FORM - V

(See Rule 14)

Annual Environmental Statement for the Financial Year ending the 31st March, 2019

PART - A

i) Name & address of the Owner/Occupier of the industry, operation or process	-	Mr. Ashish Garg, Unit Head Grasim Industries Ltd. (Unit; Grasim Cellulosic Divn.), Plot # 1, GIDC, Vilayat, Tal.-Vagra **Dist. Bharuch (Gujarat) - 392 130.**		
ii) Industry category	-	Large (Red)		
Primary :- (STC Code) Secondary:- (SIC Code)		----		
iii) Production capacity:- Units	-	164,250	MT/Year	Viscose Staple Fibre
	-	138,700	MT/Year	Sulphuric Acid
	-	54,750	MT/Year	Carbon Di-Sulphide
	-	164,250	MT/Year	Anhydrous Sodium Sulphate
iv) Year of establishment	-	Apr-2014		
v) Date of the last environmental statement submitted	-	24/09/2018		

PART - B

Water & Raw Material Consumption

i) Water consumption - M^3/day		
1) Process	-	7,737
2) Cooling & Boiler	-	4,367
3) Domestic	-	374

Name of products	**Process water consumption per product output**	
	During the previous **Financial Year 2017-2018** (1)	During the current **Financial Year 2018-2019** (2)
Viscose Staple Fibre	31.19 m^3/T fibre	27.68 m^3/T of fibre

ii) Raw Material consumption

#	* Name of raw materials	Consumption of raw material per unit of output (T/T)		
		Name of Products	During the previous **Financial Year 2017- 2018**	During the Current **Financial year 2018- 2019**
1)	Rayon grade pulp	V.S.F.	1.010	1.006
2)	Caustic Soda	V.S.F.	0.567	0.559
3)	Sulphuric acid	V.S.F.	0.796	0.783
4)	Carbon disulphide	V.S.F.	0.160	0.163

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

PART - C

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

i)	Pollutants	Parameters		Quantity of pollutants discharged (mass/day) TPD, except pH & Temp.	Concentrations of pollutants in discharges		Percentage of variation from the prescribed standard with reasons
a)	Water	Treated Effluent (ETP Outlet)	pH	-	7.47	-	All Values are maintained within GPCB norms
			S.Solids	0.482	43.00	mg/l	
			Zinc	0.028	2.50	mg/l	
			BOD	0.595	53.10	mg/l	
			COD	1.969	175.60	mg/l	
			Temp.	-	31.00	deg C.	
b)	Air	Acid Plant emission :	SO2	0.30	1.00	Kg/Ton of Acid	All Values are maintained within GPCB norms
		Spg. stack emission :	CS_2	18.06	41.30	Kg/TF of Fibre	- do -

Note : - **Stack height details :**

Spinning Stack (Main Plant) : 1 No. 175 meter

Acid Plant Stack : 1 No. 50 meter

CS2 Plant Stack : 1 No. 100 meter

PART- D
Hazardous Wastes

(As specified under Hazardous Wastes/Management & Handling Rules, 1989)

# Hazardous wastes	Units	Total Quantity disposed	
		During the previous **Financial Year 2017 - 2018**	During the current **Financial Year 2018 - 2019**
From Process			
a) Used Oil (Rayon + Power Plant)	Ltrs.	8,820	8,190
b) Spent Catalyst V2O5 (H2SO4 plant)	MT	1.88	8.91
From Pollution control facilities			
c) ETP Sludge (Chemical & Bio)	MT	3,093	10,548
d) Spent Resin	MT	0.0	0.0
e) Sodium Sulphide (Rule-9)	MT	0.0	695.6

We are disposing ETP sludge to;
1 Cement Plants : M/s UltraTech Cements Ltd. & J K Lakshmi
2 TSDF, BEIL-Dahej.

We are disposing Na2SO3 to;
1 Users under Rule-9.

PART - E

Solid Wastes

Nil

PART - F

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

i. ETP sludge — Please refer to Annexure -1.

PART - G

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

Please refer to Annexure -2

PART - H

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

Please refer to Annexure -3

PART - I

Any other particulars for improving the quality of the environment.

Please refer to Annexure -4

Signature of a person carrying out an
Industry - operations or process

Name	:	**Jayesh Trivedi**
Designation	:	Vice President
Address	:	Grasim Industries Ltd. (Grasim Cellulosic Division), Plot # 1, GIDC, Vilayat Dist. Bharuch (Gujarat)

ANNEXURE - 1

Part - F

Disposal Practice for Hazardous & Solid Waste

Annexure - 1 : ETP (Gypsum) Sludge

1 Sludge generated in Sunpzone clarifiers after neutralization is treated in Effluent Treatment plant and collected into sludge thickener for its thickening purpose. Sludge is then fed to sludge dewatering machine (Belt Press) for its dewatering purpose. Further de-watered sludge is dried into sun light to reduce its moisture < 20 %.

2 Sludge is stored on RCC platform and being regularly disposed to Cement plants for use in co-processing.

3 Sludge is stored in sludge storage yard during rainy season, which is fully covered and having stoarge capacity of 3-4 months sludge generation.

4 All necessary documents are provided during disposal of any hazardous waste, like H.W Manifest, Trem cards etc. as required during transportation and disposal.

5 We are regularly uploading sludge disposal data on GPCB website on monthly basis being a part of Hazardous waste Management system at our plant.

6 Form - 3 & Form - 4 are regularly updated & maintained as a requirement of hazardous waste rules & guideline and annual reports are submitted to GPCB.

ETP (Bio) Sludge

1 Sludge generated in Primary as well as in Secondary treatment in Effluent Treatment plant is collected into sludge thickener for its thickening purpose. Sludge is fed to sludge dewatering press (Belt Press) for its dewatering purpose. Further dewatered sludge is dried into sun light to reduce its moisture > 25%.

2 Sludge is stored on RCC platform and regularly being disposed to TSDF, BEIL as per GPCB, CC&A guidelines.

3 Sludge is stored in storage yard during rainy season, which is fully covered and having stoarge capacity of 3-4 months sludge generation.

4 All necessary documents are provided for disposal of any hazardous waste, like H.W Manifest, Trem cards etc. as required during transportation and disposal.

ANNEXURE - 2

Part - G

Impact of the pollution abatement measures taken on conservation of natural resources

#	Control Measures adopted	Impact on conservation of natural resources
1	Use LP steam injection in place of water in cutter venturi on 3 Spg. M/cs.	Water saving of 270 m3/day (Steam Cons. 3 TPD)
2	Spin bath section mechanical seal water recycling (Recycling in close loop)	Water saving of 250 m3/day
3	Viscose section Vacuum pump sealing water replaced by cooling tower BD water	Water saving of 400 m3/day
4	Cooling tower blowdown and RO reject water used in Quenching tower at CS2 plant	Water saving of 250 m3/day
5	Treated effluent recycling by RO plant	Water saving of 1500 m3/day
6	MSFE RO feed increased for more water recycling	Water saving of 600 m3/day
7	DM water pre-heating to be done by acid plant hot soft water (Saving of LP steam which is used in deaerator)	Saving of Steam 50 TPD (Temp. gain of 8 deg.C/m3 of water
8	Improving pulper productivity by reducing cycle time	Power saving of 2000 KWH/day (Pulper rpm reduced from 247 to 200 = 4.5 KWH/TF) (Churn rpm reduced from 88 to 80)
9	Steep lye cooling by cooling water in place of chilled water	Power saving in chilling plant

ANNEXURE - 3

Part - H

Additional measures / Investments proposal for Environmental Protection, including abatement of pollution & prevention of pollution

#	Proposals / Schemes	Additional Investments (Rs. In Lacs)
1	Greenbelt Development development & Horticulture expenses	130.00
2	Air Pollution Control - EDTA plant	3300.00
3	Hazardous waste handling & management	160.00
4	3rd party environment monitoring & audits	15.00
5	Drains cleaning & repairing (Effluent & Storm water) projects	15.00
6	Installation of Jet aerators in Aeration tanks - ETP	252.00
	Total Expenditures (Rs. In Lacs)	3872.00

ANNEXURE - 4

Part - I

Other Particulars for Improving the Quality of the Environment

1 Our motto is green productivity which includes preservation of natural resources as a part of our Environment & Sustainability Policy of Grasim Pulp & Fibre business.

2 We are regularly developing awareness on Environment by organizing different training programmes for our employees, including new joinees. We are regularly celebrating World Environment Day on 5th June in which a tree plantation drive is organized in our plant & nearby area to boost the green productivity movement, also we are developing Environmental awareness among society.

3 Optimizing consumption of raw materials on continuous basis by efficient monitoring & control through DCS which avoids the human mistakes and rejection of intermediate productas at different stages.

4 Green belt is developed around the plant and nearby area, continuous improvement in green belt development by planting more & more trees to reduce the dust emission being done within the factory premise and nearby areas.

5 Water consumption being reduced by improving work practices, recycling of water.

6 Installed powerfull exhaust system on all 4 spinning machines for improved work room environment.

7 Online monitoring system is installed for all plant stacks and data is displayed at OMS room near to process stacks & at DCS of dept.

8 Perfect sealing is done in all exhaust ducts for effective discharge of exhaust gases.

9 Scheduled monitoring of Environment is done by our Lab and 3rd party NABL approved Lab, also Environmental audit is carried out as per GPCB guidelines during the Financial year and data is sobmitted to GPCB regularly.

10 Online TOC, BOD, COD, SS & pH monitoring is done at the outlet of treated effluent before pumping it to GIDC pipeline.

11 Lawns developed at many locations at the plant to improve the land & environment

12 Online H2S sensors (> 40 nos.) installed at gas based CS2 plant which are connected with DCS. Online detectors gives alarm on DCS when H2S level is increased to 5 ppm

13 RCC platform with surrounding walls at ETP plant near belt press for storage, drying &

disposal of ETP sludge for efficient drying with adequate leach-ate collection system.

14 Construction of storm water drains all around the plant area for collection & safe disposal of rain water during the rainy season.

15 Construction of process water drains all around the plant area for collection & safe transportation of process waste water from plant to ETP for its treatment and safe disposal to GIDC drainage system

16 Reduced cooling tower blowdown in Auxiliary dept. by reducing carryover losses from equipment and taken to RO plant for recycling / reuse.

17 Reuse of the water used in various equipment in Viscose department and taken to cooling tower for makeup purpose.

18 Recycling of water used in Auxiliary department vacuum pumps to Cooling towers.

19 Optimize water usage in after-treatment section

20 Online H2S sensors (~ 20 nos.) installed at plant area, covering all directions and connected with alarm. H2S detectors also installed at peripheri of plant area, like main gate, material gate, ETP & other locations to cover the entire area of plant for regular and contonous monitoring of H2S.

Attachments;

A **Awards & Certificates Details, attached as Annexure-1**

B **CSR Initiatives during FY-19, attached as Annexure-2**

C **Celebration of World Environment day, 5th Jun-19, attached as Annexure-3**

Efflu.	11214	m3/day
BOD	53.1	mg/lt
	53.1	gm/m3
	53.1	kg/1000m3
	595.46	kg for 11214m3
	0.595	TPD