



Dated: 11.05.2020
ID: 14989

Regional Officer
Gujarat Pollution Control Board,
Plot No, 1501, GIDC Estate,
Ankleshwar.

Subject: Submission of Annual Environmental Statement for the Year 2019-2020.

Dear Sir,

This has reference to above subject matter; we are submitting herewith the Annual Environmental Statement (Form – V) for the financial year 2019 - 20

Hope, the same is in order.

Thanking you,

Your Faithfully,

For Birla Cellulosic

Sachin Katewale

Asst. Vice President- (Tech. Cell)

Encl: Annual Environmental Statement, Form-V (2019-20).

CC: Mr. A V. Shah, Unit Head- GPCB, Gandhinagar.



Birla Cellulose
Fibres from nature

Grasim Industries Limited
Unit - Birla Cellulosic

Works : Birladham, Kharach Kosamba R.S.
Dist. Bharuch (Gujarat) - 394 120 INDIA
CIN : L17124MP1947PNC000410

Telephone : +91 2646 270001-005, 270301-305
Fax : +91 2646 270010, 270130
Email : bc_kharach.info@adityabirla.com

Head Office : 11th Floor - 1101 & 1102 OCEAN, Opposite Vadodara Central Mall, Vikram Sarabhai Marg, Vadiwadi, Vadodara - 390023, Gujarat - India
Branch Office : Birla Cellulosic, Vadodra (MP) - 456 321. Phone : (07966) 246760-66. Fax : 255198. Website : www.grasim.com

FORM - V (See Rule 14) Environmental Statement for the financial year ending the 31st March, 2019
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PART - A			
Industrial Profile			
1	Name & address of the Owner/Operator of the industry, location of process	Mr. Sanjay Kumar Verma, Sr. President, Birla Cellulosic (A Unit of Grasim Indust. Ltd.), Birladham, Kharachi, P.O. Kosauba (R.S.), Dist. Bhadrach (Gujarat) - 394 120	
2	Industry category (Primary - (NIC Code) Secondary - (NIC Code)		
3	Production capacity	Viscose staple fibre Solvent Spun Cellulosic Fibre	1,56,250 MT/Year 15,550 MT/Year
4	Year of establishment	Dec-94	
5	Date of the last environmental Statement submitted	Jun-19	

PART - B
Production data, Water & Raw Material Consumption

A. Production data - MT/Day		
1	Viscose staple fibre	188.74
2	Carbon disulphide	87.84
3	Sulphuric acid	162.88
4	Aditya Birla Cellulosic fibre research centre	0.74
5	Solvent spun cellulosic fibre	31.05
6	Sodium Sulphate	278.75

B. Water consumption - M3/Day		
1	Process	10586
2	Cooling & Boiler	1938
3	Domestic	982

Process water consumption per product output					
No.	Plant	Product	Unit	During the previous previous Year 2018-19	During the current Financial Year 2019-20
1	Birla Cellulosic	Viscose staple fibre	MT ToF	42.65	19.88
2	Birla Excel	Solvent Spun Cellulosic Fibre	MT ToF	-	-

C. Raw Material Consumption					
No.	* Name of raw materials	Name of Products	Unit	During the previous previous Year 2018-19	During the current Financial Year 2019-20
1	Kayon grade pulp	A.S.F.	T ToF	1.008	1.0098
2	Caustic Soda	A.S.F.	T ToF	0.506	0.498
3	Sulphuric acid	A.S.F.	T ToF	0.698	0.693
4	Carbon disulphide	A.S.F.	T ToF	0.149	0.148
5	Pulp sheet	Solvent spun cellulosic fibre	T ToF	-	1
6	XXXXX(60%)	Solvent spun cellulosic fibre	T ToF	-	0.02993

Note:	* Industry may use codes if disclosing details of raw materials would violate contractual obligations, otherwise all industries have to name the raw materials used.
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Part-C						
Pollution discharged to environment / unit of output (Parameter as specified in the consent)						
No.	Pollutants	Parameters		Quantity of pollutants discharged (mass day) TPD, except pH & Temp	Concentration of pollutant in discharge	Unit
1	Wastewater	Treated Effluent (ETP)	pH	-	7.40	-
			S Solids	0.28	30.80	mg/l
			Zinc	0.00184	0.20	mg/l
			BOD	0.42	46.00	mg/l
			COD	1.75	190.40	mg/l
			Temp	-	30.80	°C
2	Air	Acid Plant-1	SO ₂	0.294	0.81	Kg ToA
			Acid mist	0.007	18.65	mg/Nm ³
		Acid Plant-2	SO ₂	0.258	0.71	Kg ToA
			Acid mist	0.002	6.47	mg/Nm ³
		Spg. stack (Including CS ₂ stack)	CS ₂	34.47	88.67	Kg ToF
		Power plant- Stack-1	SPM	0.084	36.73	mg/Nm ³
			SO ₂	0.501	219.53	mg/Nm ³
			NO _x	0.158	69.4	mg/Nm ³
		Power plant- Stack-2	SPM	0.083	36.56	mg/Nm ³
			SO ₂	0.485	212.722	mg/Nm ³
			NO _x	0.216	94.58	mg/Nm ³
			Mercury	-	<0.025	mg/Nm ³

Note :	Power plant Stack # 1	1 No. 76 meter
	Power plant Stack # 2	1 No. 86 meter
	Rayon Stack	1 No. 175 meter
	Acid Plant Stack # 1	1 No. 75 meter
	Acid Plant Stack # 2	1 No. 75 meter
	CS ₂ plant	1 No. 40 meter

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

No.	Particulars			Total Quantity	
	Source of waste	Waste Type	Units	During the previous Financial Year 2018-19	During the current Financial Year 2019-20
1	All dept.	Used Oil	Lit	6230.00	9550.00
2	CS ₂ plant	Deashing Sludge	MT	141.86	66.7
3	Acid plant	Spent Catalyst	MT	0.00	0.00
4	Effluent Treatment plant	Gypsum sludge	MT	4275.00	6095.00

Note:	Hazardous waste (deashing sludge) being disposed to Bharuch Enviro Infrastructure Ltd., GIDC Ankleshwar.				
	Used oil being selling to authorized recycler.				
	ETP sludge being selling to Cement Industries like M/s Ultra Tech Cement				

PART- E		
Solid Wastes		

No.	Particulars			Total Quantity	
	Source of waste	Waste Type	Units	During the previous Financial Year 2018-19	During the current Financial Year 2019-20
1	Energy Centre	Fly ash	MT	62698.00	54492.00

Note:	100 % Fly ash being utilized as per the MoEF guidelines.				
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PART- F		
Please specify the characterizations (in terms of composition and quantum) of Waste		

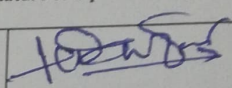
1	ETP sludge	Please refer Annexure -1A
2	Fly ash	Please refer Annexure -1B
3	Sulphur De-ashing sludge	Please refer Annexure -1C

PART - G
Impact of the pollution control measures on conservation of natural resources / Environment quality

→ Please refer Annexure-2

PART - H
Additional measures/investment proposal for environmental protection including a statement of pollution, prevention of pollution.

→ Please refer Annexure-3

Name & Signature of a person carrying out an Industry - operations or process	
Signature	
Name	Seelin Kotevala
Designation	AMP
Address	Bida Cellular, Kharvel,

ANNEXURE - I

Annexure-1(A) ETP (Gypsum) sludge yard

→	The composition of Gypsum Sludge mainly consists 4 componenets namely, Gypsum as $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ - 70-78%, Moisture- 10-15%, , Loss of ignition- 10-12%, Zinc as Zn- 2-2.5%
→	Sludge produced in Primary as well as in Secondary treatment in Effluent Treatment plant is collected into sludge thickener for its thickening purpose. Than 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 upto 15%. The quality of dried sludge (Chemical Gypsum) is tested in our Chemical Laboratory and after full quality control, this sludge (Chemical Gypsum) is dispatched to Cement Manufacturers (M/s Ultratech cement) by trucks as per the consent conditions.
→	Birla Cellulosic is submitting all required legal documents like online Hazardous waste Manifest, Trem cards etc. as required during transportation and disposal. Excisable bills are given for sludge to the Purchaser and transported through GPCB & approved transporter from cement mfg unit.
→	We are sending Form - IV on monthly basis in XGN online system (On or Before 5th of each month) to GPCB regarding Hazardous waste Management regularly.

Annexure-1(B) Fly ash

→	The composition of Fly ash mainly consists 7 components namely, Silica- 75-85%, Iron as Fe_2O_3 - 2-6%, Aluminium as Al_2O_3 - 3-6%, Magnesium as Mg- 1-5%, Calium as CaO - 2-5%, Unburn carbon- 3-5%, Moisture-0.3-0.5%.
→	Fly ash generated from captive power plant is being disposed as per Fly ash notification, 1999 and it's amendment.
→	As per Guidelines of MoEFCC, we are selling fly ash to fly ash brick manufactureres and within radius of 100 KM from thermal power plant. We have also promoted local civil contractor for stabilizing fly ash brick manufactures & brick manufactures. These local contractor selling these bricks to Buidier/contractor who providing their bricks to major cities and nearby areas. we are also repurchasing fly ash bricks from local vendor. We are also selling fly ash to cement manufacturing unit.
→	We are filling statutory compliance report annually along with implementation report.
→	Continuous technical & quality control guidance provided to many fly ash brick manufacturers in the region to boost the utilization of fly ash bricks manufacturing and uses.

Annexure-1 (C)- Sulphur Deashing Sludge

→	The composition of Deashing sludge mainly consists 7 components namely, Calcium as Ca- 40-45%, Sulphur Content- 35-45%, Unburn carbon- 8-10%, Magnesium as Mg- 3-5%, Silica- 1-3%, Iron as Fe-1-2%, Moisture-0.5-2%.
→	Sludge produced from CS2/Acid plant., during deashing of each furnace are collecting in separate closed storage yard, then it's being disposed to M/s. Bharuch Environ. Infrastructure ltd, TSDF site for landfilling. During transportation we are sending Hazardous waste Manifest and TSDF approved transporters are hired, also we are sending Trem cards with transporters to take the safety measures and environment preservation during transportation of the sludge.
→	Birla Cellulosic is submitting all required legal documents like online Hazardous waste Manifest, Trem cards etc.
→	We are sending Form - IV on monthly basis in XGN online system (On or Before 5th of each month) to GPCB regarding Hazardous waste Management regularly.

ANNEXURE - 2	
Impact of the pollution abatement measures taken for conservation of natural Resources :	

Sr. No.	Control Measures adopted	Implemented at	Impact on conservation of natural resources
Initiatives taken for improving waste water quality			
1	Installation of Jet aerators (70 HP – 02 nos)	VSF plant-ETP	Improve Biological Parameter in-terms of COD reduction by 20 % and improvement in DO.
2	Installation of flow meters in ETP inlet & Guard pond inlet and outlet.	VSF plant-ETP	For monitoring and record purpose.
3	Auto acid dosing in mixed drain in ETP	VSF plant-ETP	For better pH control
4	Installation of auto control valve for lime addition in sump zone clarifiers (02 nos)	VSF plant-ETP	Helped to maintain consistency of pH and reduction in Lime consumption.
Initiatives taken for fresh water reduction and reduction of effluent			
5	Reduction in Soft water Consumption for Belt press operation (Started from Dec'19)	Excel plant- ETP	Water conservation- 80 M3/day
6	Installation of River Based Rental RO (Started from Oct'20)	VSF plant-ETP	STP water recycling-1000 M3/Day, instead of Fresh water intake
7	Increase chemical recycling by Installation of bigger V1/V2, Adoption of FRP pultruded cooling tower & replace RCC water channel with FRP pultruded water	VSF plant-Recovery	Water conservation- 772 M3/day SZ recycling

8	Increased VC recycle to RO Plant by installing 50 m3 vapour condensate tank	VSF plant-Recovery	Water conservation- 104 M3/day
9	Intake of rejected RO permeate into CT cell and reduce STP consumption (started from Mar'20)	VSF plant-Recovery	Water conservation- 25 M3/day
10	Recycling of stream in after treatment	VSF Plant-Spinning	Water conservation- 2600 M3/day
Total water conservation:			4581 M3/day
Initiatives taken for Power/steam conservation			
11	PHE for Maturing Drum Jacket water (4 Nos.) (started	VSF Plant-	Power saving- 893 KWHD
12	Bigger capacity PHE from Alang for heat utilization from MSFE vapor condensate feed to MSFE RO	VSF plant- WTP	Steam saving-25.98 TPD
13	Installation of Centrifugal Chillers for MCL Chilling (started from Dec'19)	VSF Plant-Viscose	Power saving- 9955 KWHD
14	Energy efficient LED light fitting for Plant Area ipo 125 Watt & 400 Watt (Phase - 3) (started from Mar'20)	VSF Plant	Power saving- 1107 KWHD
15	Reduction of running hours of circulation pump at Caustic Plant (42% to 30%) from 2.5 Hrs. to 1.5 Hrs	VSF plant-Viscose	Power saving- 80 KWHD
16	To bring down the RPMs of Loop # 2 Pulper at par with Loop # 1 (452-454 RPM from 465-467 RPM)	VSF Plant-Viscose	Power saving- 152 KWHD
17	Retrofitting of impeller in Pulper # 4 (started from Aug'19)	VSF Plant-Viscose	Power saving- 108 KWHD
18	Installing 2 Nos. of Fine Homogenizers in Blender to Receiving loop & stopping 4 Nos. of Fine Homogenizers in Dissolver to Blender loop. (started from June'19)	VSF Plant-Viscose	Power saving- 1030 KWHD
19	Optimization of supplying Settled Water to CS2/Acid by stopping Settled Water Pump & supplying water through Filter Water Pump (started from July'19)	VSF plant- WTP	Power saving- 168 KWHD

20	Installing lighting timers for Energy Saving (Started from Jan '20)	VSF Plant-Viscose	Power saving- 128 KWH/D
21	Reduction in Steam Consumption at Multi Stage Flash Evaporators (MSFEs) by increasing caustic cleaning	VSF plant-Recovery	Steam saving-48 TPD
Total power Conservation:			13621 KWH/D
Total steam Conservation:			74 TPD

ANNEXURE - 3

**Additional measures Investments proposal for Environmental Protection including
abatement of pollution & prevention of pollution :**

Sl. No.	Particulars	Expenses on Env. Management (Rs.) Year (FY-19-20)
A	ETP Costing :	8,69,90,537.62
i	Chemicals Dosing	6,72,10,768.00
ii	ETP Power consumption (KWH x Cost KWH)	1,51,72,769.62
iii	ETP maint. cost	18,12,000.00
iv	Effl. Pipeline maint. Repairing works	27,95,000.00
B	Green belt development/Horticulture Expen:	1,16,06,876.00
C	Solid / Hazardous waste handling Expenses:	45,06,703.00
D	Improvement Projects Cost	15,33,90,000.00
i	EDTA & CAP	14,63,61,000.00
ii	Zinc COD recovery-Pilot trial	7,000.00
iii	Smell reduction project	70,22,000.00
iv	EUBAT	3,38,52,000.00
F	APCM cost:	3,10,95,295.53
i	APCM Power consumption (KWH x Cost/KW)	99,04,433.53
ii	APCM Maint./Repairing Cost	2,11,90,862.00
G	Environmental Audits :	34,33,960.00
i	GPCB Audit work & report preparation	3,13,450.00
ii	GPCB Analysis charges	41,810.00
iii	Environment Cell Activities	15,41,200.00
iv	Activities for getting NOC/CCA & EC for VSF Plant Expansion	15,37,500.00
H	Salaries & wages	1,94,12,870.00
i	For ETP Plant (13 staff and 37 Technician)	1,81,52,870.00
ii	For Environment Cell (1 Staff and 1 contractua	12,60,000.00
	Total Expenses (Rs.)	31,04,36,242.15