



GIL/ENV/2021-22/29

28th May 2021

To,

Ministry of Environment, Forest and Climate Change,
Regional Office (Central Zone),
Kendriya Bhawan, 5th Floor,
Sector "H", Aliganj,
Lucknow – 226020

Kind Attn: Director, MOEF& CC

Subject: Compliance Status of Environment Clearance accorded by Ministry of Environment, Forests & Climate Change, Government of India, New Delhi.

Reference:

1. Environment Clearance - Project Code: **IV/ENV/UP/IND-70/184/2005**, for Expansion of Membrane Cell Technology based Caustic Soda Plant from 145 MTPD to 255 MTPD vide Clearance letter No- J-1101/51/2005-1A II (I) dtd. 13.10.2005
2. Environment Clearance -Project Code No. **IV/ENV/UP/IND-89/233/2007**, for Expansion of Membrane Cell Technology based Caustic Soda Plant from 255 TPD to 365 TPD vide Clearance letter No. J-11011/284/2006 – 1A II (I) dtd. 21.05.2007

Respected Sir,

This is in reference to above mentioned Environmental Clearance letter received from MoEF & CC, Please note that we are complying all stipulated conditions. We are attaching herewith the descriptive reports (As per Annexure-1 & Annexure-2) on the status of compliance to conditions of Environment Clearance for the period **1st October 2020 to 31st March 2021**.

We hope you will find the above in order.

Yours Faithfully,

For, **Grasim Industries Limited,**
Chemical Division, Renukoot

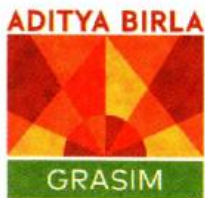
V.K. Yadav
Vinay Yadav
Manager - Environment



Grasim Industries Limited
Chemical Division Renukoot
P.O.: Renukoot - 231 217,
Distt.: Sonebhadra (U.P.) India

Telephone +91- 5446 - 252044/55/75
Fax +91- 5446 - 252088

Website www.grasim.com
E-mail grasim.renukoot@adityabirla.com
CIN L17124MP1947PLC000410
PAN AAACG4464B



GIL/ENV/2021-22/29

28th May 2021

To,

Ministry of Environment, Forest and Climate Change,
Regional Office (Central Zone),
Kendriya Bhawan, 5th Floor,
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2. Environment Clearance -Project Code No. **IV/ENV/UP/IND-89/233/2007**, for Expansion of Membrane Cell Technology based Caustic Soda Plant from 255 TPD to 365 TPD vide Clearance letter No. J-11011/284/2006 – IA II (I) dtd. 21.05.2007

Respected Sir,

This is in reference to above mentioned Environmental Clearance letter received from MoEF & CC, Please note that we are complying all stipulated conditions. We are attaching herewith the descriptive reports (As per Annexure-1 & Annexure-2) on the status of compliance to conditions of Environment Clearance for the period **1st October 2020 to 31st March 2021**.

We hope you will find the above in order.

Yours Faithfully,

**For, Grasim Industries Limited,
Chemical Division, Renukoot**

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Annexure-1

Environment Clearance Compliance - Project Code **IV/ENV/UP/IND-70/184/2005**, for Expansion of Membrane Cell Technology based Caustic Soda Plant from 145 MTPD to 255 MTPD vide Clearance letter No. J-1101/51/2005-1A II (I) dtd. 13.10.2005.

Period of Compliance Report : **1st October 2020 to 31st March 2021**

Specific Conditions:

Sr. No.	Conditions	Compliance Status
1.	The gaseous emissions (SO ₂ , NO _x , Cl ₂ & HCl) particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels 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.	All the gases emission like SO ₂ , NO _x , Cl ₂ & HCl and SPM from various process units of the plant is within the limits as prescribed by the Pollution Control Board. Latest months Stack monitoring report is attached, this monitoring done by 3 rd Party. Unit has also installed continuous online monitoring system for emissions testing of above parameters and real time data transfer on CPCB server on continuous basis. Annexure 1 – PGD and Boiler stacks monitoring report done by Prakriti Consultant, Lucknow Annexure 2 – Stack Report (Mem-1, 2&3) by Prakriti Consultant, Lucknow
2.	Ambient air quality monitoring stations shall be set up in the downwind direction as well as where maximum ground level concentration are anticipated in consultation with the SPCB and data submitted to the Ministry.	Ambient Air Monitoring at 04 locations within premises has been done by 3 rd Party. CAAQMS is installed on-line ambient air monitoring at Renukeshwar Temple. Report submitted Quarterly to ministry. Annexure 3 –latest monthly monitoring report done by Prakriti Consultant, Lucknow Annexure 4 – Biannual Audit report done by NEERI
3.	The effluent generation after expansion shall not exceed 0.80 m ³ /ton of the product. The treated effluent shall conform to the standards stipulated by the UPPCB while granting NOC to the expansion project and for discharge in inland surface water. The company shall make efforts to maximize the use of treated effluent for green belt development within the plant complex to minimize the discharge of treated effluent into Dongia Nallah. Further, efforts shall be made by maximizing optimal re-use and recycle of treated effluent in processes and utilities to reduce the fresh water.	The effluent generation is below 0.80 m ³ /ton of product. All effluent is treated through full fledged ETP along with RO, MEE and ATFD system. Unit has already achieved and implemented Zero liquid discharge facility at site and real time data transferred on CPCB server on continuous basis through online Flow meter and PTZ camera installed at final discharge point. Annexure 4 – Biannual Audit report done by NEERI

V.K. Yadav

4.	The vent gases from chlorine absorber of sodium hydrochloride plant and HCl acid plant shall be controlled at source by effective absorption system so that Chlorine concentration in the vent gases shall not exceed 5 ppm. The vent gases shall be discharged from the stacks of adequate height for effective dispersion.	Sodium hypo-chlorite vent gases are monitored and controlled effectively at source and vent gases concentration are below the specified limits. The gases are being dispersed through the stacks more than 30 meter height. Unit has also installed continuous online monitoring system for Chlorine & HCl and real time data transfer on CPCB server on continuous basis. Annexure 2 – Stack Report (Mem-1, 2&3) by Prakriti Consultant, Lucknow
5.	The solid waste including ETP sludge shall be disposed off in the landfill site approved by the State Control Pollution Board. Any further extension or creation of new secured landfill facility shall be as per the CPCB guidelines.	We have disposed all Hazardous waste, authorized by UPPCB through Common TSDF of Bharat Oil and Waste Management Ltd. during the period as per rules. Annexure 5 – Form -4 is attached for FY 2020-21.
6.	The company shall seek permission from the State Irrigation Department to draw water from the Rihand reservoir.	The water withdrawal from Rihand Reservoir is as per agreement with UP Jal Vidyut Nigam Ltd.
7.	The company shall develop rainwater-harvesting structures to harvest the runoff water from the rooftop and by laying a separate storm water drainage system for recharge of ground water.	There is no feasibility of rain water harvesting potential at our site due to hilly region, as per CGWB.
8.	Green belt shall be developed in an area of 22.75 ha to mitigate the effects of fugitive emissions all around the plant. The development of green belt shall be as per the Central Pollution Control Boards guidelines.	Greenbelt has been developed in 82.28 hectare area around the plant. Which is around 62% of total area.
9.	The project authorities shall comply with the recommendations made in the Disaster Management Plan. The Company shall install chlorine gas detectors to detect leakage of chlorine at liquid chlorine storage tanks, sodium hypo plant at vent pipe, HCl synthesis unit at vent pipe and electrolyzes area. The company should install on-line Hydrogen in Chlorine analyzer.	DMP has been prepared and has complied with its recommendation. 60 Nos. online Chlorine gas detectors have been installed at different location in Chlorine storage tank, Sodium Hypo plant, HCl synthesis and Electrolyser area for monitoring of any residual chlorine leakage.

V.K. Yadav

General Conditions:

Sr. No.	Conditions	Compliance status
1.	The project authorities must strictly adhere to the stipulations made by the Uttar Pradesh Pollution Control Board (UPPCB).	We follow the direction/guideline of UPPCB and consents are obtained.
2.	No further expansion or modifications in the plant shall be carried out without prior approval of 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.	No further expansion or modifications has been done.
3.	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and import of Hazardous Chemicals Rules, 1989 as amended in October 1994 and January 2000. Prior approvals from Chief Inspectorate of Factories, Chief of Controller Explosives, and Fire Safety Inspectorate etc. must be obtained.	We are complying with the MSIHC rules 1989 as amended in 1994 and 2000 and prepared On Site and Off Site emergency plans and drills.
4.	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 collection/treatment/storage / disposal of hazardous wastes.	Hazardous waste authorization has been obtained from UPPCB Lucknow for disposal and treatment of hazardous waste accordance with the Hazardous Wastes (Management and Handling) Rules, 2016.
5.	The overall noise levels in and around the plant area should 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 should conform to the standards prescribed under Environment (Protection) Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time)	Silencers provided to DG set vent and acoustic enclosures have been provided. The overall noise level and ambient noise levels during daytime and night time are within prescribed limits. Annexure 4 – Biannual Audit report done by NEERI
6.	Occupational health surveillance program should be undertaken as regular exercise for all the employees, specially for those engaged in handling hazardous substances. The first aid facilities in the occupational health center shall be strengthened and the	Annual health check-up of all employees are done. An 8 bed OHC headed by a MBBS Doctor equipped with Ambulance are available. Records of medical examination maintained.

V.K. Yadav

Sr. No.	Conditions	Compliance status
	medical records of each employee should be maintained separately.	
7.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and Disaster Management Plan. The company also under takes social welfare/community development measures in the surrounding villages such as health care, education and drinking water supply facilities.	We comply with the safeguards recommended in EIA and DMP. Regular health camps, training workshops, RO drinking water, free school education etc. in villages situated around GIL are undertaken as part of our Rural development activities.
8.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions.	We are having Structured Environment Management System in place and also we are having separate EMS Cell at unit level with full-fledged laboratory set up.
9.	The project authorities will provided requisite funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment & Forests as well as State Government along with the implementation schedule for all the condition stipulated herein. The funds so provided shall not be diverted for any other purpose.	There is no paucity of funds for environmental pollution control.
10.	The implementation of the project vis-à-vis environmental action plans will be monitored by the Ministry's Regional Office at Lucknow / UPPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies.	Six monthly reports are sent to authorities.
11.	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 UPPCB/Committee and may also be seen at Website of the Ministry at http://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.	Already advertised in two local newspapers i.e. Hindustan dated 22.10.05 & Dainik Jagaran dated 22.10.05. Copy of the advertisement already sent to regional office.
12.	The Project Authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work, if any.	Data sheets sent to regional office.

V.K. Yadav

Annexure-2

Environment Clearance Compliance of Project Code No. **IV/ENV/UP/IND-89/233/2007**, for Expansion of Membrane Cell Technology based Caustic Soda Plant from 255 TPD to 365 TPD vide Clearance letter No. J-11011/284/2006 – IA II (I) dtd. 21.05.2007

Period of Compliance Report : **1st October 2020 to 31st March 2021**

Specific Conditions:

Sr. No.	Conditions	Compliance Status
1.	The gaseous emissions (SO ₂ , NO _x , Cl ₂ & HCl) particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels 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.	All the gases emission like SO ₂ , NO _x , Cl ₂ & HCl and SPM from various process units of the plant is within the limits as prescribed by the Pollution Control Board. Latest months Stack monitoring report is attached, this monitoring done by 3 rd Party. Unit has also installed continuous online monitoring system for emissions testing of above parameters and real time data transfer on CPCB server on continuous basis. Annexure 1 – PGD and Boiler stacks monitoring report done by Prakriti Consultant, Lucknow Annexure 2 – Stack Report (Mem-1, 2&3) by Prakriti Consultant, Lucknow
2.	Ambient air quality monitoring stations shall be set up in the downwind direction as well as where maximum ground level concentration are anticipated in consultation with the SPCB and data submitted to the Ministry.	Ambient Air Monitoring at 04 locations within premises has been done by 3 rd Party. CAAQMS is installed on-line ambient air monitoring at Renukeshwar Temple. Report submitted Quarterly to ministry. Annexure 3 –latest monthly AAQ monitoring report done by Prakriti Consultant, Lucknow Annexure 4 – Biannual Audit report done by NEERI
3.	All the pipelines containing Cl ₂ shall be connected to the Sodium Hypochlorite (Hypo) plant to control the Cl ₂ emissions. Any Cl ₂ escaping anywhere due to leakage, plant emergency shall be sucked into Hypo plant. High efficiency Karbate absorbers – coolers and scrubbers shall be installed for the absorption of HCl gas and scrubbing vent gases. The vent gases from chlorine absorber of sodium hydrochloride plant and HCl plant shall be controlled at source by effective absorption system so that Cl ₂ concentration in the vent gases shall not exceed 5 ppm. The vent gases shall be discharged from the stacks of adequate height for effective dispersion.	All the Cl ₂ pipelines are connected to the Sodium hypochlorite/Calcium Hypo Chlorite. High efficiency absorbers, coolers and scrubbers have been installed. The vent gases from the Sodium Hypo Chlorite and HCl plant is below the specified limits. The gases are being dispersed through the stacks at more than 30 meter height. We have also installed continuous online monitoring system for emissions and real time data transferred to CPCB server. Annexure 2 – Stack Report (Mem-1, 2&3) by Prakriti Consultant, Lucknow

V.K. Yadav

Sr. No.	Conditions	Compliance Status
4.	Lindane unit shall be provided with bag filters and efficient dust collectors. Scrubbers shall be provided to the Al ₂ Cl ₃ unit to scrub un-reacted Cl ₂ from reactors and Al ₂ Cl ₃ vapor.	Related plants have been stopped permanently. Scrubbers has been provided to the Al ₂ Cl ₃ unit to scrub un-reacted Cl ₂ from reactors and Al ₂ Cl ₃ vapor.
5.	Regular monitoring of fugitive emission in the work zone environment for all the relevant parameters including Cl ₂ , Hg, HCl and Benzene etc. using proper instruments shall be ensured and report submitted to the Ministry's Regional Office at Lucknow, CPCB and UPPCB.	Related plants have been stopped permanently.
6.	Total water requirement from Rihand Reservoir shall not exceed 578* m ³ /d and as per the Agreement signed with UP Jal Vidyut Nigam Ltd. All the effluent shall be collected in one pit only and other pit shall be used for neutralization of the effluent in alternate cycles. Mercury bearing effluent shall be treated with Sodium sulphate to precipitate Mercury as Mercury sulphide. Treated supernatant (100%) shall be recycled back in the system. Settled sludge shall be disposed off in Hg bearing brine sludge disposal ground. Lindane plant effluent shall also be 100% recycled. The company shall make efforts to maximize the use of treated effluent for green belt development within the plant complex to minimize the discharge of treated effluent into Dongia Nallah. Further, efforts shall be made by maximizing optimal re-use and recycle of treated effluent in process and utilities to reduce the fresh water consumption.	The water withdrawal from Rihand Reservoir is as per agreement with UP Jal Vidyut Nigam Ltd.
7.	As mentioned in EIA/EMP report, no Mercury and/or Lindane bearing wastewater shall be discharged to Dongia Nallah/Rihand Reservoir. Regular monitoring of Dongia Nallah for all the relevant parameters shall be ensured. The treated effluent shall conform to the standards stipulated by the UPPCB for discharge in inland surface water.	We have totally stopped Lindane plant and mercury cell house. Effluent treated through full fledge ETP along with RO, MEE and ATFD system. Unit has already achieved and implemented Zero liquid discharge facility at site and real time data transferred on CPCB server on continuous basis through online Flow meter and PTZ camera installed at final discharge point. Annexure 4 – Biannual Audit report done by NEERI

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Sr. No.	Conditions	Compliance Status
8.	The process sludge (non-hazardous) shall be stored at the project site or dumped as a landfill in nearby low-lying area. Hazardous brine sludge from the filter CETP shall be dumped in UPPCB approved hazardous waste storage area (TSDF) located in nearby valley. Solid waste from Lindane unit shall be used to manufacture Tri-Chloro Benzene. Fly ash generated from CPP (extracted from ESPs) shall be used for pozzolona Portland cement and brick manufacturing. Bottom ash shall be used for land filling.	All process sludge generated by different processes are being included in Hazardous waste authorization and disposed through authorized TSDF, as directed by UPPCB. GIL has totally stopped Lindane plant and mercury cell house. Ash from CPP is being supplied to Cement plants and also used for making of bricks, blocks and road etc. Bottom ash is used for land filling. Annexure 5 – Form -3 is attached for FY 2020-21. Annexure 6 – Fly Ash utilization report submitted to UPPCB Annexure 7 – Hazardous waste authorization
9.	Proper handling, management and disposal of Lindane and Mercury bearing sludge shall be ensured.	Related plants have been stopped permanently.
10.	The company shall develop rainwater-harvesting structures to harvest the run off water from the rooftop and by laying a separate storm water drainage system for recharge of ground water.	There is no feasibility of rain water harvesting potential at our site due to hilly region, as per CGWB.
11.	Greenbelt shall be developed in an area of 22.78 ha to mitigate the effects of fugitive emissions all around the plant. The development of green belt shall be as per the Central Pollution Control Board guidelines	Greenbelt has been developed in 82.28 ha area around the plant. This is around 62% of total area.
12.	The project authorities shall comply with the recommendations made in the Disaster Management Plan. The Company shall install chlorine gas detectors to detect leakage of chlorine at liquid chlorine storage tanks, sodium hypo plant at vent pipe, HCl synthesis unit at vent pipe and electrolyzes area. The company should install on-line Hydrogen in Chlorine analyzer.	DMP has been prepared and has complied with its recommendation. 60 Nos. Chlorine gas detectors have been installed at different location in Chlorine storage tank, sodium hypo plant, HCl synthesis and Electrolyser area for monitoring of any residual chlorine leakage.
13.	All the recommendations made in a Charter of Corporate Responsibility for Environmental Protection (CREP) shall be implemented in a time bound manner.	Implemented.
14.	All the mercury cells of the existing Chlor Alkali (Mercury Cell) plant shall be phased out by 2012 and no further expansion will be granted.	Mercury cell permanently stopped in September 2011 well ahead of deadline 2012.

V.K. Yadav

General Conditions:

Sr. No.	Conditions	Compliance Status
1.	The project authorities must strictly adhere to the stipulations made by the Uttar Pradesh Pollution Control Board (UPPCB).	We follow the direction/guidelines of UPPCB and consents are obtained. We are maintaining and complying the stipulated conditions and annual productions as per UPPCB Consents as (Caustic Soda- 1,17,925 MT, Cl2- 85,206 MT, Hydrogen Gas- 4,97,066 Nm³ HCl- 29,490 MT, SBP- 31,558 MT, AlCl₃- 16,637 MT, PAC- 46,724 MT (10% basis), CPW- 16,713 MT for the FY 2020-21.)
2.	No further expansion or modifications in the plant shall be carried out without prior approval of 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.	No further expansion or modifications has been done.
3.	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and import of Hazardous Chemicals Rules, 1989 as amended in October 1994 and January 2000. Prior approvals from Chief Inspectorate of Factories, Chief of Controller Explosives, Fire Safety Inspectorate etc. must be obtained.	We are complying with the MSIHC rules 1989 as amended in 1994 and 2000 and prepared On Site and Off Site emergency plans and drills.
4.	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 collection/treatment/storage / disposal of hazardous wastes.	Hazardous waste authorization has been obtained from UPPCB Lucknow for disposal and treatment of hazardous waste.
5.	The overall noise levels in and around the plant area should 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 should conform to the standards prescribed under Environment (Protection) Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time)	Silencers to DG set vent and acoustic enclosures have been provided. The overall noise level and ambient noise levels during daytime and night time are within prescribed limits. Annexure 4 – Biannual Audit report done by NEERI
6.	Occupational health surveillance program should be undertaken as regular exercise for all the employees, specially for those engaged in handling hazardous substances. The first aid facilities in the occupational health center shall be	Annual health check-up of all employees are done. An 8 bed OHC headed by a MBBS Doctor equipped with Ambulance are available. Records of medical examination maintained.

V.K. Yadav

Sr. No.	Conditions	Compliance Status
	strengthened and the medical records of each employee should be maintained separately.	
7.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and Disaster Management Plan. The company also undertakes social welfare/community development measures in the surrounding villages such as health care, education and drinking water supply facilities.	We comply with the safeguards recommended in EIA and DMP. Regular health camps, training workshops, cleaning of wells etc. in villages situated around GIL are undertaken as part of our Rural development activities.
8.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions.	We are having Structured Environment Management System in place and also we are having separate EMS Cell at unit level with full-fledged laboratory set up.
9.	Rs. 5.00 Crores and Rs. 0.50 Crores earmarked towards the capital cost and recurring cost/annum for environmental pollution control shall be judiciously used to implement the conditions stipulated by the Ministry of Environment & Forests as well as State Government. The funds so provided shall not be diverted for any other purpose.	There is no paucity of funds for environmental pollution control.
10.	The implementation of the project vis-à-vis environmental action plans will be monitored by the Ministry's Regional Office at Lucknow / UPPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies.	Six monthly reports are sent to authorities.
11.	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 UPPCB/Committee and may also be seen at Website of the Ministry at http://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.	Already advertised in two local newspapers i.e. Hindustan dtd. 27.05.07 & Dainik Jagaran dtd. 26.05.07. Copy of the advertisement already sent to regional office.
12.	The Project Authorities shall inform the Regional Office as well as the ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work, if any.	Data sheets sent to regional office.

V.K. Yadav

- Annexure 1** – PGD and Boiler stacks monitoring report done by Prakriti Consultant, Lucknow
- Annexure 2** – Stack Report (Mem-1, 2&3) by Prakriti Consultant, Lucknow
- Annexure 3** – latest monthly AAQ monitoring report done by Prakriti Consultant, Lucknow
- Annexure 4** – Biannual Audit report done by NEERI
- Annexure 5** – Form -4 is attached for FY 2020-21.
- Annexure 6** – Fly Ash utilization report submitted to UPPCB
- Annexure 7** – Hazardous waste authorization 2021

Test Report for Stack Emission Monitoring

ULR- TC824121000000385



Report No.	Reference No	Issue Date
PCS/SE/01/2021	PCS/GIL/06/2021	23/03/2021

1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr Shubham Pandey & Mr Asheesh Kushwaha
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	15/03/2021
9. Sample Receipt in Lab	:	17/03/2021
10. Date of Analysis	:	18/03/2021 - 20/03/2021

S.No	Particulars	Value
1.	Stack attached to	PGD Unit-1
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	306
10.	Fuel Gas temperature (K)	396
11.	Flue Gas Exist Velocity (m/s)	16.24
12.	Flue Gas Quantity (Nm ³ /hr)	264824.8

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	62.5	100	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	463	600	IS: 11255 (Part-2)/ Flue gas Analyzer
CO ₂ in %	11.2	-	Flue gas Analyzer

- Note:**
- The results in the Test Report relate only to the items tested.
 - The report shall not be reproduced-except in full, without the written permission of laboratory.
 - The report shall not be used for any other purpose than declared by the Sponsor
 - Prakriti Consultants Services is not regulatory agency hence no part of this report should be used for legal purpose under any circumstances.
 - No deviation as per the Standard Method.

Authorized Signatory



(Dr. Divya Misra)

“End of this Test Report

Services Provided

Environmental Monitoring, Preparation of EIAIEMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology,
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STPIETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF



Prakriti Consultants Services

An Approved Laboratory From MoEF & Uttar Pradesh Pollution Control Board, ISO 17025:2017 Accredited by NABL
(An ISO 14001:2015, ISO 9001-2015 and ISO 45001:2018 Certified Organization)
Address: 12, Vishnupuri, Church Road, Aliganj, Lucknow-226024
E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

Report No. PCS/SE/01/2021	Reference No PCS/GIL/06/2021	Issue Date 23/03/2021
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1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr Shubham Pandey & Mr Asheesh Kushwaha
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	15/03/2021
9. Sample Receipt in Lab	:	17/03/2021
10. Date of Analysis	:	18/03/2021 - 20/03/2021

Particulars	Value
1. Stack attached to	PGD Unit-1
2. Stack height from Ground (m)	75
3. Material of Construction of duct	Mild Steel (Iron)
4. Diameter of Stack (m)	2.48x2.48
5. Area of Stack (m ²)	6.15
6. Control Measure	ESP
7. Type of fuel used	Coal
8. Sampling Duration (min)	30
9. Atmospheric temperature (K)	306
10. Fuel Gas temperature (K)	396
11. Flue Gas Exist Velocity (m/s)	16.24
12. Flue Gas Quantity (Nm ³ /hr)	264824.8

Pollutants Concentration	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	152.4	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

BDL***=0.009µg/m³

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Authorized Signatory

(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring

ULR- TC824121000000386



Report No.	Reference No	Issue Date
PCS/SE/02/2021	PCS/GIL/07/2021	23/03/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: -
9. Sample Receipt in Lab	: -
10. Date of Analysis	: -

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	RCC
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	Shutdown
9.	Atmospheric temperature (K)	-
10.	Fuel Gas temperature (K)	-
11.	Flue Gas Exist Velocity (m/s)	-
12.	Flue Gas Quantity (Nm ³ /hr)	-

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	Shutdown	-	-
SO ₂ (mg/ Nm ³)	-	-	-
CO ₂ in %	-	-	-

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date		
PCS/SE/02/2021	PCS/GIL/07/2021	23/03/2021		
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)			
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh			
3. Type of Industry	: Chemical			
4. Monitoring Point	: PGD Unit-2			
5. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha			
6. Weather Condition	: Clear			
7. Method of Monitoring	: As per standard Method			
8. Date of Monitoring	: -			
9. Sample Receipt in Lab	: -			
10. Date of Analysis	: -			
S. No.	Particulars	Value		
1.	Stack attached to	PGD Unit-2		
2.	Stack height from Ground (m)	75		
3.	Material of Construction of duct	RCC		
4.	Diameter of Stack (m)	2.48x2.48		
5.	Area of Stack (m ²)	6.15		
6.	Control Measure	ESP		
7.	Type of fuel used	Coal		
8.	Sampling Duration (min)	Shutdown		
9.	Atmospheric temperature (K)	-		
10.	Fuel Gas temperature (K)	-		
11.	Flue Gas Exist Velocity (m/s)	-		
12.	Flue Gas Quantity (Nm ³ /hr)	-		
	Pollutants	Value	Standard*	Reference Method
	Concentration			
	NO _x (mg/ Nm ³)	Shutdown	-	-
	Hg in mg/Nm ³	-	-	-

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(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring

ULR- TC824121000000387



Report No.	Reference No	Issue Date
PCS/SE/03/2021	PCS/GIL/07/2021	23/03/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: DG Set (1875KVA)
5. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 15/03/2021
9. Sample Receipt in Lab	: 17/03/2021
10. Date of Analysis	: 18/03/2021 - 20/03/2021

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875KVA)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	308
9.	Fuel Gas temperature (K)	416
10.	Flue Gas Exist Velocity (m/s)	12.6
11.	Flue Gas Quantity (Nm ³ /hr)	6185.7
	Pollutants Concentration	Value
	PM (mg/ Nm ³)	53.8
	SO ₂ (mg/ Nm ³)	140.5
	CO (mg/Nm ³) at 15% O ₂	124.5
		Standard*
		75
		-
		150
		Reference Method
		IS: 11255 (Part-1)
		IS: 11255 (Part-2)/Flue gas Analyzer
		Flue gas Analyzer

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Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/03/2021	PCS/GIL/07/2021	23/03/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: DG Set (1875KVA)
5. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 15/03/2021
9. Sample Receipt in Lab	: 17/03/2021
10. Date of Analysis	: 18/03/2021 - 20/03/2021

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875KVA)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	308
9.	Fuel Gas temperature (K)	416
10.	Flue Gas Exist Velocity (m/s)	12.6
11.	Flue Gas Quantity (Nm ³ /hr)	6185.7

Pollutants	Concentration	Value	Standard*	Reference Method
NOx	in ppm at 15% O ₂	214.2	710	IS: 11255 (Part-7)/Flue gas Analyzer
NMHC	(mg/Nm ³) at 15% O ₂	46.5	100	GC Analysis

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Test Report for Stack Emission Monitoring

ULR- TC824121000000388



Report No.	Reference No	Issue Date
PCS/SE/04/2021	PCS/GIL/06/2021	23/03/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 13/03/2021
9. Sample Receipt in Lab	: -
10. Date of Analysis	: -

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	Stand By
8.	Atmospheric temperature (K)	-
9.	Fuel Gas temperature (K)	-
10.	Flue Gas Exist Velocity (m/s)	-
11.	Flue Gas Quantity (Nm ³ /hr)	-

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	Stand By	-	-
SO ₂ (mg/ Nm ³)	-	-	-
CO ₂ in %	-	-	-

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/04/2021	PCS/GIL/06/2021	23/03/2021
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: CVPL Boiler	
5. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 13/03/2021	
9. Sample Receipt in Lab	: -	
10. Date of Analysis	: -	

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	Stand By
8.	Atmospheric temperature (K)	-
9.	Fuel Gas temperature (K)	-
10.	Flue Gas Exist Velocity (m/s)	-
11.	Flue Gas Quantity (Nm ³ /hr)	-

Pollutants Concentration	Value	Standard*	Reference Method
NOx in ppm at 15% O ₂	Stand By	-	-
Hg in mg/Nm ³	-	-	-

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Test Report for Stack Monitoring



ULR- TC824121000000384

Report No.	Reference No.	Issue Date
PCS/SE/01/2021	PCS/GIL/06/2021	23/03/2021

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh Pesticide
- Type of Industry : Chemical
- Sampling Location : **Thermax Boiler**
- Sample Collected by : Mr Shubham Pandey & Mr Asheesh Kushwaha
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 13/03/2021
- Sample Receipt in Lab : 17/03/2021
- Date of Testing : 18/03/2021-20/03/2021

S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	40
9.	Atmospheric temperature (K)	309
10.	Flue Gas temperature (K)	413
11.	Flue Gas Exit Velocity (m/s)	12.58
12.	Volume of Sample (Lt.)	800
13.	Flue Gas Discharge(Nm ³ /hr)	48298.9

Pollutants Concentration	Result	Standard*	Reference Method
PM (mg/Nm ³)	66.3	150	IS: 11255 (Part-1)
SO ₂ (mg/Nm ³)	378	600	IS: 11255 (Part-2)/Flue gas Analyzer
CO ₂ in %	11.21	-	

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2021	PCS/GIL/06/2021	23/03/2021

1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh Pesticide
2. Type of Industry	: Chemical
3. Sampling Location	: Thermax Boiler
4. Sample Collected by	: Mr Shubham Pandey & Mr Asheesh Kushwaha
5. Weather Condition	: Clear Sky
6. Method of sampling	: As per standard Method
7. Date of Monitoring	: 13/03/2021
8. Sample Receipt in Lab	: 17/03/2021
9. Date of Testing	: 18/03/2021-20/03/2021

S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	40
9.	Atmospheric temperature (K)	309
10.	Flue Gas temperature (K)	413
11.	Flue Gas Exit Velocity (m/s)	12.58
12.	Volume of Sample (Lt.)	800
13.	Flue Gas Discharge(Nm ³ /hr)	48298.9

Pollutants Concentration	Result	Standard*	Reference Method
NO _x (mg/Nm ³)	144.5	600	IS: 11255 (Part-7)/Flue gas Analyzer
Hg (mg/Nm ³)	BDL***	0.03	3112-Hg-B

BDL***=0.009µg/m³

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

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Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Stack Monitoring

Report No. PCS/SE/01/2021	Reference No. PCS/GIL/05/2021	Issue Date 28/01/2021
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1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh Pesticide
2. Type of Industry	: Chemical
3. Sampling Location	: Thermax Boiler
4. Sample Collected by	: Mr Shubham Pandey & Mr Abhishek Kumar
5. Weather Condition	: Clear Sky
6. Method of sampling	: As per standard Method
7. Date of Monitoring	: 20/02/2021
8. Sample Receipt in Lab	: -
9. Date of Testing	: -

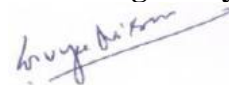
S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	Stand By
9.	Atmospheric temperature (K)	-
10.	Flue Gas temperature (K)	-
11.	Flue Gas Exit Velocity (m/s)	-
12.	Volume of Sample (Lt.)	-
13.	Flue Gas Discharge(Nm ³ /hr)	-

Pollutants Concentration	Result	Standard*	Reference Method
PM (mg/Nm ³)	Stand By	-	-
SO ₂ (mg/Nm ³)	-	-	-
CO ₂ in %	-	-	-

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No. PCS/SE/01/2021	Reference No. PCS/GIL/05/2021	Issue Date 28/01/2021
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1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh Pesticide
2. Type of Industry	: Chemical
3. Sampling Location	: Thermax Boiler
4. Sample Collected by	: Mr Shubham Pandey & Mr Abhishek Kumar
5. Weather Condition	: Clear Sky
6. Method of sampling	: As per standard Method
7. Date of Monitoring	: 20/02/2021
8. Sample Receipt in Lab	: -
9. Date of Testing	: -

S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	Stand By
9.	Atmospheric temperature (K)	-
10.	Flue Gas temperature (K)	-
11.	Flue Gas Exit Velocity (m/s)	-
12.	Volume of Sample (Lt.)	-
13.	Flue Gas Discharge(Nm ³ /hr)	-

Pollutants Concentration	Result	Standard*	Reference Method
NO _x (mg/Nm ³)	Stand By	-	-
Hg (mg/Nm ³)	-	-	-

BDL***=0.009µg/m³

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

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 5. No deviation as per the Standard Method.

Authorized Signatory

(Dr. Divya Misra)

“End of this Test Report”

Services Provided

Environmental Monitoring, Preparation of EIA/EEMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology, Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STPI/ETP, Clearances from Ground Water Board, Compliance of E.C., NOC from UP/PCB, MoEF

Test Report for Stack Emission Monitoring

ULR- TC824121000000309



Report No.	Reference No	Issue Date
PCS/SE/01/2021	PCS/GIL/05/2021	08/03/2021

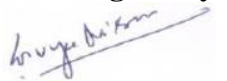
1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	22/02/2021
9. Sample Receipt in Lab	:	25/02/2021
10. Date of Analysis	:	25/02/2021 - 27/02/2021

S.No	Particulars	Value
1.	Stack attached to	PGD Unit-1
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	302
10.	Fuel Gas temperature (K)	390
11.	Flue Gas Exist Velocity (m/s)	17.0
12.	Flue Gas Quantity (Nm ³ /hr)	283780.1

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	68.4	100	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	478.1	600	IS: 11255 (Part-2)/ Flue gas Analyzer
CO ₂ in %	10.8	-	Flue gas Analyzer

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(Dr. Divya Misra)

“End of this Test Report

Test Report for Stack Emission Monitoring

Report No. PCS/SE/01/2021	Reference No PCS/GIL/05/2021	Issue Date 08/03/2021
-------------------------------------	----------------------------------------	---------------------------------

1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	22/02/2021
9. Sample Receipt in Lab	:	25/02/2021
10. Date of Analysis	:	25/02/2021 - 27/02/2021

Particulars	Value
1. Stack attached to	PGD Unit-1
2. Stack height from Ground (m)	75
3. Material of Construction of duct	Mild Steel (Iron)
4. Diameter of Stack (m)	2.48x2.48
5. Area of Stack (m ²)	6.15
6. Control Measure	ESP
7. Type of fuel used	Coal
8. Sampling Duration (min)	30
9. Atmospheric temperature (K)	302
10. Fuel Gas temperature (K)	390
11. Flue Gas Exist Velocity (m/s)	17.0
12. Flue Gas Quantity (Nm ³ /hr)	283780.1

Pollutants Concentration	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	167	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

BDL***=0.009µg/m³

- Note:**
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 5. No deviation as per the Standard Method.

Authorized Signatory



(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring

ULR- TC824121000000310



TC-8241

Report No.	Reference No	Issue Date
PCS/SE/02/2021	PCS/GIL/06/2021	08/03/2021

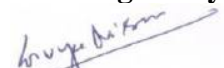
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 22/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021 - 27/02/2021

S. No.	Particulars	Value		
1.	Stack attached to	PGD Unit-2		
2.	Stack height from Ground (m)	75		
3.	Material of Construction of duct	RCC		
4.	Diameter of Stack (m)	2.48x2.48		
5.	Area of Stack (m ²)	6.15		
6.	Control Measure	ESP		
7.	Type of fuel used	Coal		
8.	Sampling Duration (min)	30		
9.	Atmospheric temperature (K)	301		
10.	Fuel Gas temperature (K)	394		
11.	Flue Gas Exist Velocity (m/s)	21.2		
12.	Flue Gas Quantity (Nm ³ /hr)	289941.7		
Pollutants Concentration		Value	Standard*	Reference Method
	PM (mg/ Nm ³)	43.0	50	IS: 11255 (Part-1)
	SO ₂ (mg/ Nm ³)	488.6	600	IS: 11255 (Part-2)/ Flue gas Analyzer
	CO ₂ in %	11.2	-	Flue gas Analyzer

Note:

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- No deviation as per the Standard Method.

Authorized Signatory


(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring

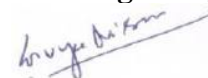
Report No. PCS/SE/02/2021	Reference No PCS/GIL/06/2021	Issue Date 08/03/2021
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1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 22/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021 - 27/02/2021

S. No.	Particulars	Value		
1.	Stack attached to	PGD Unit-2		
2.	Stack height from Ground (m)	75		
3.	Material of Construction of duct	RCC		
4.	Diameter of Stack (m)	2.48x2.48		
5.	Area of Stack (m ²)	6.15		
6.	Control Measure	ESP		
7.	Type of fuel used	Coal		
8.	Sampling Duration (min)	30		
9.	Atmospheric temperature (K)	301		
10.	Fuel Gas temperature (K)	394		
11.	Flue Gas Exist Velocity (m/s)	21.2		
12.	Flue Gas Quantity (Nm ³ /hr)	289941.7		
Pollutants Concentration		Value	Standard*	Reference Method
NO _x (mg/ Nm ³)		141.3	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³		BDL***	0.03	3112-Hg-B

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 5. No deviation as per the Standard Method.

Authorized Signatory



(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring



ULR- TC824121000000311

Report No.	Reference No	Issue Date
PCS/SE/03/2021	PCS/GIL/06/2021	08/03/2021

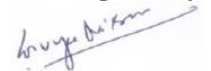
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: DG Set (1875KVA)
5. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	: .Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 20/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021 - 27/02/2021

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875KVA)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	297
9.	Fuel Gas temperature (K)	391
10.	Flue Gas Exist Velocity (m/s)	14.7
11.	Flue Gas Quantity (Nm ³ /hr)	7691.6

Pollutants	Concentration	Value	Standard*	Reference Method
PM	(mg/ Nm ³)	48.7	75	IS: 11255 (Part-1)
SO ₂	(mg/ Nm ³)	147.4	-	IS: 11255 (Part-2)/Flue gas Analyzer
CO	(mg/Nm ³) at 15% O ₂	118.2	150	Flue gas Analyzer

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“End of this Test Report”

Test Report for Stack Emission Monitoring

Report No. PCS/SE/03/2021	Reference No PCS/GIL/06/2021	Issue Date 08/03/2021
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1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: DG Set (1875KVA)
5. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 20/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021 - 27/02/2021

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875KVA)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	297
9.	Fuel Gas temperature (K)	391
10.	Flue Gas Exist Velocity (m/s)	14.7
11.	Flue Gas Quantity (Nm ³ /hr)	7691.6

Pollutants	Concentration	Value	Standard*	Reference Method
NOx	in ppm at 15% O ₂	211.5	710	IS: 11255 (Part-7)/Flue gas Analyzer
NMHC	(mg/Nm ³) at 15% O ₂	49.1	100	GC Analysis

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 5. No deviation as per the Standard Method.

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(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring

ULR- TC824121000000312



Report No.	Reference No	Issue Date
PCS/SE/04/2021	PCS/GIL/05/2021	08/03/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 20/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021 - 27/02/2021

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	297
9.	Fuel Gas temperature (K)	431
10.	Flue Gas Exist Velocity (m/s)	6.7
11.	Flue Gas Quantity (Nm ³ /hr)	21485.5

Pollutants	Concentration	Value	Standard*	Reference Method
PM	(mg/ Nm ³)	82.7	150	IS: 11255 (Part-1)
SO ₂	(mg/ Nm ³)	355.1	600	IS: 11255 (Part-2)/Flue gas Analyzer
CO ₂	in %	11.9	-	GC Analysis

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Authorized Signatory


(Dr. Divya Misra)

“End of this Test Report”

Test Report for Stack Emission Monitoring

Report No. PCS/SE/04/2021	Reference No PCS/GIL/05/2021	Issue Date 08/03/2021
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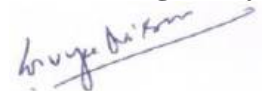
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 20/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021 - 27/02/2021

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	297
9.	Fuel Gas temperature (K)	431
10.	Flue Gas Exist Velocity (m/s)	6.66
11.	Flue Gas Quantity (Nm ³ /hr)	21485.5

Pollutants Concentration	Value	Standard*	Reference Method
NOx in ppm at 15% O ₂	121.0	600	IS: 11255 (Part-7)/Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	Flue gas Analyzer

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 5. No deviation as per the Standard Method.

Authorized Signatory



(Dr. Divya Misra)

“End of this Test Report”



Prakriti Consultants Services

An Approved Laboratory From MoEF & Uttar Pradesh Pollution Control Board, ISO 17025:2017 Accredited by NABL
(An ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 Certified Organization)
Address: 12, Vishnupuri, Church Road, Aliganj, Lucknow-226024
E-mail: prakriti_md@rediffmail.com
Tel: 0522-4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

URL- TC824119000002599



Report No.	Reference No	Issue Date
PCS/SE/01/2021	PCS/GIL/04/2021	28/01/2021

- | | | |
|--------------------------|---|-----------------------------------------------------------|
| 1. Name of Industry | : | M/s Grasim Industries Limited(Chemical Division Renukoot) |
| 2. Address of Industry | : | PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh |
| 3. Type of Industry | : | Chemical |
| 4. Monitoring Point | : | PGD Unit-1 |
| 5. Monitoring done by | : | Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu |
| 6. Weather Condition | : | Clear |
| 7. Method of Monitoring | : | As per standard Method |
| 8. Date of Monitoring | : | 15/01/2021 |
| 9. Sample Receipt in Lab | : | 18/01/2021 |
| 10. Date of Analysis | : | 19/01/2021 - 21/01/2021 |

S.No	Particulars	Value
1.	Stack attached to	PGD Unit-1
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	295
10.	Fuel Gas temperature (K)	387
11.	Flue Gas Exist Velocity (m/s)	12.4
12.	Flue Gas Quantity (Nm ³ /hr)	204392.8

Pollutants	Value	Standard*	Reference Method
PM (mg/ Nm ³)	71.4	100	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	499.2	600	IS: 11255 (Part-2)/ Flue gas Analyzer
CO ₂ in %	11.9	-	Flue gas Analyzer

- Note:**
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 5. No deviation as per the Standard Method.

Authorized Signatory


(Dr. Divya Misra)
Managing Director

“End of this Test Report

Services Provided
Environmental Monitoring, Preparation of EIAIEMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology,
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STPIETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF



Prakriti Consultants Services

An Approved Laboratory From MoEF & Uttar Pradesh Pollution Control Board, ISO 17025:2017 Accredited by NABL
(An ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 Certified Organization)
Address: 12, Vishnupuri, Church Road, Aliganj, Lucknow-226024
E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/01/2021	PCS/GIL/04/2021	28/01/2021

1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	15/01/2021
9. Sample Receipt in Lab	:	18/01/2021
10. Date of Analysis	:	19/01/2021 - 21/01/2021

Particulars	Value
1. Stack attached to	PGD Unit-1
2. Stack height from Ground (m)	75
3. Material of Construction of duct	Mild Steel (Iron)
4. Diameter of Stack (m)	2.48x2.48
5. Area of Stack (m ²)	6.15
6. Control Measure	ESP
7. Type of fuel used	Coal
8. Sampling Duration (min)	30
9. Atmospheric temperature (K)	295
10. Fuel Gas temperature (K)	387
11. Flue Gas Exist Velocity (m/s)	12.4
12. Flue Gas Quantity (Nm ³ /hr)	204392.8

Pollutants Concentration	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	155	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

BDL***=0.009µg/m³

- Note:**
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 5. No deviation as per the Standard Method.

Authorized Signatory

**(Dr. Divya Misra)
Managing Director**

“End of this Test Report”

Services Provided

Environmental Monitoring, Preparation of EIA/EEMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology,
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STPIETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Stack Emission Monitoring

ULR- TC824121000000183



Report No.	Reference No	Issue Date
PCS/SE/02/2021	PCS/GIL/04/2021	28/01/2021

1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 15/01/2021
9. Sample Receipt in Lab	: 18/01/2021
10. Date of Analysis	: 19/01/2021 - 21/01/2021

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	RCC
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	289
10.	Fuel Gas temperature (K)	388
11.	Flue Gas Exist Velocity (m/s)	13.0
12.	Flue Gas Quantity (Nm ³ /hr)	215703.3

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	44.0	50	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	453.0	600	IS: 11255 (Part-2)/ Flue gas Analyzer
CO ₂ in %	11.7	-	Flue gas Analyzer

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/02/2021	PCS/GIL/04/2021	28/01/2021

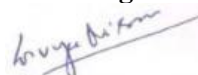
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 15/01/2021
9. Sample Receipt in Lab	: 18/01/2021
10. Date of Analysis	: 19/01/2021 - 21/01/2021

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	RCC
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	289
10.	Fuel Gas temperature (K)	388
11.	Flue Gas Exist Velocity (m/s)	13.0
12.	Flue Gas Quantity (Nm ³ /hr)	215703.3

Pollutants Concentration	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	152.7	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

URL- TC82411900002601



Report No.	Reference No	Issue Date		
PCS/SE/03/2021	PCS/GIL/04/2021	28/01/2021		
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)			
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh			
3. Type of Industry	: Chemical			
4. Monitoring Point	: DG Set (1875KVA)			
5. Monitoring done by	: Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu			
6. Weather Condition	: .Clear			
7. Method of Monitoring	: As per standard Method			
8. Date of Monitoring	: 15/01/2021			
9. Sample Receipt in Lab	: 18/01/2021			
10. Date of Analysis	: 19/01/2021 - 21/01/2021			
S. No.	Particulars	Value		
1.	Stack attached to	DG Set (1875KVA)		
2.	Stack height from Ground (m)	36		
3.	Material of Construction of duct	Mild Steel		
4.	Diameter of Stack (m)	0.5		
5.	Area of Stack (m ²)	0.2		
6.	Type of fuel used	HSD		
7.	Sampling Duration (min)	30		
8.	Atmospheric temperature (K)	299		
9.	Fuel Gas temperature (K)	396		
10.	Flue Gas Exist Velocity (m/s)	14.0		
11.	Flue Gas Quantity (Nm ³ /hr)	7218.8		
Pollutants Concentration		Value	Standard*	Reference Method
PM (mg/ Nm ³)		49.2	75	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)		141.3	-	IS: 11255 (Part-2)/Flue gas Analyzer
CO (mg/Nm ³) at 15% O ₂		123.4	150	Flue gas Analyzer

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Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/03/2021	PCS/GIL/04/2021	28/01/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: DG Set (1875KVA)
5. Monitoring done by	: Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 15/01/2021
9. Sample Receipt in Lab	: 18/01/2021
10. Date of Analysis	: 19/01/2021 - 21/01/2021

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875KVA)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	299
9.	Fuel Gas temperature (K)	396
10.	Flue Gas Exist Velocity (m/s)	14.0
11.	Flue Gas Quantity (Nm ³ /hr)	7218.8

Pollutants	Concentration	Value	Standard*	Reference Method
NOx	in ppm at 15% O ₂	187.2	710	IS: 11255 (Part-7)/Flue gas Analyzer
NMHC	(mg/Nm ³) at 15% O ₂	51.4	100	GC Analysis

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Test Report for Stack Emission Monitoring

URL- TC824119000002602



Report No.	Reference No	Issue Date
PCS/SE/04/2021	PCS/GIL/04/2021	28/01/2021

1. Name of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
2. Address of Industry : PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry : Chemical
4. Monitoring Point : **CVPL Boiler**
5. Monitoring done by : Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
6. Weather Condition : Clear
7. Method of Monitoring : As per standard Method
8. Date of Monitoring : 15/01/2021
9. Sample Receipt in Lab : 18/01/2021
10. Date of Analysis : 19/01/2021 - 21/01/2021

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	293
9.	Fuel Gas temperature (K)	384
10.	Flue Gas Exist Velocity (m/s)	7.1
11.	Flue Gas Quantity (Nm ³ /hr)	25584.5

Pollutants	Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)		73.5	150	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)		369.1	600	IS: 11255 (Part-2)/Flue gas Analyzer
CO ₂ in %		12.2	-	GC Analysis

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Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/04/2021	PCS/GIL/04/2021	28/01/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 15/01/2021
9. Sample Receipt in Lab	: 18/01/2021
10. Date of Analysis	: 19/01/2021 - 21/01/2021

S. No.	Particulars	Value		
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler		
2.	Stack height from Ground (m)	61		
3.	Material of Construction of duct	Mild Steel		
4.	Diameter of Stack (m)	1.26x1.07		
5.	Area of Stack (m ²)	1.35		
6.	Type of fuel used	Coal		
7.	Sampling Duration (min)	30		
8.	Atmospheric temperature (K)	293		
9.	Fuel Gas temperature (K)	384		
10.	Flue Gas Exist Velocity (m/s)	7.1		
11.	Flue Gas Quantity (Nm ³ /hr)	25584.5		
	Pollutants Concentration	Value	Standard*	Reference Method
	NOx in ppm at 15% O ₂	135.4	600	IS: 11255 (Part-7)/Flue gas Analyzer
	Hg in mg/Nm ³	BDL***	0.03	Flue gas Analyzer

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2021	PCS/GIL/03/2021	28/01/2021

1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh Pesticide
2. Type of Industry	: Chemical
3. Sampling Location	: Thermax Boiler
4. Sample Collected by	: Mr. Asheesh, Mr. Abhishek & Mr. Shubham
5. Weather Condition	: Clear Sky
6. Method of sampling	: As per standard Method
7. Date of Monitoring	: 15/01/2021
8. Sample Receipt in Lab	: -
9. Date of Testing	: -

S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	Stand By
9.	Atmospheric temperature (K)	-
10.	Flue Gas temperature (K)	-
11.	Flue Gas Exit Velocity (m/s)	-
12.	Volume of Sample (Lt.)	-
13.	Flue Gas Discharge(Nm ³ /hr)	-

Pollutants Concentration	Result	Standard*	Reference Method
PM (mg/Nm ³)	Stand By	-	-
SO ₂ (mg/Nm ³)	-	-	-
CO ₂ in %	-	-	-

BDL***=0.009µg/m³

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

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Tel: 0522- 4002545, Mobile: 09415518818,

GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2021	PCS/GIL/03/2021	28/01/2021

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh Pesticide
- Type of Industry : Chemical
- Sampling Location : **Thermax Boiler**
- Sample Collected by : Mr. Asheesh, Mr. Abhishek & Mr. Shubham pandey
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 15/01/2021
- Sample Receipt in Lab : -
- Date of Testing : -

S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	Stand By
9.	Atmospheric temperature (K)	-
10.	Flue Gas temperature (K)	-
11.	Flue Gas Exit Velocity (m/s)	-
12.	Volume of Sample (Lt.)	-
13.	Flue Gas Discharge(Nm ³ /hr)	-

Pollutants Concentration	Result	Standard*	Reference Method
NO _x (mg/Nm ³)	Stand By	-	-
Hg (mg/Nm ³)	-	-	-

BDL***=0.009µg/m³

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

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Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date		
PCS/SE/01/2021	PCS/GIL/04/2021	08/01/2021		
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)			
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh			
3. Type of Industry	: Chemical			
4. Monitoring Point	: PGD Unit-1			
5. Monitoring done by	: Mr.Asheesh Kushwaha,Mr.Shubham Pandey & Mr.Abhishek			
6. Weather Condition	: Clear			
7. Method of Monitoring	: As per standard Method			
8. Date of Monitoring	: 29/12/2020			
9. Sample Receipt in Lab	: -			
10. Date of Analysis	: -			
S.No	Particulars	Value		
1.	Stack attached to	PGD Unit-1		
2.	Stack height from Ground (m)	75		
3.	Material of Construction of duct	Mild Steel (Iron)		
4.	Diameter of Stack (m)	2.48x2.48		
5.	Area of Stack (m ²)	6.15		
6.	Control Measure	ESP		
7.	Type of fuel used	Coal		
8.	Sampling Duration (min)	Shut Down		
9.	Atmospheric temperature (K)	-		
10.	Fuel Gas temperature (K)	-		
11.	Flue Gas Exist Velocity (m/s)	-		
12.	Flue Gas Quantity (Nm ³ /hr)	-		
	Pollutants Concentration	Value	Standard*	Reference Method
	PM (mg/ Nm ³)	Shut Down	-	-
	SO ₂ (mg/ Nm ³)	-	-	-
	CO ₂ in %	-	-	-

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Test Report for Stack Emission Monitoring

Report No. PCS/SE/01/2020	Reference No PCS/GIL/04/2020	Issue Date 08/01/2021
-------------------------------------	----------------------------------------	---------------------------------

1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abhishek
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	29/12/2020
9. Sample Receipt in Lab	:	-
10. Date of Analysis	:	-

Particulars	Value
1. Stack attached to	PGD Unit-1
2. Stack height from Ground (m)	75
3. Material of Construction of duct	Mild Steel (Iron)
4. Diameter of Stack (m)	2.48x2.48
5. Area of Stack (m ²)	6.15
6. Control Measure	ESP
7. Type of fuel used	Coal
8. Sampling Duration (min)	Shut Down
9. Atmospheric temperature (K)	-
10. Fuel Gas temperature (K)	-
11. Flue Gas Exist Velocity (m/s)	-
12. Flue Gas Quantity (Nm ³ /hr)	-

Pollutants	Value	Standard*	Reference
Concentration			Method
NO _x (mg/ Nm ³)	Shut Down	-	-
Hg in mg/Nm ³	-	-	-

BDL**=0.009µg/m³

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

ULR- TC824121000000020



Report No.	Reference No	Issue Date
PCS/SE/01/2021	PCS/GIL/04/2021	08/01/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abhishek
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 29/12/2020
9. Sample Receipt in Lab	: 02/01/2021
10. Date of Analysis	: 02/01/2021 - 04/01/2021

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	RCC
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	291
10.	Fuel Gas temperature (K)	303
11.	Flue Gas Exist Velocity (m/s)	13.4
12.	Flue Gas Quantity (Nm ³ /hr)	219536.1
	Pollutants	Value
	Concentration	Standard*
	PM (mg/ Nm ³)	50
	SO ₂ (mg/ Nm ³)	600
	CO ₂ in %	-
		Reference Method
		IS: 11255 (Part-1)
		IS: 11255 (Part-2)/ Flue gas Analyzer
		Flue gas Analyzer

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 5. No deviation as per the Standard Method.

Authorized Signatory

(Signature)
 (Dr. Divya Misra)
 Managing Director

"End of this Test Report"

Services Available

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 Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
 Ground Water Board, Compliance of E.C. NOC from UPPCB, etc.

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/01/2021	PCS/GIL/04/2021	08/01/2021

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: PGD Unit-2
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr. Abhishek Tiwari
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 29/12/2020
9. Sample Receipt in Lab	: 02/01/2021
10. Date of Analysis	: 02/01/2021 - 04/01/2021

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	RCC
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	291
10.	Fuel Gas temperature (K)	393
11.	Flue Gas Exist Velocity (m/s)	13.4
12.	Flue Gas Quantity (Nm ³ /hr)	219536.1

Pollutants	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	133.2	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

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Authorized Signatory

(Dr. Divya Misra)
Managing Director

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Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C. NOC from UPPCB, etc.

Test Report for Stack Emission Monitoring

URL- TC824119000002447



Report No. PCS/SE/03/2021	Reference No PCS/GIL/02/2021	Issue Date 08/01/2021
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1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr.Abhishek
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 28/12/2020
9. Sample Receipt in Lab	: 02/01/2021
10. Date of Analysis	: 02/01/2021 - 04/01/2021

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	303
9.	Fuel Gas temperature (K)	393
10.	Flue Gas Exist Velocity (m/s)	11.9
11.	Flue Gas Quantity (Nm ³ /hr)	41945.7

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	61.1	150	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	342.3	600	IS: 11255 (Part-2)/Flue gas Analyzer
CO ₂ in %	11.9	-	GC Analysis

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Managing Director

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Tel: 0522- 4002545, Mobile: 09415518818,

GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring


Report No. PCS/SE/03/2021	Reference No PCS/GIL/02/2021	Issue Date 08/01/2021
-------------------------------------	----------------------------------------	---------------------------------

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr.Abhishek Tiwari
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 28/12/2020
9. Sample Receipt in Lab	: 02/01/2021
10. Date of Analysis	: 02/01/2021 - 04/01/2021

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	303
9.	Fuel Gas temperature (K)	393
10.	Flue Gas Exist Velocity (m/s)	11.9
11.	Flue Gas Quantity (Nm ³ /hr)	41945.7
	Pollutants Concentration	Value Standard* Reference Method
	NOx in ppm at 15% O ₂	117.8 600 IS: 11255 (Part-7)/Flue gas Analyzer
	Hg in mg/Nm ³	BDI.*** 0.03 Flue gas Analyzer

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date		
PCS/SE/01/2020	PCS/GIL/02/2020	08/01/2021		
1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh Pesticide			
2. Type of Industry	: Chemical			
3. Sampling Location	: Thermax Boiler			
4. Sample Collected by	: Mr. Asheesh, Mr. Abhishek & Mr. Shubham			
5. Weather Condition	: Clear Sky			
6. Method of sampling	: As per standard Method			
7. Date of Monitoring	: 28/12/2020			
8. Sample Receipt in Lab	: -			
9. Date of Testing	: -			
S. No.	Particulars	Value		
1.	Stack Attached to	Thermax Boiler		
2.	Type of Stack	Rectangular		
3.	Stack height from Ground (m)	61		
4.	Material of Construction of duct	Mild Steel		
5.	Diameter of Stack (m)	1.26 x 1.07		
6.	Type of fuel used	Coal		
7.	Normal operating hour	24 hrs		
8.	Sampling Duration (min)	Shut Down		
9.	Atmospheric temperature (K)	-		
10.	Flue Gas temperature (K)	-		
11.	Flue Gas Exit Velocity (m/s)	-		
12.	Volume of Sample (Lt.)	-		
13.	Flue Gas Discharge(Nm ³ /hr)	-		
	Pollutants Concentration	Result	Standard*	Reference Method
	PM (mg/Nm ³)	Shut Down	-	-
	SO ₂ (mg/Nm ³)	-	-	-
	CO ₂ in %	-	-	-

BDL***=0.0099167

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015.

Note:

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Authorized Signatory


(Dr. Divya Misra)
Managing Director

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GSTIN :- 09AAJFP5925GIZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2020	PCS/GIL/02/2020	08/01/2021

- | | |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 1. Name & Address of Industry | : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh Pesticide |
| 2. Type of Industry | : Chemical |
| 3. Sampling Location | : Thermax Boiler |
| 4. Sample Collected by | : Mr. Asheesh, Mr. Abhishek & Mr. Shubham |
| 5. Weather Condition | : Clear Sky |
| 6. Method of sampling | : As per standard Method |
| 7. Date of Monitoring | : 28/12/2020 |
| 8. Sample Receipt in Lab | : - |
| 9. Date of Testing | : - |

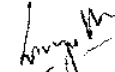
S. No.	Particulars	Value
1.	Stack Attached to	Thermax Boiler
2.	Type of Stack	Rectangular
3.	Stack height from Ground (m)	61
4.	Material of Construction of duct	Mild Steel
5.	Diameter of Stack (m)	1.26 x 1.07
6.	Type of fuel used	Coal
7.	Normal operating hour	24 hrs
8.	Sampling Duration (min)	Shut Down
9.	Atmospheric temperature (K)	-
10.	Flue Gas temperature (K)	-
11.	Flue Gas Exit Velocity (m/s)	-
12.	Volume of Sample (Lt.)	-
13.	Flue Gas Discharge(Nm ³ /hr)	-

Pollutants Concentration	Result	Standard*	Reference Method
NO _x (mg/Nm ³)	Shut Down	-	-
Hg (mg/Nm ³)	-	-	-

* 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers. These limits shall supersede the earlier limits notified under Schedule I at serial number 25 of Environment (Protection) Act, 1986 vide notification GSR 3305(E), Amendment dated 7th December, 2015

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Authorized Signatory


(Dr. Divya Misra)
Managing Director

"End of this Test Report"

Services Available

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Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearance from

Test Report for Stack Emission Monitoring

URL- TC824119000002446



Report No.	Reference No	Issue Date
PCS/SE/02/2021	PCS/GIL/04/2021	08/01/2021


1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: DG Set (1875KW)
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr.Abhishek
6. Weather Condition	: .Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 29/12/2020
9. Sample Receipt in Lab	: 02/01/2021
10. Date of Analysis	: 02/01/2021 - 04/01/2021

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875kw)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	294
9.	Fuel Gas temperature (K)	378
10.	Flue Gas Exist Velocity (m/s)	5.0
11.	Flue Gas Quantity (Nm ³ /hr)	2690.8

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	46.2	75	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	137.3	-	IS: 11255 (Part-2)/Flue gas Analyzer
CO (mg/Nm ³) at 15% O ₂	108.2	150	Flue gas Analyzer

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Managing Director

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date		
PCS/SE/02/2021	PCS/GIL/04/2021	08/01/2021		
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)			
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh			
3. Type of Industry	: Chemical			
4. Monitoring Point	: DG Set (1875KW)			
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr.Abhishek Tiwari			
6. Weather Condition	: .Clear			
7. Method of Monitoring	: As per standard Method			
8. Date of Monitoring	: 29/12/2020			
9. Sample Receipt in Lab	: 02/01/2021			
10. Date of Analysis	: 02/01/2021 - 04/01/2021			
S. No.	Particulars	Value		
1.	Stack attached to	DG Set (1875kw)		
2.	Stack height from Ground (m)	36		
3.	Material of Construction of duct	Mild Steel		
4.	Diameter of Stack (m)	0.5		
5.	Area of Stack (m ²)	0.2		
6.	Type of fuel used	HSD		
7.	Sampling Duration (min)	30		
8.	Atmospheric temperature (K)	294		
9.	Fuel Gas temperature (K)	378		
10.	Flue Gas Exist Velocity (m/s)	5.0		
11.	Flue Gas Quantity (Nm ³ /hr)	2690.8		
	Pollutants Concentration	Value	Standard*	Reference Method
	NOx in ppm at 15% O ₂	111.4	710	IS: 11255 (Part-7)/Flue gas Analyzer
	CO (mg/Nm ³) at 15% O ₂	103.2	150	Flue gas Analyzer
	NMHC (mg/Nm ³) at 15% O ₂	57.3	100	GC Analysis

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Managing Director

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GSTIN :- 09AAJFPS925G1ZY

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

URL- TC824119000002218

Test Report for Stack Emission Monitoring


Report No.	Reference No	Issue Date
PCS/SE/01/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: PGD Unit-1	
5. Monitoring done by	: Mr.Asheesh Kushwaha,Mr.Shubham Pandey & Mr.Abhishek	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 23/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020 - 27/11/2020	

S.No	Particulars	Value
1.	Stack attached to	PGD Unit-1
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	304
10.	Fuel Gas temperature (K)	375
11.	Flue Gas Exist Velocity (m/s)	10.5
12.	Flue Gas Quantity (Nm ³ /hr)	214808.8

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	64.2	100	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	531.1	600	IS: 11255 (Part-2)/Flue gas Analyzer
CO ₂ in %	11.7	-	Flue gas Analyzer

- Note:
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 GSTIN : 09AAJFP5925G1ZY

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/01/2020	PCS/GIL/03/2020	07/12/2020

1. Name of Industry	:	M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	:	PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Point	:	PGD Unit-1
5. Monitoring done by	:	Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abhishek
6. Weather Condition	:	Clear
7. Method of Monitoring	:	As per standard Method
8. Date of Monitoring	:	23/11/2020
9. Sample Receipt in Lab	:	26/11/2020
10. Date of Analysis	:	26/11/2020 - 27/11/2020

Particulars	Value
1. Stack attached to	PGD Unit-1
2. Stack height from Ground (m)	75
3. Material of Construction of duct	Mild Steel (Iron)
4. Diameter of Stack (m)	2.48x2.48
5. Area of Stack (m ²)	6.15
6. Control Measure	ESP
7. Type of fuel used	Coal
8. Sampling Duration (min)	30
9. Atmospheric temperature (K)	304
10. Fuel Gas temperature (K)	375
11. Flue Gas Exist Velocity (m/s)	10.5
12. Flue Gas Quantity (Nm ³ /hr)	214808.8

Pollutants Concentration	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	140.7	600	IS: 11255 (Part-7)/Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

BDL***=0.009µg/m³

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 (Dr. Divya Misra)
 Managing Director

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Tel: 0522-4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

URL: TC824119000002219

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/02/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: PGD Unit-2	
5. Monitoring done by	: Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abhishek	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 23/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020 - 27/11/2020	

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	303
10.	Fuel Gas temperature (K)	389
11.	Flue Gas Exist Velocity (m/s)	13.7
12.	Flue Gas Quantity (Nm ³ /hr)	226183.0

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	38.7	100	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	531.5	600	IS: 11255 (Part-2)/ Flue gas Analyzer
CO ₂ in %	12.1	-	Flue gas Analyzer

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An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/02/2020	PCS/GIL/03/2020	07/12/2020

- | | | |
|--------------------------|---|-----------------------------------------------------------|
| 1. Name of Industry | : | M/s Grasim Industries Limited(Chemical Division Renukoot) |
| 2. Address of Industry | : | PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh |
| 3. Type of Industry | : | Chemical |
| 4. Monitoring Point | : | PGD Unit-2 |
| 5. Monitoring done by | : | Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abbishek |
| 6. Weather Condition | : | Clear |
| 7. Method of Monitoring | : | As per standard Method |
| 8. Date of Monitoring | : | 23/11/2020 |
| 9. Sample Receipt in Lab | : | 26/11/2020 |
| 10. Date of Analysis | : | 26/11/2020 - 27/11/2020 |

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	303
10.	Fuel Gas temperature (K)	389
11.	Flue Gas Exist Velocity (m/s)	13.7
12.	Flue Gas Quantity (Nm ³ /hr)	226183.0

Pollutants Concentration	Value	Standard*	Reference Method
NO _x (mg/ Nm ³)	121.0	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B

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An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

URL- TC824119000002221

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/04/2020	PCS/GIL/01/2020	07/12/2020

1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Point	: CVPL Boiler
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr.Abhishek
6. Weather Condition	: Clear
7. Method of Monitoring	: As per standard Method
8. Date of Monitoring	: 21/11/2020
9. Sample Receipt in Lab	: 26/11/2020
10. Date of Analysis	: 26/11/2020 - 27/11/2020

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	301
9.	Fuel Gas temperature (K)	394
10.	Flue Gas Exist Velocity (m/s)	11.6
11.	Flue Gas Quantity (Nm ³ /hr)	190237.5

Pollutants	Concentration	Value	Standard*	Reference Method
PM	(mg/ Nm ³)	68.4	150	IS: 11255 (Part-1)
SO ₂	(mg/ Nm ³)	351.8	600	IS: 11255 (Part-2)/Flue gas Analyzer
CO ₂	in %	11.8	-	GC Analysis

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Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/04/2020	PCS/GIL/01/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: CVPL Boiler	
5. Monitoring done by	: Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abhishek	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 21/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020 - 27/11/2020	

S. No.	Particulars	Value
1.	Stack attached to	Bag Filter and MDC at the outlet of Steam Generation Boiler
2.	Stack height from Ground (m)	61
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	1.26x1.07
5.	Area of Stack (m ²)	1.35
6.	Type of fuel used	Coal
7.	Sampling Duration (min)	30
8.	Atmospheric temperature (K)	301
9.	Fuel Gas temperature (K)	394
10.	Flue Gas Exist Velocity (m/s)	11.6
11.	Flue Gas Quantity (Nm ³ /hr)	190237.5

Pollutants Concentration	Value	Standard*	Reference Method
NOx in ppm at 15% O ₂	129.5	600	IS: 11255 (Part-7)/Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	Flue gas Analyzer

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URL- TC824119000002220

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/03/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: DG Set (1875KW)	
5. Monitoring done by	: Mr.Asheesh Kushwaha, Mr.Shubham Pandey & Mr.Abhishek	
6. Weather Condition	: .Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 23/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020 - 27/11/2020	

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875kw)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	50
8.	Atmospheric temperature (K)	298
9.	Fuel Gas temperature (K)	348
10.	Flue Gas Exist Velocity (m/s)	5.9
11.	Flue Gas Quantity (Nm ³ /hr)	4068.3

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	48.1	75	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	148.1	-	IS: 11255 (Part-2)/Flue gas Analyzer
CO (mg/Nm ³) at 15% O ₂	116.1	150	Flue gas Analyzer

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Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/03/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: DG Set (1875KW)	
5. Monitoring done by	: Mr.Asheesh Kushwaha,Mr.Shubham Pandey&Mr.Abhishek	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 23/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020 - 27/11/2020	

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875kw)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	50
8.	Atmospheric temperature (K)	298
9.	Fuel Gas temperature (K)	348
10.	Flue Gas Exist Velocity (m/s)	5.9
11.	Flue Gas Quantity (Nm ³ /hr)	4068.3

Pollutants Concentration	Value	Standard*	Reference Method
NOx in ppm at 15% O ₂	91.3	710	IS: 11255 (Part-7)/Flue gas Analyzer
CO (mg/Nm ³) at 15% O ₂	116.1	150	Flue gas Analyzer
NMHC (mg/Nm ³) at 15% O ₂	50.1	100	GC Analysis

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An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

'NABL' Accredited Laboratory Certificate No. TC-8241 dated-01 Jan. 2019 to 31 Dec. 2020

URL- TC824119000002076P

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/01/2020	PCS/GIL/02/2020	02/11/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: PGD Unit-1	
5. Monitoring done by	: Mr. Asheesh, Mr. Abhishek & Mr. Shubham	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 22/10/2020	
9. Sample Receipt in Lab	: 26/10/2020	
10. Date of Analysis	: 26/10/2020 - 28/10/2020	

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-1
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Mild Steel (Iron)
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	303
10.	Fuel Gas temperature (K)	377
11.	Flue Gas Exist Velocity (m/s)	15.2
12.	Flue Gas Quantity (Nm ³ /hr)	260832.5

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	86.2	100	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	523.4	600	IS: 11255 (Part-2)/Flue gas Analyzer
NO _x (mg/ Nm ³)	163.5	600	IS: 11255 (Part-7)/Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B
CO ₂ in %	11.6	-	Flue gas Analyzer

BDL***=0.009µg/m³

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Managing Director

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Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
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'NABL' Accredited Laboratory Certificate No. TC-8241 dated-01 Jan. 2019 to 31 Dec. 2020

URL- TC824119000002077P

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/02/2020	PCS/GIL/02/2020	02/11/2020
1. Name of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: PGD Unit-2	
5. Monitoring done by	: Mr. Asheesh, Mr. Abhishek & Mr. Shubham	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 22/10/2020	
9. Sample Receipt in Lab	: 26/10/2020	
10. Date of Analysis	: 26/10/2020 - 28/10/2020	

S. No.	Particulars	Value
1.	Stack attached to	PGD Unit-2
2.	Stack height from Ground (m)	75
3.	Material of Construction of duct	Concrete RCC
4.	Diameter of Stack (m)	2.48x2.48
5.	Area of Stack (m ²)	6.15
6.	Control Measure	ESP
7.	Type of fuel used	Coal
8.	Sampling Duration (min)	30
9.	Atmospheric temperature (K)	304
10.	Fuel Gas temperature (K)	381
11.	Flue Gas Exist Velocity (m/s)	14.8
12.	Flue Gas Quantity (Nm ³ /hr)	250998.9

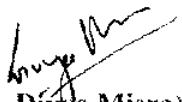
Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	40.3	50	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	556.8	600	IS: 11255 (Part-2)/ Flue gas Analyzer
NO _x (mg/ Nm ³)	136.5	300	IS: 11255 (Part-7)/ Flue gas Analyzer
Hg in mg/Nm ³	BDL***	0.03	3112-Hg-B
CO ₂ in %	11.4	-	Flue gas Analyzer

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Authorized Signatory


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 Managing Director

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 Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
 Ground Water Board, Compliance of E.C. NOC from UPPCR MoEF



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'NABL' Accredited Laboratory Certificate No. TC-8241 dated-01 Jan. 2019 to 31 Dec. 2020

URL- TC824119000002078P

Test Report for Stack Emission Monitoring

Report No.	Reference No	Issue Date
PCS/SE/03/2020	PCS/GIL/02/2020	02/11/2020
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)	
2. Address of Industry	: PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Point	: DG Set (1875KW)	
5. Monitoring done by	: Mr. Asheesh, Mr. Abhishek & Mr. Shubham	
6. Weather Condition	: Clear	
7. Method of Monitoring	: As per standard Method	
8. Date of Monitoring	: 21/10/2020	
9. Sample Receipt in Lab	: 26/10/2020	
10. Date of Analysis	: 26/10/2020 - 28/10/2020	

S. No.	Particulars	Value
1.	Stack attached to	DG Set (1875KW)
2.	Stack height from Ground (m)	36
3.	Material of Construction of duct	Mild Steel
4.	Diameter of Stack (m)	0.5
5.	Area of Stack (m ²)	0.2
6.	Type of fuel used	HSD
7.	Sampling Duration (min)	50
8.	Atmospheric temperature (K)	306
9.	Fuel Gas temperature (K)	405
10.	Flue Gas Exist Velocity (m/s)	6.7
11.	Flue Gas Quantity (Nm ³ /hr)	3368.1

Pollutants Concentration	Value	Standard*	Reference Method
PM (mg/ Nm ³)	51.0	75	IS: 11255 (Part-1)
SO ₂ (mg/ Nm ³)	169.0	-	IS: 11255 (Part-2)/Flue gas Analyzer
NOx in ppm at 15% O ₂	90.5	710	IS: 11255 (Part-7)/Flue gas Analyzer
CO (mg/Nm ³) at 15% O ₂	111.9	150	Flue gas Analyzer
NMHC (mg/Nm ³) at 15% O ₂	56.4	100	GC Analysis

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 P- is to be used when report contains a mix of accredited & non-accredited tests/calibration with identification as per NABL norms

Authorized Signatory


 (Dr. Divya Misra)
 Managing Director

"End of this Test Report"

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
 Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
 Ground Water Board, Compliance of E.C., NOC from UPPCR, MoEF



Prakriti Consultants Services

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E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2021	PCS/GIL/06/2021	23/03/2021

- | | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1. Name & Address of Industry | : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh |
| 2. Type of Industry | : Chemical |
| 3. Sampling Location | : Membrane-I(Process Emission) |
| 4. Sample Collected by | : Mr Shubham Pandey & Mr Asheesh Kushwaha |
| 5. Weather Condition | : Clear Sky |
| 6. Method of sampling | : As per standard Method |
| 7. Date of Monitoring | : 14/03/2021 |
| 8. Sample Receipt in Lab | : 17/03/2021 |
| 9. Date of Testing | : 18/03/2021 – 20/03/2021 |

Pollutants Concentration	Result	Standard*
HCL (mg/Nm ³)	5.6	35
Cl ₂ (mg/Nm ³)	3.1	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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(Dr. Divya Misra)

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Services Provided

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date	
PCS/SE/02/2021	PCS/GIL/06/2021	23/03/2021	
1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh		
2. Type of Industry	: Chemical		
3. Sampling Location	: Membrane-II(Process Emission)		
4. Sample Collected by	: Mr Shubham Pandey & Mr Asheesh Kushwaha		
5. Weather Condition	: Clear Sky		
6. Method of sampling	: As per standard Method		
7. Date of Monitoring	: 14/03/2021		
8. Sample Receipt in Lab	: 17/03/2021		
9. Date of Testing	: 18/03/2021 – 20/03/2021		
	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	4.8	35
	Cl ₂ (mg/Nm ³)	2.6	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/03/2021	PCS/GIL/06/2021	23/03/2021

- | | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1. Name & Address of Industry | : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh |
| 2. Type of Industry | : Chemical |
| 3. Sampling Location | : Membrane-III(Process Emission) |
| 4. Sample Collected by | : Mr Shubham Pandey & Mr Asheesh Kushwaha |
| 5. Weather Condition | : Clear Sky |
| 6. Method of sampling | : As per standard Method |
| 7. Date of Monitoring | : 14/03/2021 |
| 8. Sample Receipt in Lab | : 17/03/2021 |
| 9. Date of Testing | : 18/03/2021 – 20/03/2021 |

Pollutants Concentration	Result	Standard*
HCL (mg/Nm ³)	5.2	35
Cl ₂ (mg/Nm ³)	2.9	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date	
PCS/SE/01/2021	PCS/GIL/05/2021	08/03/2021	
1. Name & Address of Industry : M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh 2. Type of Industry : Chemical 3. Sampling Location : Membrane-I(Process Emission) 4. Sample Collected by : Mr Shubham Pandey& Mr Abhishek Kumar 5. Weather Condition : Clear Sky 6. Method of sampling : As per standard Method 7. Date of Monitoring : 21/02/2021 8. Sample Receipt in Lab : 25/02/2021 9. Date of Testing : 25/02/2021 – 27/02/2021			
Pollutants Concentration		Result	Standard*
HCL (mg/Nm ³)		4.8	35
Cl ₂ (mg/Nm ³)		3.4	15

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date	
PCS/SE/02/2021	PCS/GIL/05/2021	08/03/2021	
1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh		
2. Type of Industry	: Chemical		
3. Sampling Location	: Membrane-II(Process Emission)		
4. Sample Collected by	: Mr Shubham Pandey & Mr Abhishek Kumar		
5. Weather Condition	: Clear Sky		
6. Method of sampling	: As per standard Method		
7. Date of Monitoring	: 21/02/2021		
8. Sample Receipt in Lab	: 25/02/2021		
9. Date of Testing	: 25/02/2021 – 27/02/2021		
	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	5.8	35
	Cl ₂ (mg/Nm ³)	3.1	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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“End of this Test Report”

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date	
PCS/SE/03/2021	PCS/GIL/05/2021	08/03/2021	
1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh		
2. Type of Industry	: Chemical		
3. Sampling Location	: Membrane-III(Process Emission)		
4. Sample Collected by	: Mr Shubham Pandey & Mr Abhishek Kumar		
5. Weather Condition	: Clear Sky		
6. Method of sampling	: As per standard Method		
7. Date of Monitoring	: 21/02/2021		
8. Sample Receipt in Lab	: 25/02/2021		
9. Date of Testing	: 25/02/2021 – 27/02/2021		
	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	5.9	35
	Cl ₂ (mg/Nm ³)	2.5	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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E-mail: prakriti_md@rediffmail.com

Tel: 0522- 4002545, Mobile: 09415518818,

GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.

PCS/SE/01/2021

Reference No.

PCS/GIL/04/2021

Issue Date

28/01/2021

- | | |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 1. Name & Address of Industry | : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh |
| 2. Type of Industry | : Chemical |
| 3. Sampling Location | : Membrane-I(Process Emission) |
| 4. Sample Collected by | : Mr Shubham Pandey, Mr Vipin Kannojiya &Mr Ghanshyam Babu |
| 5. Weather Condition | : Clear Sky |
| 6. Method of sampling | : As per standard Method |
| 7. Date of Monitoring | : 16/01/2021 |
| 8. Sample Receipt in Lab | : 18/01/2021 |
| 9. Date of Testing | : 19/01/2021 – 21/01/2021 |

Pollutants Concentration**Result****Standard***HCL (mg/Nm³)

5.2

35

Cl₂ (mg/Nm³)

3.0

15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Authorized Signatory

(Dr. Divya Misra)
Managing Director

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/02/2021	PCS/GIL/04/2021	28/01/2021

- | | |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 1. Name & Address of Industry | : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh |
| 2. Type of Industry | : Chemical |
| 3. Sampling Location | : Membrane-II(Process Emission) |
| 4. Sample Collected by | : Mr Shubham Pandey, Mr Vipin Kannojiya &Mr Ghanshyam Babu |
| 5. Weather Condition | : Clear Sky |
| 6. Method of sampling | : As per standard Method |
| 7. Date of Monitoring | : 16/01/2021 |
| 8. Sample Receipt in Lab | : 18/01/2021 |
| 9. Date of Testing | : 19/01/2021 – 21/01/2021 |

Pollutants Concentration	Result	Standard*
HCL (mg/Nm ³)	6.1	35
Cl ₂ (mg/Nm ³)	2.9	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Managing Director

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/03/2021	PCS/GIL/04/2021	28/01/2021

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Sampling Location : **Membrane-III(Process Emission)**
- Sample Collected by : Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 16/01/2021
- Sample Receipt in Lab : 18/01/2021
- Date of Testing : 19/01/2021 – 21/01/2021

	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	4.3	35
	Cl ₂ (mg/Nm ³)	1.9	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2021	PCS/GIL/03/2021	08/01/2021

- | | |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 1. Name & Address of Industry | : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh |
| 2. Type of Industry | : Chemical |
| 3. Sampling Location | : Membrane-I(Process Emission) |
| 4. Sample Collected by | : Mr Asheesh Kushwaha& Mr Shubham Pandey |
| 5. Weather Condition | : Clear Sky |
| 6. Method of sampling | : As per standard Method |
| 7. Date of Monitoring | : 30/12/2020 |
| 8. Sample Receipt in Lab | : 02/01/2021 |
| 9. Date of Testing | : 02/01/2021 – 04/01/2021 |

S. No.	Particulars	Value	
		Pollutants Concentration	Standard*
	HCL (mg/Nm ³)	3.9	35
	Cl ₂ (mg/Nm ³)	2.0	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Managing Director**

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Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/02/2021	PCS/GIL/03/2021	08/01/2021

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Sampling Location : **Membrane-II(Process Emission)**
- Sample Collected by : Mr Asheesh Kushwaha& Mr Shubham Pandey
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 30/12/2020
- Sample Receipt in Lab : 02/01/2021
- Date of Testing : 02/01/2021 – 04/01/2021

S. No.	Particulars	Value	
	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	4.7	35
	Cl ₂ (mg/Nm ³)	3.1	15

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/03/2021	PCS/GIL/03/2021	08/01/2021

1. Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
2. Type of Industry : Chemical
3. Sampling Location : **Membrane-III(Process Emission)**
4. Sample Collected by : Mr. Asheesh Kushwaha &Mr Shubham Pandey
5. Weather Condition : Clear Sky
6. Method of sampling : As per standard Method
7. Date of Monitoring : 30/12/2020
8. Sample Receipt in Lab : 02/01/2021
9. Date of Testing : 02/01/2021 – 04/01/2021

S. No.	Particulars	Value	
	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	5.9	35
	Cl ₂ (mg/Nm ³)	1.12	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Managing Director

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An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2020	PCS/GIL/03/2020	07/12/2020

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Sampling Location : **Membrane-I(Process Emission)**
- Sample Collected by : Mr Asheesh Kushwaha & Mr Shubham Pandey
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 22/11/2020
- Sample Receipt in Lab : 26/11/2020
- Date of Testing : 26/11/2020 – 27/11/2020

S. No.	Particulars	Value	
		Pollutants Concentration	Standard*
	HCL (mg/Nm ³)	4.1	35
	Cl ₂ (mg/Nm ³)	1.2	15

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E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFPS925G1ZY

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/02/2020	PCS/GIL/03/2020	07/12/2020

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Sampling Location : **Membrane-II(Process Emission)**
- Sample Collected by : Mr Asheesh Kushwaha & Mr Shubham Pandey
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 22/11/2020
- Sample Receipt in Lab : 26/11/2020
- Date of Testing : 26/11/2020 – 27/11/2020

S. No.	Particulars	Value	
		Pollutants Concentration	Standard*
	HCL (mg/Nm ³)	5.87	35
	Cl ₂ (mg/Nm ³)	2.3	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

Note: 1. The results in the Test Report related only to the items tested.

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3. The report shall not be used for any other purpose than declared by the sponsor.

4. Prakriti Consultants Services are not regulatory agency hence no part of this report should be used for legal purpose under any circumstances.

Authorized Signatory

(Dr. Divya Misra)
Managing Director

“End of this Test Report”



Prakriti Consultants Services

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(An ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 Certified Organization)
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GSTIN :- 09AAJFPS925G1ZY

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/03/2020	PCS/GIL/03/2020	07/12/2020

- Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Sampling Location : **Membrane-III(Process Emission)**
- Sample Collected by : Mr. Asheesh Kushwaha & Mr Shubham Pandey
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 22/11/2020
- Sample Receipt in Lab : 26/11/2020
- Date of Testing : 26/11/2020 – 27/11/2020

S. No.	Particulars	Value	
		Pollutants Concentration	Standard*
	HCL (mg/Nm ³)	5.23	35
	Cl ₂ (mg/Nm ³)	0.92	15

*Environment (Protection) Act (1986 fourth Amendment rule -2012) vide notification GSR 820(E), dated 9th November, 2012 Schedule-I, Serial no. 38

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Tel: 0522- 4002545, Mobile: 09415518818.

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

'NABL' Accredited Laboratory Certified No. TC-8241 dated-01 Jan. 2019

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/01/2020	PCS/GIL/02/2020	02/11/2020

- Name & Address of Industry : M/s Grasim Industries Limited(Chemical Division Renukoot)
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Sampling Location : Membrane-I(Process Emission)
- Sample Collected by : Mr. Asheesh, Mr. Abhishek & Mr. Shubham
- Weather Condition : Clear Sky
- Method of sampling : As per standard Method
- Date of Monitoring : 23/10/2020
- Sample Receipt in Lab : 26/10/2020
- Date of Testing : 26/10/2020 – 28/10/2020

S. No.	Particulars	Value	
		Pollutants Concentration	Standard*
	HCL (mg/Nm ³)	3.72	35
	Cl ₂ (mg/Nm ³)	0.83	15

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'NABL' Accredited Laboratory Certified No. TC-8241 dated-01 Jan. 2019

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/02/2020	PCS/GIL/02/2020	02/11/2020

1. Name & Address of Industry : **M/s Grasim Industries Limited(Chemical Division Renukoot)**
PO- Renukoot Dist- Sonbhadra 231217, Uttar Pradesh
2. Type of Industry : Chemical
3. Sampling Location : **Membrane-II(Process Emission)**
4. Sample Collected by : Mr. Asheesh, Mr. Abhishek & Mr. Shubham
5. Weather Condition : Clear Sky
6. Method of sampling : As per standard Method
7. Date of Monitoring : 23/10/2020
8. Sample Receipt in Lab : 26/10/2020
9. Date of Testing : 26/10/2020 – 28/10/2020

S. No.	Particulars	Value	
	Pollutants Concentration	Result	Standard*
	HCL (mg/Nm ³)	4.24	35
	Cl ₂ (mg/Nm ³)	1.63	15

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'NABL' Accredited Laboratory Certified No. TC-8241 dated-01 Jan. 2019

Test Report for Stack Monitoring

Report No.	Reference No.	Issue Date
PCS/SE/03/2020	PCS/GIL/02/2020	02/11/2020
1. Name & Address of Industry	: M/s Grasim Industries Limited(Chemical Division Renukoot) PO- Renukoot Dist- Sonebhadra 231217, Uttar Pradesh	
2. Type of Industry	: Chemical	
3. Sampling Location	: Membrane-III(Process Emission)	
4. Sample Collected by	: Mr. Asheesh, Mr. Abhishek & Mr. Shubham	
5. Weather Condition	: Clear Sky	
6. Method of sampling	: As per standard Method	
7. Date of Monitoring	: 23/10/2020	
8. Sample Receipt in Lab	: 26/10/2020	
9. Date of Testing	: 26/10/2020 – 28/10/2020	

S. No.	Particulars	Value	
		Pollutants Concentration	Standard*
	HCL (mg/Nm ³)	3.46	35
	Cl ₂ (mg/Nm ³)	1.14	15

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Managing Director

“End of this Test Report”

Test Report for Ambient Air Quality



TC-8241

ULR- TC824121000000366

Report No.	Reference No.	Issue Date
PCS/AAQ/01/2021	PCS/GIL/07/2021	23/03/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	At Main Gate
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey & Mr Asheesh Kushwaha
8. Date of Monitoring	:	12/03/2021 – 13/03/2021
9. Sample Receipt in Lab	:	17/03/2021
10. Date of Analysis	:	18/03/2021– 20/03/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	(µg/ m³)	66.7	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	(µg/ m³)	17.6	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	(µg/ m³)	24.5	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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 5. No deviation as per the Standard Method.

Authorized Signatory


(Dr Divya Misra)

“End of this Test Report”

Test Report for Ambient Air Quality

Report No. PCS/AAQ/01/2021	Reference No. PCS/GIL/07/2021	Issue Date 23/03/2021
--------------------------------------	-----------------------------------------	---------------------------------

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	At Main Gate
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey & Mr Asheesh Kushwaha
8. Date of Monitoring	:	12/03/2021 – 13/03/2021
9. Sample Receipt in Lab	:	17/03/2021
10. Date of Analysis	:	18/03/2021– 20/03/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM_{2.5})	($\mu\text{g}/\text{m}^3$)	40.3	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	1.9	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.058	1.0	EPM 2000 by AAS Method
7.	Ozone(O₃)	($\mu\text{g}/\text{m}^3$)	18.2	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO₂)	(ppm)	266	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl₂)	(mg/m^3)	0.68	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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 5. No deviation as per the Standard Method.

Authorized Signatory


(Dr Divya Misra)

“End of this Test Report”

Test Report for Ambient Air Quality



ULR- TC824121000000367

Report No. PCS/AAQ/02/2021	Reference No. PCS/GIL/07/2021	Issue Date 23/03/2021
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1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Location	: PGD Area
5. Weather Condition:	: Clear Sky
6. Method of sampling:	: As per Standard Method
7. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha
8. Date of Monitoring	: 12/03/2021 – 13/03/2021
9. Sample Receipt in Lab	: 17/03/2021
10. Date of Analysis	: 18/03/2021– 20/03/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	68.5	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	20.3	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	26.8	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date			
PCS/AAQ/02/2021	PCS/GIL/07/2021	23/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: PGD Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha				
8. Date of Monitoring	: 12/03/2021 – 13/03/2021				
9. Sample Receipt in Lab	: 17/03/2021				
10. Date of Analysis	: 18/03/2021– 20/03/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	43.5	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	2.4	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.063	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	38.4	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	210	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.60	1.46	IS : 5182 (Part XIX) • 1982

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**8 Hourly Standard

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 5. No deviation as per the Standard Method.

Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Test Report for Ambient Air Quality

ULR- TC824121000000368



TC-8241

Report No.	Reference No.	Issue Date
PCS/AAQ/03/2021	PCS/GIL/07/2021	23/03/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	Project Office
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey & Mr Asheesh Kushwaha
8. Date of Monitoring	:	12/03/2021 – 13/03/2021
9. Sample Receipt in Lab	:	17/03/2021
10. Date of Analysis	:	18/03/2021– 20/03/2021

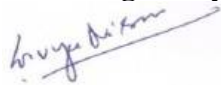
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	($\mu\text{g}/\text{m}^3$)	62.5	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	($\mu\text{g}/\text{m}^3$)	22.8	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	($\mu\text{g}/\text{m}^3$)	28.1	80	IS: 5182 (Part 6) 2006

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Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date			
PCS/AAQ/03/2021	PCS/GIL/07/2021	23/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: Project Office				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha				
8. Date of Monitoring	: 12/03/2021 – 13/03/2021				
9. Sample Receipt in Lab	: 17/03/2021				
10. Date of Analysis	: 18/03/2021– 20/03/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	40.6	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	2.1	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.059	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	37.5	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	214	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.73	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

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Authorized Signatory



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Test Report for Ambient Air Quality

ULR- TC824121000000369



TC-8241

Report No.	Reference No.	Issue Date			
PCS/AAQ/04/2021	PCS/GIL/07/2021	23/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: ETP Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha				
8. Date of Monitoring	: 12/03/2021 – 13/03/2021				
9. Sample Receipt in Lab	: 17/03/2021				
10. Date of Analysis	: 18/03/2021– 20/03/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	($\mu\text{g}/\text{m}^3$)	66.5	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	($\mu\text{g}/\text{m}^3$)	21.8	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	($\mu\text{g}/\text{m}^3$)	25.9	80	IS: 5182 (Part 6) 2006

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Test Report for Ambient Air Quality

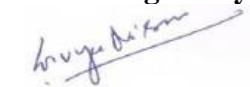
Report No.	Reference No.	Issue Date			
PCS/AAQ/04/2021	PCS/GIL/07/2021	23/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: ETP Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey & Mr Asheesh Kushwaha				
8. Date of Monitoring	: 12/03/2021 – 13/03/2021				
9. Sample Receipt in Lab	: 17/03/2021				
10. Date of Analysis	: 18/03/2021– 20/03/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	36.8	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	2.52	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.052	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	25.6	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	190	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.76	1.46	IS : 5182 (Part XIX) • 1982

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Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Test Report for Ambient Air Quality



TC-8241

ULR- TC824121000000291

Report No.	Reference No.	Issue Date
PCS/AAQ/01/2021	PCS/GIL/06/2021	08/03/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	At Main Gate
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
8. Date of Monitoring	:	20/02/2021 – 21/02/2021
9. Sample Receipt in Lab	:	25/02/2021
10. Date of Analysis	:	25/02/2021– 27/02/2021

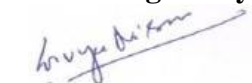
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	68.4	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	19.1	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	22.0	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

- Note:**
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 5. No deviation as per the Standard Method.

Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality

Report No. PCS/AAQ/01/2021	Reference No. PCS/GIL/06/2021	Issue Date 08/03/2021
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1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	At Main Gate
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
8. Date of Monitoring	:	20/02/2021 – 21/02/2021
9. Sample Receipt in Lab	:	25/02/2021
10. Date of Analysis	:	25/02/2021– 27/02/2021

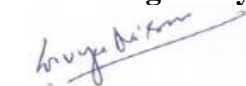
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	42.3	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	1.8	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.062	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	20.5	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	251	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m^3)	0.73	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality



ULR- TC82412100000292

Report No. PCS/AAQ/02/2021	Reference No. PCS/GIL/06/2021	Issue Date 08/03/2021
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1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	: Chemical
4. Monitoring Location	: PGD Area
5. Weather Condition:	: Clear Sky
6. Method of sampling:	: As per Standard Method
7. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
8. Date of Monitoring	: 20/02/2021 – 21/02/2021
9. Sample Receipt in Lab	: 25/02/2021
10. Date of Analysis	: 25/02/2021– 27/02/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	68.0	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	27.3	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	23.2	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


(Dr Divya Misra)

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality

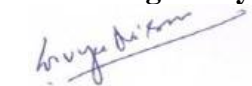
Report No.	Reference No.	Issue Date			
PCS/AAQ/02/2021	PCS/GIL/06/2021	08/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: PGD Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu				
8. Date of Monitoring	: 20/02/2021 – 21/02/2021				
9. Sample Receipt in Lab	: 25/02/2021				
10. Date of Analysis	: 25/02/2021– 27/02/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	39.9	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	2.8	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.074	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	41.2	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	191	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.58	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality

ULR- TC824121000000293



TC-8241

Report No.	Reference No.	Issue Date
PCS/AAQ/03/2021	PCS/GIL/06/2021	08/03/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	Project Office
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
8. Date of Monitoring	:	20/02/2021 – 21/02/2021
9. Sample Receipt in Lab	:	25/02/2021
10. Date of Analysis	:	25/02/2021– 27/02/2021

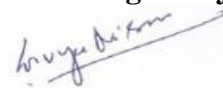
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	($\mu\text{g}/\text{m}^3$)	67.5	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	($\mu\text{g}/\text{m}^3$)	29.2	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	($\mu\text{g}/\text{m}^3$)	21.3	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

Test Report for Ambient Air Quality

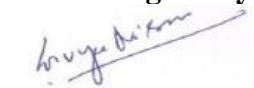
Report No.	Reference No.	Issue Date			
PCS/AAQ/03/2021	PCS/GIL/06/2021	08/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: Project Office				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu				
8. Date of Monitoring	: 20/02/2021 – 21/02/2021				
9. Sample Receipt in Lab	: 25/02/2021				
10. Date of Analysis	: 25/02/2021– 27/02/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	41.2	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	1.8	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.062	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	35.4	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	207	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.82	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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 5. No deviation as per the Standard Method.

Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”

Test Report for Ambient Air Quality

ULR- TC824121000000294



TC-8241

Report No.	Reference No.	Issue Date
PCS/AAQ/04/2021	PCS/GIL/06/2021	08/03/2021

1.	Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2.	Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3.	Type of Industry	:	Chemical
4.	Monitoring Location	:	ETP Area
5.	Weather Condition:	:	Clear Sky
6.	Method of sampling:	:	As per Standard Method
7.	Monitoring done by	:	Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu
8.	Date of Monitoring	:	20/02/2021 – 21/02/2021
9.	Sample Receipt in Lab	:	25/02/2021
10.	Date of Analysis	:	25/02/2021– 27/02/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	($\mu\text{g}/\text{m}^3$)	62.4	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	($\mu\text{g}/\text{m}^3$)	24.7	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	($\mu\text{g}/\text{m}^3$)	20.2	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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(Dr Divya Misra)

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
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Test Report for Ambient Air Quality

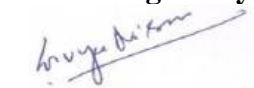
Report No.	Reference No.	Issue Date			
PCS/AAQ/04/2021	PCS/GIL/06/2021	08/03/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: ETP Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey, Mr Abhishek Kumar & Mr Ghanshyam Babu				
8. Date of Monitoring	: 20/02/2021 – 21/02/2021				
9. Sample Receipt in Lab	: 25/02/2021				
10. Date of Analysis	: 25/02/2021– 27/02/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	42.1	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	1.9	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.071	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	28.2	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	220	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.83	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory



(Dr Divya Misra)

“End of this Test Report”



Prakriti Consultants Services

An Approved Laboratory From MoEF & Uttar Pradesh Pollution Control Board, ISO 17025:2017 Accredited by NABL
(An ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 Certified Organization)
Address: 12, Vishnupuri, Church Road, Aliganj, Lucknow-226024
E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925GIZY

Test Report for Ambient Air Quality



URL- TC824119000002582

Report No.	Reference No.	Issue Date
PCS/AAQ/01/2021	PCS/GIL/05/2021	28/01/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	At Main Gate
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
8. Date of Monitoring	:	14/01/2021 – 15/01/2021
9. Sample Receipt in Lab	:	18/01/2021
10. Date of Analysis	:	19/01/2021– 21/01/2021

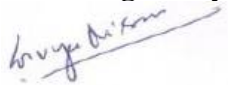
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	79.2	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	21.8	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	28.2	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


(Dr Divya Misra)
Managing Director

“End of this Test Report”



Prakriti Consultants Services

An Approved Laboratory From MoEF & Uttar Pradesh Pollution Control Board, ISO 17025:2017 Accredited by NABL
(An ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 Certified Organization)

Address: 12, Vishnupuri, Church Road, Aliganj, Lucknow-226024

E-mail: prakriti_md@rediffmail.com

Tel: 0522- 4002545, Mobile: 09415518818,

GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No. PCS/AAQ/01/2021	Reference No. PCS/GIL/05/2021	Issue Date 28/01/2021
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1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	At Main Gate
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
8. Date of Monitoring	:	14/01/2021 – 15/01/2021
9. Sample Receipt in Lab	:	18/01/2021
10. Date of Analysis	:	19/01/2021– 21/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	49.5	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	2.5	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.071	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	19.8	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	221	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m^3)	0.88	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

**(Dr Divya Misra)
Managing Director**

“End of this Test Report”

Services Provided

Environmental Monitoring, Preparation of EIA/EEMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology,
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STPIETP, Clearances from
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Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality



URL- TC824119000002583

Report No.	Reference No.	Issue Date
PCS/AAQ/02/2021	PCS/GIL/05/2021	28/01/2021

1.	Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2.	Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3.	Type of Industry	:	Chemical
4.	Monitoring Location	:	PGD Area
5.	Weather Condition:	:	Clear Sky
6.	Method of sampling:	:	As per Standard Method
7.	Monitoring done by	:	Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
8.	Date of Monitoring	:	14/01/2021 – 15/01/2021
9.	Sample Receipt in Lab	:	18/01/2021
10.	Date of Analysis	:	19/01/2021– 21/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	(µg/ m³)	89.3	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	(µg/ m³)	29.2	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	(µg/ m³)	20.5	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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 5. No deviation as per the Standard Method.

Authorized Signatory

(Dr Divya Misra)
Managing Director

“End of this Test Report”



Prakriti Consultants Services

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(An ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 Certified Organization)
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E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date			
PCS/AAQ/02/2021	PCS/GIL/05/2021	28/01/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: PGD Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu				
8. Date of Monitoring	: 14/01/2021 – 15/01/2021				
9. Sample Receipt in Lab	: 18/01/2021				
10. Date of Analysis	: 19/01/2021– 21/01/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	50.1	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	3.1	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.079	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	37.5	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	177.4	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m^3)	0.76	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


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Managing Director

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

URL- TC824119000002584



Report No.	Reference No.	Issue Date
PCS/AAQ/03/2021	PCS/GIL/05/2021	28/01/2021

- | | | | |
|-----|-----------------------|---|------------------------------------------------------------|
| 1. | Name of Industry | : | M/s Grasim Industries Limited (Chemical Division Renukoot) |
| 2. | Industry Address | : | PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh |
| 3. | Type of Industry | : | Chemical |
| 4. | Monitoring Location | : | Project Office |
| 5. | Weather Condition: | : | Clear Sky |
| 6. | Method of sampling: | : | As per Standard Method |
| 7. | Monitoring done by | : | Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu |
| 8. | Date of Monitoring | : | 14/01/2021 – 15/01/2021 |
| 9. | Sample Receipt in Lab | : | 18/01/2021 |
| 10. | Date of Analysis | : | 19/01/2021– 21/01/2021 |

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	86.4	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	33.8	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	25.1	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Managing Director

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Services Provided

Environmental Monitoring, Preparation of EIA/EEMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology,
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GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/03/2021	PCS/GIL/05/2021	28/01/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	Project Office
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
8. Date of Monitoring	:	14/01/2021 – 15/01/2021
9. Sample Receipt in Lab	:	18/01/2021
10. Date of Analysis	:	19/01/2021– 21/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	52.4	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	2.8	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.071	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	29.2	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	197	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.95	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

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Managing Director

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

URL- TC824119000002585



Report No.	Reference No.	Issue Date
PCS/AAQ/04/2021	PCS/GIL/05/2021	28/01/2021

1.	Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2.	Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3.	Type of Industry	:	Chemical
4.	Monitoring Location	:	ETP Area
5.	Weather Condition:	:	Clear Sky
6.	Method of sampling:	:	As per Standard Method
7.	Monitoring done by	:	Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu
8.	Date of Monitoring	:	14/01/2021 – 15/01/2021
9.	Sample Receipt in Lab	:	18/01/2021
10.	Date of Analysis	:	19/01/2021– 23/01/2021

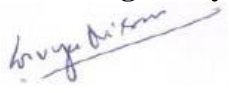
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	80.2	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	27.2	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	23.8	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


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Managing Director

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Tel: 0522- 4002545, Mobile: 09415518818,

GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/04/2021	PCS/GIL/05/2021	28/01/2021

- | | | |
|--------------------------|---|-------------------------------------------------------------------|
| 1. Name of Industry | : | M/s Grasim Industries Limited (Chemical Division Renukoot) |
| 2. Industry Address | : | PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh |
| 3. Type of Industry | : | Chemical |
| 4. Monitoring Location | : | ETP Area |
| 5. Weather Condition: | : | Clear Sky |
| 6. Method of sampling: | : | As per Standard Method |
| 7. Monitoring done by | : | Mr Shubham Pandey, Mr Vipin Kannojiya & Mr Ghanshyam Babu |
| 8. Date of Monitoring | : | 14/01/2021 – 15/01/2021 |
| 9. Sample Receipt in Lab | : | 18/01/2021 |
| 10. Date of Analysis | : | 19/01/2021– 21/01/2021 |

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	47.4	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	2.1	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.064	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	31.4	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	213	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m^3)	0.91	1.46	IS : 5182 (Part XIX) • 1982

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**8 Hourly Standard

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Managing Director

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Services Provided

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Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality



URL- TC824119000002428

Report No.	Reference No.	Issue Date			
PCS/AAQ/01/2021	PCS/GIL/04/2021	08/01/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: At Main Gate				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek				
8. Date of Monitoring	: 28/12/2020 – 29/12/2020				
9. Sample Receipt in Lab	: 02/01/2021				
10. Date of Analysis	: 02/01/2021– 04/01/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	72.9	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	23.3	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	22.7	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Managing Director

“End of this Test Report”

Services Available

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Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date			
PCS/AAQ/01/2021	PCS/GIL/04/2021	08/01/2021			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: At Main Gate				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek Tiwari				
8. Date of Monitoring	: 28/12/2020 – 29/12/2020				
9. Sample Receipt in Lab	: 02/01/2021				
10. Date of Analysis	: 02/01/2021– 04/01/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	(µg/ m ³)	44.2	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/ m ³)	1.1	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	(µg/ m ³)	0.064	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	21.7	100**	IS:5182(Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	167	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.62	1.46	IS : 5182 (Part XIX) • 1982

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**8 Hourly Standard

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Authorized Signatory

(Dr Divya Misra)
Managing Director

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Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF



Test Report for Ambient Air Quality

URL- TC824119000002429

Report No.	Reference No.	Issue Date
PCS/AAQ/02/2021	PCS/GIL/04/2021	08/01/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	PGD Area
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek
8. Date of Monitoring	:	29/12/2020 – 30/12/2020
9. Sample Receipt in Lab	:	02/01/2021
10. Date of Analysis	:	02/01/2021– 04/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	($\mu\text{g}/\text{m}^3$)	86.5	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	($\mu\text{g}/\text{m}^3$)	27.2	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	($\mu\text{g}/\text{m}^3$)	19.3	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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**(Dr Divya Misra)
Managing Director**

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GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/02/2021	PCS/GIL/04/2021	08/01/2021

1.	Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2.	Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3.	Type of Industry	:	Chemical
4.	Monitoring Location	:	PGD Area
5.	Weather Condition:	:	Clear Sky
6.	Method of sampling:	:	As per Standard Method
7.	Monitoring done by	:	Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek
8.	Date of Monitoring	:	29/12/2020 – 30/12/2020
9.	Sample Receipt in Lab	:	02/01/2021
10.	Date of Analysis	:	02/01/2021– 04/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	48.6	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	1.8	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.082	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	29.1	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	113.5	5000	NIOSH 6603/GC-TCD
6.	Chlorine (Cl ₂)	(mg/m^3)	0.54	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

(Dr Divya Misra)
Managing Director

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Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

URL- TC824119000002430



TC-8241

Report No.	Reference No.	Issue Date
PCS/AAQ/03/2021	PCS/GIL/04/2021	08/01/2021

- | | | |
|--------------------------|---|-------------------------------------------------------------------|
| 1. Name of Industry | : | M/s Grasim Industries Limited (Chemical Division Renukoot) |
| 2. Industry Address | : | PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh |
| 3. Type of Industry | : | Chemical |
| 4. Monitoring Location | : | Project Office |
| 5. Weather Condition: | : | Clear Sky |
| 6. Method of sampling: | : | As per Standard Method |
| 7. Monitoring done by | : | Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek |
| 8. Date of Monitoring | : | 29/12/2020 – 30/12/2020 |
| 9. Sample Receipt in Lab | : | 02/01/2021 |
| 10. Date of Analysis | : | 02/01/2021– 04/01/2021 |

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM₁₀)	($\mu\text{g}/\text{m}^3$)	81.0	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO₂)	($\mu\text{g}/\text{m}^3$)	31.5	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO₂)	($\mu\text{g}/\text{m}^3$)	26.4	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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 5. No deviation as per the Standard Method.

Authorized Signatory

(Dr Divya Misra)
Managing Director

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF



Prakriti Consultants Services

An Approved Laboratory From MoEF & Uttar Pradesh Pollution Control Board, ISO 17025:2017 Accredited by NABL
(An ISO 14001:2015, ISO 9001-2015 and ISO 45001:2018 Certified Organization)
Address: 12, Vishnupuri, Church Road, Aliganj, Lucknow-226024
E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/03/2021	PCS/GIL/04/2021	08/01/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	Project Office
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek
8. Date of Monitoring	:	29/12/2020 – 30/12/2020
9. Sample Receipt in Lab	:	02/01/2021
10. Date of Analysis	:	02/01/2021– 04/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	50.3	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	2.3	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.052	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	26.2	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	203	5000	NIOSH 6603/GC-TCD
6.	Chlorine (Cl ₂)	(mg/m^3)	1.07	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

**(Dr Divya Misra)
Managing Director**

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF



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E-mail: prakriti_md@rediffmail.com
Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

URL- TC824119000002431



TC-8241

Report No.	Reference No.	Issue Date			
PCS/AAQ/04/2021	PCS/GIL/04/2021	08/01/2021			
1. Name of Industry	: M/s Grasm Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: ETP Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek				
8. Date of Monitoring	: 29/12/2020 – 30/12/2020				
9. Sample Receipt in Lab	: 02/01/2021				
10. Date of Analysis	: 02/01/2021– 04/01/2021				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	76.4	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	25.0	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	20.1	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

(Dr Divya Misra)
Managing Director

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
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Tel: 0522- 4002545, Mobile: 09415518818,
GSTIN :- 09AAJFP5925G1ZY

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/04/2021	PCS/GIL/04/2021	08/01/2021

1. Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address	:	PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh
3. Type of Industry	:	Chemical
4. Monitoring Location	:	ETP Area
5. Weather Condition:	:	Clear Sky
6. Method of sampling:	:	As per Standard Method
7. Monitoring done by	:	Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek
8. Date of Monitoring	:	29/12/2020 – 30/12/2020
9. Sample Receipt in Lab	:	02/01/2021
10. Date of Analysis	:	02/01/2021– 04/01/2021

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
4.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	49.3	60	APHA Air(Gravimetric)
5.	Carbon Monoxide (CO)	(mg/m^3)	1.9	4.0**	IS:5182 (Part 10):1999
6.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.082	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	23.0	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	181	5000	NIOSH 6603/GC-TCD
6.	Chlorine (Cl ₂)	(mg/m^3)	0.62	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

**(Dr Divya Misra)
Managing Director**

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports, Commissioning, Erection, Operation and Maintenance of STP/ETP, Clearances from
Ground Water Board, Compliance of E.C., NOC from UPPCB, MoEF

URL- TC824119000002203

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/01/2020	PCS/GIL/03/2020	07/12/2020

1. Name of Industry : M/s Grasim Industries Limited (Chemical Division Renukoot)
2. Industry Address : PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3. Type of Industry : Chemical
4. Monitoring Location : At Main Gate
5. Weather Condition: : Clear Sky
6. Method of sampling: : As per Standard Method
7. Monitoring done by : Mr Asheesh Kushwaha, Mr Shubham Pandey&Mr Abhishek
8. Date of Monitoring : 20/11/2020 – 21/11/2020
9. Sample Receipt in Lab : 26/11/2020
10. Date of Analysis : 26/11/2020– 27/11/2020

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	88.1	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	21.6	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	24.1	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


(Dr Divya Misra)
Managing Director

“End of this Test Report”

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/01/2020	PCS/GIL/03/2020	07/12/2020

1.	Name of Industry	:	M/s Grasim Industries Limited (Chemical Division Renukoot)
2.	Industry Address	:	PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
3.	Type of Industry	:	Chemical
4.	Monitoring Location	:	At Main Gate
5.	Weather Condition:	:	Clear Sky
6.	Method of sampling:	:	As per Standard Method
7.	Monitoring done by	:	Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek Tiwari
8.	Date of Monitoring	:	20/11/2020 – 21/11/2020
9.	Sample Receipt in Lab	:	26/11/2020
10.	Date of Analysis	:	26/11/2020– 27/11/2020


S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	49.7	60	APHA Air(Gravimetric)
2.	Carbon Monoxide (CO)	(mg/m^3)	1.4	4.0**	IS:5182 (Part 10):1999
3.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.059	1.0	EPM 2000 by AAS Method
4.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	15.9	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	181	5000	NIOSH 6603/GC-TCD
6.	Chlorine (Cl ₂)	(mg/m^3)	0.53	1.46	IS : 5182 (Part XIX) • 1982

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**8 Hourly Standard

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(Dr Divya Misra)
Managing Director

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URL- TC82411900002204

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/02/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)	
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Location	: PGD Area	
5. Weather Condition:	: Clear Sky	
6. Method of sampling:	: As per Standard Method	
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek	
8. Date of Monitoring	: 21/11/2020 – 22/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020– 27/11/2020	

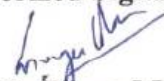
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	91.3	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	29.5	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	21.1	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


(Dr Divya Misra)
Managing Director

“End of this Test Report”

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/02/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)	
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Location	: PGD Area	
5. Weather Condition:	: Clear Sky	
6. Method of sampling:	: As per Standard Method	
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek	
8. Date of Monitoring	: 21/11/2020 – 22/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020– 27/11/2020	

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	51.7	60	APHA Air(Gravimetric)
2.	Carbon Monoxide (CO)	(mg/m^3)	2.0	4.0**	IS:5182 (Part 10):1999
3.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.068	1.0	EPM 2000 by AAS Method
4.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	22.8	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	128.1	5000	NIOSH 6603/GC-TCD
6.	Chlorine (Cl ₂)	(mg/m^3)	0.47	1.46	IS : 5182 (Part XIX) • 1982

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**8 Hourly Standard

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(Dr Divya Misra)
Managing Director

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Tel: 0522- 4002545, Mobile: 0941 5518818,

GSTIN :- 09AAJFP5925G1ZY

An Approved Laboratory from MoEF vide - F.No. Q-15018/12/2019-CPW dated-24 Oct. 2019

URL- TC82411900002205

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date			
PCS/AAQ/03/2020	PCS/GIL/03/2020	07/12/2020			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: Project Office				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek				
8. Date of Monitoring	: 21/11/2020 – 22/11/2020				
9. Sample Receipt in Lab	: 26/11/2020				
10. Date of Analysis	: 26/11/2020– 27/11/2020				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	($\mu\text{g}/\text{m}^3$)	79.2	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	($\mu\text{g}/\text{m}^3$)	29.8	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	($\mu\text{g}/\text{m}^3$)	21.0	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory

(Dr Divya Misra)
Managing Director

“End of this Test Report”

Services Available

Environmental Monitoring, Preparation of EIA/EMP, Baseline data generation for Air, Water, Soil, Noise & Meteorology
Environmental and Safety Audit reports. Commissioning, Erection, Operation and Maintenance of STP/ETP

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/03/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)	
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Location	: Project Office	
5. Weather Condition:	: Clear Sky	
6. Method of sampling:	: As per Standard Method	
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek	
8. Date of Monitoring	: 21/11/2020 – 22/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020– 27/11/2020	

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM _{2.5})	($\mu\text{g}/\text{m}^3$)	47.1	60	APHA Air(Gravimetric)
2.	Carbon Monoxide (CO)	(mg/m^3)	1.39	4.0**	IS:5182 (Part 10):1999
3.	Lead (Pb)	($\mu\text{g}/\text{m}^3$)	0.039	1.0	EPM 2000 by AAS Method
4.	Ozone(O ₃)	($\mu\text{g}/\text{m}^3$)	23.4	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	167	5000	NIOSH 6603/GC-TCDC
6.	Chlorine (Cl ₂)	(mg/m^3)	0.59	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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(Dr Divya Misra)
Managing Director

“End of this Test Report”

URL- TC82411900002206

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date			
PCS/AAQ/04/2020	PCS/GIL/03/2020	07/12/2020			
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)				
2. Industry Address	: PO. Renukoot, Dist- Sonebhadra 231217, Uttar Pradesh				
3. Type of Industry	: Chemical				
4. Monitoring Location	: ETP Area				
5. Weather Condition:	: Clear Sky				
6. Method of sampling:	: As per Standard Method				
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek				
8. Date of Monitoring	: 21/11/2020 – 22/11/2020				
9. Sample Receipt in Lab	: 26/11/2020				
10. Date of Analysis	: 26/11/2020– 27/11/2020				
S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	80.9	100	IS: 5182 Part (23) 2006
2.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	19.1	80	IS : 5182 (Part-2) 2001
3.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	24.3	80	IS: 5182 (Part 6) 2006

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


(Dr Divya Misra)
Managing Director

“End of this Test Report”

Test Report for Ambient Air Quality

Report No.	Reference No.	Issue Date
PCS/AAQ/04/2020	PCS/GIL/03/2020	07/12/2020
1. Name of Industry	: M/s Grasim Industries Limited (Chemical Division Renukoot)	
2. Industry Address	: PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh	
3. Type of Industry	: Chemical	
4. Monitoring Location	: ETP Area	
5. Weather Condition:	: Clear Sky	
6. Method of sampling:	: As per Standard Method	
7. Monitoring done by	: Mr Asheesh Kushwaha, Mr Shubham Pandey & Mr Abhishek	
8. Date of Monitoring	: 21/11/2020 – 22/11/2020	
9. Sample Receipt in Lab	: 26/11/2020	
10. Date of Analysis	: 26/11/2020– 27/11/2020	

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM _{2.5})	(µg/ m ³)	52.1	60	APHA Air(Gravimetric)
2.	Carbon Monoxide (CO)	(mg/ m ³)	1.5	4.0**	IS:5182 (Part 10):1999
3.	Lead (Pb)	(µg/ m ³)	0.029	1.0	EPM 2000 by AAS Method
4.	Ozone(O ₃)	(µg/ m ³)	17.0	100**	IS:5182(Part IX)-1974
5.	Carbon Dioxide (CO ₂)	(ppm)	158	5000	NIOSH 6603/GC-TCD
6.	Chlorine (Cl ₂)	(mg/m ³)	0.54	1.46	IS : 5182 (Part XIX) • 1982

* National Ambient Air Quality Standards- dated 18.11.2009

**8 Hourly Standard

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Authorized Signatory


(Dr Divya Misra)
Managing Director

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URL- TC824119000002058P

Test Report for Ambient Air Quality

Report No. PCS/AAQ/01/2020	Reference No. PCS/GIL/02/2020	Issue Date 02/11/2020
--------------------------------------	-----------------------------------------	---------------------------------

- Name of Industry : M/s Grasim Industries Limited (Chemical Division Renukoot)
- Industry Address : PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Monitoring Location : At Main Gate
- Weather Condition: : Clear Sky
- Method of sampling: : As per Standard Method
- Monitoring done by : Mr. Asheesh Kushwaha, Mr. Shubham Pandey & Mr. Abhishek
- Date of Monitoring : 21/10/2020 – 22/10/2020
- Sample Receipt in Lab : 26/10/2020
- Date of Analysis : 26/10/2020– 28/10/2020

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	86.2	100	IS: 5182 Part (23) 2006
2.	Particulate Matter (PM _{2.5})	(µg/ m ³)	51.7	60	APHA Air(Gravimetric)
3.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	17.2	80	IS : 5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	26.3	80	IS: 5182 (Part 6) 2006
5.	Carbon Monoxide (CO)	(mg/ m ³)	1.24	4.0**	IS 5182 : Part 10 : 1999
6.	Lead (Pb)	(µg/ m ³)	0.048	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	14.3	100**	IS: 5182 (Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	150	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.38	1.46	IS : 5182 (Part XIX)-1982

* National Ambient Air Quality Standards- dated 18.11.2009

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Managing Director

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URL- TC824119000002059P

Test Report for Ambient Air Quality

Report No. PCS/AAQ/02/2020	Reference No. PCS/GIL/02/2020	Issue Date 02/11/2020
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- Name of Industry : M/s Grasim Industries Limited (Chemical Division Renukoot)
- Industry Address : PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Monitoring Location : PGD Area
- Weather Condition: : Clear Sky
- Method of sampling: : As per Standard Method
- Monitoring done by : Mr. Asheesh Kushwaha, Mr. Shubham Pandey & Mr. Abhishek
- Date of Monitoring : 21/10/2020 – 22/10/2020
- Sample Receipt in Lab : 26/10/2020
- Date of Analysis : 26/10/2020– 28/10/2020

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	90.5	100	IS: 5182 Part (23) 2006
2.	Particulate Matter (PM _{2.5})	(µg/ m ³)	54.3	60	APHA Air(Gravimetric)
3.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	22.4	80	IS : 5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	18.3	80	IS: 5182 (Part 6) 2006
5.	Carbon Monoxide (CO)	(mg/ m ³)	1.6	4.0**	IS 5182 : Part 10 : 1999
6.	Lead (Pb)	(µg/ m ³)	0.052	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	18.6	100**	IS: 5182 (Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	143	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.39	1.46	IS : 5182 (Part XIX)-1982

* National Ambient Air Quality Standards- dated 18.11.2009

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Managing Director

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URL- TC824119000002060P

Test Report for Ambient Air Quality

Report No. PCS/AAQ/03/2020	Reference No. PCS/GIL/02/2020	Issue Date 02/11/2020
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- Name of Industry : M/s Grasim Industries Limited (Chemical Division Renukoot)
- Industry Address : PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Monitoring Location : Project Office
- Weather Condition: : Clear Sky
- Method of sampling: : As per Standard Method
- Monitoring done by : Mr. Asheesh Kushwaha, Mr. Shubham Pandey & Mr. Abhishek
- Date of Monitoring : 20/10/2020 – 21/10/2020
- Sample Receipt in Lab : 26/10/2020
- Date of Analysis : 26/10/2020– 28/10/2020

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	84.6	100	IS: 5182 Part (23) 2006
2.	Particulate Matter (PM _{2.5})	(µg/ m ³)	44.6	60	APHA Air(Gravimetric)
3.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	16.9	80	IS : 5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	26.4	80	IS: 5182 (Part 6) 2006
5.	Carbon Monoxide (CO)	(mg/ m ³)	1.05	4.0**	IS 5182 : Part 10 : 1999
6.	Lead (Pb)	(µg/ m ³)	0.046	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	18.3	100**	IS: 5182 (Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	140	5000	NIOSH 6603/GC-TCO
9.	Chlorine (Cl ₂)	(mg/m ³)	0.43	1.46	IS : 5182 (Part XIX)-1982

* National Ambient Air Quality Standards- dated 18.11.2009

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Managing Director

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Test Report for Ambient Air Quality

Report No. PCS/AAQ/04/2020	Reference No. PCS/GIL/02/2020	Issue Date 02/11/2020
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- Name of Industry : M/s Grasim Industries Limited (Chemical Division Renukoot)
- Industry Address : PO. Renukoot, Dist- Sonbhadra 231217, Uttar Pradesh
- Type of Industry : Chemical
- Monitoring Location : ETP Area
- Weather Condition: : Clear Sky
- Method of sampling: : As per Standard Method
- Monitoring done by : Mr. Asheesh Kushwaha, Mr. Shubham Pandey & Mr. Abhishek
- Date of Monitoring : 21/10/2020 – 22/10/2020
- Sample Receipt in Lab : 26/10/2020
- Date of Analysis : 26/10/2020– 28/10/2020

S. No.	Parameters	Unit	Result	Standards*	Method of Measurement
1.	Particulate Matter (PM ₁₀)	(µg/ m ³)	87.6	100	IS: 5182 Part (23) 2006
2.	Particulate Matter (PM _{2.5})	(µg/ m ³)	48.2	60	APHA Air(Gravimetric)
3.	Sulphur Dioxide (SO ₂)	(µg/ m ³)	18.6	80	IS : 5182 (Part-2) 2001
4.	Nitrogen Dioxide (NO ₂)	(µg/ m ³)	29.4	80	IS: 5182 (Part 6) 2006
5.	Carbon Monoxide (CO)	(mg/ m ³)	0.998	4.0**	IS 5182 : Part 10 : 1999
6.	Lead (Pb)	(µg/ m ³)	0.063	1.0	EPM 2000 by AAS Method
7.	Ozone(O ₃)	(µg/ m ³)	14.2	100**	IS: 5182 (Part IX)-1974
8.	Carbon Dioxide (CO ₂)	(ppm)	166	5000	NIOSH 6603/GC-TCD
9.	Chlorine (Cl ₂)	(mg/m ³)	0.48	1.46	IS : 5182 (Part XIX)-1982

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**BIANNUAL ENVIRONMENTAL
ASSESSMENT FOR GRASIM RENUKOOT
CHEMICAL DIVISION, RENUKOOT,
SONEBHADRA DIST., UP**

Sponsor

**Chemical Division, Grasim Industries Ltd,
Renukoot, UP**



**CSIR-National Environmental Engineering Research Institute
Hyderabad Zonal Centre
Uppal Road, Hyderabad-500007**

May 2021

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CSIR-NEERI, Hyderabad Zonal Centre

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Mrs. M. Sumathi	Mr. S. Harirama Kumar
Mr. Shaik Fareed	Mr. D Praveen
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Mr. Rahul	

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Project Coordinator

Dr. S. Chandrasekhar
Director, CSIR-NEERI, Nagpur

Chapter 1

Introduction

1.0 Preamble

Grasim Industries Limited is having a Chloro-alkali plant at Renukoot, District, Sonbhadra, Uttar Pradesh. This plant previously operated by M/s Kanoria Chemicals & Industries Ltd. (KCIL). Then the main products of KCIL were Caustic soda with Liquid chlorine, Hydrochloric acid and Hydrogen as by products and Stable Bleaching Powder, Lindane and its formulations, Aluminium Chloride, Trichlorobenzene and Poly Aluminium Chloride as co-products. Kanoria stopped the production of Lindane and its formulations, Tri Chloro Benzene in the year 2007. Later the plant was acquired by Aditya Birla Group. In last few years the Caustic Soda business has grown multi-fold through both organic and inorganic routes. Grasim is the largest Caustic Soda producer in India. The mercury brine sludge was produced during the manufacturing of caustic soda and the same was disposed in a secured landfill with in their premises. From May 2011 onwards Caustic soda production by mercury cell was stopped, as per the directives of Govt. of India.

M/s GRCD has continuously been monitoring the environmental parameters for air, groundwater, effluents etc. In this regard, M/s. GRCD has requested CSIR-NEERI HZC to undertake biannual monitoring of environmental components for Grasim Industries Ltd, Renukoot.

The objectives and scope of work of the study are as follows:

1.1 Objectives

- Assessment of the prevailing environmental data w.r.to air, water and noise for a period of three years on biannual basis
- To delineate suitable environmental management plan, if any

1.2 Scope of Work and Methodology

The salient features of the study are as follows:

Sampling and analysis of various environmental components/parameters for a period of three years on biannual basis will be carried out. The salient features of the study are as follows:

- Collection and analysis of the ambient air samples at 4 locations for PM₁₀, PM_{2.5}, SO₂, NO_x, CO, O₃, Cl₂ and Pb in particulate matter (Table 1.1)
- Monitoring of the noise data at various locations in the industry as well as the work zone noise
- Collection and analysis of the groundwater samples and drinking water samples and analysis for the major parameters as given in Table 1.1
- Collection of wastewater samples from ETP (Table 1.1)
- Collection and analysis of the other components as mentioned in Table 1.1

Table 1.1: Schedule of Various Environmental Components/Parameters on biannual basis

S. No.	Item	Sample Location	Total No of Sample/year	Parameters
1.	Effluent analysis	ETP inlet, Outlet, Confluence Point (Dongia Nala)	6	Physico - Chemical Parameters
				Metals like Cr, Cd, Zn, Cu, Pb, Ni, As, Co, Hg and Fluoride
2.	Drinking Water	Drinking Water	8	As per IS:10500 standards
3.	Ground Water	Ground Water	8	Borewell inside the Factory
4.	STP	Domestic Sewage Inlet and Outlet	4	Physico chemical parameters: pH, TSS, TDS, Ammoniacal Nitrogen, Total Nitrogen, BOD, COD, Boron, Sodium absorption n Ratio (SAR)
			4	Total Coliform
5.	Air Monitoring	Ambient Air	8	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, O ₃ , Cl ₂ & Pb in particulate matter
6.	Noise	Noise Monitoring	10	Ambient Noise
			24	Work Zone Noise
7.	RO water and GW water of villages	RO water and ground water analysis from CSR Villages	20	Physico-Chemical parameters, Bacteriological, metals: Cr, Cd, Zn, Cu, Pb, Ni, Co, Hg, As and Fluoride
8.	Intake Water -Rihand Dam	Dam water (Pump House)	2	Physico-Chemical parameters, Bacteriological, metals Cr, Cd, Zn, Cu, Pb, Ni, Co, Hg, As and Fluoride
9.	Brine Sludge	Membrane Brine sludge	2	Physico-Chemical Parameters and Leachable Concentration of Various Metal and others
10.	STP Inlet Colony	Colony STP Inlet and outlet	4	Physico chemical parameters: pH, TSS, TDS, Ammoniacal Nitrogen, Total Nitrogen, BOD, COD, Boron, Sodium absorption Ratio (SAR)
11.	SLF	Leachate water from SLF	2	Physico - Chemical Parameters
				Metals like Cr, Cd, Zn, Cu, Pb, Ni, As, Co, Hg and Fluoride

1.3 Layout of the report

The report is presented in the following structure:

Chapter 1: Introduction (this chapter)

Chapter 2: Project Description

Chapter 3: Prevailing Environmental Quality Status

Chapter 4: Conclusion and Recommendations

Chapter 2

Project Description

(Source: M/s. Chemical Division, Grasim Industries, Renukoot)

2.0 Introduction

2.1 Caustic Soda

The installed production capacity for caustic soda is 353 TPD. The main raw materials for the caustic soda manufacture are power and common salt. The power is received by GRCD through 132 KV transmission line directly from Rihand Power Station and also from our 2 x 25 MW CPP and salt is procured from Salt works in Gujarat. The solution of salt in water is prepared and is purified by addition of sodium carbonate, Barium Carbonate, caustic soda etc. The impurities of calcium and magnesium are precipitated and removed from the process fluid by setting and filtration. The clarified brine is made ultrapure by passing through polish brine filter and Ion exchange column before being fed to the electrolyzers which consists of anode segment and cathode segment separated by a high-performance membrane. D.C. current coming from Rectifier then flows from anode to Cathode and after electrolysis of Ultrapure brine it decomposing into sodium and chlorine ions. Sodium ions pass through the membrane and goes to cathode side and combine with water to form Caustic soda (NaOH) and Hydrogen is liberated. The chloride ion which remain in the anode side combine to form chlorine gas which is then sent out for drying and liquefaction. The installed capacity of the products are presented in **Table 2.1**. The reaction is as follows:



Table 2.1: Capacities of the Products at Grasim Industries, Renukoot

Sr. No.	Product	UOM	Consent Capacity
1	Caustic Soda Lye	TPM	10950
2	Liquid Chlorine	TPM	8630
3	Hydrochloric acid	TPM	2107
4	Stable Bleaching Powder	TPM	5400
5	Aluminium Chloride	TPM	1500
6	Poly Aluminium Chloride	TPM	6000
7	Chlorinated paraffin	TPM	1800
8	Hydrogen	TPM	275

The hydrogen so produced is used as fuel in Hydrogen fired boiler, caustic concentration plant, in the synthesis of Hydrochloric acid, and bottling in cylinders. Hydrogen is highly inflammable; therefore, proper care is taken to keep it away from the fire. No other chemical reactions of dangerous nature occur during caustic soda manufacture. The depleted brine from the electrolyzers again made saturated by dissolution of common salt. The product caustic soda is collected in production tank and then transferred to main storage tank.

2.2 Liquid Chlorine

The chlorine is a by-product of caustic soda plant. After its dissociation from common salt in the electrolyser it is taken to the liquefaction section where it is first scrubbed with water to remove impurities of Sodium Chloride in scrubbing towers. So washed chlorine gas, which is saturated with water vapours, is dried in contact with sulphuric acid in drying towers. The dried chlorine is non-corrosive, but, if wet, it becomes very corrosive. In the liquefaction operation of chlorine no chemical reaction takes place as such, but care is taken to ensure that chlorine is absolutely dry after the drying operation. This is being done by constant monitoring of the concentration of sulphuric acid in the drying towers and the chlorine compressors, which are checked at every two hour interval and proper operating record maintained.

After compressing the gas to 3 kg/cm^2 , it is liquefied in refrigeration system by cooling it to about minus 10°C . The liquefied product is taken to the main storage tank. Grasim is having capacity of storing 500 MT of liquid chlorine in five number storage tanks, with 100 MT capacity of each which are properly insulated and dyked. The process flow diagram of Chlorine plant is depicted in **Figure 2.1**. All rules and regulations of Department of Explosive are observed for safe storage of Liquid Chlorine.

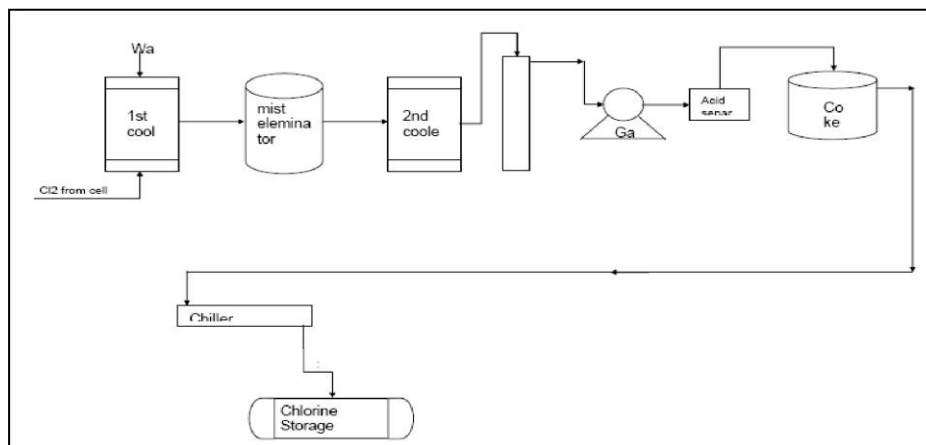


Figure 2.1: Process Flow Diagram of Chlorine Plant Hydrochloric Acid

Hydrochloric acid is also a by-product of caustic soda manufacturing plant. The scrubbed chlorine from scrubbing tower is burned in the atmosphere of hydrogen which is also a by-product of caustic soda unit, to form hydrochloric acid vapours which after absorbing in water make 33% of Hydrochloric Acid. Hydrochloric Acid so produced is stored in storage tanks. Hydrochloric acid is

also produced as a by-product in the CPW plant where unreacted chlorine is absorbed in a graphite absorber where water is circulated to form HCl. The process flow diagram of Hydrochloric Acid plant is depicted in **Figure 2.2**.

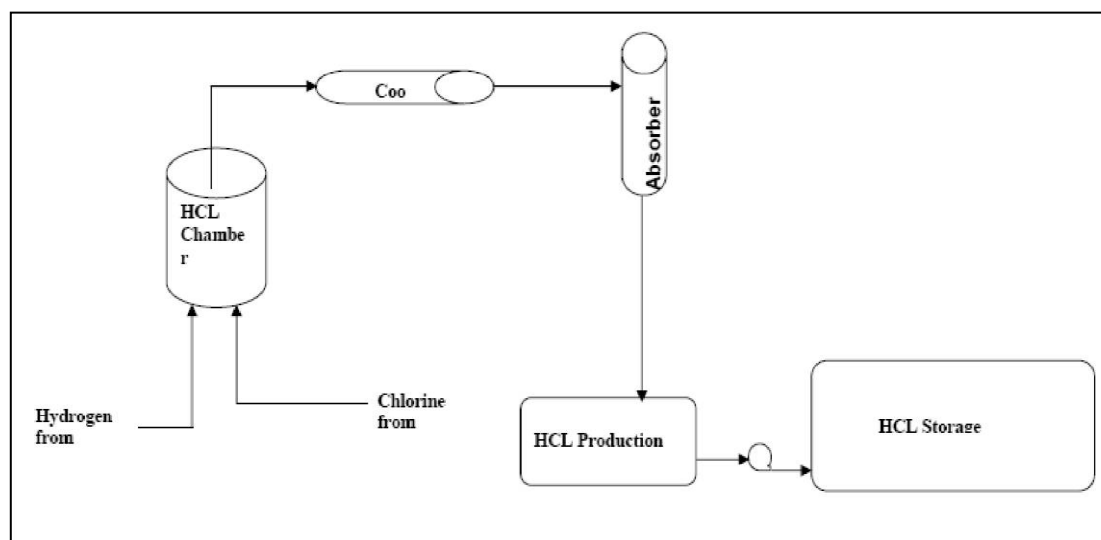


Figure 2.2: Process Flow Diagram of Hydrochloric Acid Plant

2.3 Caustic Soda Flakes

Caustic Soda produced in caustic soda unit has concentration of 50% only and is in liquid form. The 50% water is evaporated by application of heat by burning of hydrogen gas along with furnace oil. After concentrating the lye to about 99% it is cooled by indirect method with water to make its flakes, which are packed in HDPE bags. No chemical reaction of hazardous nature is involved during the process.

2.4 Stable Bleaching Plant (SBP)

The main raw materials used for the production of SBP are quick lime and liquid chlorine. About 95% chemical lime is purchased which is slacked with water to make calcium hydroxide with 1% moisture. Slacked lime is allowed to mature for some time and classified for bigger particles in an air classifier. The $\text{Ca}(\text{OH})_2$ so produced is reacted with liquid chlorine in chlorine drums under vacuum so that the reaction water is removed simultaneously. The reaction as follows:



After complete chlorination of hydrated lime, which is done on measured quantity basis, the product is packed in HDPE bags/Airtight containers. There is no hazardous chemical reaction involved in the process. The process flow diagram of Stable Bleaching plant is depicted in **Figure 2.3**.

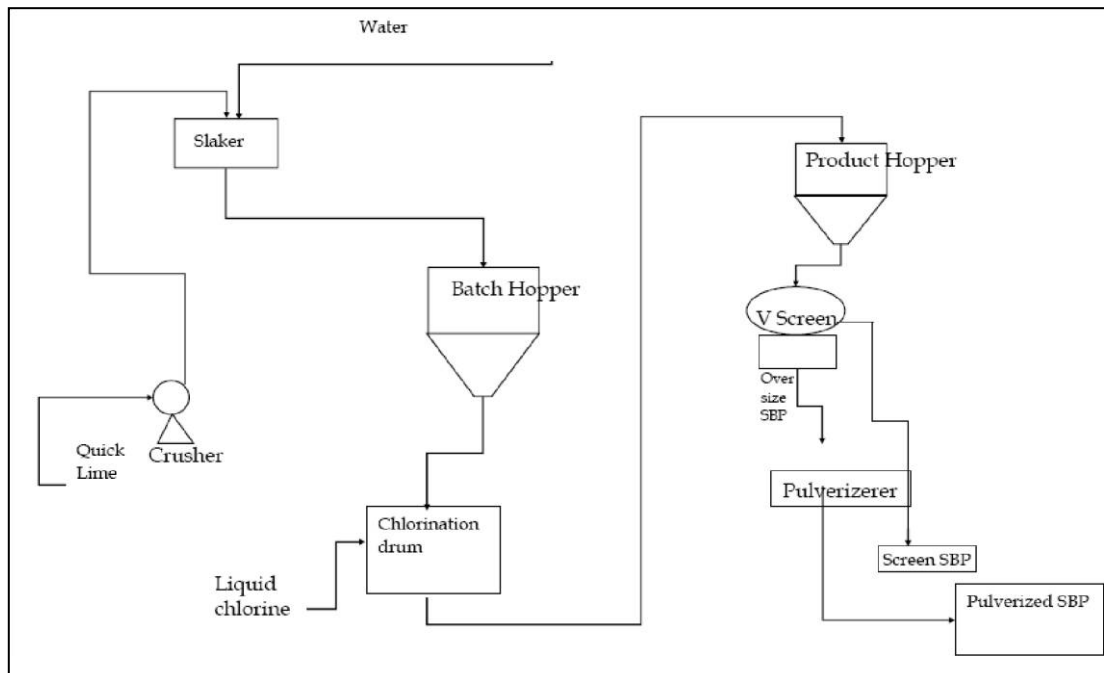


Figure 2.3: The Process Flow Diagram of Stable Bleaching Powder Plant

2.5 Aluminum Chloride

Aluminium Chloride is manufactured by passing Chlorine Gas over molten Aluminium metal. Aluminium ingots are charged in brick lined MS vessel, called reactor and melted by means of gas or any other heat source. Chlorine gas is then passed over it. Aluminium Chloride vapours come out and condense in M.S. hollow chamber called condenser. It is discharged from the condenser at a regular interval in a specially made container and transferred to the main silo. The reaction being exothermic, initially metal is heated but later on reaction is auto thermal and melting of aluminium ingot is self-sustaining. Excess heat is removed by means of cooling water spread over the reactor. Suction blowers continuously suck un-reacted Chlorine through series of scrubbing towers having water, lime and caustic solutions.

The product is then crushed and screened and packed in PVC lined HDPE bags and/or 200 Litres open mouth M.S. Drums. The process flow diagram of Aluminium Chloride plant is depicted in **Figure 2.4**.

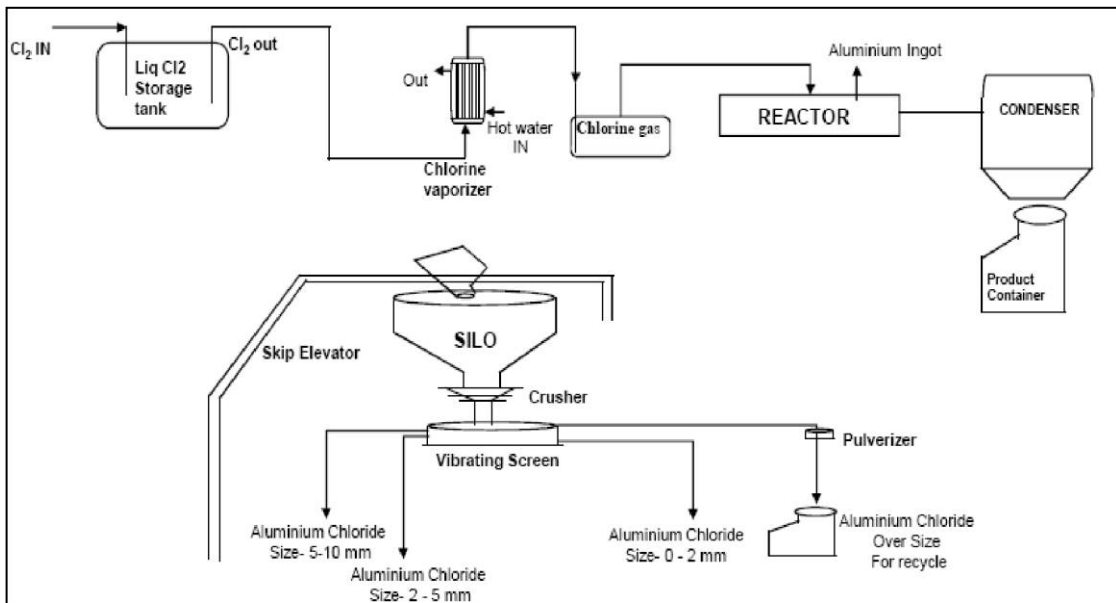


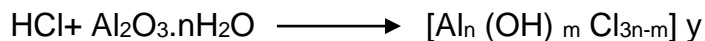
Figure 2.4: The Process Flow Diagram of Aluminium Chloride Plant

2.6 Hydrogen Bottling

The hydrogen so purified by cooling and filtration is fed to hydrogen bottling plant. The before bottling is further purified make it Caustic soda free by using water spray. The hydrogen, so purified is compressed in hydrogen compressors to about 150 Kg/cm^2 pressure and bottled in hydrogen bottles approved by CCE.

2.7 Poly – Aluminum Chloride

Poly-aluminium Chloride is produced by high temperature (160°C) and high pressure (5 to 6 bar) reaction between Hydrochloric Acid (32% approx) and Hydrated Alumina (62% Al_2O_3 approx) as shown below:



HCl is charged in a glass-lined reactor at room temperature and then hydrated Alumina is charged in the reactor. Reactor is then closed and contents of the reactor are heated by steam to initiate the reaction. Reaction is exothermic and reactor temperature is maintained at 160°C for 4 to 6 hours depending on acid strength and active alumina content in reactor feed material to form Poly-Aluminium Chloride (PAC) slurry. PAC slurry is cooled to 110°C and is discharged from the reactor and cooled to nearly 70°C in a heat exchanger. PAC slurry is filtered through a filter press at a temperature not less than 50°C for easier filtration to obtain PAC product. The process flow diagram of Poly Aluminium Chloride plant is depicted in **Figure 2.5**.

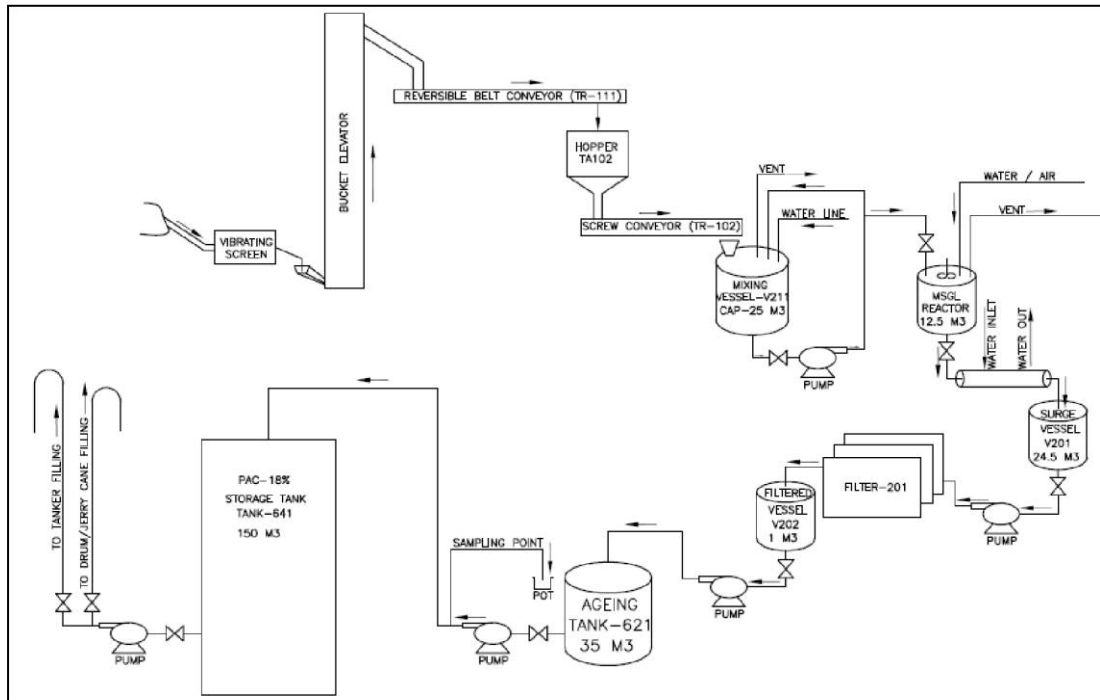


Figure 2.5: Process Flow Diagram of Poly Aluminium Chloride Plant

2.8 Chlorinated Paraffin Wax

Chlorinated Paraffin wax is produced by chlorination of liquid paraffin wax. The chlorination is carried out in a lead lined reactor where chlorine is passed through a sparger at the bottom of the reactor. HCl is produced as a by-product. During reaction un-reacted chlorine is led to graphite absorber where water is circulated to form HCl.

2.9 Electricity Generation

Thermal Power is generated by burning coal in IRCFC boiler generating high pressure steam and passing through the turbo generator of 2 x 25 MW capacities. The generated electricity is at 11 KV where from it is distributed to our Chemical plant for various uses. The process flow diagram of power generation plant and steam generation plant is depicted in **Figures 2.6 & 2.7**.

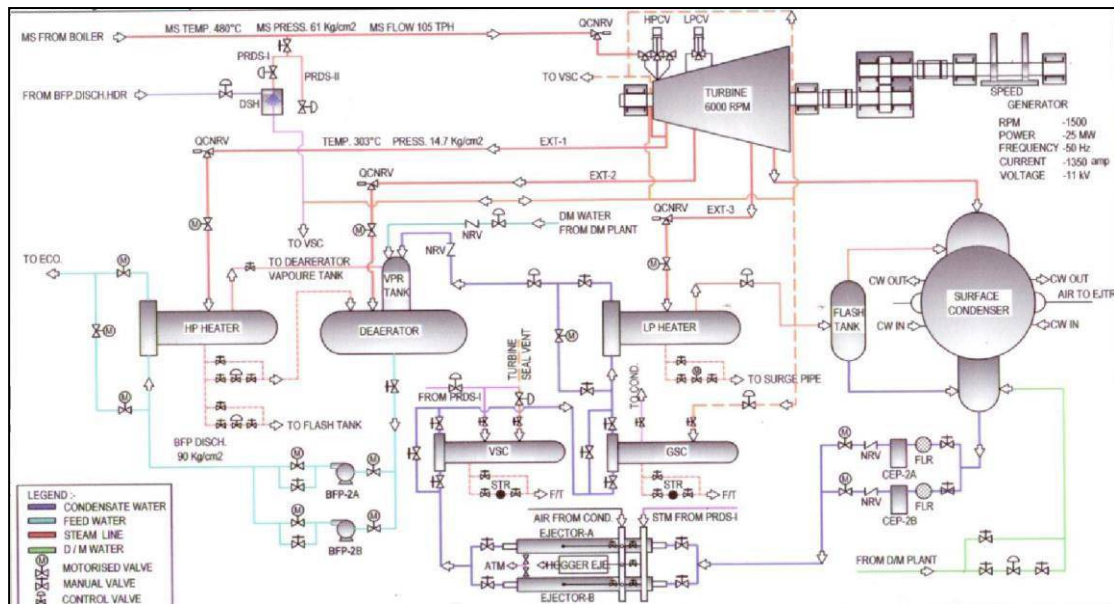


Figure 2.6: Process Flow Diagram of Power Generation Plant

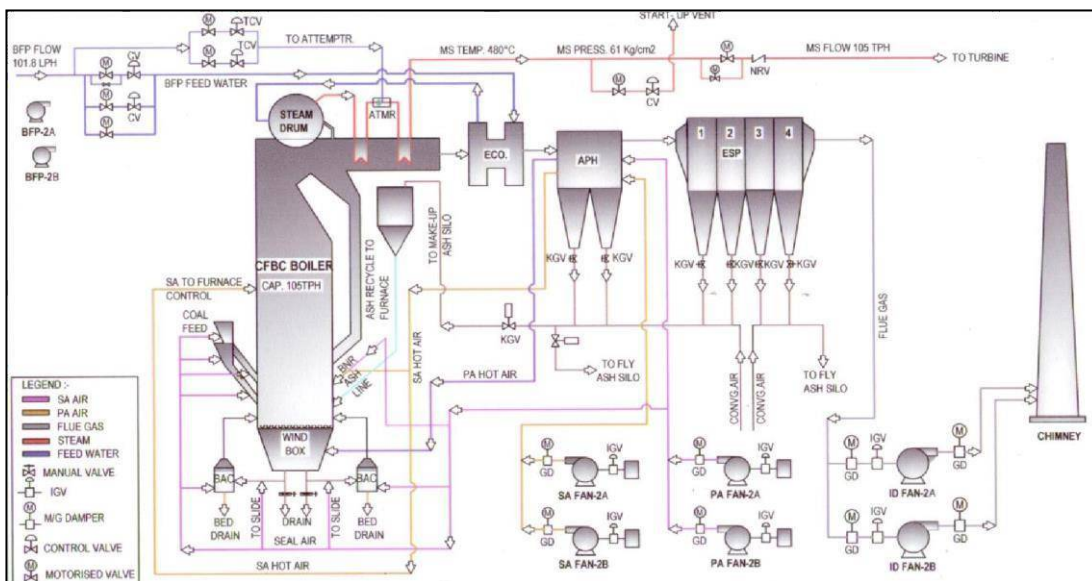


Figure 2.7: Process Flow Diagram of Steam Generation (Boiler) Plant

2.11 Existing Waste Management Practices

Each section of the plant has a dedicated effluent collection pit in the section. Maximum reduction, reuse and recycle of effluent is done in the section itself. The unused effluent from the sections is sent to effluent treatment plant for treatment (**Figure 2.8**). The effluent from various sections is collected in effluent collection pit where it is collected for equalization. The pH of the effluent after equalization is maintained in the desired range with alkali or acid, whatever may

be the requirement. The neutralized effluent is then passed through pipe flocculator into flocculation tank where dosing of polyelectrolyte is done using flash mixer. Effluent dosed with polyelectrolyte then goes to lamella clarifier where sufficient retention time is given for settling and clarification. By gravity suspended solids settle down and are removed as sludge from the bottom. The sludge is then dewatered at filter press. The water from filter press is again recycled back in collection tank. The filter cake is filled in bags and stored for disposal in TSDF.

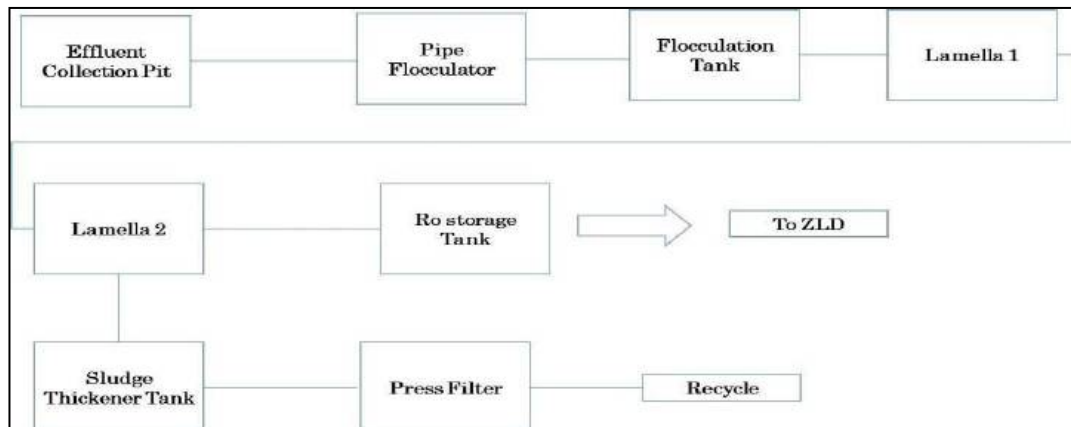


Figure 2.8: Schematic Flow Diagram of ETP

Clarifier overflow is stored in treated water tank and then passed through multi-grade filter (MGF) followed by ACF. The filtered water is stored in ultra-filter tank. Then it is pumped through bag filter into UF unit. UF permeate is fed to RO unit. RO unit is installed in 2 stages. RO-1 which is Brackish water RO to treat effluent with TDS 2500 ppm. Reject from BW RO is fed to Sea Water RO which treats effluent upto TDS 10000 ppm. Reject of SW RO goes to MEE feed tank. The permeate of RO stages is used for cooling tower make up. The Schematic diagram is presented in **Figure 2.9**.

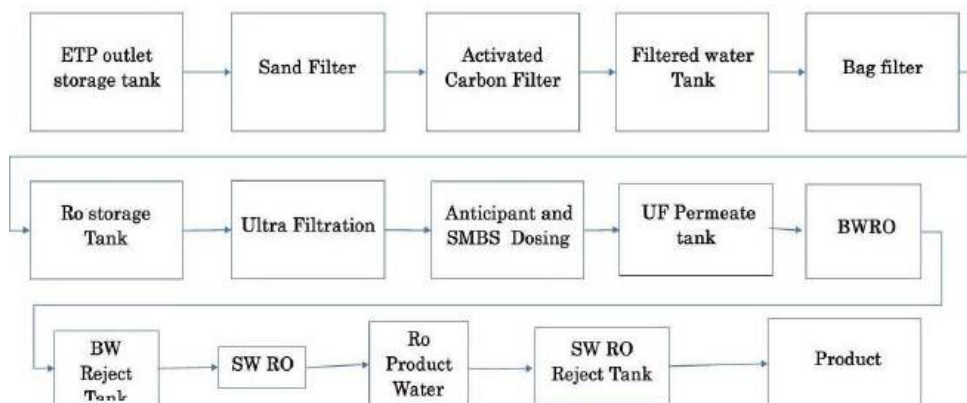
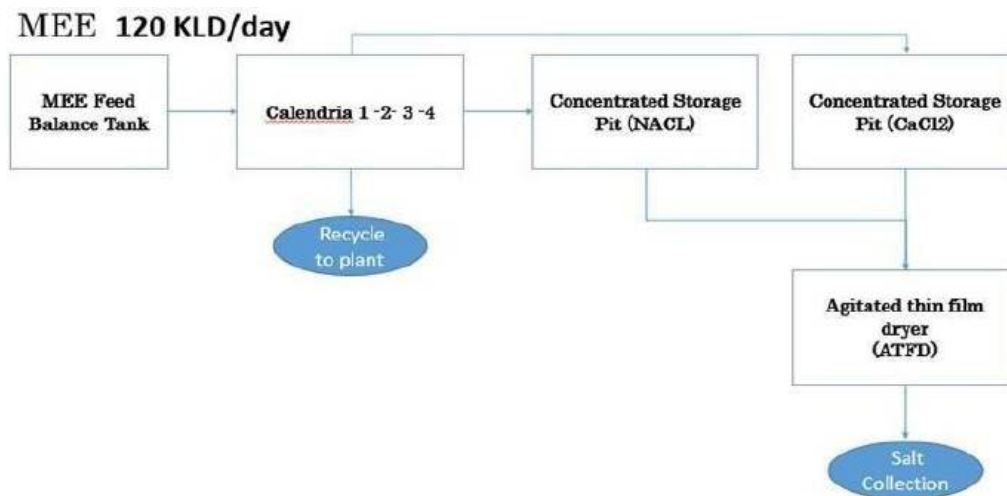


Figure 2.9: Schematic Flow Diagram of Filters

Multiple Effective Evaporator (MEE) permeate is used for cooling tower make and the reject is sent to ATFD (Agitated Thin Film Drier). Semi solid salt is generated at this stage. Condensate is sent to ETP collection tank. The salt is collected in bags, stored and finally disposed in TSDF. No water is left for discharge, hence completing the ZLD process requirements. The schematic diagram is presented hereunder in **Figure 2.10**.

Figure 2.10: Schematic Flow Diagram of MEE



Grasim, Renukoot has already installed MEE+ATFD and is operating successfully. The unit is not discharging any treated effluent from ETP installed in the premises. All effluent generated in plant are being recycled through RO and MEE plant after treatment through ETP and is being reused in the manufacturing processes.

A HD camera has also been installed at final discharge point of ETP and the serve connection at PCB is in progress. The photographs of ETP, STP, RO, MEE plant and HD camera at final discharge point is shown in Fig. 2.11:



Figure 2.11: Photographs of ETP, STP, RO, MEE and HD Camera ETP final discharge point

In addition to achieving ZLD, Grasim, Renukoot has commissioned 1000 m³ sewage treatment plant for treating colony domestic sewage. The plant was made fully operational on 24th November 2019 at the colony township for treatment of domestic sewage generated from the colony. For further utilization of treated sewage back in the plant, a 1000M³ Ultra Filtration System has been installed and commissioned on March 10th, 2021 and hence, complete ZLD has been achieved with respect to the domestic sewage. The photographs of the same are shown in Figure 2.13.



Figure 2.13: Photographs of Ultra Filtration System

Waste details which are generated from process and disposal practice of units:

- **Brine Sludge** – Generated from the brine purification process is non-hazardous. Brine sludge in semi solid brine mud cake form is stored in HDPE lines secured landfill within plant premises.
- **MEE & ATFD Salts/ETP Sludge** – The salt sludge is generated from the ATFD section of ETP and ETP sludge is generated filter press. Both the sludge is stored in separate bags at an isolated location in plant and disposed to authorized TSDF.
- **E-Waste:** Generated from various sections of the plant consists of electronic and instrument obsolete equipments. The waste generated is collected and

is sent to Authorized Recycler

- **Acid-Battery Waste:** Used battery is sent to Authorized Recycler or buyback agreement is done with the supplier. Used battery is disposed within 6months.
- **Bio-Medical waste** is sent to common disposal facility (Incineration), The waste is stored in colored coding bags/container.
- **Used Oil** is collected in adequate storage facilities such as barrels, drums and kept at an isolated location in the plant maintained under lock and key with all safety and environment protection measures. Used oil stored is then sold ff to authorized recycle.
- **Fly Ash & Bed Ash** It is non-hazardous waste and is utilized 100% for ash-based product (bricks and other building materials-Cement), road construction.
- **Plastic Waste** is sold off to Authorized Recycler for new product or raw material
- **Other wastes** – Such as spent resin, exhausted activated carbon, used activated carbon, glass wool, asbestos etc is sent to authorized vendor

2.13 Details of Secured Landfill, Effluent Treatment Plant

There are five land fill sites are existing in the Chloro-alkali Grasim Industrial premises and detailed layout of these are presented in **Figure 2.14**. There are three secured landfill are closed by capping as per the CPCB guidelines. The details of these secured landfills are mentioned in the below table. Two more secured land fill sites are in operation to dispose the brine sludge (non-hazardous) generated presently in the process plant. The details are also presented here under:

1. Total area of the plant premises: 323hectare
2. Details of Capped Secured Landfill site:

Ref	Area (sq.m)	Quantity (MT)
Pit no-1	856	6134
Pit no-2	1071	7808
Pit no-3	950	5883
Total	2877	19825

3. Details of Site for Storage of non- hazardous brine sludge:

Ref	Area (sq.m)
Pit no-1	1350
Pit no-2	2850
Total	4200

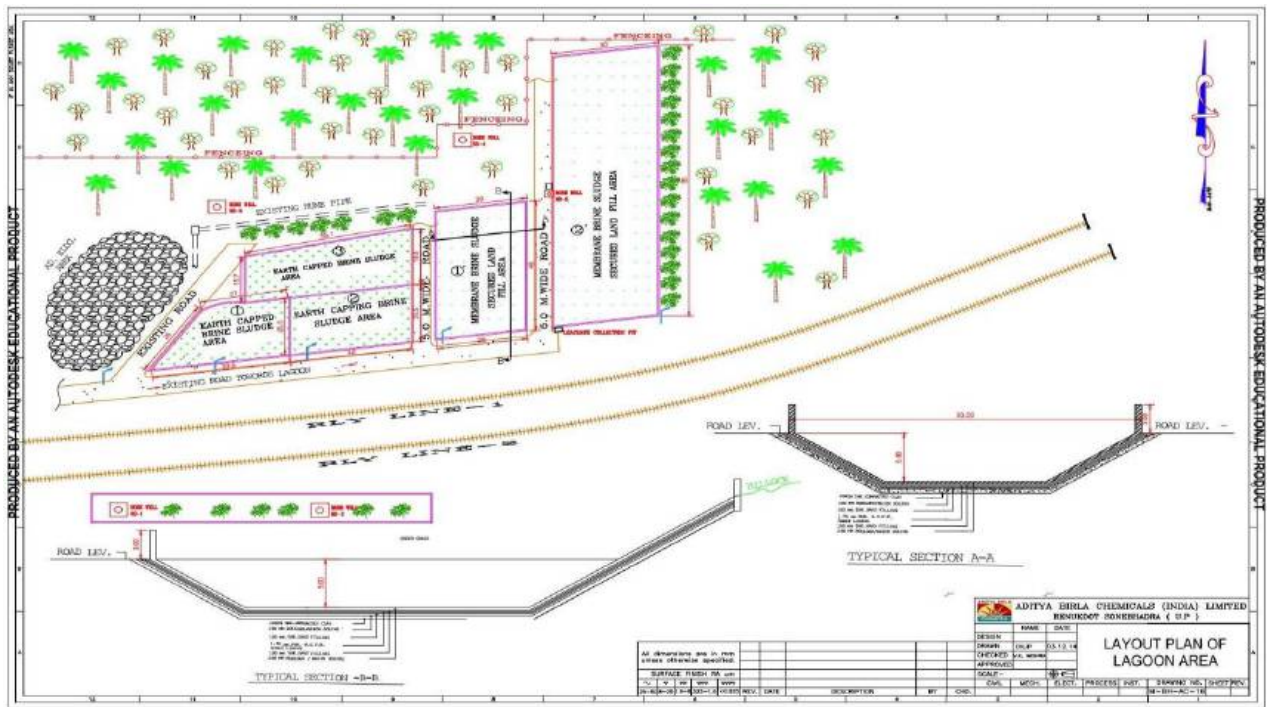


Figure 2.14: Layout of Secured Landfill Site at Chlor-Alkali Plant, Renukoot, Sonbhadra (U.P)

Chapter 3

Prevailing Environmental Quality

3.0 Introduction

Grasim Industries Ltd., Renukoot falls in the Survey of India Toposheet Nos. 63L/15, 63L/16, 63P/3 and 63P/4. The study area lies in between the latitudes N 24° 09' 30" to N 24° 15' 00" and longitudes E 83° 00' 00" to E 83° 06' 00" (Figure 3.1).

Chemical Division, Grasim Industries Ltd has been regularly carrying out the biannual monitoring of various environmental parameters as discussed in Chapter 1. The sampling for the biannual monitoring has been carried out during the period March 22-27, 2021. The results of the analysis have been discussed briefly below:

3.1. Effluent Analysis

The samples for the analysis have been collected from the ETP collection tank, RO permeate and near the confluence point of Dongia Nallah (Table 3.1.1). The results are as presented in Table 3.1.2 and 3.1.3. The results indicate that the values of all the parameters are within the CPCB discharge standards except for TDS of collection tank and Dongia Nallah samples. The TDS of collection tank is high as the water is received from various units of GRCD. TDS of Dongia Nallah is slightly high due to the sewage entering the Nallah.

Table 3.1.1: Details of ETP Sampling Locations

Sr. No	Sample Code	Sampling Location	GPS Co-ordinates	Remarks
1.	E1-CT	Collection Tank	24°12'9.13"N 83°03'2.30"E	Sample Collected form the ETP collection Tank
2.	E1-RO	RO Permeate		Sample collected for the RO-permeate
3.	DN	Dongia Nallah	24°11'56.32"N 83°02'35.97"E	Near Confluence Point

Table 3.1.2: Effluent Quality Parameters

Parameters	E1-CT	E1-RO	DN	CPCB Discharge Standards
pH	7.5	7.6	7.8	5.5-9.0
Temp (°C)	28.4	29.2	27.7	< 40
Residual Chlorine(mg/l)	BDL	BDL	BDL	1
TSS (mg/l)	70.4	3.4	14.6	100
Turbidity (NTU)	0.2	0.1	0.2	-
TDS (mg/l)	3160	820	2290	2100
Conductivity (µS/cm)	5330	1365	3310	-
Sulphate (as SO ₄)	109	5	37	1000
Chloride(as Cl ⁻)(mg/l)	2063	376	485	1000
N-Nitrate(N-NO ₃) (mg/l)	0.095	0.04	0.39	10
Ammonia-N(mg/l)	1.12	1.4	BDL	50
Available Phosphorus (mg/l)	0.024	BDL	0.066	5
O&G (mg/l)	0.8	BDL	0.4	10
COD (mg/l)	108	80	56	250
BOD (mg/l)	10	8	9	30
DO(mg/l)	4.2	5.6	4.8	-

Table3.1.3: Effluent Quality-Heavy Metals

Parameters (mg/l)	E1-CT	E1-RO	DN	CPCB Discharge Standards
As	BDL	BDL	BDL	0.2
B	0.071	0.086	0.029	2
Cd	BDL	BDL	0.001	2
Co	BDL	BDL	BDL	-
Cr	0.073	0.008	BDL	2
Cu	0.070	0.003	BDL	3
Fe	1.059	BDL	BDL	3
Mn	0.157	BDL	0.027	2
Ni	0.024	0.012	0.003	3
Pb	BDL	BDL	BDL	0.1
Zn	1.136	BDL	0.066	5
Hg	BDL	BDL	BDL	0.01

3.2. Drinking Water

The samples have been collected from the tap water at four locations inside the industry. The four locations of tap water are being used for drinking. The details are shown in Table 3.2.1. The analysis results are presented in Table 3.2.2. The results indicate that all the parameters were below the BIS permissible limits and are safe for drinking.

Table3.2.1: Details of Sampling Locations

Sr. No	Sample Source	Sample Code	Remarks	GPS Location
1.	Drinking Water (Tap water for Drinking)	R-BA-9	Power Plant Area –Near Stack ID FAN IB	24°12'12.76"N 83°03'21.25"E
2.		R-BA-12	Near Gate No.44 ALCP Building	24°12'13.77"N 83°02'58.86"E
3.		R-BA-13	Canteen Area – Opposite to Admin Building	24°12'18.56"N 83°03'11.72"E
4.		R-BA-14	Colony Mess Area	24°12'23.04"N 83°02'48.01"E

Table3.2.2: Drinking Water: Physico-Chemical Parameters

Parameters	RBA-9	RBA-12	RBA-13	RBA-14	Acceptable	Permissible
pH	8.0	7.8	8.0	7.2	6.8-8.5	NR
Temp(°C)	31.3	31.8	30.1	27.1	-	-
Turbidity (NTU)	0.1	0.1	0.1	0.1	1	5
TDS (mg/l)	126	122	111	118	500	2000
Conductivity(μS/cm)	213	192	196	195	-	-
Total Hardness (as CaCO ₃) (mg/l)	76	64	66	56	200	600
Calcium (as Ca) (mg/l)	26	21	14	19	75	200
Magnesium (as Mg) (mg/l)	3	3	8	2	30	100
Sodium (as Na) (mg/l)	13	13	13	16	-	-
Potassium (as K) (mg/l)	4	3	4	4	-	-
Total Alkalinity (as CaCO ₃) (mg/l)	56	48	40	52	200	600
Sulphate (as SO ₄ ²⁻) (mg/l)	5	9	10	9	200	400
Chloride (as Cl ⁻) (mg/l)	29	27	28	26	250	1000
Salinity (‰)	0.05	0.05	0.05	0.05	-	-
Fluoride (as F) (mg/l)	0.45	0.79	0.85	0.78	1	1.5
Nitrate (as NO ₃) (mg/l)	1.45	2.58	0.36	0.20	45	NR
Total Phosphorus (mg/l)	0.077	0.172	0.010	0.250	-	-
Mineral Oil (as O&G)	BDL	BDL	BDL	BDL	0.5	NR
TC(CFU/100ml)	TNC	TNC	480	500	Absent	-
FC(CFU/100ml)	ND	ND	20	ND	Absent	-
TVC(CFU/ml)	160×10 ⁵	400×10 ⁵	180×10 ⁵	370×10 ⁵	-	-

Table 3.2.3: Drinking Water: Water Quality Parameters- Heavy metals

Parameter	RBA-9	RBA-12	RBA-13	RBA-14	IS 10500:2012	
					Acceptable	Permissible
As	BDL	BDL	BDL	BDL	0.01	0.05
Cd	BDL	BDL	BDL	BDL	0.003	NR
Cr	BDL	BDL	BDL	BDL	0.05	NR
Cu	BDL	BDL	BDL	0.008	0.5	1.5
Fe	BDL	BDL	BDL	BDL	0.3	NR
Mn	BDL	BDL	BDL	BDL	0.1	0.3
Ni	BDL	BDL	BDL	BDL	0.02	NR
Pb	BDL	BDL	BDL	BDL	0.01	BDL
Zn	BDL	0.020	0.015	0.021	5	15
Hg	BDL	BDL	BDL	BDL	0.001	NR

3.3. Groundwater

The groundwater samples have been collected from the four monitoring wells inside GRCD. The monitoring wells details are presented in Table 3.3.1. The water level ranges from 2.50 to 5.88m. The groundwater quality results are given in Table 3.3.2. The analysis results reveal that the values of all the parameters are within the BIS limits except for RMS-11 (monitoring well no. 1). The results of monitoring well no. 1 indicate the parameter viz., TDS, chloride, sodium are more than BIS limits and this may be attributed to the geological nature of the study area. Geologically the study area is comprised of rocks of Precambrian that belong to Chotanagpur Granite Gneiss Complex (CGGC) and Mahakoshal Group. The geology mainly consists of the slate and phyllites (Mahakoshal group) and granites and gneisses with schists (CGGC group). The reason for high chloride, sodium and fluoride is due to the underlying rocks in the study area as the whole area is hard rock area.

Table3.3.1: Details of Sampling Locations

Sr. No	Sample Location	Sample Code	GPS Co-ordinates	Water level (m)	Remarks
1.	Monitoring Well No 2	RMS-8	24°12'18.61"N 83°03'16.09"E	5.70	Monitoring well Near SLF Backside of Admin Building
2.	Monitoring Well No 1	RMS-11	24°12'16.06"N 83°03'16.92"E	5.88	Monitoring well near Railway Track adjacent to Piezometer
3.	Monitoring Well No 4	RMS-12	24°12'19.96"N 83°03'19.04"E	5.05	Near SLF area adjacent to leachate collection tank of SLF
4.	Monitoring Well No 3	RMS-13	24°12'19.86"N 83°03'17.85"E	2.50	Near SLF area-Towards Hill Side-adjacent to Monitoring well 2

Table 3.3.2: Groundwater Quality of Monitoring Wells

Parameter	RMS-8	RMS-11	RMS-12	RMS-13	IS 10500:2012	
					Acceptable	Permissible
pH	6.9	6.9	6.8	7.2	6.5-8.5	NR
Temp (°C)	28.2	28.3	27.2	26.0	-	-
Turbidity (NTU)	0.2	0.4	0.3	0.5	1	5
TSS (mg/l)	12.6	36.1	12.9	10.4	-	-
TDS (mg/l)	760	2990	224	299	500	2000
Conductivity (µS/cm)	1370	4650	400	505	-	-
Total Hardness (as CaCO ₃) (mg/l)	348	204	148	64	200	600
Calcium (as Ca) (mg/l)	91	48	34	19	75	200
Magnesium (as Mg) (mg/l)	29	20	15	4	30	100
Sodium (as Na) (mg/l)	50	1052	23	86	-	-
Potassium (as K) (mg/l)	1	11	2	1	-	-
Total Alkalinity (as CaCO ₃) (mg/l)	108	100	68	96	200	600
Sulphate (as SO ₄ ⁻²) (mg/l)	191	68	24	19	200	400
Chloride (as Cl ⁻) (mg/l)	781	1458	64	84	250	1000
Salinity (‰)	3.2	2.6	0.1	0.2	-	-
Fluoride (as F ⁻) (mg/l)	0.97	0.63	0.69	0.80	1.0	1.5
Nitrate (as NO ₃) (mg/l)	0.98	0.20	0.87	2.14	45	NR
Total Phosphorus (mg/l)	0.204	0.770	0.180	0.340	-	-
Available Phosphorus (mg/l)	BDL	BDL	0.037	0.029	-	-
O&G (mg/l)	BDL	BDL	BDL	BDL	0.5	NR

Table3.3.3: Groundwater Quality of Monitoring Wells: Heavy metals

Parameter	RMS-8	RMS-11	RMS-12	RMS-13	IS 10500:2012	
					Acceptable	Permissible
As	BDL	BDL	BDL	BDL	0.01	0.05
Cd	BDL	BDL	BDL	BDL	0.003	NR
Cr	BDL	BDL	BDL	BDL	0.05	NR
Cu	BDL	BDL	BDL	BDL	0.5	1.5
Fe	0.186	BDL	0.133	0.102	0.3	NR
Mn	0.156	0.044	0.464	0.101	0.1	0.3
Ni	BDL	BDL	BDL	BDL	0.02	NR
Pb	BDL	BDL	BDL	BDL	0.01	NR
Zn	0.011	BDL	BDL	0.020	5	15
Hg	BDL	BDL	BDL	BDL	0.001	NR

3.4 STP

The samples for the analysis have been collected from the inlet and outlet of STP located inside the industry. The details are shown in Table 3.4.1. The results reveal that all the parameters are within the CPCB discharge standards.

Table3.4.1: Details of STP Sampling Locations

Sr. No	Sampling Location	Sample Code	GPS Location	Source	Remarks
1.	STP Inlet	R-BA-10	24°12'11.17"N 83°02'58.42"E	STP inside Industry	Sample collected from Inlet into STP Collection Tank
2.	STP Outlet	R-BA-11	24°12'10.03"N 83°03'00.13"E		Sample collected from the pump into the outlet collection tank

Table3.4.2: STP Water Quality Parameters

S.No	Parameter	RBA-10	RBA-11	CPCB Discharge Standards
1.	pH	7.0	7.1	5.5 – 9.0
2.	Temp (°C)	28.4	28.7	-
3.	TSS (mg/l)	10.6	21.3	200
4.	Turbidity (NTU)	0.2	0.2	-
5.	TDS (mg/l)	1710	1690	-
6.	Conductivity (µS/cm)	2860	2820	-
7.	Ammonia –N (mg/l)	6.1	1.12	-
8.	TKN (mg/l)	2.80	2.24	-
9.	Nitrite – N (mg/l)	1.21	1.06	-
10.	Nitrate – N (mg/l)	0.12	0.10	-
11.	Available – P (mg/l)	0.07	0.01	-
12.	Total – P (mg/l)	0.11	0.492	-
13.	DO (mg/l)	4.8	5.3	-
14.	BOD (mg/l)	45	34	100
15.	COD (mg/l)	128	68	-
16.	O&G (mg/l)	3.2	BDL	10
17.	SAR	4.0	4.5	-
18.	TC (CFU/100ml)	1160	580	-
19.	FC (CFU/100ml)	180	ND	-
20.	TVC (CFU/ml)	420×10 ⁵	180×10 ⁵	-

3.5. Air Monitoring

Ambient air samples at 4 locations, identified within the industrial premises (Table 3.5.1), were collected and analysed for PM₁₀, PM_{2.5}, SO₂, NO_x, CO, O₃, Cl₂ and Pb in particulate matter following the standard procedures/methods (Table 3.5.2) as per CPCB guidelines, during March 2021. The concentrations of these pollutants are compared with National Ambient Air Quality Standards (NAAQS) (Annexure III).

The ambient levels of all pollutants, namely PM₁₀, PM_{2.5}, SO₂, NO_x, CO, O₃, Cl₂ and Pb in particulate matter (as given in Table 3.5.3), are found to be less than their NAAQS at all locations.

Table 3.5.1: Ambient Air quality monitoring Locations

S. No.	Location name	GPS Co-ordinates
1.	Plant Main Gate	N 24° 12' 18.97" E 83° 03' 12.99"
2.	ETP Plant	N 24° 12' 09.83" E 83° 03' 03.08"
3.	Technical office area	N 24° 12' 02.83" E 83° 03' 13.56"
4.	PGD Area	N 24° 12' 12.03" E 83° 03' 20.66"

Table 3.5.2: Methods Used for Analysis of Ambient Air Quality

S. No.	Parameter	Methods for Analysis
1.	Particulate Matter size < 10 microns or PM ₁₀	Gravimetric
2.	Particulate Matter size less than 2.5 microns or PM _{2.5}	Gravimetric
3.	Sulphur Dioxide (SO ₂)	EPA Improved West and Geake Method
4.	Oxides of Nitrogen (NO _x)	Modified Jacobs-Hoechheiser Method
5.	Hydrogen sulphide (H ₂ S)	Colorimetric method
6.	Ozone (O ₃)	UV Photometric method
7.	Lead (Pb)	AAS/ICP method for sampling on EPM 2000

Table 3.5.3: Ambient Air Quality during March 2021

S. No.	Location name	Pollutant	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	O ₃	Cl ₂	Pb
		Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ppm	µg/m ³
		Avg. Time	24 hr	24 hr	24 hr	24 hr	1 hr	1 hr	24 hr	24 hr
1	Plant Main Gate		66	31	7	9	0.9	5	0.27	0.014
2	ETP Plant		80	56	6	16	1.2	48	0.36	0.021
3	Technical office area		95	53	8	11	1.1	23	0.11	0.068
4	PGD Area		82	56	10	12	1.4	44	1.85	0.182
NAAQS			100	60	80	80	4	180	-	1

Below detectable limit (BDL)

3.6. Noise

Noise levels were monitored within the work zone area and inside the Grassim Industries Ltd., Chemicals Division, Renukoot (Table 3.6.1) in March 2021 using a precision integrated sound level meter from 6 am to 10 pm (daytime) and from 10 pm to 6 am (night time).

The equivalent noise at work zone locations during daytime are observed in the range from 60.4 to 83.2 dB(A) and during night time in the range of 56.8 to 80.6 dB(A) as given in Table 2. Work zone noise levels are observed to be exceeding the CPCB standards for industrial area (Annexure IV) at all locations except at Coal Handling plant (CHP), Transport area, DM Plant and Aluminium Chloride plant locations during daytime and night time and at Membrane Phase 1&2, MEE Plant and CD Boiler & Chlorine Filling locations during night time. The observed noise levels were found to be less than 90 dB(A) for 8 hours in work zone environment and they are found within the damage risk criteria for hearing loss of Occupational Safety & Health Administration Standard 1999 (Annexure V).

The observed noise levels inside the industry are ranged from 45.2 - 62.3 dB(A) during daytime and 38.0 - 53.6 dB(A) during night time (Table 3.6.2). Daytime and night time noise levels at the locations inside the Grasim Industries Ltd. are well below the CPCB standards for industrial area.

Table 3.6.1: List of Noise Monitoring Locations

S. No.	Location name	GPS Co-ordinates
Work Zone Noise locations		
1.	ID Fan area	N 24° 12' 4.35" E 83° 03' 19.16"
2.	Coal Handling Plant (CHP) area	N 24° 12' 14.37" E 83° 03' 23.99"
3.	Turbine Area	N 24° 12' 12.48" E 83° 03' 17.35"
4.	Transport Area	N 24° 12' 09.96" E 83° 03' 15.11"
5.	Membrane Phase 1&2	N 24° 12' 10.35" E 83° 03' 09.81"
6.	DM Plant	N 24° 12' 11.18" E 83° 03' 07.95"
7.	MEE Plant	N 24° 12' 09.74" E 83° 03' 03.87"
8.	ZLD Compressor	N 24° 12' 10.02" E 83° 03' 01.88"
9.	Aluminum Chloride plant area	N 24° 12' 13.45" E 83° 02' 56.38"
10.	S.B.P. Plant & CP	N 24° 12' 22.57" E 83° 03' 04.00"
11.	CD Boiler & Chlorine filling	N 24° 12' 15.99" E 83° 03' 02.87"
12.	PGD Area	N 24° 12' 12.03" E 83° 03' 20.66"
Noise Locations inside the industry		
13.	Plant Main Gate	N 24° 12' 18.97" E 83° 03' 12.99"
14.	Hospital	N 24° 12' 27.80" E 83° 03' 05.51"
15.	Guest House	N 24° 12' 29.23" E 83° 03' 01.69"
16.	Staff Mess area	N 24° 12' 22.93" E 83° 02' 47.07"
17.	Material Gate	N 24° 12' 27.32" E 83° 03' 01.69"

Table 3.6.2: Noise Levels within the Industry and Work zone

S. No.	Location name	Day time	Night time
		Leq (dB(A))	Leq (dB(A))
Work Zone Noise locations			
1.	ID Fan area	82.2	78.5
2.	Coal Handling Plant (CHP) area	60.4	58.2
3.	Turbine Area	83.1	80.6
4.	Transport Area	70.5	66.4
5.	Membrane Phase 1&2	75.6	69.2
6.	DM Plant	71.5	68.4
7.	MEE Plant	78.5	56.8
8.	ZLD Compressor	78.2	70.5
9.	Aluminum Chloride plant area	68.4	60.8
10.	S.B.P. Plant & CP	80.5	73.6
11.	CD Boiler & Chlorine filling	78.6	68.6
12.	PGD Area	83.2	80.4
Noise Locations inside the industry			
13.	Plant Main Gate	62.3	53.6
14.	Hospital	45.2	38.0
15.	Guest House	46.6	40.2
16.	Staff Mess area	50.1	42.4
17.	Material Gate	58.2	44.6

3.7. RO water and groundwater of villages

GRCD has installed 5 RO plants as a part of the CSR programme at Kusumah, Gambirpur, Khairahi villages. There are two RO plants each at Kusumah village, Khairahi village and one RO plant at Gambirpur village. During the sample collection, it was observed that one RO plant at Kusumah village was not in operation. Hence, RO plant inlet and outlet samples were collected from the other four RO plants. The details are presented in Table 3.7.1. The results of the analysis are presented in Table 3.7.2. The results indicate that all the parameters are within the permissible standards of BIS. The RO plant is efficient enough to decrease all the parameters in the groundwater.

Table3.7.1: Details of Sampling Locations (CSR-Villages)

Sr. No	Village Name	Sample Code	GPS Location	Source	RO Plant Information (Grasim CSR Villages)
1.	Kusumah	R-BA-1	24°09'41.22"N 83°05'39.95"E	RO outlet	GIL, Renukoot, RO plant No-1, Kusumah Village, Sonabadhra
2.		R-BA-2		Tube well (Inlet to RO)	
3.	Gambirpur	R-BA-3	24°09'51.91"N 83°05'04.45"E	RO outlet	GIL Renukoot RO plant No-1, Gambirpur Village, Sonabhadre
4.		R-BA-4		Tube well (Inlet to RO)	
5.	Khairahi	R-BA-5	24°10'34.05"N 83°05'10.50"E	RO outlet	GIL Renukoot RO plant No-2, Khairahi Village, Sonabhadre
6.		R-BA-6		Tube well (Inlet to RO)	
7.	Khairahi	R-BA-7	24°10'34.53"N 83°04'12.38"E	RO outlet	GIL Renukoot, RO plant No-1, Khairahi Village, Sonabhadre
8.		R-BA-8		Tube well (Inlet to RO)	

Table 3.7.2: Groundwater and RO water Quality -Physico-Chemical Parameters

Parameter	RBA-1 RO	RBA-2 GW	RBA-3 RO	RBA-4 GW	RBA-5 RO	RBA-6 GW	RBA-7 RO	RBA-8 GW	IS 10500:2012	
									Acceptable	Permissible
pH	7.6	7.4	7.7	7.2	7.6	7.4	7.1	7.2	6.5-8.5	NR
Temp(°C)	32.2	27.6	28.3	28.2	28.1	28.2	28.3	27.9	-	-
Turbidity (NTU)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	5
TDS (mg/l)	122	397	96	634	109	526	131	215	500	2000
Conductivity (µS/cm)	192	628	146	1021	183	802	218	344	-	-
Total Hardness (as CaCO ₃) (mg/l)	60	200	48	324	48	196	60	96	200	600
Calcium (as Ca) (mg/l)	16	42	8	78	13	54	13	29	75	200
Magnesium (as Mg) (mg/l)	5	23	7	31	4	14	7	6	30	100
Sodium (as Na) (mg/l)	22	68	18	98	22	126	25	40	-	-
Potassium (as K) (mg/l)	1	1	1	5	<1	4	1	2	-	-
Total Alkalinity (as CaCO ₃) (mg/l)	56	180	48	232	60	276	56	92	200	600
Sulphate (as SO ₄ ⁻²) (mg/l)	8	47	3	155	2	26	15	33	200	400
Chloride (as Cl ⁻) (mg/l)	24	72	22	70	21	88	24	28	250	1000
Salinity (‰)	0.04	0.13	0.04	0.13	0.04	0.16	0.04	0.05	-	-
Fluoride (as F ⁻) (mg/l)	0.49	1.36	0.57	1	0.22	1.46	0.21	0.43	1	1.5
Nitrate (as NO ₃) (mg/l)	1.06	0.4	0.66	0.8	1.19	1.48	1.08	2.51	45	NR
Total Phosphorus (mg/l)	0.025	0.29	0.152	0.44	0.141	0.35	0.302	0.29	-	-
Mineral Oil (as O&G) (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.5	NR
TC(CFU/100ml)	920	1420	TNC	280	660	TNC	820	TNC	Absent	-
FC(CFU/100ml)	20	240	160	360	ND	220	ND	40	Absent	-
TVC(CFU/ml)	230 ×10 ⁵	350 ×10 ⁵	590 ×10 ⁵	30 ×10 ⁵	240 ×10 ⁵	390 ×10 ⁵	190 ×10 ⁵	510 ×10 ⁵	-	-

Table3.7.3: Groundwater and RO water Quality –Heavy Metals

Parameter	RBA -1 RO	RBA -2 GW	RBA -3 RO	RBA -4 GW	RBA -5 RO	RBA -6 GW	RBA -7 RO	RBA -8 GW	IS 10500:2012	
									Acceptable	Permissible
As	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.01	0.05
B	0.00 4	0.06 4	0.01 7	0.05 4	0.00 8	0.01	BDL	0.00 6	0.5	1
Cd	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.003	NR
Co	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	-	-
Cr	0.00 9	0.02 5	0.00 6	0.02 1	0.00 9	0.00 3	0.00 7	0.00 4	0.05	NR
Cu	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.5	1.5
Fe	0.14 4	0.30 3	0.30 8	9.16	BDL	0.14 3	BDL	BDL	0.3	NR
Mn	BDL	BDL	BDL	0.02 9	BDL	BDL	BDL	BDL	0.1	0.3
Ni	0.00 6	0.00 6	0.00 5	0.00 2	0.00 2	0.00 6	0.01	0.00 9	0.02	NR
Pb	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.01	NR
Zn	BDL	0.00 5	0.06	0.13	0.01 3	0.12 7	BDL	BDL	5	15
Hg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.001	NR

3.8. Intake Water – Rihand Dam

The sample has been collected from the intake water pump house and analysed for physico-chemical and microbiological parameters (Tables 3.8.1 and 3.8.2). The results indicate that all the values are within the permissible limit of BIS standard.

Table3.8.1: Details of Surface Water Sampling Location

Sr. No	Sample Code	Sample Location	GPS Location	Source	Remarks
1.	R-MS22	Grasim-Intake Water	24°11'41.11"N 83°03'04.04"E	River water	Grasim – Intake Water Pump House

Table3.8.2: Surface Water Quality

S.NO	Parameter	R-MS 22
1.	pH	8.7
2.	Temp (°C)	28.0
3.	Turbidity (NTU)	0.1
4.	TSS (mg/l)	4.4
5.	TDS (mg/l)	119
6.	Conductivity (µS/cm)	176
7.	Total Hardness (as CaCO ₃) (mg/l)	56
8.	Calcium (as Ca) (mg/l)	14
9.	Magnesium (as Mg) (mg/l)	5
10.	Sodium (as Na) (mg/l)	13
11.	Potassium (as K) (mg/l)	4
12.	Total Alkalinity (as CaCO ₃) (mg/l)	68
13.	Sulphate (as SO ₄ ⁻²) (mg/l)	7
14.	Chloride (as Cl ⁻) (mg/l)	24
15.	Salinity (‰)	0.04
16.	Fluoride (as F) (mg/l)	0.33
17.	Ammonia – N (mg/l)	1.4
18.	TKN (mg/l)	5.0
19.	Nitrite –N (mg/l)	BDL
20.	Nitrate –N (mg/l)	0.05
21.	Total Phosphorus (mg/l)	0.373
22.	Available Phosphorus (mg/l)	0.010
23.	DO (mg/l)	5.7
24.	BOD (mg/l)	1.2
25.	COD (mg/l)	60
26.	O&G (mg/l)	BDL
27.	TC (CFU/100ml)	540
28.	FC (CFU/100ml)	180
29.	TVC (CFU/100ml)	140×10 ⁵
30.	Chromium (mg/l)	0.001
31.	Cadmium (mg/l)	BDL
32.	Zinc (mg/l)	BDL

33.	Copper (mg/l)	BDL
34.	Lead (mg/l)	BDL
35.	Nickel (mg/l)	0.002
36.	Cobalt (mg/l)	BDL
37.	Mercury (mg/l)	BDL
38.	Arsenic (mg/l)	BDL

3.9. Brine Sludge

Brine sludge is produced during the electrolysis of brine to produce chlorine and caustic soda. The brine sludge samples were collected from Vacuum drum kites and brine sludge point. The locations are given in Table 3.9.1. Collected samples were air dried and analyzed for various physico chemical parameters. Particle size analysis was carried out by the international pipette method (Black, 1965 and Piper 1966). Bulk density, porosity are analyzed using soil pycnometer and water holding capacity by KR Box method (Keen and Raczkowski, 1921).

The chemical Characteristics were determined in filtered sludge extract prepared from sludge and distilled water in ratio of 1:2(Jackson, 1967). Potassium by flame photometric method (Jackson ML 1967). Heavy metals in sludge samples were determined by extracting samples with conc. H₂SO₄ and conc. HNO₃ followed by analysis on Inductively Coupled Plasma Spectrometer (ICP-OES) (APHA, 2017). Mercury was analyzed in Direct Mercury Analyzer 80 (DMA) (USEPA, Method 7473).

Physical Characteristics

Physical characteristics of sludge are determined through analysis of specific parameters : particle size distribution, bulk density, porosity etc. Particle size distribution is an important factor, which influences water holding capacity, bulk density, moisture availability. Particle size in between 0.002-0.05 mm is predominant in the sludge samples. The Bulk Density of Sludge sample is 1.17 g/cm³. The porosity of Sludge sample is 60.20%.

Chemical Characteristics

The collected Sludge and Top soil samples were analysed for various chemical parameters. pH is an indication of the alkaline or acidic nature of the particle. Sludge samples are strongly alkaline in nature with pH 10.24. The soluble salts analysed in water saturated extract (1:2) are expressed in terms of electrical conductivity (EC). Sludge have been observed to be 28.3 mS/cm EC value. Therefore, Sludge sample was observed to be saline in nature. Concentration of calcium and magnesium are 0.002 meq/100g and 0.30meq/100g, whereas sodium and potassium concentrations are observed to be 218meq/100g and 0.31meq/100g respectively. Chlorides and Sulphates content were observed to be 23.60 meq/100 gm and 2.08meq/100 gm respectively.

The Sludge sample was investigated for Heavy metals viz. Arsenic (0.71 mg/kg), Boron (7.30mg/kg), Cadmium (0.12mg/kg), Chromium (12.82mg/kg), Cobalt (0.28 mg/kg), Copper (3.08 mg/kg), Manganese (112mg/kg), Nickel (7.04 mg/kg), Lead (0.35 mg/kg) and Zinc (15.20mg/kg). Iron was Below Detectable Limit. The heavy metals were found to be within the limit. Concentration of Mercury in the sludge was BDL.

Toxicity Characteristic Leaching Procedure (TCLP)

TCLP is a chemical analysis method for determining the presence of hazardous elements in a waste. Accordingly, TCLP analysis was carried out following USEPA hazardous waste test method SW 846 (1311) to determine inorganic analytes in the leachate using Hazardous waste filtration assembly. The technique involved extracting the solid phase with a volume of extraction fluid equal to 20 times the solid phase's weight. The extraction fluid used is determined by the alkalinity of the waste's solid phase. After extraction, the liquid extract is filtered through a 0.7 m glass fibre filter to isolate it from the solid form. Heavy metals concentrations in the TCLP leachate are presented in Table 3.9.6. As per the results it was observed that Heavy metals are below TCLP concentration Limit as per Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 (Annexure SL). Therefore, possibility of leaching of metals including Mercury from the mercury bearing sludge from the Secured land fill is minimal and under the limit as per Hazardous waste management rule 2016.

Table 3.9.1: Sludge Sampling Locations

S.No	Sample Code	Description	Latitude/Longitude	Description
1.	R-BA-SL1	Brine sludge fresh	24°12'11.73"N 83°03'11.37"E	Sample collected near membrane l, vacuum drum kites, adjacent to technical office

Table 3.9.2: Particle size distribution

S.No.	Sample Code	Particle Size Distribution (%)			
		0.25 to 2.00 mm (Coarse sand)	0.05 to 0.25 mm (Fine sand)	0.002 - 0.05mm(Silt)	<0.002 mm (Clay)
1	R-BA-SL1	0.03	11.33	72.30	16.34

Table 3.9.3: Physical Properties

S.No	Sample Code	Bulk Density (g/cc)	Porosity (%)	Water Holding Capacity (%)
1.	R-BA-SL1	1.17	60.20	58.33

Table 3.9.4: Chemical Properties of Sludge Extract (water soluble)

S. No	Sample Code	pH	EC mS/cm	Ca ⁺⁺	Mg ⁺⁺	Na ⁺	K ⁺	SO ₄ ⁻²	Cl ⁻
				----- (meq/100gm) -----					
1.	R-BA-SL1	10.24	28.3	0.002	0.30	218	0.31	2.08	23.60

Table 3.9.5 Heavy metals in sludge samples

Sample Code	As	B	Cd	Co	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Zn
	mg/kg											
R-BA-SL1	0.71	7.30	0.12	0.28	12.82	3.08	BDL	BDL	112	7.04	0.35	15.20

Table 3.9.6 TCLP Trace metal concentrations

Samples/ metals	R-BA-SL1 (mg/l)	Regulatory level by USEPA-RCRA-D List (mg/l)
As	BDL	5
Cd	0.0003	1
Co	BDL	-
Cr	BDL	5
Cu	BDL	-
Fe	1.18	-
Mn	0.03	-
Ni	BDL	-
Pb	BDL	5
Zn	BDL	-

3.10. STP inlet colony

The samples from the STP inlet and outlet of the colony have been collected and analysed for the parameters. The results have been presented in Table 3.10.2.

Table 3.10.1: Details of STP Sampling Locations

Sr. No	Sampling Location	Sample Code	GPS Location	Source	Remarks
1.	Colony STP inlet	R-BA-15	24°12'15.36"N 83°02'49.45"E	STP in Colony	Sample collected from Inlet into STP Collection Tank
2.	Colony STP outlet	R-BA-16	24°12'15.36"N 83°02'49.45"E		Sample collected from the colony STP outlet Pipe

Table 3.10.2: STP Water Quality Parameters

S.NO	Parameter	RBA-15	RBA-16	CPCB Discharge Standards
1.	pH	6.9	7.1	5.5 – 9.0
2.	Temp (°C)	26.2	27.3	-
3.	TSS (mg/l)	17	0.6	200
4.	Turbidity (NTU)	0.5	0.2	-
5.	TDS (mg/l)	242	220	-
6.	Conductivity (µS/cm)	402	372	-
7.	Ammonia –N (mg/l)	8.40	BDL	-
8.	TKN (mg/l)	15.12	12.32	-
9.	Nitrite – N (mg/l)	BDL	1.09	-
10.	Nitrate – N (mg/l)	0.54	0.10	-
11.	Available – P (mg/l)	0.06	0.24	-
12.	Total – P (mg/l)	0.11	0.53	-
13.	DO (mg/l)	1.5	2.5	-
14.	BOD (mg/l)	81	16	100
15.	COD (mg/l)	328	88	-
16.	O&G (mg/l)	13.6	6.4	10
17.	SAR	2.1	2.5	-
18.	Boron (mg/l)	1.06	0.06	-
19.	TC (CFU/100ml)	TNC	TNC	-
20.	FC (CFU/100ml)	640	300	-
21.	TVC (CFU/ml)	610×10 ⁵	120×10 ⁵	-

3.11. SLF

The secured landfill site leachate has been collected from the pump opposite to the power plant. The results are presented in the Table 3.11.2.

Table 3.11.1: Details of Sampling Locations

Sr. No	Sample Location	Sample Code	GPS Co-ordinates	Site Information
1.	SLF leachate	RMS-14	24°12'19.05"N 83°03'19.65"E	Leachate Pump-Adjacent to Railway Track opposite to Capacitive Power plant

Table3.11.2: Leachate Quality Parameters

S.No	Parameter	RMS-14
1.	pH	7.7
2.	Temp(°C)	26.2
3.	Turbidity (NTU)	0.1
4.	TSS (mg/l)	5.9
5.	TDS (mg/l)	1183
6.	Conductivity (µS/cm)	1547
7.	Total Hardness (as CaCO ₃) (mg/l)	108
8.	Calcium (as Ca) (mg/l)	35
9.	Magnesium (as Mg) (mg/l)	5
10.	Sodium (as Na) (mg/l)	456
11.	Potassium (as K) (mg/l)	5
12.	Total Alkalinity (as CaCO ₃) (mg/l)	104
13.	Sulphate (as SO ₄ ⁻²) (mg/l)	47
14.	Chloride (as Cl ⁻)	465
15.	Salinity (‰)	0.84
16.	Fluoride (as F ⁻) (mg/l)	0.91
17.	Nitrate (as NO ₃) (mg/l)	0.60
18.	Total Phosphorus (mg/l)	0.172
19.	Available Phosphorus (mg/l)	BDL
20.	O&G (mg/l)	0.6

Table3.11.3: Leachate Quality: Heavy Metals (mg/l)

S.No	Parameter	RMS-14
1.	As	BDL
2.	B	BDL
3.	Cd	BDL
4.	Co	BDL
5.	Cr	0.082
6.	Cu	BDL
7.	Fe	BDL
8.	Mn	0.029
9.	Ni	0.049
10.	Pb	0.001
11.	Zn	BDL
12.	Hg	BDL

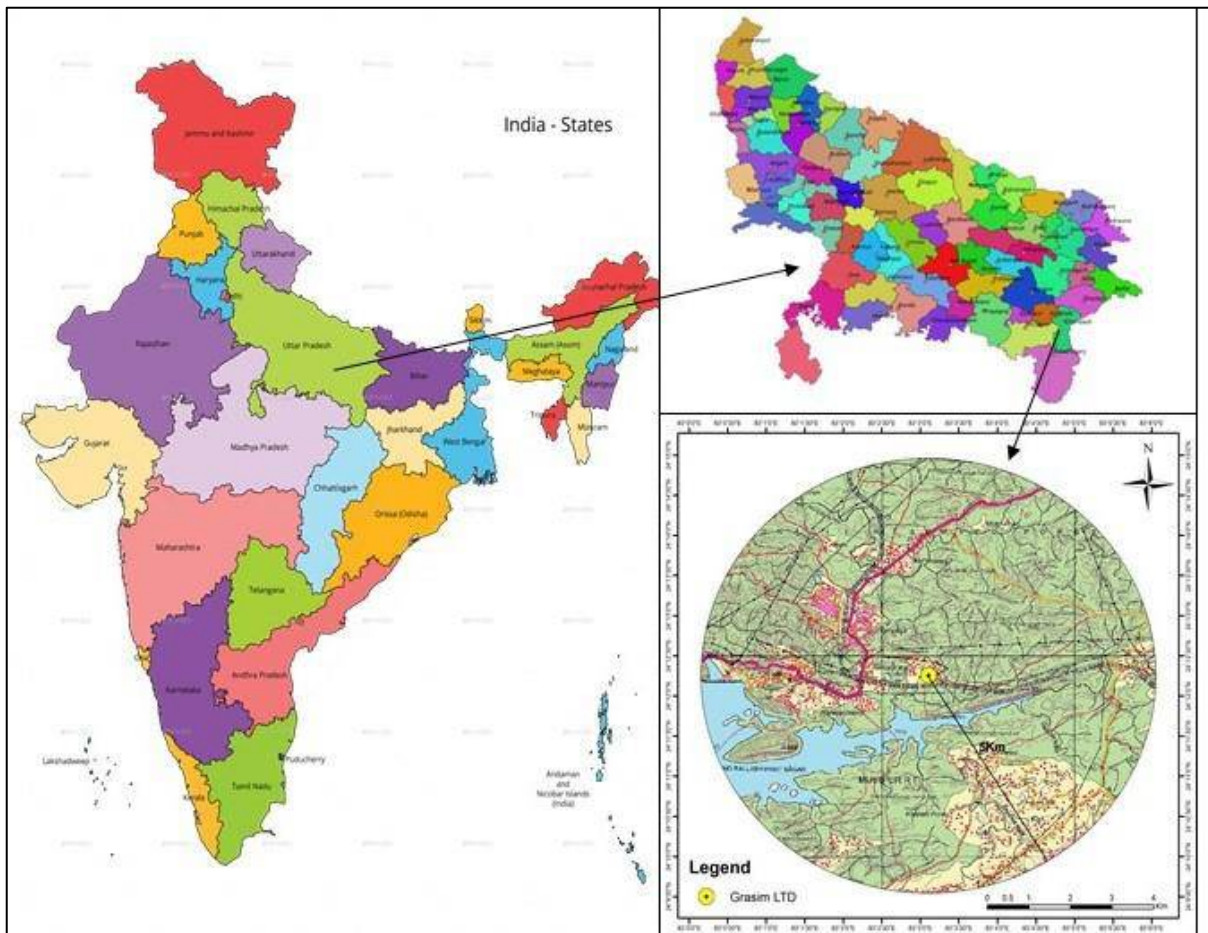


Fig. 3.1 Location of the study area

Chapter 4

Summary

4.0 Summary

A systematic study on biannual assessment of environmental quality has been carried out during the field survey. The results of the air, water and noise components are as follows:

- The ETP samples indicate that the values of all the parameters are within the CPCB discharge standards except for TDS of collection tank. The TDS of collection tank is high as the water is received from various units of GRCD. TDS of Dongia Nallah is slightly high due to the sewage entering the Nallah.
- The results of the Industry groundwater monitoring wells indicate that the values of all the parameters are within the BIS limits except for RMS-11 (monitoring well no. 1). Parameters like TDS, chloride, sodium were more than BIS in monitoring well no. 1 and this may be due to the geological nature of the study area. Geologically the study area is comprised of rocks of Precambrian that belong to Chotanagpur Granite Gneiss Complex (CGGC) and Mahakoshal Group. The geology mainly consists of the slate and phyllites (Mahakoshal group) and granites and gneisses with schists (CGGC group).
- Water samples from the STP have been collected from the inlet and outlet of STP and all the parameters are within the CPCB discharge standards.
- The ambient levels of all pollutants, namely PM₁₀, PM_{2.5}, SO₂, NO_x, CO, O₃, Cl₂ and Pb in particulate matter, are found to be less than their NAAQS at all locations.
- The observed noise levels inside the industry are ranged from 45.2 - 62.3 dB(A) during daytime and 38.0 - 53.6 dB(A) during night time. Daytime and night time noise levels at the locations inside the Grasim Industries Ltd. are well below the CPCB standards for industrial area.
- The results of the RO plant water of the CSR villages indicate that all the parameters are within the permissible standards of BIS. The RO plant is efficient enough to decrease the concentration of all the parameters in the groundwater.
- The results of the STP indicate that all the parameters have values within the CPCB discharge standards.

References

APHA (2012). Standard methods for analysis of the water and waste water analysis, 22nd editions.

BIS (2012). Indian standard specification for drinking water. IS: 10500.

Annexures

Annexure-I

Specifications for Drinking Water - (IS 10500: 2012)

S. No.	Substance or characteristic	Requirement (Acceptable limit)	Permissible limit in the absence of alternate source	Remarks
Essential Characteristics				
1.	Colour Hazen Units, max	5	15	Extended to 15 only if toxic substances are not suspected in absence of alternate sources
2.	Odour	Agreeable	Agreeable	a. test cold and when heated b. test after several dilutions
3.	Taste	Agreeable	Agreeable	Test to be conducted only after safety has been established
4.	Turbidity (NTU) Max	1	5	-
5.	pH value	6.5 to 8.5	No relaxation	-
6.	Total hardness (mg/l, CaCO ₃) Max.	200	600	-
7.	Iron (mg/l, Fe) Max	0.3	No relaxation	Total concentration of manganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
8.	Chlorides (as Cl) mg/l Max	250	1000	-
9.	Free residual chlorine (mg/l), Min	0.2	1	To be applicable only when water is chlorinated. Tested at consumer end. When protection against viral infection is required, it should be minimum 0.5 mg/L
Desirable Characteristics				
10.	Total dissolved solids, mg/l, max	500	2000	-
11.	Calcium (mg/l, Ca) Max.	75	200	-
12.	Magnesium (mg/l, Mg) Max.	30	100	-
13.	Copper (mg/l, Cu) Max.	0.05	1.5	-
14.	Manganese (mg/l, Mn) Max.	0.1	0.3	Total concentration of manganese (as Mn) and iron(as Fe) shall not exceed 0.3 mg/l
15.	Sulphate (mg/l, SO ₄) Max.	200	400	May be extended upto 400 provided Magnesium (as Mg) does not exceed 30
16.	Nitrate(mg/l, NO ₃) Max.	45	No relaxation	-
17.	Fluoride(mg/l, F) Max.	1.0	1.5	-
18.	Phenolic compounds (mg/l C ₆ H ₅ OH) Max.	0.001	0.002	-

S. No.	Substance or characteristic	Requirement (Acceptable limit)	Permissible limit in the absence of alternate source	Remarks
19.	Mercury (mg/l, Hg) Max	0.001	No Relaxation	-
20.	Cadium (mg/l, Cd) Max.	0.003	No Relaxation	-
21.	Selenium (mg/l, Se) Max.	0.01	No Relaxation	-
22.	Total Arsenic (mg/l, As) Max.	0.01	0.05	-
23.	Cyanide(mg/l, CN) Max.	0.05	No Relaxation	-
24.	Lead (mg/l, Pb) Max.	0.01	No Relaxation	-
25.	Zinc(mg/l, Zn) Max.	5	15	-
26.	Anionic detergents (mg/l, MBAS) Max	0.2	1.0	-
27.	Total Chromium(mg/l),Max.	0.05	No relaxation	-
28.	Polynuclear aromatic hydrocarbons (mg/l, PAH) Max.	0.0001	No relaxation	-
29.	Mineral oil (mg/l) Max.	0.05	No relaxation	-
30.	Pesticides (mg/l) Max.	-	No relaxation	-
Radioactive materials				
31.	Alpha emitters (Bq/l) Max.	0.1	No relaxation	-
32.	Beta emitters (pci/l) Max.	1.0	No relaxation	-
33.	Alkalinity (mg/l) Max.	200	600	-
34.	Aluminium (mg/l, Al) Max.	0.03	0.2	-
35.	Boron(mg/l) Max.	0.5	1.0	-

Annexure-II

Methods for Preservation and Analysis of Water Samples

S. No.	Parameter	Units of Expression	Preservative and Storage Condition	Reference: APHA 21 st Edition Methods
Physical Parameters				
1.	Temperature	°C	Analyze immediately	2550 – B: (Thermometer)
2.	pH	--	Analyze immediately	4500-H ⁺ - B: (Electrode)
3.	Conductivity	µs/ms	Refrigeration at 4°C	2510 – B: (Conductivity meter)
4.	Total dissolved solids	mg/l	Refrigeration at 4°C	2540 – C: (dried at 180°C & gravimetric)
5.	Total suspended solids	mg/l	Refrigeration at 4°C	2540 – D: (dried at 103°C-105°C & gravimetric)
6.	Turbidity	NTU	Refrigerate and Analyze immediately	2130 – B: (Nephelometric)
Inorganic Parameters				
7.	Total alkalinity	as CaCO ₃ mg/l	Refrigerate and Analyze immediately	2320 – B: (Titration)
8.	Hardness	as CaCO ₃ mg/l	Add HNO ₃ to pH < 2 and refrigerate	2340 – C: (EDTA Titrimetric)
9.	Chloride	mg/l	Not Required	4500-Cl ⁻ - B: (Argentometric)
10.	Sulphate	mg/l	Refrigeration at 4°C	4500-SO ₄ ⁻ - E: (Turbidimetric)
11.	Fluoride	mg/l	Not Required	4500-F ⁻ - D: (SPADNS)
12.	Sodium and potassium	mg/l	Not Required	3500- K, Na-B: (Flame Photometric)
Nutrient and Demand Parameter				
13.	Nitrate	as NO ₃ ⁻ - N mg/l	Refrigerate and analyze immediately	4500-NO ₃ ⁻ B: (UV spectrophotometric)
14.	Total Phosphate	mg/l	Refrigeration at 4°C	4500-P-D: (Stannous Chloride)
15.	Dissolved Oxygen [DO]	mg/l	Analyze immediately	4500-O-C: (Azide modification)
16.	COD	mg/l	Add H ₂ SO ₄ at pH <2 refrigerate & analyze immediately	5220-B: (Open Reflux)
17.	BOD	mg/l	Refrigeration at 4°C & analyze immediately	5210-B: (BOD Test at 27 °C)
18.	Total Kjeldhal Nitrogen	mg/l	Refrigerate and Add H ₂ SO ₄ to pH<2	4500- N _{ORG} -B: (Macro-kjeldhal)
19.	Oil and grease	mg/l	Add H ₂ SO ₄ at pH <2 refrigerate	5220 –B: (Liquid-Liquid Partition Gravimetric)
Heavy Metals				
20.	Heavy metals	mg/l	Add HNO ₃ to pH <2	3030 –E, 3125 - B: (ICP- MS)

National Ambient Air Quality Standards – 2009

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO ₂), µg/m ³	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke -Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO _x), µg/m ³	Annual * 24 Hours **	40 80	30 80	-Modified Jacob & Hochheiser (Na-Arsenite) -Chemiluminescence
3.	Particulate Matter (Size less than 10 µm) or PM ₁₀ µg/m ³	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TOEM -Beta attenuation
4.	Particulate Matter (Size less than 2.5 µm) or PM _{2.5} µg/m ³	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TOEM -Beta attenuation
5.	Ozone (O ₃) µg/m ³	8 hours ** 1 hour**	100 180	100 180	-UV photometric -Chemiluminescence - Chemical method
6.	Lead (Pb) µg/m ³	Annual * 24 Hours **	0.50 1.00	0.50 1.00	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
7.	Carbon Monoxide (CO) mg/m ³	8 hours ** 1 hour *	02 04	02 04	-Non-Dispersive Infrared Spectroscopy
8.	Ammonia (NH ₃) µg/m ³	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
9.	Benzene (C ₆ H ₆) µg/m ³	Annual *	05	05	-Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo Pyrene (BaP) - particulate phase only ng/m ³	Annual *	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic(As) ng/m ³	Annual *	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel(Ni) ng/m ³	Annual *	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform intervals

** 24 hourly or 8 hourly or 01 hourly monitored values as applicable shall be compiled with 98% of the time in a year. 2% of the time they may exceed the limits but not on two consecutive days of monitoring

Ambient Air Quality Standards in Respect of Noise (as recommended by CPCB)

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

Notes :

1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
3. Silence zone is defined as an area comprising not less than 100 meters around hospitals, Educational Institutions and courts. The silence zones are zones which are declared as such by the competent authority.
4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is related to human hearing

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of human ear

Leq : It is an energy mean of the noise level over a specified period

[The Gazette of India Extraordinary
MoEF Notification, 14 February,
2000]

**Damage Risk Criteria for Hearing Loss
Occupational Safety & Health Administration (OSHA)**

Maximum Allowable Duration Per Day, h	Noise Level dB(A) (Slow Response)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 or less	115

Operational / Working Zone – not to exceed 85 dB(A) Leq for 8 hours exposure

Source : The Gazette of India

January 2, 1999



GIL/ENV/2021-22/17

Date: - 08/05/2021

The Member Secretary,
U.P. Pollution Control Board,
TC 12 V, Vibhuti Khand
Gomti Nagar, Lucknow-226010

Subject: - Submission of Form – 4 under Hazardous and Other Waste (Management, & Trans-boundary Movement) Rules, 2016

Dear Sir,

Kindly find enclosed herewith the **Form – 4** towards submission of annual return for the year **2020-21**, regarding disposal of hazardous waste as required under **Hazardous and Other Waste (Management, & Transboundary Movement) Rules, 2016** duly completed in all respect.

We hope you will find above in order.

Thanking You
For Grasim Industries Limited

v.k. yadav
(Vinay Yadav)
Manager- Environment

Encl: - As Above

Cc: - Regional Officer
U.P Pollution Control Board
H.No. – 162, Uttar Mohal
Near Chandi Hotel, Robertsganj
Sonebhadra - 231216

Grasim Industries Limited

Chemical Division Renukoot
P.O.: Renukoot - 231 217,
Distt.: Sonebhadra (U.P.) India

Telephone +91- 5446 - 252044/55/75
Fax +91- 5446 - 252088

Website www.grasim.com
E-mail grasim.renukoot@adityabirla.com
CIN L17124MP1947PLC000410
PAN AAACG4464B

FORM 4

[See rules 6(5), 13(8), 16(6) and 20 (2)]

FORM FOR FILING ANNUAL RETURNS

[Period 1st April, 2019 to 31st March, 2020]

1. Name and address of facility	Grasim Industries Limited, Chemical Division Renukoot, Renukoot, Pin 231217, Sonebhadra (U.P)
2. Authorisation No. and Date of issue	H03288 C-2/Haz/20/Dated 30.05.2017 13583/UPPCB/Sonebhadra(UPPCBRO)/HWM/SONEBHADRA/2020 Date: 02/03/2021
3. Name of the authorised person and full address With telephone, fax number and e-mail	Mr. SHRIDHARA SASTRY Grasim Industries Limited, Chemical Division Renukoot Renukoot, Pin 231217, Sonebhadra (U.P) T-91-5446-252044/55/75 Fax-91-5446-252088 grasim.renukoot@adityabirla.com

4. Production during the year (product wise),

Sr. No.	Product Name (FY 2020-21)	UOM	Production in FY 2020-21
1	Caustic Soda Lye	(MT)	1,17,925
2	Electricity	(KWH)	322760484
3	Cl2	(MT)	85,206
4	H2	(NM ³)	4,97,066
5	HCL-100%	(MT)	29,490
6	SBP	(MT)	31,558
7	AlCl3	(MT)	16,637
8	PAC-10%	(MT)	46,724
9	CPW	(MT)	16,713

Part A. (To be filled by hazardous waste generators):

Sr. No.	Name & category of Hazardous Waste	Total qty of waste generated	Quantity dispatched (MT)			Facility Name
			To disposal facility	To recycler or co / pre-processor	others	
1.	Used oil / Spent Oil Schedule I Cat 5.1,5.2	3.830	-	3.830	NA	M/s Bharat Oil & Waste management Ltd. ,Kanpur U.P.
2.	ETP Sludge Schedule I Cat -35.3	37.220	37.220		NA	M/s Bharat Oil & Waste management Ltd. ,Kanpur U.P.
3.	MEE Salt Waste Schedule I Cat -35.3	389.550	389.550		NA	M/s Bharat Oil & Waste management Ltd. ,Kanpur U.P.
4.	Brine Sludge Schedule I Cat -16.3	14764.280	14764.280		NA	M/s Bharat Oil & Waste management Ltd., Kanpur U.P. M/s Ramky Enviro Engineers Ltd. Kanpur
5.	FRP Waste Schedule I Cat -33.1	38.990	38.990		NA	M/s Bharat Oil & Waste management Ltd. ,Kanpur U.P.
6.	PAC Sludge Schedule II (B 30)	106.730	106.730		NA	M/s Bharat Oil & Waste management Ltd. ,Kanpur U.P.

Quantity utilised in-house, if any

Name & category of Hazardous Waste	Quantity utilised in-house	UOM
NA	0	KL/Annum or MTPA

Quantity in storage at the end of the year

Name & category of Hazardous Waste	Quantity of Waste	UOM
NA	0	KL/Annum or MTPA

Part B. (To be filled by Treatment, storage and disposal facility operators)

Sr.	Name & category of Hazardous Waste	Quantity in stock at the beginning of the year	Quantity treated	Quantity disposed in landfills as such and after treatment	Quantity incinerated (if applicable)	Quantity processed other than specified above	Quantity in storage at the end of the year
Not Applicable							

Part C. (To be filled by recyclers or co-processors or other users)

Sr.	Name & category of Hazardous Waste	Total qty of waste generated/ Received		Qty in stock at the beginning of the year	Quantity recycled or co-processed or used	Quantity of products dispatched	Quantity of waste generated	Quantity of waste disposed	Quantity re-exported	Qty in storage at the end of the year
		Domestic Source	Imported							
Not Applicable										

Date: 08.05.2021

Place: Renukoot

Signature



(Occupier or Operator of the disposal facility)



GIL/ENV/2021-22/14

Date: - 29 April 2021

To
The Regional officer
UP Pollution Control Board
H.N. 162, Uttar Mohal, Near Chandi Hotel
Robertsganj-231216
Sonebhadra (U.P.)

Sub: - Fly Ash Generation and utilization Report for FY 2020-21

Dear Sir,

Please find enclosed Fly Ash generation and utilization report for **FY 2020-21** as Annexure-1.

Thanking You

Yours faithfully
for Grasim Industries Ltd.

V.K. Yadav
(Dr. Vinay Yadav)
Manager- Environment

Encl: - As above

Grasim Industries Limited
Chemical Division Renukoot
P.O.: Renukoot - 231 217,
Distt.: Sonebhadra (U.P.) India

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CIN L17124MP1947PLC000410
PAN AAACG4464B

Grasim Industries Limited : Unit : Renukoot

Updated on 29/Apr/21

Total Ash Inventory

Inventory				Utilization (MT)					
Quarter	Month	Opening stock	Total Ash Generation	Sent to Cement Industries	Brick Manufacturing	Construction Projects	Low lying area filling	Specify if any other utilization (Paver Tiles)	Closing Stock
		(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)
Q1	Apr-20	0	5076	803	107	4165	0	1.3	0
Q1	May-20	0	5372	4760	210	402	0	0.0	0
Q1	Jun-20	0	11081	9962	102	1017	0	0.0	0
Q1 Total			21529	15525	419	5584	0	1.3	0
Q2	Jul-20	0	10831	3707	138	6984	0	1.0	0
Q2	Aug-20	0	10839	4525	58	6255	0	0.7	0
Q2	Sep-20	0	10112	8339	246	1525	0	2.2	0
Q2 Total			31782	16571	442	14765	0	4.0	0
Q3	Oct-20	0	10946	9500	185	1260	0	1.5	0
Q3	Nov-20	0	10742	6695	104	3943	0	0.3	0
Q3	Dec-20	0	8021	6679	49	1293	0	0.0	0
Q3 Total			29709	22875	337	6496	0	1.8	0
Q4	Jan-21	0	11247	9848	209	1189	0	0.3	0
Q4	Feb-21	0	10345	9262	170	208	703	1.2	0
Q4	Mar-21	0	8138	6975	28	331	804	0.46	0
Q4 Total			29730	26085	407	1728	1507	1.92	0
Grand Total			112750	81056	1605	28572	1507	9.00	0

Remark : Total Ash generation is **112750 MT** for FY 2020-21.
 Total Ash sent to Cement Industries is **81056 MT** for FY 2020-21.
 Total Ash utilized in Brick manufacturing is **1605 MT** for FY 2020-21.
 Total Ash utilized in Construction Projects is **28572 MT** for FY 2020-21.
 Total Ash utilized in other categories (Paver Tiles, etc.) is **9 MT** for FY 2020-21.

^{###} Total Ash utilized in various way is **111242.6 MT** which compares **98.66 %** and rest **1.34 %** is used in filling low lying area

V.K. Yadav



UTTAR PRADESH POLLUTION CONTROL BOARD

TC-12V, Vibhuti Khand, Gomti Nagar, Lucknow-226010

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

Ref. No : 13583/UPPCB/Sonebhadra(UPPCBRO)/HWM/SONBHADRA/2020

Dated :02/03/2021

To,

M/s GRASIM INDUSTRIES LIMITED CHEMICAL DIVISION RENUKOOT

GRASIM INDUSTRIES LIMITED CHEMICAL DIVISION RENUKOOT ,SONBHADRA,231217

Tehsil :Duddhi

District :SONBHADRA

Sub :- Authorisation issued under the provisions of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

1. Number of authorization and date of issue 13583 and 02/03/2021 .
2. Reference of application (No. and date) 10586194 and 31/12/2020 .
3. Mr SHRIDHARA SASTRY of M/s GRASIM INDUSTRIES LIMITED CHEMICAL DIVISION RENUKOOT is hereby granted an authorization based on the enclosed signed inspection report for generation, collection, utilization, storage and disposal or any other use of hazardous or other wastes or both on the premises situated at GRASIM INDUSTRIES LIMITED CHEMICAL DIVISION .

Details of Authorisation

S No.	Category of Hazardous Waste as per the Schedules I,II and III of these rules	Authorised mode of disposal or recycling or utilization or co-processing, etc.	Quantity(ton/annum)
1	Spent ion exchange resin containing toxic metals (Sch-1, S.No. 35.2)	Through TSDF	50 Ton/Annum
2	Spent Carbon or filter medium (Sch.-1, S No.-36.2)	Through TSDF	20 Ton/Annum
3	Used or spent oil (Sch.-1, S.No.-5.1)	Authorized Recyclers	50 Ton/Annum
4	Wastes or residues containing oil (Sch.-1, Cat.-5.2)	Through TSDF	5 Ton/Annum
5	Brine Sludge (Sch.1, S.No. 16.3)	Through TSDF	10000 Ton/Annum
6	Residue or sludges and filter cakes (Sch-1, S.No. 16.2)	Through TSDF	6 Ton/Annum
7	Asbestos (Sch-II, B21)	Through TSDF	100 Ton/Annum
8	Spent Carbon or filter medium (Sch.-1, Cat.-36.2)	Through TSDF	5 ton/annum
9	Empty barrels/ containers/liners contaminated with hazardous chemicals /wastes (Sch.-1, Cat.-33.1)	Through TSDF	100 Ton/Annum
10	Rubber Wastes (Sch-III, B3040)	Through TSDF	5 Ton/Annum
11	Ferro Silicate and alloys (Sch-II, B28)	Through TSDF	1 Ton/Annum
12	Chemical sludge from waste water treatment (Sch.-1, Cat.-35.3)	Through TSDF	150 Ton/Annum
13	Chemical sludge from waste water treatment (Sch.-1, Cat.-35.3)	Through TSDF	2800 Ton/Annum
14	Drosses and Waste from treatment of salt sludge (Schedule-1 S.No. 11.5)	Through TSDF	100 Ton/Annum
15	Exhaust Air or Gas cleaning residue (Sch-I, S.No. 35.1)	Through TSDF	10 ton/annum
16	Halogen- containing compounds which produce acidic vapours on contact with humid air or water e.g. silicon tetrachloride, aluminum chloride, titanium tetrachloride (Sch-II, B30)	Through TSDF	120 Ton/Annum
17	Halogen- containing compounds which produce acidic vapours on contact with humid air or water e.g. silicon tetrachloride, aluminum chloride, titanium tetrachloride (Sch-II, B30)	Through TSDF	800 Ton/Annum

1. The authorization shall be valid for a period of 02/03/2026 from the date of issue of this letter .
2. The authorization is subject to the following general and specific conditions (please specify any conditions that need to be imposed over and above general conditions, if any) .

A General Conditions of Authorization -

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under .

2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Board .
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorization .
4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorisation .
5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time .
6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and penalty .
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility .
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation .
9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained .
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation .
11. The importer or exporter shall bear the cost of Import or export and mitigation of damages if any
12. An application for the renewal of an authorisation shall be made as laid down under these Rules .
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Changes or Central Pollution Control Board from time to time .
14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year .
15. The Unit will file the renewal application at least 2 months prior to the expiry of this Order.

B Specific Conditions of Authorization

1. The wastes must be safely collected in leak proof containers and shall be duly marked in a manner suitable for handling, storage and transport and the packaging shall be easily visible and be able to withstand physical conditions and climatic factors. All hazardous waste containers / bags shall be provided with a general label. The storage area should be at an isolated spot in the premises and must be fenced, covered and duly marked.

2. The authorized person/agency shall ensure that no adverse impact on the air, soil and water including groundwater takes place due to activities for which authorization has been requested. Comprehensive safety measures must be followed in handling of wastes and the staff must be properly trained.

3. An application for the renewal of an authorization shall be made in form 1, before its expiry as laid down in rule. It is further brought to your notice that as per the order dated 14-11-2003 passed by the Hon'ble Supreme Court in W.P. (c) No. 657 of 1995, no industry covered under Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 shall be allowed to operate without valid authorization. It is also provided in the same orders that industries which are not complying with the conditions of authorization shall not be allowed to operate. Hence in case

you fail to apply for authorization, before its expiry or fail to comply with conditions of the earlier authorization issued to you, closure order shall be issued against your industry without any further notice.

4. The applicant must file returns on prescribed Form 4 along with a compliance report of this letter and should also maintain records on Form 3 and present it to Board's inspecting officials.
5. In case of occurrence of an accident, complete details on form must be sent to U.P. Pollution Control Board at the earliest along with details of mitigative and remedial measures taken.
6. The authorized person shall not receive, collect, or store any hazardous waste from any unauthorized occupier or generator of hazardous wastes. In case any hazardous wastes is sold to any other reprocessing unit it must be ensured that such unit is fully complying with environmental requirements and has a valid authorization of the Board.
7. In no case any hazardous wastes shall be disposed off on land, in any drain or stream. All spillages of hazardous chemicals, used containers, of hazardous chemicals such as flammable corrosive, explosive and toxic nature must be safely collected and stored. Non-compatible wastes must be suitably and safely handled.
8. It is within the powers and functions of the U.P. Pollution Control Board to modify / revoke the terms and conditions of the authorization issued under the Rule – 7 of Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
9. You are directed to display board outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including waste water and air emission and solid hazardous waste generated within the factory premises. Necessary compliance should be sent within 15 days of receipt of this letter.
10. It is the mandatory duty of the authorized person to comply with the guidelines for transportation of hazardous waste in accordance with rule 18 of Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.
11. It should be ensured that hazardous wastes shall be properly collected and packed in HDPE bags and then temporarily stored in a lined RCC tank/pit with suitable shed.
12. An ETP sludge/salt test report of a laboratory approved under E.P. Act shall be submitted along with compliance of this letter of this office.
13. Used oil shall be sold only to recyclers registered with U.P. Pollution Control Board. The record shall be maintained.
14. The occupier, transporter and operator of a facility shall be liable for damages caused to the environment resulting due to improper handling and disposal of hazardous waste listed in schedule 1,2, and 3 and shall be liable to pay a fine as levied by the State Pollution Control Board under the rules.
15. You shall have the valid membership of any common TSDF for S.L.F. (M/S U.P. Waste Management Project Kumbhi Kanpur Dehat or M/s Bharat Oil and Waste Management Ltd., Kumbhi, Akbarpur, Kanpur Dehat. permitted by U.P.P.C.B)., and start sending the stored hazardous wastes for final disposal to the TSDF and report back to U.P.P.C.B. with the required manifesto (document of proof) within three month of this letter. The authorized incinerator is with M/s Bharat Oil Company, Sahibabad, Ghaziabad for oily waste and paint sludge only.
16. You are required to store the hazardous waste safely and send it to TSDF/incinerator within stipulated time period.
17. This authorization is valid till the industry is having valid consent as per the provisions of Air (Prevention and Control of Pollution) Act 1981 and Water (Prevention and Control of Pollution) Act, 1974.

(Authorized Signatory)

UTTAR PRADESH POLLUTION CONTROL BOARD

Copy to: To the Regional Officer, U.P.Pollution Control Board, Sonbhadra for information and necessary action .

CEO/EE, I/C Circle_____