited an amount of Rs. 5982.45 lacs with the Irrigation Department to undergo C.C lining / repairs of the canal to restrict water seepage.

Now the agreement witnesses as follows: -

1. In this agreement unless the contrary intention appears: -

(a) 'Canal' means Etawah Branch of Lower Ganga Canal system.

(b) "Chief Engineer" means the Chief Engineer of Irrigation Department who will be in the administrative charge of all works pertaining to Lower Ganga Canal system along with their off taking channels, and at present is Chief Engineer (Ram Ganga) with Head Quarter at Kanpur.

S.E.
I.W.O. Etawah
सिंचाई कार्य मण्डल, इटावा

GAIL
राकेश मित्तल
R. K. MITTAL
(PC-Ops.)
Limited
भारत
Pata, Distt. Auraiya-206 241 (U.P.) INDIA

(c) 'Cross Regulator' means Cross regulator constructed in Etawah Branch downstream of Burhadana Distributory Head Regulator to effect supplies into Burhadana Distributory.

(d) "General Manager" means, the General Manager of GAIL Petro Chemical Complex, Pata, District, Auraiya.

(e) "Executive Engineer" means Executive Engineer of the Irrigation Department incharge of the Burhadana Distributory, who at present is Executive Engineer, Irrigation Division, Auraiya.

(f) "Financial year" means:

(I) Each succeeding Twelve (12) month period beginning on April Ist during the term of this agreement and ending on the following March 31.

(II) In case the date of commencement of agreement is fixed any month after 1st April of the year then number of months from 1st April till preceding month of the date of signing shall not be construed as a financial year.

(III) Like wise if the date of termination of agreement is fixed any month beyond 1st April of the year then the balance of months till next 31st March shall not be construed as a financial year.

(g) "Intake cum cross regulator" means intake cum Cross Regulator Constructed on Burhadana Distributory for diverting water into the intake channel of Petro Chemical Complex, Pata.

(h) "Irrigation Department" means the Irrigation Department of Government of Uttar Pradesh.

(i) "Reduced Level" means level measured with reference to the bench mark provided on U/S bed of the regulator Km. 17.200 of Burhadana Distributory diversion left bank. The R. L. 140.355 and at Km. 16.65 RL is 140.455M.

(j) "Roster" means time schedule for running and closure of Canal as fixed by the Irrigation Department of the Uttar Pradesh Government.

(k) "Sub Divisional Officer" means the Assistant Engineer of the Irrigation Department in direct charge of Burhadana Distributory.

(l) "Superintending Engineer" means the Superintending Engineer of the Irrigation Department in direct administrative control of Etawah Branch and Burhadana Distributory presently Superintending Engineer, Irrigation Works Circle, Etawah.

(m) "The GAIL Petro Chemical Complex" means Gas based Petro Chemical Plant constructed at Pata in District Auraiya on right bank of Burhadana Distributory off taking at Km. 109.00 right bank of Etawah Branch Canal.

S.E.
I.W.C. Etawah

GAIL

(n) "Year" Means a period of 365 days (Three hundred Sixty Five days) calculated from the date of execution of this agreement except in case of leap year in which it means a period of 366 days (Three Hundred Sixty Six days) from the date of execution of this agreement.

2. The supplier and the Consumer agree as Follows: -

(a) It is agreed that that the consumer shall pay to the supplier water charges at the rate Rs. 12.48 (Rupees Twelve and Paisa forty Eight) per one thousand cubic feet which shall be charged as per actual quantity of water consumed. The said amount of water charges is being qualified as per provision in G.O. NO. 2953/11-27-सिं-4-08-(जल)/82 dated 15.07.2011. It is mutually agreed that the water charges at the above rate shall be deposited quarterly as per the actual consumption. The Government shall have the right to change the rate of water charges by way of Notifications from time to time which will be binding on consumer i.e. Gail (India) Limited, Pata, District Auraiya.

(b) Royalty charges at the rate Rs 6.00 Lacs (Six Lacs) per cusecs per Annum shall be charged as per agreement quantity as per provision of G. O. No. 2953/11-27-सिं-4-08-(जल)/82 dated 15.07.2011. The Government shall have the right to change the rate of Royalty charges from time to time which will be binding on consumer. Amount of Royalty charges due for a particular financial year shall be deposited on or before the commencement of the new financial year latest by the end of April of new financial year. To be clear the Royalty charges for financial year 2017-2018 would be payable on or before 30.04.2017 after receipt of bill from Irrigation department and likewise the subsequent payments would be made.

(c) Under the agreement Irrigation Department shall supply 30 cusecs non-potable water from Burhadana Distributory into both intake channels constructed by Consumer provided that the canal is not closed as per roster.

(d) The Consumer may store sufficient water as per their requirement in their storage tanks for use during Canal closure.

(e) Etawah Branch / Burhadana Distributory, supplying water to the consumer will be operated as per roster which will have a normal canal closure period not exceeding 4 (four) weeks at a stretch. However, if the canal closure is not as per the Roster or is for a period of more than 4 (four) weeks duration, the supplier shall inform consumer one month in advance of such canal closure.

S.E.
I.W. Co. Etawah
सिंचाई कार्य मण्डल, इटावा

GAIL

राकेश मित्तल
R. K. MITTAL
महाप्रबंधक (पी.सी.-पाटा)/General Manager (PC-Pata)
गेल (इंडिया) लिमिटेड/GAIL (India) Limited
पाटा, जिला औरैया-206 241 (उ०प्र०) भारत
Pata, Distt. Auraiya-206 241 (U.P.) INDIA

(f) The supplier shall supply to the consumer a copy of the roster for both Kharif and Rabi to know about tentative period of running and closure of the canal every year.

(g) Consumer shall provide following residential accommodation for the staff & executives of Irrigation Department in their colony at Dibiyapur to facilitate day to day working and close liaison on similar terms and conditions as applicable to GAIL staff on chargeable basis. The accommodation shall be earmarked and handed over in the name of Executive Engineer of Irrigation Division Auraiya, Dibiyapur (Supplier).

For Assistant Engineer Incharge, type 'C' one number (unfurnished).

For Junior Engineer Incharge type 'B' one number (unfurnished).

Two Bachelor accommodations.

(h) The Executive Engineer, Assistant Engineer and Junior Engineer Incharge of Irrigation Division Auraiya, Dibiyapur (Supplier) or any other authority/agent of Uttar Pradesh Irrigation Department shall have free access to the off-take Pump House and other structures and equipments where measuring devices for consumption of water are installed.

(i) All subsequent alterations or additions in the pumping equipments or the measuring devices or both, if considered necessary, shall be done at its cost by consumer with prior written concurrence of Irrigation Department.

(j) The joint discharge of intake channels shall be observed monthly to ascertain actual consumption of water by consumer. Executive Engineer shall inform the date of joint observation of discharges to consumer.

(k) If the payment.of dues, as per bills submitted by the Executive Engineer, is not made within the Twelve months of their presentation, the Irrigation Department shall have the right to stop the supplies after giving thirty days notice to the Consumer.

(l) Annual maintenance cost of work constructed and maintained by the Irrigation Department for supplying water to the GAIL, Petro Chemical Complex shall be paid by the consumer to the Irrigation Department. This amount shall be calculated at the rate of 2% (Two percent) per annum on the total actual cost of the works paid by Gail. This amount shall be increased annually at the simple rate of escalation of 10% (ten percent) per annum. Cost of special repairs or any alternations and additions at any stage for maintenance of supply of 30 cusecs non-potable additional water will be borne by the consumer separately.

(m) The Consumer shall also pay the Irrigation Department 12.5% centage charges and in addition 1% cess charges on the actual cost of works executed by Irrigation Department at the rates that may be decided by the Government from time to time.

S.E.
I.W.C. Etawah
अधीक्षण अभियन्ता
सिंचाई कार्य मण्डल, इटावा

GAIL

राकेश मित्तल
R. K. MITTAL
महाप्रबंधक (पी.सी.-प्रचालन) / General Manager (PC-Ops)
गेल (इंडिया) लिमिटेड / GAIL (India) Limited
पाता, जिला औरैया-206 241 (उ०प्र०) भारत
Pata, Distt. Auraiya-206 241 (U.P.) INDIA

(n) The demand of funds for the annual maintenance, as per clause (l) above, for the commencing Financial Year shall be sent by Executive Engineer to General Manager in the month of March of every year and Consumer shall have to pay this demand amount by the end of April of the following financial year.

(o) Final bill on account of annual maintenance charges as per clause (l) above for the financial year shall be submitted by the end of April of following year, crediting the amount already paid by the consumer.

(p) The amount of Royalty charges, centage charges, annual maintenance cost and other amount which are payable by the consumer at a specified time shall be paid by the consumer on or before the specified date and time. In case the consumer fails to deposit above amount on the specified date and time, the above amount may be recovered from the consumer after one month from the specified date as an arrear of land revenue at the certificate of Superintending Engineer.

(q) The agreement shall come into force from the date of its execution and will remain effective for a period of 10 (Ten) years unless otherwise terminated earlier.

(r) After the execution of this agreement all notices to be given or action to be taken under this agreement on behalf of the Consumer, shall be given or taken by the General Manager, GAIL Petro Chemical Complex, Pata who will be addressed in all matters connected with this agreement.

(s) Effluent water generated, if any, after consumption shall be treated as per the norms of U.P. Pollution Control Board by the consumer before discharging into the natural drain. If any guidelines made by Center Government national green tribunal, the consumer have to follow the guidelines for treatment of effluent water.

(t) In the event of any dispute, arising out of this agreement, which can not be settled by the joint examination of the facts by the Superintending Engineer, Irrigation Department and the General Manager, shall be referred in writing to the Chief Engineer, Irrigation Department Incharge of this work, and his decision shall be final and legally binding on both the parties.

S.E.
I.W.C. Etawah
अधीक्षण अभियन्ता
सिंचाई कार्य मण्डल, इटावा

GAIL

राकेश मित्तल
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पाता, जिला औरैया-206 241 (उ०प्र०) भारत
Pata, Distt. Auraiya-206 241 (U.P.) INDIA

In witness, whereof these presents have been signed by the parties to this agreement on the day and year above written.

(T. C. Sharma)
SEIWC Etawah
Signed for and on behalf of Governor of Uttar Pradesh

(R. K. MITTAL)
General Manager (PC-Opn.)
Signed for and on behalf of GAIL India Limited, Pata

In the presence of

1. **(Rajeev Mittal)**
   E.E.I.D. Auraiya, Dibiyapur

2. **(Jas Ram Singh)**
   A.E.I.D. Auraiya, Dibiyapur

Name and address

In the presence of

1. ..... 02/05/2017
   (RAM NIHOR RAI)
   DGM (PC-OJ), GAIL, PATA

2. ..... 02/5/2017
   Chief Manager (PC-operation)
   GAIL, PATA

Name and address

Annexure-8

Letter submitted to Regional Office, MoEF&CC regarding advertisement of receipt of EC in the local newspapers

बांदा: प्रवक्ता के आठ साल के बेटे की अपहरण के बाद हत्या

संवाद न्यूज एजेंसी

प्रिंस फाइल फोटो

सोमवार को घर के बाहर से सुबह किया था अगवा

परिजनों ने एक घंटे बच्चे का शव नहीं उठने दिया

ओरन (बांदा)। बिसंडा थाना क्षेत्र के चौसड़ गांव स्थित भागीरथी महाविद्यालय के प्रवक्ता के आठ साल के बेटे का सोमवार की सुबह अपहरण कर गला घोंटकर हत्या कर दी गई और शव को पुआल के ढेर में छिपा दिया गया। मंगलवार को शव मिलने के बाद परिजन और ग्रामीण भड़क उठे और पुलिस को शव नहीं उठाने दिया। मौके पर पहुंचे एसपी डा. एसएस मीणा के आरोपियों की शीघ्र गिरफ्तारी के आश्वासन पर शव को पुलिस कब्जे में ले सकी। परिजनों ने गांव के युवक पर अपहरण और हत्या की रिपोर्ट दर्ज कराई है। उधर, परिजनों ने आशंका जताई कि प्रिंस के आंखों और मुंह पर चिपकने वाला कोई पदार्थ भी डाला गया था, लेकिन पोस्टमार्टम में ऐसे कोई निशान नहीं मिले।

महाविद्यालय में प्रवक्ता पद पर तैनात हैं। सोमवार की सुबह 10 बजे गांव के स्कूल में चौथी कक्षा में पढ़ने वाला उनका बेटा प्रिंस घर के दरवाजे पर खेलते समय लापता हो गया। दिनभर तलाश के बाद पता नहीं चला। रात करीब 8.55 बजे प्रवक्ता के फोन पर एक कॉल आई, जिसमें बेटे की सही सलामती को पुलिस को सूचना न देने की ताकीद की गई। कुछ देर बाद फिर फोन आया, जिसमें पुलिस को सूचना देने पर नाराजगी जताई गई। मंगलवार सुबह घर से करीब सौ मीटर दूर तालाब के पास पुआल के ढेर के पास प्रिंस की चप्पलें पड़ी मिलीं। पुआल हटाने पर प्रिंस का शव मिला। [illegible]

हमीरपुर : बोलेरो में धमाका, छह लोग घायल

भरुआसुमेरपुर (हमीरपुर)। कानपुर-सागर हाईवे पर मंगलवार दोपहर करीब 12:30 बजे मुस्करा की तरफ जा रही बोलेरो में बसस्टैंड के पास अचानक विस्फोट हो गया। जब तक लोग संभल पाते बोलेरो में सवार लोग मौके से भाग निकले। विस्फोट से बस स्टैंड के निकट गैराज में खड़ी एक कार, दो बोलेरो व एक बस क्षतिग्रस्त हो गई। हादसे में गैराज में काम कर रहे मिस्त्री सोनू, मोहित, विष्णु के साथ राहगीर नेहा (30), सरस्वती (60) व सल्लू प्रसाद शर्मा (55) घायल हो गए। घायल नेहा, सरस्वती व सल्लू को सदर अस्पताल भेजा गया है, जबकि अन्य को पीएचसी में भर्ती कराया गया है। हादसे में रमेशचंद्र गुप्ता के मकान की दूसरी मंजिल में लगे शीशे चकनाचूर हो गए। (संवाद)

Amar Ujala - 21/10/2020

न पहुंची। अब

तार्ड का शिलान्यास

र : नगर निगम की स्वास्थ्य
ेतु प्रस्तावित 30 शय्या गोपाल नगर,
। नगर, गड़रिया, अमरीश
देवली नगर समेत कई जगह
र्ग का शिलान्यास कराया। जाम

एवं निजी लैब में भेजा जा रहा है।

मेडिकल कॉलेज के माइक्रो बायोलॉजी विभाग की लैब में में रोजाना 40-50 सैंपल जांच कराने पहुंच रहे हैं। हालांकि अभी एक दिन छोड़कर जांच हो रही है। उसला में जांच न होने से यहां के सैंपल भी मेडिकल कॉलेज भेजे जा रहे हैं।

नमूना का भार कर इकट्ठा करना पड़ता है। चार-चार गाड़ी सैंपल भी जमा कर चुकी हो रहे हैं।

डॉ. महेंद्र सागवंशी, असोसिएट प्रोफेसर एवं एचओडी माइक्रो

का लाए जाने वाले नमूनों की जांच तेजी से एंटीजेन्स किटने की बात बताते हैं। इस वजह डेंगू की स्थिति गंभीर है।

डॉ. नूतन आन, चिकित्सा अधीक्षक (जनरल मेडिसिन एवं इंचार्ज डेंगू इकाई), जेकेसीओएच

8, उनका इलाज एवं स्क्रीनिंग में जांच शुरू की जाएगी। साथ मरीज पर इलाज कराया जा सके।

डॉ. एके सिंह, सुपरिंटेंडेंट एवं नोडल अधिकारी कोरोना वार्ड जे.के.सी.ओ

मेडिकल कॉलेज की जांच में 10-15 में डेंगू की पुष्टि हो रही है। इसी तरह निजी लैब की जांच में भी 20-25 केस रोज आ रहे हैं। समय पर इसे लेकर सतर्कता बरती जानी बेहद ही जरूरी है।

है, जो स्तन कैंसर से पीड़ित थीं। वहीं अमरेंद्रपुरी निवासी 60 वर्षीय बुजुर्ग लाइसेंसिन, मधुमेह एवं निमोनिया से पीड़ित थे। इसमें से एक ने हैलट के कोविड हॉस्पिटल और दूसरे ने नाजरेथ मेडिकल कॉलेज एवं हॉस्पिटल में इलाज के दौरान दम तोड़ दिया।

जैस पहले थे। इस दौरान कलेक्ट्रेट के एनआइसी सभागार में प्राचार्य प्रो. आरती कपाल, उप प्राचार्य प्रो. रिंटा गिरि, प्रमुख अधीक्षक डॉ. ज्योति सक्सेना, डॉ. मनीष सिंह, डॉ. अनिल वर्मा, डॉ. अवधेश्वर सिंह, डॉ. अनंत सचान मौजूद रहे। डॉ. दुबे ने कहा कि चरणबद्ध तरीके से ओपीडी सेवाएं शुरू करें। दूर-दराज से आने वाले

शुरू करने की अनुमति मांगी। डॉ. दुबे ने कहा कि अगर जॉन कॉनेक्ट की ओपीडी चलानी है तो अलग भवन में चलाएं। अपर मुख्य सचिव ने कहा कि संजय गांधी स्नातकोत्तर आयुर्विज्ञान संस्थान की तर्ज पर कोविड, आइसीयू एवं आइसोलेशन वार्ड, जो वर्तमान चिकित्सक इंटर्नल बचुअल स्टाफ रोजाना से।

ोरोना को हराने के लिए पेश की कहानी

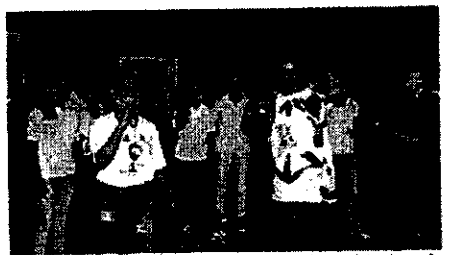
जागरण अभियान

दिशा संदेश

- मंच डेकर पर नुक्कड़ नाटक से मास्क पहनने की अपील की
- टेक्निक जागरण व पुलिस कोरोना को लेकर कर रही है जागरूक

कानपुर : गुनहगारों की धर
में वाले 'दृश्यम', 'सिंघम-
' ने कॉलेज कार्यक्रम पर कारी
की। अपने अभिनय, संवाद,
कलाकारों के ट्रांस पर लोगों
ुरंजन के खजर से
ह फिर और मास्क
र ही घर से
निकलने की
न की। मौका
लाकार को
को मंच
पर नुक्कड़
के आयोजन
जिसकी प्रस्तुति
छात्रियों ने दी। यह
अभिनय का हिस्सा है, जिसे
'जागरण के सहयोग से कानपुर
। आमजन को कोविड-19 के

नियों का पालन करके और नियमित हाथों को धोकर रहने है। उनका कहना कुछ भी बिगाड़ नहीं पाता है। उनके अभिनय पर तालियां बजीं। नुक्कड़ नाटक में सुरभा द्विवेदी, हन्नी सिंह, विष्णु कुंतल, सृष्टि, दिव्यका ठाकुर, स्वाति, प्रीति, सीमा, सागर पोरवाल अभिनय किया।



टेक्निक जागरण व कानपुर पुलिस के ट्रांस टलाव जा रहे अभियान के तहत कोरोना से बचाव के लिए नुक्कड़ नाटक के जरिए जागरूक किया गया ● जागरण

प्रभावी रणनीतियों पर मंथन किया जाएगा। इसमें जेएसवीएम मेडिकल कॉलेज की पूर्व प्राचार्य प्रो. आरती लालचंदानी, एएसपी निखिल पाठक, नोडल रोग विशेषज्ञ डॉ. अवधेश दुबे, सर्जरी रोग विशेषज्ञ डॉ. मोनिका सचदेवा, मेडिसिन रोग विशेषज्ञ डॉ. मनीष माहेश्वरी, डॉ. शैली माहेश्वरी, मैक्सो सर्जन डॉ. आरके जौहरी, डॉ. अनुराज रजोरिया, डॉ. वीरेन्द्र सिंह, डॉ. विकास श्रीवास्तव, डॉ. आशीष श्रीवास्तव, डॉ. नवनीत चौधरी, जेएसवीएम मेडिकल कॉलेज की चीफ वैक प्रभारी डॉ. सुबरन खान आदि

पहले ही खप गए डोबुटामिन इंजेक्शन

जागरण संवाददाता : दिल के मरीजों के लिए उप मेडिकल सप्लाई कॉरपोरेशन (यूपीएमएससी) द्वारा भेजा गया डोबुटामिन-50 एमजी इंजेक्शन का नमूना जांच में फेल हो गया है। जिले के उर्सला व कमलापत मेमोरियल (केपीएम) हॉस्पिटल में इंजेक्शन की आपूर्ति हुई थी, लेकिन पत्र मिलने से पहले ही इंजेक्शन खप चुके थे।

वित्तीय वर्ष 2019-2020 में डेहरादून की हिमालय मेडिकल ग्राहक लिमिटेड को डोबुटामिन-50 एमजी इंजेक्शन की आपूर्ति का ठेका यूपीएमएससी ने दिया था। कंपनी ने बैच नंबर एचएल भाव 124सी, जिसकी मैन्युफैक्चरिंग तिथि मार्च 2019 एवं एक्सपायरी फरवरी 2021 थी। इसी तरह बैच नंबर एचएल भाव 888अप्रैल, जिसकी मैन्युफैक्चरिंग तिथि जून 2019 एवं एक्सपायरी मई 2021 थी। यूपीएमएससी ने सभी जिलों के सीएमओ एवं अस्पतालों के सीएमएस को पत्र भेजकर दवाओं के इस्तेमाल पर रोक लगा दी है। उर्सला अस्पताल के चिकित्सा अधीक्षक डॉ. एके सिंह का कहना है कि अस्पताल में 100 वॉयल आए थे, जो सितंबर में खत्म हो गए। उसके बाद से अभी तक इंजेक्शन की आपूर्ति नहीं हुई है।

Dainik Jagran - 21/10/2020

tting DL

official said that the testing camps start functioning from 8.30am and till about 11am, the counters inside see scant footfall but suddenly then, the rush goes up. "We were able to regulate entry to the RTO very well till the camps opened. Now, a large number of people gather at the premises after undergoing tests," he added.

"The testing site is not permanent and it is going to shift to another place that needs attention as we keep doing this on a rotational basis. However, it takes time to set up camps and when we do, we keep testing continuously for enough days," Kaur said, adding that when the positivity rate dips, camps are shifted to another public place.

Forensic lab told to expedite test of riots' data

New Delhi: A Delhi court has directed the director of Forensic Investigation of Crime and Scientific Services (CFSL) to expedite the examination of the analysis of electronic data in a case related to the communal violence in northeast Delhi in February. Metropolitan Magistrate Fahad Uddin asked police to expedite the process and take steps for filing supplementary chargesheet along with pending forensic lab results at the earliest in the case related to the riots in Jaffrabad. The court was hearing an application filed by JNU student and Pinjra Tod activist Devangana Kalita, arrested in the case, seeking copies of videos of protests against CAA and other electronic data available with the police in the matter. PTI

ter in the city due to rampant advertisements for maximising revenue. But officials maintained that SDMC had been following the outdoor advertisement policy.

wraps of LED screens. "For LED screens, a maximum of 50-sq-meter area will be allowed and double the rate of the normal monthly licence fee will be levied," the official said.

Times of India - Delhi
21-10-2020

Indian Express - Delhi 21-10-2020

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CORONAVIRUS IN THE CAPITAL

TOTAL CASES		Total	Vacant
3,36,750	HOSPITAL BEDS	15,723	10,659
	VENTILATORS	1,264	536

	Daily cases	Recoveries	Deaths	Tests
Oct 19	2,154	2,845	31	36,445
Oct 20	3,579	2,186	41	56,593
Total	23,922*	3,06,747	6,081	40,83,476

*Total active cases

...said there have been repeated instances where RT-PCR test results were not made available to people within 24 hours, and called it "most unacceptable" that the time taken for results was still extending upto even four days.

The court asked the Delhi government in its next status report to clarify how the system is being streamlined to ensure the turnaround time for testing is adhered to. There is obviously "some lag" which must be addressed at earliest, observed the court, while hearing a petition filed by advocate Rakesh Malhotra regarding Delhi's Covid testing strategy.

"The direction is considered necessary in light of the fact that on most occasions where the samples are collected and sent to the laboratories for testing, the person who is tested is not given ... Justices Hima Kohli and Subramonium ... observed, adding there is no reason why results should not be communicated on the mobile phone to the persons. The court made the observations after taking note of recommendations made by an Expert Committee on the Testing Strategy, which said results should be available within 24 hours and suspected cases should ensure strict isolation till then.

"When the government has declared a complete unlockdown which requires all employed persons to report for duty regularly... nor can the self-employed persons/professionals be expected to remain in isolation unnecessarily. It is most unacceptable that turnaround for results is still far exceeding 24 hours and extending upto four days," said the court.

...said it was time for prisoners out on interim bail or parole on account of Covid-19 pandemic to return to jails, after it was informed that only three inmates now suffer from Covid-19. A total of 6,711 inmates would have to surrender if the court decides not to extend its blanket order extending the interim bail and parole of prisoners.

The full bench of Chief Justice D N Patel and Justice Siddharth Mridul and Justice Talwant Singh was hearing a suo-motu case regarding extension in interim bails and parole. Directions were passed by the court earlier to decongest the city's jails to contain the spread of Covid-19 there.

"We are not concerned with the capacity of jails and the nature of offence. The order was passed only due to Covid and ...

However, the Delhi government's senior standing counsel (criminal) Rahul Mehra submitted the state has not brought anything before the court to show the decongestion has led to widespread crime in the city. Mehra also said Covid-19 by "no means is over in Delhi" and there are still a high number of cases.

Mehra also submitted it would be against the spirit of the Supreme Court judgement regarding decongestion of jails during the pandemic. However, CJ Patel observed the "Covid chapter" should close, adding that other avenues for bail and parole exist, and the power of the apex court's high-powered committee will still remain. "Let them surrender and get bail on merits... in a usual manner," he said.