

# Six Monthly Compliance Report of Environmental Clearance

For

Viscose Staple Fibre, Sulphuric Acid and Carbon-Di-sulphide



## Submitted to:-

**Ministry of Environment Forest & Climate**

Change, (WR Office) Bhopal Ministry of Environment

Forest & Climate Change, New Delhi

Central Pollution Control Board, Zonal Office

(Vadodara) Gujarat Pollution Control Board-Bharuch

## Submitted By:-

**Grasim Industries Limited**

(Unit: - Grasim Cellulosic Division)

Plot No. 1 GIDC Vilayat Industrial Estate,

PO-Vilayat, Taluka-Vagra, Dist: - Bharuch-

392012, Gujarat, India

**Period: -01.04.2018 to 30.09.2018**

**Compliance Status Report for “Environmental Clearance” Accorded by the MoEF  
For  
Grasim Cellulosic Division (GCD), Vilayat Project**

**List of Annexure**

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**Compliance Status Report for “Environmental Clearance” Accorded by the MoEF  
For  
Grasim Cellulosic Division (GCD), Vilayat Project**

**-: Introduction: -**

1. Grasim Industries Limited (GIL), incorporated on 25th Aug., 1947; is a flagship company of the Aditya Birla Group and India's pioneer in manufacturing of Viscose Staple Fibre (VSF) a man-made, biodegradable fibre with characteristics akin to cotton.
2. M/s. Grasim Industries Ltd. has four VSF Plants in India which are located at Nagda (Madhya Pradesh), Harihar (Karnataka), Kharach & Vilayat (Gujarat).
3. Grasim Cellulosic Division, Vilayat is a latest plant in the Pulp & Fibre business, commissioned in Apr-2014 which produces both grey VSF and specialty fibre. This is the company's first plant producing specialty grade fibre.
4. The Company's main production is Viscose Staple Fibre, Sulphuric Acid, Carbon-Disulphide.
5. All the operation related permits, including Environmental Clearance, Forest Clearance from MOEF&CC and Consents to Establish (CTE) & Consent to Operate (CTO) has obtained from Gujarat Pollution Control Board, are in place.
6. Environmental quality monitoring in & around the project site is being carried out by GPCB & NABL approved Laboratory on a regular basis.
7. 04 No. of Ambient Air Quality Monitoring Stations (AAQMS) along with Environmental Parameter Display Board at main gate have been established.
8. Continuous Emission Monitoring System has installed in process stacks of Rayon (Fibre) plant and H<sub>2</sub>SO<sub>4</sub> acid plant for regular monitoring of CS<sub>2</sub>, SO<sub>2</sub> etc.
9. Online TOC, pH & flow meters installed at the outlet of ETP, before discharging treated effluent to GIDC pipeline.
10. Green belt is being developed as per the CPCB guidelines to curb the emission and also to provide an aesthetic look.
11. Point wise compliance status of Environmental Clearance for GCD, Vilayat is furnished herewith.

# Compliance Status Report for “Environmental Clearance” Accorded by the MoEF

For

Grasim Cellulosic Division (GCD), Vilayat Project

Compliance status on Environmental Clearance

MOEF Ref. Letter No.: J-11011/463/2007-IA II (I), dated 20-12-2007

Sr. No.	Stipulation	Compliance Status
1	This reference to application No. Nil, dated 9 <sup>th</sup> May-2007 along with Form-I & pre-feasibility report seeking the environmental clearance for the above mentioned project and subsequent correspondence vide letters dated 28 <sup>th</sup> September 2007, 13 <sup>th</sup> October 2007 and 30 <sup>th</sup> November 2007.	-
2	The Ministry of Environment & Forest has examined the proposal along with the correspondence mentioned above and noted the proposal is to set up the Viscose Staple Fibre (VSF) plant at plot # 1, GIDC Industrial estate, Vilayat, Vagra, Bharuch district Gujarat by M/s Grasim Industries Limited (Grasim Cellulosic Division)	Latitude : 21 deg 46'8" and 21 deg 47'11"North Longitude : 72 deg 53'18"and 72 deg 54'49"East
	The Total Cost of the Project is Rs. 1200 Crores	Total Cost 1703 Crores
	No ecological sensitive areas are located within 15 KM periphery of the plant site.	Yes
	The proposed plant is to be located in notified Industrial area at GIDC (Gujarat Industrial Development Corporation)	Yes
	Total land taken on lease from Gujarat Industrial Development Corporation for the plant is 567 Acres.	530 Acre area provided on lease from GIDC after having provision of land for power corridor. GIDC offer letter attached as <b>Annexure-1</b>

**Following will be the products & production capacity:-**

<b>Products=&gt;</b>	<b>Viscose Staple Fibre</b>	<b>Carbon Di sulphide</b>	<b>Sulfuric Acid</b>	<b>Sodium Sulphate (Byproduct)</b>	<b>Power Generation</b>
<b>EC Amendment As per EC No. F. No. J-11011/321/2016-IA-II(I) Pt Dated – 15.01.2018</b>	<b>255500</b> (36500 by De bottle necking & 91250 by new lines)	<b>34675</b>	<b>182500</b>	<b>166076 to 210788</b>	<b>55 MW</b>
Total Production (Tons) - Apr-18 to Oct-18	92716	17195	66884	63274	-
Total Production (Tons) - Jan-18 to Mar-18	27369	2418	20135	19086	-
<b>As per EC Letter No. J-11011/463/2007-IA-II(I) Dated- 20.12.2007 As per EC SEIAA/Guj./EC/1(d2),4(d)&amp;5(f)/96/2011,date 30.05.2011</b>	<b>127750,00</b>	<b>23725,31025</b>	<b>102200,36500</b>	<b>83038,00</b>	-
Total Production (Tons) - Apr-17 to Dec-17	106275	17880	92165	82007	-
Total Production (Tons) - FY 2016 to 2017	127749	24094	117648	82914	-
Total Production (Tons) - FY 2015 to 2016	122625	23075	87291	76460	-
Total Production (Tons) - FY 2014 to 2015	65005	5647	51897	40620	-

**\*\* Note :** -\_State Environmental Impact Assessment Authority (SEIAA), Gujarat has also issued an amendment vide letter no. SEIAA/Guj./EC/1(d2), 4(d) & 5(f) /96/2011, dated 30-May-2011 in their Permission to increase production of CS2 to 31025 TPA and H2SO4 to 36500 TPA, EC copy has attached as **Annexure-2**

**3 Raw Material**

**Following will be the Raw Material:-**

<b>Raw Material=&gt;</b>	<b>Pulp (Dissolving Grade)</b>	<b>Caustic Soda 100%</b>	<b>Sulphur</b>	<b>Charcoal</b>
<b>Raw Material Consumption (TPA) As per EC F. No. J-11011/463/2007-IA-II(I), Dated – 20.12.2007</b>	<b>130305</b>	<b>74195</b>	<b>55079</b>	<b>7118</b>
Total Consumption FY-18	134990	80392	53874	NIL
Consumption (Tons) Oct-17 to Mar-18	59396	33405	23149	NIL
Consumption (Tons) Apr-18 to Sep-18	79136	47515	31079	NIL

Justification : Pulp & Caustic consumption is increased due increase in VSF production under de-bottnecking after receiving EC amendment in Jan-2018.

Coal (255500 TPA) will be used as a Raw Material: -

**Power Plant Covered under Chemical Division consent.** State Environmental Impact Assessment Authority (SEIAA), Gujarat has issued an amendment vide letter no. SEIAA/Guj./EC/1(d), 4(d) & 5(f) /96/2011, dated 30-May-2011 for use of natural gas in place of charcoal in CS2 plant, details attached as **Annexure-2**

4

Total Water Requirement of the plant will be 25,000 m3/day and will be sourced from Narmada River, supplied by GIDC.

Average Water consumption for last six months (Apr'18-Sep'18) 12,309 m3/day (for VSF plant only), sourced from Narmada River, supplied by GIDC (Except Power plant), following are the tabulated water Consumption details in **Table No.01**

Table No.01			
Month	Water Consumption (m3/day)		
	Average	Minimum	Maximum
Apr-18	12382	11749	15676
May-18	10927	11628	14551
June-18	11129	10522	14974
July-18	12176	12520	15238
Aug-18	13526	11835	15441
Sep-18	13711	12203	15361
<b>Avg.</b>	<b>12309</b>	-	-

Following are the GIDC offer cum allotment letter details;

1) Letter No.	GIDC/POJ/MKT/GRASIM/575 Dated 06 <sup>th</sup> December-2006
Agreement for Water Supply	15.60 MLD
Effluent Discharge	12.48 MLD
2) Letter No.	GIDC/SE/CG//BRH/1236 Dated 29 <sup>th</sup> December-2016
Agreement for Water Supply	25.00 MLD
Effluent Discharge	19.40 MLD

Necessary agreement of water supply is made with GIDC

Agreement of water supply is made with GIDC on **06.12.2006**, details as per **Annexure-1 & 1A**.

A full-fledged Effluent Treatment Plant will be installed with Primary & Secondary treatment facilities based on extended aeration activated sludge process.

Full Fledged ETP installed, which comprises of;

1. Primary Treatment: -Grit Chambers, Equalization tank, Neutralization tank & Primary Clarifier with sludge dewatering system installed.
2. Extended aeration activated sludge process: -Diffused aeration system.
3. Secondary treatment: - Biological reactor with secondary clarifier & settling tanks.

**Treated effluent quality for the period of Apr-18 to Sep-18 is summarized as under [Table no. 02](#)  
Monthly Test Report from Unistar Refer as [Annexure - 3](#)**

**Third Party Lab Details: -**

**Agency:** - Unistar Environment & Research lab Pvt. Ltd

**Address:** -GIDC, Char Rasta, Vapi

**NABL :** - NABL Certificate Number TC-7753

**NABL Certificate Issue Date & Expiry Date:** - 15.09.2018 to 14.09.2020  
(Copy of NABL Certificate is attached with Test Report (Annexure-3))

**Table No. : - 02**

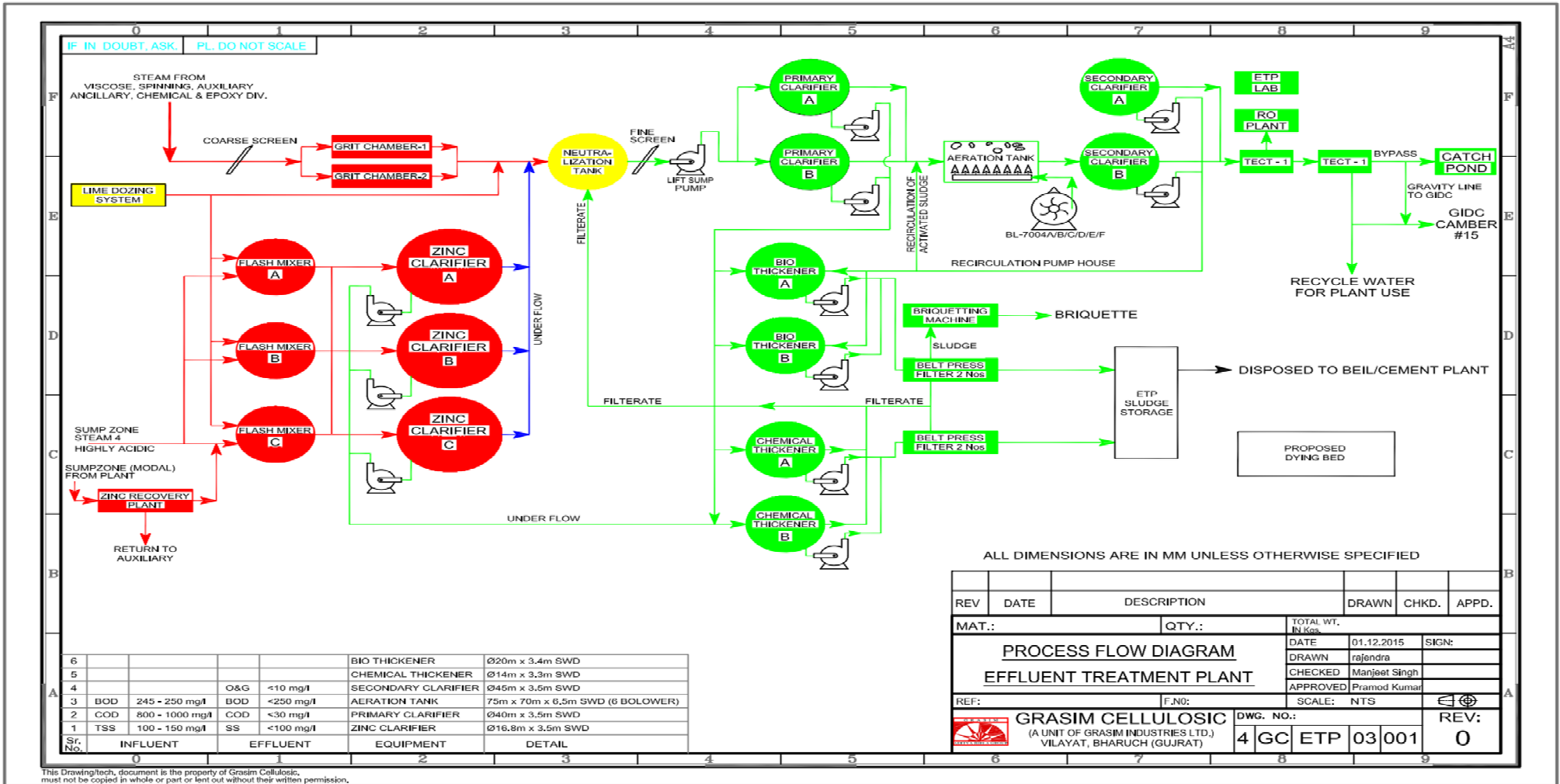
**FINAL TREATED EFFLUENT**

Month	FINAL TREATED EFFLUENT																										
	pH	Colour	Temp.	TSS	Oil & Grease	Fluoride	Sulphide	Amm. N as N	Copper	Zinc	BOD	COD	Total Res Cl2	Arsenic	Mercury	Hexavalent Chromium	Total Chromium	Lead	Cadmium	Nickel	Cyanide	Phenolic Comp	Selenium	Mn	Iron	Vanadium	
Unit	-	Pt CO Sc	deg C	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit
GPCB limit	6.5-8.5	100	<40	100	10	20	5	50	3	15	100	250	1	0.2	0.01	1	2	1	2	5	0.2	5	0.05	2	3	0.2	
Apr-18	7.30	150	32.0	ND	ND	4.9	ND	26.5	0.06	2.6	42	144	ND	ND	ND	0.1	0.07	ND	0.08	0.04	ND	0.53	ND	0.07	0.03	ND	
May-18	7.25	100	33.0	20.0	ND	4.8	ND	45.0	0.08	2.7	62	201	ND	ND	ND	0.1	0.08	ND	0.09	0.05	ND	0.67	ND	0.08	0.32	ND	
Jun-18	7.15	80	32.0	16.0	ND	3.7	ND	42.8	0.07	2.5	57	192	ND	ND	ND	0.12	0.08	ND	0.08	0.05	ND	0.52	ND	0.07	0.31	ND	
Jul-18	8.04	60	29.0	25.0	ND	1.0	ND	6.3	0.05	2.5	15	48	ND	ND	ND	ND	0.06	ND	0.06	0.03	ND	0.43	ND	0.05	0.27	ND	
Aug-18	8.02	60	29.0	95.0	ND	0.2	ND	ND	0.04	2.5	76	244	ND	ND	ND	ND	0.04	ND	0.06	0.02	ND	0.32	ND	0.04	0.24	ND	
Sep-18	7.34	60	30.0	52.0	ND	0.2	ND	ND	ND	2.4	37	123	ND	ND	ND	ND	ND	ND	0.04	0.03	ND	0.27	ND	ND	0.22	ND	
Min	7.2	60	29	16.0	0.0	0.2	0.0	6.3	0.0	2.4	15	48	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	
Max	8.0	150	33	95.0	0.0	4.9	0.0	45.0	0.1	2.7	76	244	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.7	0.0	0.1	0.3	0.0	
Average	7.52	85	31	41.6	ND	2.5	ND	30.2	0.06	2.5	48	159	ND	ND	ND	ND	0.07	ND	0.1	0.04	ND	0.5	ND	0.1	0.23	ND	

**Justification; Value of color was high in Apr-18, this may be due sampling done during cleaning of Secondary clarifier launder, chances of algae mixing.**

**Please Refer Effluent Treatment Plant PFD & Details of Equipments on Next Page**

# ETP PFD: -



After treatment the treated effluent will be disposed of in Gulf of Khambat via pipeline already laid by GIDC

Treated effluent is being pumped to GIDC effluent collection station, Vilayat, from where it is pumped to Gulf of Khambat by GIDC.



	The main source of Air pollution will be CS2 plant, Viscose plant, Sulphuric Acid plant and Coal based captive power plant. The proposed pollution control equipment are:		
5	CS2 Plant	Carbon disulphide recovery system	4 nos. CS2 Recovery system using condensation route installed.
		Oil scrubbing system for recovery of CS2	This is not Applicable as the installation is natural gas based CS2 plant.
		Water/ chilled water condensers	
		Brine condensers	
		Klaus kiln for CS2 plant	Klaus kiln for CS2 plant installed to recover Sulphur
		The stack of 175m shall be provided to reduce GLC of CS2 & H2S	The stack of 175m has provided to reduce GLC of CS2 & H2S from VSF plant
		Dust extraction cum Ventury scrubbing System for CS2 Furnace	Not applicable as CS2 is manufactured
	Acid Plant	Gas scrubbing system for tail gases	Two stage Caustic Scrubber installed
		Mist eliminators	Installed for all 3 nos. of towers
	Power plant	Electrostatic Precipitator (ESP) in power plant along with 100 m height stack	Electrostatic Precipitator (ESP) in power plant along with 125 m height stack installed under chemical Division
		Ash Handling plant	Ash Handling Plant Installed as a part of Chemical Division.
Auxiliary section	Cyclone	Cyclone /dryer (total 3 nos. ) installed	
	Water scrubbers	Water scrubbers are Installed	
6	During regeneration process of Cellulose from Viscose in Spg. Machine CS2 & H2S will be liberated. It will be extracted through powerful exhaust system and discharged through chimney.		CS2 & H2S from Spg. Machine is extracted through Powerful exhaust system provided at spinning machines, connected with main chimney of 175m height.
	The part of liberated fugitive emission in work zone area will be controlled by modified exhaust system, motorized curtain in Spg. machine.		The part of liberated fugitive emission in work zone area is controlled by modified exhaust system, motorized curtain in Spg. Machine.
	Air curtain at stretch & feed rollers and bottom exhaust		Air curtains provided on stretch, feed and bottom rollers.

<b>7</b>	Spent catalyst (2.5 MT/Year)	<p>Spent Catalyst Disposal Details are as under <b>Table No.03</b></p> <table border="1"> <thead> <tr> <th colspan="2" style="text-align: center;"><b>Table No. 03</b></th> </tr> </thead> <tbody> <tr> <td><b>Disposed To.</b></td> <td>TSDF (Refer BEIL Membership as <b>Annexure-10</b>)</td> </tr> <tr> <td><b>Agency: -</b></td> <td>Bharuch Enviro Infrastructure Limited</td> </tr> <tr> <td><b>Reference</b></td> <td>BEIL/ANK/Oth/474</td> </tr> <tr> <td><b>Membership Qty</b></td> <td>1500 Tone/Annum</td> </tr> <tr> <td colspan="2"><b>Consent Qty. 2.5MT/Year</b></td> </tr> <tr> <td>FY 2017-2018 (Audited Period)</td> <td>1.88 Tone (It is generated during Annual shutdown of H2SO4 plant.)</td> </tr> <tr> <td>Apr-18 to Sep-18</td> <td>NIL</td> </tr> </tbody> </table>	<b>Table No. 03</b>		<b>Disposed To.</b>	TSDF (Refer BEIL Membership as <b>Annexure-10</b> )	<b>Agency: -</b>	Bharuch Enviro Infrastructure Limited	<b>Reference</b>	BEIL/ANK/Oth/474	<b>Membership Qty</b>	1500 Tone/Annum	<b>Consent Qty. 2.5MT/Year</b>		FY 2017-2018 (Audited Period)	1.88 Tone (It is generated during Annual shutdown of H2SO4 plant.)	Apr-18 to Sep-18	NIL
	<b>Table No. 03</b>																	
	<b>Disposed To.</b>	TSDF (Refer BEIL Membership as <b>Annexure-10</b> )																
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FY 2017-2018 (Audited Period)	1.88 Tone (It is generated during Annual shutdown of H2SO4 plant.)																	
Apr-18 to Sep-18	NIL																	
Spent resin from D.M plant (4 MT/Year)	<p>Spent Resin Disposal Details are in following table</p> <table border="1"> <tbody> <tr> <td><b>Disposed To.</b></td> <td>TSDF (Refer BEIL Membership as <b>Annexure-10</b>)</td> </tr> <tr> <td><b>Agency: -</b></td> <td>Bharuch Enviro Infrastructure Limited</td> </tr> <tr> <td><b>Reference</b></td> <td>BEIL/ANK/Oth/474</td> </tr> <tr> <td><b>Membership Qty</b></td> <td>1500 Tone/Annum</td> </tr> <tr> <td colspan="2"><b>Consent Qty. 4.0 MT/Year</b></td> </tr> <tr> <td>FY 2017-2018 (Audited Period)</td> <td>NIL as no generation during the period.</td> </tr> <tr> <td>Apr-18 to Sep-18</td> <td>NIL as no generation during the period.</td> </tr> </tbody> </table>	<b>Disposed To.</b>	TSDF (Refer BEIL Membership as <b>Annexure-10</b> )	<b>Agency: -</b>	Bharuch Enviro Infrastructure Limited	<b>Reference</b>	BEIL/ANK/Oth/474	<b>Membership Qty</b>	1500 Tone/Annum	<b>Consent Qty. 4.0 MT/Year</b>		FY 2017-2018 (Audited Period)	NIL as no generation during the period.	Apr-18 to Sep-18	NIL as no generation during the period.			
<b>Disposed To.</b>	TSDF (Refer BEIL Membership as <b>Annexure-10</b> )																	
<b>Agency: -</b>	Bharuch Enviro Infrastructure Limited																	
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<b>Membership Qty</b>	1500 Tone/Annum																	
<b>Consent Qty. 4.0 MT/Year</b>																		
FY 2017-2018 (Audited Period)	NIL as no generation during the period.																	
Apr-18 to Sep-18	NIL as no generation during the period.																	
Sulphur de-ashing sludge will be disposed off through common TSDF	Sulphur de-ashing sludge is not generated as we have natural gas based CS2 plant.																	
Used oil will be sold to CPCB registered recyclers	<p>Used Oil Sold to CPCB Registered Agency &amp; following are the details of Agency in <b>Table No 04</b> &amp; Refer <b>Annexure-4</b> for Vendor Registration</p> <table border="1"> <thead> <tr> <th colspan="2" style="text-align: center;"><b>Table No. 04</b></th> </tr> </thead> <tbody> <tr> <td><b>Used Oil is being sent to.</b></td> <td>Registered refiners as per CC&amp;A guidelines</td> </tr> <tr> <td><b>Recycler Details</b></td> <td>M/s ABC Organics &amp; Chemicals, plot #</td> </tr> </tbody> </table>	<b>Table No. 04</b>		<b>Used Oil is being sent to.</b>	Registered refiners as per CC&A guidelines	<b>Recycler Details</b>	M/s ABC Organics & Chemicals, plot #											
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<b>Used Oil is being sent to.</b>	Registered refiners as per CC&A guidelines																	
<b>Recycler Details</b>	M/s ABC Organics & Chemicals, plot #																	

			605, GIDC Estate, Panoli, Dist. Bharuch (Gujarat)
		<b>Registration no.</b>	GPCB/HAZ-RF-184/45/2014, Dated 17/12/2014.
		<b>Membership Qty</b>	1500 Tone/Annum
		<b>Consent Qty. 6.0 MT/Year</b>	
		FY 2017-2018 (Audited Period)	5.9KL
		Apr-18 to Sep-18	1.7KL
	Fly ash will be disposed off as per Fly Ash Notification 2003 and used for brick / cement manufacturing	Fly ash is being disposed off as per Fly Ash Notification 2003 and used for brick / cement manufacturing, following are the disposal details in <b>Table-05</b> We have not installed power plant. Power & steam is being taken from CPP operated by our Chemical Division. <b>(Annexure-5)</b> Whenever we install power plant after EC is obtained, we commit for 100% utilization of fly ash.	

<b>Table No. 05</b>				
<b>Month</b>	<b>Ash Generation in MT</b>	<b>Ash Disposal to MT</b>		<b>In House Use</b>
		<b>Bricks /Road Manufacturing</b>	<b>Cement Manufacturing</b>	<b>Reclaiming &amp; Compaction</b>
<b>Apr-18</b>	3990.30	0.0	5240.5	-1250.19
<b>May-18</b>	5051.06	0.0	6075.1	-1024.05
<b>June-18</b>	3286.32	0.0	3950.9	-664.59
<b>July-18</b>	3132.60	0.0	2335.9	796.75
<b>Aug-18</b>	2941.18	0.0	1958.2	982.98
<b>Sep-18</b>	5525.90	438.3	1339.6	3747.98
<b>Total</b>	23927	438.3	20900	2589
<b>% Utilization Achieved</b>				<b>100%</b>

8	The expert appraisal committee (Industry) in its 73rd meeting held on 24th - 26th Oct-2007 considered the proposal. All manmade Fibers (rayon) manufacturing units are listed at Sl. 5(d) of schedule of EIA notification 2006 under category "A" hence appraisal at Central level. Since the project located at GIDC, Vilayat, Vagra. it does not need Public Consultation as per Para 7(i) III, Stage (3) (b)	The condition stipulated under EIA notification 2006, Para 7(i) III, Stage (3) (b) for all manmade fibre (Rayon) manufacturing units are complied.
9	Based on information submitted by project authorities, the MoEF accords environmental clearance to the above project under EIA notification 2006 subject to the compliance to the below specific & general conditions	The compliance status for specific & general conditions are as below

## A. Specific Condition :-

<b>1</b>	The project authority shall maintain emission limit of 50 kg/Ton of Viscose Staple Fibre (VSF) for Carbon di-sulphide (CS2)	We are complying the said stipulation by maintaining emission limits below 50 Kg/T of VSF for CS2. The details are tabulated in below <b>Table No. 06</b>
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### Emission of CS2 /Ton of Viscose Staple Fibre (VSF): Monthly Stack Monitoring Report from Unistar Please Refer Annexure-6

<b>Table No. 06</b>			
<b>Third Party Lab Details</b>	<b>Month &amp; Date of Sample</b>	<b>Rayon Plant</b>	
		<b>CS2 (Kg/Tone of Fibre)</b>	<b>H2S (mg/nm3)</b>
	<b>Consent Value</b>	<b>50</b>	<b>-</b>
<b>Agency:</b> - Unistar Environment & Research lab Pvt. Ltd	Apr-18	44	154
<b>Address:</b> -GIDC, Char Rasta, Vapi	May-18	45	163
<b>NABL :</b> - NABL Certificate Number TC-7753	June-18	42	148
<b>Details of instrument Used for Monitoring: -</b>  <b>Instrument Name:</b> - Stack Monitoring Kit Vss1 <b>Serial No.:-</b> 467 DTJ 15 <b>Calibration Date:-</b> 05.02.18 <b>Expiry Date:</b> - 05.02.19	July-18	38	131
	Aug-18	41	125
	Sep-18	38	113
	<b>Min</b>	<b>38</b>	<b>113</b>
	<b>Max</b>	<b>45</b>	<b>163</b>
	<b>Avg</b>	<b>41</b>	<b>139</b>

<b>2</b>	A guard/polishing pond shall be provided before discharge of treated waste water into GIDC pipeline for discharge into sea	2 nos. of guard ponds, each of (L: 90 m, B: 60 m, SWD: 6.5m) equivalent to 50,000m3 capacity installed, which is suitable for storage of 48 hrs. have been provided before discharge of treated waste water into GIDC pipeline for discharge into Sea. Photograph of guard pond are shown at <b>Figure-01.</b>
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**Figure – 01: - Guard pond for storage of Treated effluent**



2

TOC should continuously monitored

TOC Meter is placed to continuously monitored TOC meter & following are the TOC meter reading tabulated in **Table No. – 07 & the photograph of TOC meter**

(Permissible COD : 250 mg/litre which is equivalent to TOC value of 100 mg/litre)

**Table No. 07  
TOC Meter Values**

TOC Meter Make: - Shimadzu			
Month	Min	Max	Average
Apr-18	34	82	58
May-18	75	94	85
Jun-18	54	92	73
Jul-18	72	88	80
Aug-18	65	86	76
Sep-18	65	84	75

**Figure 02: TOC Meter**



**3**

The project authorities shall install at least 11 multiple effect evaporator (MEE) to achieve

We have installed 10 nos. of more efficient (less specific steam consumption) 14 stage multiple effect evaporator (MEE) having higher evaporation Capacity in place earlier visualized 11 small MEE's of 18 m3/hr.  
Total evaporation is 280 m3/hr. instead 198 m3/hr.

	Higher than 65% recovery of Sodium Sulphate	> 70% recovery of Sodium sulphate achieved during the period Apr-18 to Sep-18, following are the details tabulated under <b>Table No.08</b>		
	<b>Table No. 08</b>			
	<b>Month</b>	<b>Viscose Staple Fibre (Tone)</b>	<b>Sodium Sulphate (Tone)</b>	<b>Recovery %</b>
	Apr-18	13143	9060	69
	May-18	13383	9337	70
	June-18	11917	8155	68
	July-18	13592	9945	73
	Aug-18	13372	9466	71
	Sep-18	13139	9283	71
	<b>Total</b>	<b>78546</b>	<b>55246</b>	<b>70</b>
<b>4</b>	Electrostatic Precipitators (ESP's) to power plant boiler shall be provided to control particulate matter.	Electrostatic Precipitators (ESP's) to power plant boiler has provided to control particulate matter as Chemical division have installed CPP. EC has been amended through Chemical division. Pl. refer <b>Annexure-2</b>		
	3-stage condensing system for recovery of CS2 Scrubber to Acid plant chimney	We have installed 3 stage condensing system with all 4 spinning lines and Caustic scrubber has installed with Acid plant chimney.		
	klaus kiln recovery system to recover Sulphur from CS2 plant gases, followed by lime water absorber shall be provided	Klaus kiln recovery system to recover Sulphur from CS2 plant gases installed for achieving > 96% Sulphur recovery efficiency.		
<b>5</b>	Monitoring arrangement shall be provided with the scrubber & condenser vents and shall be monitored monthly.	Monitoring arrangement provided for scrubbers & condenser vents. Following are the details tabulated under <b>Table No. 09</b>		



<b>Table No. 09</b>			
<b>Testing Details</b>	<b>Month &amp; Date of Sample</b>	<b>CS2 (PPM)</b>	<b>H2S (PPM)</b>
<b>Agency:</b> - Environmental Monitoring Lab	<b>Standard</b>	<b>NP</b>	<b>NP</b>
<b>Address:</b> -Internal Lab	Apr-18	18	10
<b>Details of instrument Used for Monitoring:</b> -	May-18	16	8
Inst. Calibration done by : - Respo Products	Jun-18	15	8
<b>Instrument Name:</b> - Toxirae III (for H2S Measurement) For CS2 measurement following IS 5182 (Part 20) : 1982 method	Jul-18	16	8
<b>Serial No.:-</b> G011236349	Aug-18	15	7
<b>Calibration Date:-</b> 09.08.18	Sep-18	15	7
<b>Expiry Date:</b> - 08.02.19	<b>Min</b>	<b>15</b>	<b>7</b>
<b>Note:</b> - The Third Party Monitoring will be started by Nov-18	<b>Max</b>	<b>18</b>	<b>10</b>
	<b>Avg</b>	<b>16</b>	<b>8</b>
Report shall be submitted to Ministry's regional office, Bhopal, CPCB & GPCB	Reports are submitted to MOEF as <b>Annexure-7</b> to compliance report every six months. Last compliance report submitted in May-18.		
<b>6</b>	The technology employed shall achieve standards notified by the Ministry for the Rayon Industry vide Gazette Notification no. 195, dated 16th Oct-2006, other than CS2.	As per Gazette notification, CS2 emission of 125 Kgs/T F is to be met. New control technology using organic solvent based on absorption and desorption to recover CS2 from exhaust gases installed which is helping in achieving CS2 emission level at much lower level.	
	1. If there are more than one stack existing in the plant, the required height of all stacks shall be on the minimum emission rate in any of the stacks. In other words, all the stacks carrying CS <sub>2</sub> emission shall be on same height (based on maximum emission rate)	We have installed only one stack of 175m based on stack height calculation as per notification.	
	2. Number of Stacks shall not be increased from the existing number. However the number of stacks may be reduced. The existing stacks may be rebuilt & if stacks are to be relocated condition no. 3 below	We have installed only one stack of 175m height	

applies	
3. Spacing among the stacks (x) at the minimum shall be 3.0 H (in m). If distance, x between two stacks is less than 3.0H (in m), emission shall be considered as single point source & height of both the stacks shall be calculated considering all emission is going through one stack.	Presently we have installed only one stack, in future if we increase, we will follow the instructions.
The Company shall monitor CS <sub>2</sub> & H <sub>2</sub> S regularly and submit data on the emission levels to the Ministry and its Regional office at Bhopal, GPCB and CPCB.	CS <sub>2</sub> & H <sub>2</sub> S is being monitored regularly. Emission details for Apr'18-Sep'18 is tabulated in <b>Table No. 10</b>

**Emission of CS<sub>2</sub> /Ton of Viscose Staple Fibre (VSF):  
Monthly Stack Monitoring Details from Unistar refer as Annexure-6**

<b>Table No. 10</b>			
<b>Third Party Lab Details</b>	<b>Month &amp; Date of Sample</b>	<b>Rayon Plant</b>	
		<b>CS<sub>2</sub> (Kg/ Tone of Fibre)</b>	<b>H<sub>2</sub>S (mg/nm<sup>3</sup>)</b>
	<b>Consent Value</b>	<b>50</b>	<b>-</b>
<b>Agency:</b> - Unistar Environment & Research lab Pvt. Ltd	Apr-18	44	154
<b>Address:</b> -GIDC, Char Rasta, Vapi	May-18	45	163
<b>NABL :</b> - NABL Certificate Number TC-7753	June-18	42	148
<b>Details of instrument Used for Monitoring:</b> -  <b>Instrument Name:</b> - Stack Monitoring Kit Vss1 <b>Serial No.:-</b> 467 DTJ 15 <b>Calibration Date:-</b> 05.02.18 <b>Expiry Date:</b> - 05.02.19	July-18	38	131
	Aug-18	41	125
	Sep-18	38	113
	<b>Min</b>	<b>38</b>	<b>113</b>
	<b>Max</b>	<b>45</b>	<b>163</b>
	<b>Avg.</b>	<b>41</b>	<b>139</b>

Provision shall be made for retrofit additional equipment's, if necessary in future

In future if required, company is committed to install additional equipment. At present there is no such requirement.

<b>7</b>	The effluent should be treated in ETP having primary & secondary treatment facilities and treated effluent should meet the standards to be prescribed by the GPCB or under E. P. Act-1986 whichever are more stringent	Full Fledged ETP installed, which comprises of Primary, Extended aeration activated sludge process and secondary treatment. Details are tabulated in <b>Table No. 10</b>
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**Treated effluent quality for the period of Apr-18 to Sep-18 is summarized as under in Table No. 11**

**Agency:** - Unistar Environment & Research lab Pvt. Ltd

**Address:** -GIDC, Char Rasta, Vapi

**NABL :** - NABL Certificate Number TC-7753

**Monthly Analysis Report from Unistar refer as Annexure-03**

**Table No. 11**

**FINAL TREATED EFFLUENT**

Month	FINAL TREATED EFFLUENT																										
	pH	Colour	Temp.	TSS	Oil & Grease	Fluoride	Sulphide	Amm - N as N	Copper	Zinc	BOD	COD	Total Res C12	Arsenic	Mercury	Hexavalent Chromium	Total Chromium	Lead	Cadmium	Nickel	Cyanide	Phenolic Comp	Selenium	Mn	Iron	Vanadium	
<b>Unit</b>	-	Pt. CO Sc	deg C	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit	mg/lit
<b>GPCB limit</b>	6.5-8.5	100	<40	100	10	20	5	50	3	15	100	250	1	0.2	0.01	1	2	1	2	5	0.2	5	0.05	2	3	0.2	
Apr-18	7.30	150	32.0	ND	ND	4.9	ND	26.5	0.06	2.6	42	144	ND	ND	ND	0.1	0.07	ND	0.08	0.04	ND	0.53	ND	0.07	0.03	ND	
May-18	7.25	100	33.0	20.0	ND	4.8	ND	45.0	0.08	2.7	62	201	ND	ND	ND	0.1	0.08	ND	0.09	0.05	ND	0.67	ND	0.08	0.32	ND	
Jun-18	7.15	80	32.0	16.0	ND	3.7	ND	42.8	0.07	2.5	57	192	ND	ND	ND	0.12	0.08	ND	0.08	0.05	ND	0.52	ND	0.07	0.31	ND	
Jul-18	8.04	60	29.0	25.0	ND	1.0	ND	6.3	0.05	2.5	15	48	ND	ND	ND	ND	0.06	ND	0.06	0.03	ND	0.43	ND	0.05	0.27	ND	
Aug-18	8.02	60	29.0	95.0	ND	0.2	ND	ND	0.04	2.5	76	244	ND	ND	ND	ND	0.04	ND	0.06	0.02	ND	0.32	ND	0.04	0.24	ND	
Sep-18	7.34	60	30.0	52.0	ND	0.2	ND	ND	ND	2.4	37	123	ND	ND	ND	ND	ND	ND	0.04	0.03	ND	0.27	ND	ND	0.22	ND	
<b>Min</b>	<b>7.2</b>	<b>60</b>	<b>29</b>	<b>16.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>6.3</b>	<b>0.0</b>	<b>2.4</b>	<b>15</b>	<b>48</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	
<b>Max</b>	<b>8.0</b>	<b>150</b>	<b>33</b>	<b>95.0</b>	<b>0.0</b>	<b>4.9</b>	<b>0.0</b>	<b>45.0</b>	<b>0.1</b>	<b>2.7</b>	<b>76</b>	<b>244</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.7</b>	<b>0.0</b>	<b>0.1</b>	<b>0.3</b>	<b>0.0</b>	
<b>Average</b>	<b>7.52</b>	<b>85</b>	<b>31</b>	<b>41.6</b>	<b>ND</b>	<b>2.5</b>	<b>ND</b>	<b>30.2</b>	<b>0.06</b>	<b>2.5</b>	<b>48</b>	<b>159</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>0.07</b>	<b>ND</b>	<b>0.1</b>	<b>0.04</b>	<b>ND</b>	<b>0.5</b>	<b>ND</b>	<b>0.1</b>	<b>0.23</b>	<b>ND</b>	

**Justification; Value of color was high in Apr-18, this may be due sampling done during cleaning of Secondary clarifier launder, chances of algae mixing.**

Total quantity of effluent should not exceed 60m3/ ton of production. The production shall be regulated to match the permitted discharge quantity by GIDC/GPCB	The quantity of effluent discharged is 28.4 m3 / Ton of Fibre. Against stipulation of 60m3/TF. <b>Avg. water intake :</b> 12,307 m3/day, (22,764 m3/day For all 3 units) <b>Effluent discharge :</b> 12,072 m3/day (For all 3 units) Following are the details tabulated in <b>Table No.12</b>
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<b>Table No. 12</b>				<b>Note: -</b> In May-18, June-18 & July-18, The minimum effluent discharge is <b>Zero</b> due to GIDC Shutdown for 24hrs till the time water stored in guard pond.
<b>Month</b>	<b>Effluent Generation (m3/day)</b>			
	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	
Apr-18	12893	7598	16020	
May-18	11828	0	15755	
June-18	12690	0	15395	
July-18	10280	0	15570	
Aug-18	12093	4349	14422	
Sep-18	12712	5810	14183	
<b>Avg.</b>	<b>12083</b>	-	-	

<b>8</b>	<p>The project authorities shall produce the copy of agreement with GIDC for discharge of treated wastewater to the Ministry &amp; its Regional office within three months and submit the same to Regional office</p>	<p>Agreement with GIDC for water supply &amp; discharge of treated waste water in GIDC chamber was done. A Copy of same was submitted along with earlier six monthly compliance report to MoEF&amp;CC.</p> <p><b>Following are the GIDC offer cum allotment letter details;</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 70%;"><b>3) Letter No.</b></td> <td><b>GIDC/POJ/MKT/GRASIM/575</b></td> </tr> <tr> <td></td> <td><b>Dated 06<sup>th</sup> December-2006</b></td> </tr> <tr> <td><b>Agreement for Water Supply</b></td> <td><b>15.60 MLD</b></td> </tr> <tr> <td><b>Effluent Discharge</b></td> <td><b>12.48 MLD</b></td> </tr> </table> <table border="1" style="width: 100%;"> <tr> <td style="width: 70%;"><b>4) Letter No.</b></td> <td><b>GIDC/SE/CG//BRH/1236</b></td> </tr> <tr> <td></td> <td><b>Dated 29<sup>th</sup> December-2016</b></td> </tr> <tr> <td><b>Agreement for Water Supply</b></td> <td><b>25.00 MLD</b></td> </tr> <tr> <td><b>Effluent Discharge</b></td> <td><b>19.40 MLD</b></td> </tr> </table> <p>Pl. refer attached <b>Annexure # 1&amp;1A.</b></p>	<b>3) Letter No.</b>	<b>GIDC/POJ/MKT/GRASIM/575</b>		<b>Dated 06<sup>th</sup> December-2006</b>	<b>Agreement for Water Supply</b>	<b>15.60 MLD</b>	<b>Effluent Discharge</b>	<b>12.48 MLD</b>	<b>4) Letter No.</b>	<b>GIDC/SE/CG//BRH/1236</b>		<b>Dated 29<sup>th</sup> December-2016</b>	<b>Agreement for Water Supply</b>	<b>25.00 MLD</b>	<b>Effluent Discharge</b>	<b>19.40 MLD</b>
<b>3) Letter No.</b>	<b>GIDC/POJ/MKT/GRASIM/575</b>																	
	<b>Dated 06<sup>th</sup> December-2006</b>																	
<b>Agreement for Water Supply</b>	<b>15.60 MLD</b>																	
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	<b>Dated 29<sup>th</sup> December-2016</b>																	
<b>Agreement for Water Supply</b>	<b>25.00 MLD</b>																	
<b>Effluent Discharge</b>	<b>19.40 MLD</b>																	
<b>9</b>	<p>The project authorities shall take up the in-house or through IIT's research studies for further reduction of CS2 emission below 50 Kg/ Ton of production of VSF within three months and submit the same to Regional office</p>	<p>In house research studies done and many steps taken to further reduce the CS2 emission level. Some of the initiatives taken are :</p> <ol style="list-style-type: none"> <li><b>1)</b> Control technology using organic solvent based on absorption and desorption to recover CS2 from exhaust gases installed</li> <li><b>2)</b> Natural Gas based CS2 plant installed in place of conventional charcoal process to avoid CS2 emission from CS2 plant</li> </ol> <p>Above information is submitted to MOEF through letter, dated 05.11.18 Please refer as <b>Annexure-18</b></p>																

	<p><b>Brief of Technology: -</b></p> <p><b>Introduction: -</b> The spinning line is equipped with CS2 condensation system wherein CS2 entrapped in Tow during wet spinning process is recovered by vaporizing the same with LP Steam followed by Condensation of CS2 in series of Condensers using soft water at ambient temperature and chilled water in final condenser. Around 46-50% of CS2 added in the process can be recovered by this process depending on the ambient temperature. To reduce emission load from stack further technological operations to recover CS2 from exhaust gases is imperative. We had taken lab scale trials at our Nagda unit using genosorb solvent which is comprises of POLY-ETHYLENE GLYCOL DIALKALINE ETHER (Chemical from Clariant) for adsorption of CS2 &amp; H2S. H2S is stripped off &amp; taken to vent/chimney. CS2 is stripped and condensed &amp; recovered. The lab scale trials ws successful results with 80% removal of CS2. Finally semi commercial scale plant was set up in Nagda utilizing 10% of total gases being taken to chimney was taken. After lab &amp; pilot plant trials of six months, it was decided to put 02 nos. of 45,000 Nm3/hr Genosorb commercial scale unit at Vilayat.</p> <p><b>Process Step:-</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Gas coming from the different areas of spinning and Auxiliary section is washed out using cooling water to remove acid mist &amp; to cool the gas</li> <li><input type="checkbox"/> Washed gas sent to cooler to get the required 25°C of Gas temperature for absorption using chilled water.</li> <li><input type="checkbox"/> In absorption tower, mainly CS2 and minor amount of H2S is absorbed in GENOSORB and remaining gases exhausted through chimney.</li> <li><input type="checkbox"/> After absorption GENOSORB sent to H2S stripper column, In this column H2S gas is stripped out using HOT AIR at 70°C</li> <li><input type="checkbox"/> CS2 rich GENESORB sent to CS2 stripping column, CS2 is stripped out using LIVE STEAM at 125°C</li> <li><input type="checkbox"/> Stripped CS2 is cooled in two stages, in first stage cooled up to 70°C to condensate water &amp; then up to 25°C to condense CS2.</li> <li><input type="checkbox"/> Condensed CS2 is @ 100% pure and sent to CS2 plant for Storage &amp; re use.</li> </ul>	
10	<p>The industry shall measure ambient air quality for CS2, and H2S at the 3 ambient air quality monitoring stations set up in consultation with the GSPCB to ensure CS2 and H2S emission not exceed 100 microgram/m3 and 150 microgram/m3</p>	<p>Ambient air quality is being monitored regularly for CS2 &amp; H2S emissions, 4 nos. ambient air quality monitoring stations (covering all directions) placed in consultation with the GPCB. CS2 &amp; H2S emission are well below the prescribed standards.</p>
	<p><b>Summary of 6 months (Apr'18 - Sep'18) is tabulated below in Table No. 13</b></p> <p><b>Monthly Report from Unistar Please refer Annexure No. -08</b></p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Agency : -</b> Unistar Environment &amp; Research Lab Pvt. Ltd</p> <p><b>Instrument ID &amp; Name: -1) UERL/AIR/RDS/02 – Respirable Dust Sampler (Calibration Period: - 10.08.2018 – 09.08.2019)</b></p> <p style="padding-left: 40px;"><b>2) UERL/AIR/FPS/08 – Fine Particulate Sampler (Calibration Period: - 10.08.2018 – 09.08.2019)</b></p> </div>	

**Table No. 13**

Month	ETP MCC Room		ER Office		Aluminum Chloride plant		Security Gate (CA Plant)	
	H2S	CS2	H2S	CS2	H2S	CS2	H2S	CS2
<b>Norms --&gt;</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>100</b>
Apr-18	6.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL
May-18	5.6	ND	BDL	BDL	BDL	BDL	BDL	BDL
Jun-18	4.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jul-18	4.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aug-18	3.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sep-18	4.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL
<b>Min</b>	<b>3.4</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
<b>Max</b>	<b>6.1</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
<b>Average</b>	<b>4.8</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>

The Solid & Hazardous waste shall be segregated according to its calorific contents and stored separately for treatment and disposal

Solid / Hazardous waste being categorized as per guideline of GPCB consent, treatment & disposal practice is followed accordingly. We are member of BEIL, Dahej for transportation & disposal of hazardous waste ; Following are the Disposal details tabulated in **Table No.14**

**11**

Type of waste	Category	Treatment /Disposal
Chemical sludge from ETP	34.3	Collection, storage, transportation, disposal at Cement Industries/ TSDF-BEIL
Used Oil	5.1	Collection, storage, transportation, disposal by selling to registered refiners.
Discarded container	33.3	Collection storage, transportation, disposal by selling to vendors after detoxification
Discarded bags/liner	33.3	Collection, storage, transportation, disposal by selling to vendors after detoxification
Spent catalyst from H2SO4 plant	17.2	Collection, storage, transportation, disposal to TSDF-BEIL
Spent catalyst from H2SO4 plant	34.2	Collection, storage, transportation, disposal to TSDF-BEIL

Please refer **Annexure-9** for CCA from GPCB

**Table No. 14**

Month	Chemical sludge-ETP-MT		Used Oil (KL)		Empty barrels/containers/bags/liners		Bio Sludge from ETP		Spent Catalyst-MT		Spent Resin-MT	
	Generation	Disposal	Generation	Disposal	Generation	Disposal	Generation	Disposal	Generation	Disposal	Generation	Disposal
<b>CC&amp;A Qty. →</b>	<b>6000 MT (35.3)</b>		<b>10.0 KL (5.1)</b>		<b>50 MT (33.1)</b>		<b>5000 MT</b>		<b>5.0 MT (17.2)</b>		<b>5.0 MT (35.2)</b>	
<b>FY; 2017-18 Audited period</b>	<b>4251.4</b>	<b>3092.6</b>	<b>5.9</b>	<b>5.9</b>	<b>32</b>	<b>25.5</b>	<b>Mixed with Chem. sludge</b>		<b>1.88</b>	<b>1.88</b>	<b>0</b>	<b>0</b>
Apr-18	498.77	0	1.0	0.0	11	9.27	350.00	622.16	0	0	0	0
May-18	333.47	1590.39	1.0	1.7	8	9.16	300.00	249.39	0	0	0	0
Jun-18	475.68	19.33	0.0	0.0	6	5.91	539.00	0	0	0	0	0
Jul-18	525.26	0	0.0	0.0	7	11.4	556.50	165.67	0	0	0	0
Aug-18	613.44	0	1.0	0.0	6	6.94	538.13	230.25	0	0	0	0
Sep-18	677.46	0	0.0	0.0	5	0	525.00	241.07	0	0	0	0
<b>Total</b>	<b>3124.08</b>	<b>1609.72</b>	<b>3.0</b>	<b>1.68</b>	<b>43</b>	<b>42.68</b>	<b>2808.63</b>	<b>1508.54</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Disposed To →</b>	<b>Ultra Tech &amp; TSDF BEIL Dahej</b>		<b>M/S ABC Organic</b>		<b>Sold to Vendors</b>		<b>TSDF BEIL Dahej</b>		<b>TSDF BEIL Dahej</b>		<b>TSDF BEIL Dahej</b>	

Fly Ash generated from CPP shall be utilize as per fly ash notification 1999 and subsequent amendment in 2003

We are utilizing 100% fly ash as per guidelines please refer below **Table No.15**

**12**

<b>Table No. 15</b>				
Month	Ash Generation in MT	Ash Disposal to MT		In House Use
		Bricks /Road Manufacturing	Cement Manufacturing	Reclaiming & Compaction
<b>Apr-18</b>	3990.30	0.0	5240.5	-1250.19
<b>May-18</b>	5051.06	0.0	6075.1	-1024.05
<b>June-18</b>	3286.32	0.0	3950.9	-664.59
<b>July-18</b>	3132.60	0.0	2335.9	796.75
<b>Aug-18</b>	2941.18	0.0	1958.2	982.98
<b>Sep-18</b>	5525.90	438.3	1339.6	3747.98
<b>Total</b>	23927	438.3	20900	2589
<b>% Utilization Achieved</b>				<b>100</b>

13

Green belt development 150 Acre out of 567 Acre to mitigate the effect of fugitive emission all around the plant.

**Total Plant Area – 567Acre**  
**Cellulosic Division – 300 Acre (132-Open Area+168Acre- Const. Area)**  
**Chemical + Epoxy Division – 267 Acre**  
 Out of 567 Acres, Grasim Cellulosic division has 300 Acre and out of 300 Acre 168 Acre is construction area. We have developed greenbelt in our factory complex along the boundary wall and open space area of 55.4 acre area to achieve target of 33% green belt of construction area. Total 50,000 nos. tree have been planted till Aug-2018.  
 We are planning to plant > 15,000 trees in FY-19 and to cover 33% of total plant area the detail action plan are Tabulated in **Table No. 16**

The development of green belt along the boundary wall and two additional rows in predominant wind direction shall be provided in consultation with the local DFO as per the CPCB guideline

We have developed greenbelt along with boundary wall & planted different plant species in campus area. Following are the list of plant species. Plant species were selected as per the directives of CPCB & DFO. Photograph of green belts is attached below.

**Table No. 16**

Sr. No	Duration	Area (Acre.) for Plantation	Number of Plant
1	Existing (Till FY; 2017-18)	60	37,500 Plants
2	2018-19	25	15,000 Plants
3	2019-20	25	15,000 Plant
4	2020-21	25	15,000 Plant
5	2021-223	25	15,000 Plant
6	2022-23	25	15,000 Plant
<b>Total=&gt;</b>		<b>185</b>	<b>1,12,500 Plant</b>

**Existing Plantation Species:**

Neem (*Azadirachta indica*), Kasood (*Cassia siamea*), Pine/Junglisaru (*Casuarina equisetifolia*), Orchid tree (*Bauhinia blakeana*), Gulmohar (*Delonix regia*), Rain tree (*Samanea saman*), Yellow Gulmohar (*Peltophorum ferrugineum*), Bottle brush (*Callistemon sp.*), Earleaf Acacia (*Acacia auriculiformis*), Kadamb (*Neolamarckia cadamba*), Basant Rani (*Tabebuia rosea*), Safeda (*Eucalyptus*), *Bougainvillea spectabilis*, Lawn Plantation and Shrubbery.

The Existing Spices for plantation are Selected by following CPCB guidelines

**Proposed Plantation Species:** Neem (*Azadirachta indica*), Kasood (*Cassia siamea*), Pine/Junglisaru (*Casuarina equisetifolia*), Orchid tree (*Bauhinia blakeana*), Saptparni (*Alstonia scholaris*), Gulmohar (*Delonix regia*), Rain tree (*Samanea saman*), Shisham (*Dalbergia sissoo*), Bel (*Aegle marmelos*), Arjun tree (*Terminalia arjuna*), Cassia fistula (Amaltas), Yellow Gulmohar (*Peltophorum ferrugineum*), Bottle brush (*Callistemon sp.*), Kadamb (*Neolamarckia cadamba*), Semal/Kapok (*Bombax ceiba*), Jamun (*Syzygium cumini*), Apple blossom tree (*Cassia javanica*), Sausage tree (*Kigelia pinnata*), Basant Rani (*Tabebuia rosea*), Morpankhi (*Thuja occidentalis*), Safeda (*Eucalyptus*), Guh babool (*Acacia farnesiana*), Kaner (*Nerium indicum*), Champa (*Plumeria rubra*), Holy basil (*Ocimum tenuiflorum*), Jarul (*Lagerstroemia speciosa*), *Bougainvillea spectabilis*, Lemon (*Citrus lemon*), Sankuppi



(*Clerodendrum inerme*), Lawn Plantation and Shrubbery etc.

**Plant species for Odor management :** Neem (*Azadirachta indica*), Saptparni (*Alstonia scholaris*), Guh babool (*Acacia farnesiana*), Morpankhi (*Thuja occidentalis*), Bougainvillea (*Bougainvillea spectabilis*), Lemon (*Citrus lemon*), Kaner (*Nerium indicum*), Mehndi (*Lawsonia inermis*), Champa (*Plumeria rubra*), Holy basil (*Ocimum tenuiflorum*), Tulsi (*Ocimum sanctum*), Sankuppi (*Clerodendrum inerme*), Jasmine tree (*Plumeria alba*), Jarul (*Lagerstroemia speciosa*), Gurhal (*Hibiscus rosa sinensis*), Bunchgrass (*Vetiveria zizanioides*) etc.

**Gaseous emission (SO<sub>2</sub> & NO<sub>x</sub>) tolerant species:** Neem (*Azadirachta indica*), Bel (*Aegle marmelos*), Kasood (*Cassia siamea*), Earleaf Acacia (*Acacia auriculiformis*), Saptparni (*Alstonia scholaris*), Aldu (*Ailanthus excelsa*), Siris (*Albizia lebbek*), Shisham (*Dalbergia sissoo*), Pipal (*Ficus religiosa*), White fig (*Ficus infectoria*), Maulsari (*Mimusops elengi*), Kaner (*Nerium indicum*), Jarul (*Lagerstroemia speciosa*) etc.

**Green Belt Development Photographs are as under :-**



**14** The project proponent shall comply with the environmental protection measures and safeguards recommended in the EIA/EMP

Total project cost was Rs. 1200 Crores as mentioned in EC. As committed in the EIA/EMP, Unit has been allocated capital cost Rs. 170.5 Crores and recurring cost Rs. 15.5 Crores per annum respectively for implementations of environmental pollution control measures as per condition stipulated by the MoEF & CC & state government. Detailed EIA/EMP report is explained below & Capex – Opex Details are tabulated under **Table No. 17**

<b>Table No. 17</b>				
<b>Sl.</b>	<b>Particular</b>	<b>Capex</b>	<b>Opex FY-17</b>	<b>Opex FY-18</b>
1	Effluent treatment Plant	79.00	11.50	10.56
2	Air Pollution Control	91.00	03.50	04.00
3	Green belt development	00.50	00.50	00.55
4	Waste Management	01.50	00.50	00.60
<b>Total Amount</b>		<b>172.00</b>	<b>16.00</b>	<b>15.71</b>

**Environmental monitoring Program :** - In order to ensure that the predicted impact levels are within the acceptable limits and to further mitigate the impacts wherever possible from proposed facilities, following monitoring programs are undertaken;

**Air Environment:** Air quality surveillance program which includes;

1. Monitoring of air quality of all 4 stacks for CS<sub>2</sub>, H<sub>2</sub>S, PM, SO<sub>2</sub> & Nox by our Lab as well as 3<sup>rd</sup> party Lab.
2. Ground level concentration is monitored for CS<sub>2</sub>, H<sub>2</sub>S, PM, SO<sub>2</sub> & Nox in the impact zone as a part of ambient air monitoring by our Lab & 3<sup>rd</sup> party Lab.
3. Port holes and sampling facilities are provided in each stack as per CPCB guidelines, periodic performance evaluation of control measures & equipment's are done

**Noise Environment:** Noise generated sources are regularly monitored, ambient noise level is being monitored on quarterly basis inside & outside of plant area and strictly adhered the Factory Act norms of workroom and ambient levels as per E P Act.

**Water Environment:** For effective environmental pollution control the following measures are taken;

1. Daily monitoring of treated effluent in our Lab as well as third party monitoring by outside labs.
2. Evaluation of ETP performance is done regularly, based on the results of treated effluent.
3. Treated sewage is 100% used in green belt, sewage quantity is very less as only plant sewage comes to STP.
4. 2 nos. of guard ponds, each of (L: 90 m, B: 60 m, SWD: 6.5m) equivalent to 50,000m<sup>3</sup> capacity installed, which is suitable for storage of 48 hrs. treated effluent to meet the emergency situation in discharge of treated effluent through GIDC pipeline
5. Water conservation measures are taken and achieved very less discharge of treated effluent (< 35m<sup>3</sup> / Ton of fibre as against 60m<sup>3</sup> / Ton of fibre).

**Land Environment:** Following measures are taken to avoid adverse impacts on biological activities;

1. All precautions are taken to avoid any spillages on ground.
2. A record of Solid & Hazardous waste is maintained & monitored regularly by Env. Cell
3. Waste is categorized based on CC&A by GPCB. Hazardous waste is stored separately and disposed as per GPCB guidelines through online Manifest.
4. Green belt development program is undertaken and planted > 10,000 tree every year which will be continued to cover > 33% area as green belt.

**Biological Environment:** Following measures are taken to avoid adverse impacts on biological activities;

1. Survival rate of planted trees are closely monitored. New saplings are planted in place of dead saplings as per guideline which is closely monitored by Horticulture department.
2. Past project environmental monitoring has taken up, our plant is commissioned in Apr-2014 and only 3 financial years are completed.

<p><b>15</b></p>	<p>The project authorities shall obtain the membership of TSDf and waste water disposal facility and copy of the same shall be submitted to the GPCB and Ministries regional office at Bhopal within three months.</p>	<p>We have obtained the membership of TSDf and waste water disposal facility and copy of the same has submitted to the GPCB and Ministries regional office at Bhopal regularly with six monthly compliance reports</p> <p>Membership with TSDf for waste disposal,</p> <p><b>TSDf Name:</b> - Bharuch Enviro Infrastructure Limited, Dahej.  <b>Ref :</b> -BEIL/ANK/Oth/474  <b>Membership Qty:</b> - 1500Tone/Annum</p> <p>Membership copy is attached herewith as <b>Annexure-10</b></p> <p>Membership copy is attached for waste water disposal through GIDC pipeline, Pl. refer <b>Annexure-1</b></p>
<p><b>16</b></p>	<p>Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the factories Act.</p>	<p>100% employees undergo with occupational health surveillance every 6 month / 12 month depending on exposure. Record is available with Occupational Health Centre.</p> <p>No one is suffering from any occupational health related disease. Details are given for different type of test reports of employees, conducted on Yearly / Six monthly basis in table below in <b>Table No. 18</b></p>

**Table No. 18**  
**Spirometry (FY : 2017- 18)**

Name of Dept.	Total Employees	FVC (liters)	FEV 1	FEV 1/ FVC %	PEF Liters/Sec	Conclusion
Admin Department (SCM, Purchase, Account, Legal, IT Dept.)	34	2	0	0	2	Aprox 2.94% deviation from normal
%		5.88	0.00	0.00	5.88	
Process Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC, Civil)	413	8	1	4	10	Aprox 1.39% is deviation from normal
%		1.94	0.24	0.97	2.42	
Technical Cell, WCM, Customer Focus, Electrical Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC)	70	3	0	0	4	Aprox 2.5% is deviation from normal
%		4.29	0.00	0.00	5.71	
Mechanical Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC)	163	8	1	1	6	Aprox 2.45% deviation from normal
%		4.91	0.61	0.61	3.68	
QC & QA Instrumentation Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC)	81	3	0	0	7	Aprox 3.09% deviation from normal
%		3.70	0.00	0.00	8.64	
P&A (HR, Security & Services, ER, CSR, HORTICULTURE, Workshop) Dept.	27	1	0	0	2	Aprox 2.77% deviation from normal
%		3.70	0.00	0.00	7.41	

**Circulatory system ( FY- 2017-18)**

Employees	Total Employees	Circulatory system ( FY- 2017-18)				Vision (FY - 2017-18)		ENT
		Pulse	ECG	Blood Pressure	Hemat	Distant Vision	Color Blindness	Audiometry
					Hb			
Admin Department (SCM, Purchase, Account, Legal, IT Dept.)	34	0	0	1	0	0	0	1
%		0.00	0.00	2.94	0.00	0.00	0.00	2.94

Process Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC, Civil)	<b>413</b>	0.00	4.00	9.00	15.00	0.00	5.00	5
%		0.00	0.97	2.18	3.63	0.00	1.21	1.21
Technical Cell, WCM, Customer Focus, Electrical Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC)	<b>70</b>	0.00	2.00	2.00	3.00	0.00	1.00	3
%		0.00	2.86	2.86	4.29	0.00	1.43	4.29
Mechanical Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC)	<b>163</b>	0.00	2.00	2.00	6.00	0.00	1.00	5
%		0.00	1.23	1.23	3.68	0.00	0.61	3.07
QC & QA Instrumentation Dept. (Auxiliary, viscose, spinning, CS2/Acid, WTP/ETP/STP, EC)	<b>81</b>	0.00	1.00	1.00	1.00	0.00	2.00	3
%		0.00	1.23	1.23	1.23	0.00	2.47	3.70
P&A (HR, Security & Services, ER, CSR, HORTICULTURE, Workshop) Dept.	<b>27</b>	0.00	0.00	1.00	1.00	0.00	1.00	2
%		0.00	0.00	3.70	3.70	0.00	3.70	7.41

<b>17</b>	The project authorities shall take up all out efforts to protect the water bodies and biodiversity around the plant.	Regular monitoring of Water & Air quality done by our Lab and 3rd party. There is only one water body namely "Bhooki Khadi" which is approximately 500 m from boundary wall. Water from this is being used for irrigation and cattle feeding.
	A monitoring mechanism for water / air quality , production & crop pattern around the plant shall be adopted and comparative status shall be reported annually to the Ministries Regional office, GPCB & CPCB	Water, Air quality & production is being monitored regularly and compared with base line. Same is being reported to Ministries Regional office on six monthly basis and submitting reports to GPCB on monthly basis for the same. Data are tabulated Under <b>Table No.19</b> & refer monthly data from Unistar Test Report <b>Annexure - 11</b>
	<b>Agency:</b> - Unistar Environment & Research Lab <b>Address:</b> - Near GIDC Office Char Rasta, Vapi-396195	<b>NABL Accreditation:</b> - NABL Certificate Number TC-7754

**Table No. 19**

Parameters	Up Stream					Down Stream				
	pH	Temperature	Turbidity	Nitrate	Phenolic Compound	pH	Temperature	Turbidity	Nitrate	Phenolic Compound
UOM		Deg C	NTU	PPM	PPM		Deg C	NTU	PPM	PPM
Base Line	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Apr-18	8.3	32	0.1	0.1	ND	8.2	32	0.1	0.1	ND
May-18	8.3	33	0.1	0.2	ND	8.1	33	0.1	0.3	ND
June-18	8.3	31	0.1	0.4	ND	8.34	31	0.1	0.2	ND
Jul-18	7.8	29	50	0.4	ND	7.65	29	10	1.3	ND
Aug-18	7.62	29	100	18	ND	7.4	29	100	1.3	ND
Sep-18	7.54	30	0.1	0.1	ND	7.28	30	0.1	0.2	ND
Min	7.5	29	0.1	0.1	ND	7.3	29	0.1	0.1	ND
Max	8.3	33	100	18	ND	8.3	33	100	1.3	ND
Avg	8.0	31	25	3	ND	7.8	31	18	0.6	ND

There are 4 nos. of Ambient air quality monitoring stations covering all directions in nearby villages. Monthly monitoring is being done on monthly by NABL accredited Lab. The Ambient Air quality results for the period of Apr-18 to Sep-18 is tabulated as under Table No. 20  
 Monthly Report from Unistar Refer as Annexure-12

**Agency :** - Unistar Environment & Research Lab Pvt. Ltd  
**Instrument ID & Name:** -1) UERL/AIR/RDS/02 –1) Respirable Dust Sampler (Calibration Period: - 10.08.2018 – 09.08.2019)  
 2) UERL/AIR/FPS/08 – Fine Particulate Sampler (Calibration Period: - 10.08.2018 – 09.08.2019)

**Table No. 20**

Month	SARNAR						DEROL						ARGAMA						VILAYAT					
	SPM PM10	SPM PM2.5	SO2	NO2	H2S	CS2	SPM PM10	SPM PM2.5	SO2	NO2	H2S	CS2	SPM PM10	SPM PM2.5	SO2	NO2	H2S	CS2	SPM PM10	SPM PM2.5	SO2	NO2	H2S	CS2
	µg/m3						µg/m3						µg/m3						µg/m3					
Norms ->	100	60	80	80	150	100	100	60	80	80	150	100	100	60	80	80	150	100	100	60	80	80	150	100
Apr-18	88	31	21	26	BDL	BDL	96	33	14.8	17.2	BDL	BDL	94	28	26	32	BDL	BDL	92	27	28	34	BDL	BDL
May-18	81	26	18	21	BDL	BDL	94	29	16.1	21.4	BDL	BDL	91	26	24	33	BDL	BDL	89	24	26	31	BDL	BDL
Jun-18	84	21	16	20	BDL	BDL	91	33	18.2	22.1	BDL	BDL	89	28	26	37	BDL	BDL	89	24	26	31	BDL	BDL
Jul-18	81	25	31	36	BDL	BDL	78	24	19	23.0	BDL	BDL	85	23	26	28	BDL	BDL	79	21	21	24	BDL	BDL

Aug-18	83	32	28	34	BDL	BDL	81	28	20	26.0	BDL	BDL	77	25	22	26	BDL	BDL	76	23	25	32	BDL	BDL
Sep-18	78	27	26	30	BDL	BDL	81	26	23	28.0	BDL	BDL	77	22	22	25	BDL	BDL	80	25	19	24	BDL	BDL
<b>Average</b>	<b>83</b>	<b>27</b>	<b>23</b>	<b>28</b>	<b>BDL</b>	<b>BDL</b>	<b>87</b>	<b>29</b>	<b>19</b>	<b>23</b>	<b>BDL</b>	<b>BDL</b>	<b>86</b>	<b>25</b>	<b>24</b>	<b>30</b>	<b>BDL</b>	<b>BDL</b>	<b>84</b>	<b>24</b>	<b>24</b>	<b>29</b>	<b>BDL</b>	<b>BDL</b>
<b>Min</b>	<b>78</b>	<b>21</b>	<b>16</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>24</b>	<b>15</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>77</b>	<b>22</b>	<b>22</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>21</b>	<b>19</b>	<b>24</b>	<b>0</b>	<b>0</b>
<b>Max</b>	<b>88</b>	<b>32</b>	<b>31</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>33</b>	<b>23</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>28</b>	<b>26</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>92</b>	<b>27</b>	<b>28</b>	<b>34</b>	<b>0</b>	<b>0</b>

## B. General Condition: -

j)	The project authorities must strictly adhere to the stipulations of the SPCB/State Government or any statutory body										All stipulations made by GPCB are strictly complied. Pl. refer detailed CCA Report tabulated under <b>Table No. 21</b>											
	<b>Table No. 21</b>																					
	<b>Sl. No.</b>	<b>CC &amp; A Condition</b>	<b>Descriptions</b>										<b>Compliance by GCD</b>									
			<b>1.0 Consent order No., Date of Issue :</b>										-									
	1		AWH - 62510, 07/07/2014 & amendment for Debottnecking																			
			<b>2.0 Consent Validity &amp; Production :</b>																			
	2		Consent under the Water Act-1974, the Air Act-1981 & the E.P Act-1986 is valid till 23/03/2019 for the following products / by-products										-									
			<b>Products :</b>																			
	3	1	1. For Viscose staple Fibre : - Consent capacity under CCA No. BPCB/BRCH-B-CCA-70(2)/ID36507/218410, Dated -07.07.2014 - 1,27,750 MT/Year & after Debottnecking consent capacity is 1,64,250MT/Year under CCA No. GPCB/BRCH-B-CCA-70(4)/ID36507/453503, Dated-27.04.2018										VSF : 1,33,644 MT									
	4	2	Sulphuric Acid : 1,38,700 MT/Year										H2SO4 : 1,12,300 MT									
5	3	Carbon Di-sulphide : 54,750 MT/Year										CS2 : 20,297 MT										
6	4	Anhydrous Sodium Sulphate : 83,038 MT/Year, after Debottnecking 1,64,250MT/Year										Na2SO4 : 1,01,093 MT										
		<b>3.0 Special conditions :</b>																				



7	3.1	Unit shall not produce any products as well as not to carry out any activities for products / process listed in the EIA notification dated 14/09/2006 as amended from time to time, requiring prior EC from competent authority	We have noted & we will not produce any products as well as not to carry out any activities for products / process listed in the EIA notification dated 14/09/2006 as amended from time to time, requiring prior EC from competent authority
8	3.2	Unit shall strictly comply / fulfil with the conditions stipulated by competent authority in the order of EC issued vide letter no. SEIAA/GUJ/EC/1(d), 4(d) & 5(f)/96/2011, dated 30/05/2011 and SEIAA/GUJ/EC/1(d), 4(d) & 5(f)/96/2011, dated 22/03/2012	We Complied all conditions mentioned in both EC. CPP is a part of Chemical division CC&A.
9	3.3	Unit shall be member of Dahej/Vilayat CETP and its industrial waste water except concentrated / high COD stream to CETP for treatment	We are the member of CETP & We have our full flagged ETP
10	3.4	Concentrated / high TDS waste water stream from manufacturing process shall be segregated & treated in evaporation system, condensate water shall be reused to process / scrubbers	We have MSFE for salt recovery from concentrated stream
11	3.5	Effluent shall be stripped off of VOC's in a close system before further treatment in ETP	We have no VOC in system
12	3.6	Shall provide treated effluent holding facility (Guard pond) for at least 48 hrs, before discharge into GIDC u/g drain	Treated effluent holding facility available (Guard pond) for at least 48 hrs, before discharge into GIDC u/g drain
13	3.7	Shall carryout bioassay & toxicological test for the treated waste water and report to GPCB	Bioassay test being carried out by 3rd party Env auditor on quarterly basis and reports to GPCB
14	3.8	Treated effluent shall be taken into effluent conveyance pipeline only after confirming the disposal standards.	Treated effluent is being taken into effluent conveyance pipeline only after confirming the disposal standards.
15	3.9	Shall comply with provisions of Hazardous waste (management, handling & transboundary movement) Rule-2008 for all types/categories of generating Hazardous waste	We are being complied with provisions of Hazardous waste (management, handling & transboundary movement) Rule-2008 for all types/categories of generating Hazardous waste
16	3.10	In connection with Kalpasar scheme/ yojna, as & when required / needed, applicant shall shift the end disposal point with common disposal arrangement of GIDC	We will comply when it is applicable
17	3.11	Unit shall install continuous monitoring as well as alarm system for parameters of treated effluent such as pH meter, TOC analyzer, magnetic flow meter with totalizer and recorder at the final outlet from factory, record to be maintained & submit to GPCB office on monthly basis	Continuous monitoring system has installed with pH, flow meter with totalizer & TOC meter, reports submitting to GPCB on monthly basis
18	3.12	Total control of odor nuisance from the plant premises, shall be achieved and maintained, if not achieved stop use of such chemicals	Total control of odor nuisance from the plant premises is being achieved and maintained

19	3.13	Unit shall affix water meters as per section 4(1) of the water act for the purpose of measuring & recording the water consumed at such places as may be required	Water meters are provided at all sources as per section 4(1) of the water act for the purpose of measuring & recording the water consumed
20	3.14	Applicant shall use only fresh raw material in their production and shall not use any type of Haz waste.	We are using fresh raw material in the production and not using any type of Haz waste.
21	3.15	Applicant shall have to provide guard pond for sufficient capacity of storage of treated effluent prior its discharge to GIDC pipeline, conveyance shall be by gravity flow at the 1st manhole of GIDC / UG drainage	We have Guard pond of sufficient capacity of storage of treated effluent prior its discharge to GIDC pipeline
22	3.16	Shall ensure & undertake on Rs 100 stamp paper that it has only one outlet to GIDC, u/g drain	We have ensure & undertaken on Rs 100 stamp paper that we have only one outlet to GIDC, u/g drain
<b>4.0 Condition Under Water Act :</b>			
23	4.1	Quantity of total water consumption shall not exceed 12200 KL/day, Industrial 11800 KL/day, Domestic 400 KL/day	Total Water consump. 11798 m3/d. For Indust. 11,420 & 378 m3 for domestic
24	4.2	Quantity of Industrial Effluent shall not exceed 11349 KL/day, Industrial 10964 KL/day, Domestic 385 KL/day. Total 19400 KL/day by all 3 units.	Total Waste Water by all 3 units 12673 m3/d, Limit : 19400 m3/d
25	4.3	Quantity of Industrial Effluent from the manufacturing process & other ancillary industrial operations shall not exceed 11349 KL/day, Industrial 10964 KL/day, Domestic waste water (Sewage) 385 KL/day	Total Waste Water by all 3 units 12673 m3/d, Limit : 19400 m3/d, domestic WW < 100 m3/day
26	4.4	10964 KL/day of biodegradable industrial effluent shall sent to ETP for Primary, Secondary & Secondary treatment and to dispose to GIDC pipeline after treatment for disposal into sea	Done
27	4.5	The quality of treated effluent shall confirm the following standards prior to disposal into GIDC pipeline (29 parameters)	We Complied the quality of treated effluent which confirm the following standards prior to disposal into GIDC pipeline (29 parameters)
28	4.6	The effluent confirming to the above standards shall be discharged into GIDC sewer line , Dahej Vilayat pipeline up to sea for final disposal at NIO designated point	We have Complied all standards for discharged to GIDC Sewer line
29	4.7	Sewage shall be treated separately to confirm the standards mentioned in table, shall be disposed into septic tank/soak pit system exclusively within premises	We have separate sewage plant separately for treatment of sewage and meeting the standards
30	4.8	Unit shall affix water meters as per section 4(1) of the water act for the purpose of measuring & recording the water consumed at such places as may be required, within 15 days and shall be presumed that	Water meters provided as per section 4(1) of the water act for the purpose of measuring & recording the water consumed & within 15 days.

		the quantity indicated by the meter has been consumed by the industry	
<b>5.0 Condition Under Air Act :</b>			
31	5.1	There is no fuel consumption & flue gas emission. Shall obtain all their utilities from their Sister concern located at same premises	We are taking steam & power from Chemical division & no fuel is used
32	5.2	Shall install and operate a comprehensive adequate air pollution control measures in order to achieve the prescribed standards.	Adequate air pollution control system has installed to control air pollution and meeting standards
33	5.3	Process emissions through various stack/vent of reactors, process vessels shall confirm the standards mentioned in table, So <sub>2</sub> from H <sub>2</sub> SO <sub>4</sub> plant 2.0 Kg/T of Acid, So <sub>2</sub> from Cs <sub>2</sub> plant - 96% recovery from SRU, Cs <sub>2</sub> from main plant (Rayon) 50 Kg/T of Fibre	Complied for all 3 process stacks, Avg. SO <sub>2</sub> is 1.0 Kg/T, CS <sub>2</sub> is 45 Kg/T & recovery from SRU is > 96%.
34	5.4	Ambient Air quality within the premises of Indust. Shall not exceed the limits specified in the table (12 parameters)	Ambient Air quality within the premises of Indust. not exceed the limits specified in the table (12 parameters)
35	5.5	Applicant shall operate industrial plant / air pollution control equipments very efficiently and continuously so that the gaseous emission always confirms to the standards specified	Operating industrial plant / air pollution control equipments very efficiently and continuously so that the gaseous emission always confirms to the standards specified
36	5.6	Consent to operate the industrial plant shall lapse if any time the parameters of the gaseous emission are not within the tolerance limits as specified	We have Noted
37	5.7	Shall provide portholes, ladders, platforms at chimneys for monitoring the air emission and same shall be open for inspection to / and for use of Board staff, chimneys shall be painted to satellite identification.	We have provided portholes, ladders, platforms at chimneys for monitoring the air emission and same shall be open for inspection to / and for use of Board staff, chimneys shall be painted to satellite identification.
38	5.8	Industry shall take adequate measures for control of noise levels from its own facilities within the premises so as to maintain ambient quality standards wrt noise levels. 75 dB(A) during day, 70 dB(A) during night hours 10 PM to 06 AM	We are being monitored regularly & having control system to prevent the noise as per the standard
39	5.9	Shall install continuous / online monitoring system on the stacks for the parameters such as Hcl, SO <sub>2</sub> , NH <sub>4</sub> , H <sub>2</sub> S, Cl <sub>2</sub> & PM.	CMS available for all stack in plant area
<b>6. Authorization for the management &amp; handling of Hazardous wastes :</b>			
40	6.1	No. of authorization : AWH - 62510 for disposal of waste as mentioned in the table (6 waste categories)	Authorization received in AWH - 62510 for disposal of waste & maintained

41	6.2	Authorization granted to operate a facility for collection, storage, storage, treatment within the factory premises. Transportation and disposal at BEIL	We have authorization to operate a facility for collection, storage, storage, treatment within the factory premises. Transportation and disposal at BEIL
42	6.3	The authorization shall be in force till 06/07/2019.	We Noted the authorization
43	6.4	Shall have to obtain all prior permissions from competent authority with accordance to end/ultimate disposal of each type of waste	We have agreement with BEIL
44	6.5	Shall comply with the specific condition of the terms & conditions of Haz waste as given in annexure	We are complying the specific terms & condition of Haz waste as given in annexure
45	6.5.1	Authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time	Noted
46	6.6	Applicant shall have to comply with the CPCB guidelines for co processing of the incerable waste as well as the guideline of transportation of waste, unit shall upload records on Xgn & display data online data	We are Compling with the CPCB guidelines for co processing of the incerable waste as well as the guideline of transportation of waste, unit shall upload records on Xgn & display data online data
47	6.7	Fly ash shall collect / storage and dispose to brick / cement manufacturers	Fly ash is collected / storage and dispose to brick / cement manufacturers
48	6.8	<b>TERMS &amp; CONDITIONS OF AUTHORIZATION</b>	
49	6.8.1	Applicant shall comply with the provisions of the EP Act-1986 and the rules	We are comply with the provisions of the EP Act-1986 and the rules
50	6.8.2	Authorization shall be produced for inspection at the request of an officer authorized by GPCB	We are producing for inspection at the request of an officer authorized by GPCB
51	6.8.3	Person authorized shall not rent, lend, sell, transfer of otherwise transport the Haz waste w/o obtaining prior permission from GPCB	We shall not rent, lend, sell, transfer of otherwise transport the Haz waste w/o obtaining prior permission from GPCB
52	6.8.4	Unauthorized change in personnel equipment or working conditions as mentioned in authorization order by the person authprized shall constitute a breach of this authorization	We have noted that Unauthorized change in personnel equipment or working conditions as mentioned in authorization order by the person is breach of this authorization
53	6.8.5	Duty of the authorized person to take prior permission of the GPCB to close down the facility	We shall take prior permission to GPCB when required
54	6.8.6	Application for renewal of an authorization shall be made as laid down	We shall do when required
55	6.8.7	Shall have to display the relevent information with regards to Haz waste as indicated in the courts order	Done at factory main gate

	56	6.8.8	Shall have to display online data outside the factory main gate with regard to and nature of hazardous chemicals being handled in the plant, including waste water & air emission and solid waste generated within the factory premises	Online display board need to provide at main gate and data maintained.
	<b>7. General Conditions :</b>			
	57	7.1	In case of change in personnel, equipment or working condition as mentioned in the consent order shall be intimated to GPCB	We shall inform In case of change in personnel, equipment or working condition as mentioned in the consent
	58	7.2	Applicant shall also comply with the general conditions given in Annexure-I	We shall comply the general condition
	59	7.3	Arrangement shall be made in each plant for drainage in such a way that all the effluent drain shall be taken to the central effluent treatment plant and no untreated waste water is discharged	Drainage in such a way that all the effluent drain shall be taken to the central effluent treatment plant
	60	7.4	Install continuous flow recording devices for each plant to record the individual plant effluent going to ETP, also flow monitoring device at inlet & outlet of ETP	We have installed continuous flow recording devices for each plant to record the individual plant effluent going to ETP, also flow monitoring device at inlet & outlet of ETP
	61	7.5	Board reserves the right to review and / or revoke the consent and / or make amendment to the conditions which the Board deems fit	Noted
	62	7.6	In case the change of management, the name and address of new directors shall immediately to be informed to GPCB	We shall inform when required
	63	7.7	The consent granted shall lapse at any time if any parameters or any condition of this consent order are not complied with	Noted
ii)	No expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry to access the adequacy of conditions imposed and to add additional environmental protection measures required, if any.			We have received EC for expansion of VSF plant capacity from 127750 TPA to 255500 TPA along with expansion of CS <sub>2</sub> & H <sub>2</sub> SO <sub>4</sub> plants on 15 <sup>th</sup> Jan-18, also for setting up Solvent Spun Cellulosic fibre plant for 100 T/d and CPP of 55 MW. We have implemented capacity expansion under de-bottlenecking of VSF plant.
iii)	The gaseous emission (SO <sub>2</sub> , Nox, H <sub>2</sub> S & CS <sub>2</sub> ) and PM along with RSPM levels from various process units shall confirm to the standards prescribed by the concerned authorities from time to time.			Gaseous emission is monitored regularly and results confirm to the standards specified by both GPCB and CPCB The lab results are summarized for the period Apr-18 to Sep-18 as under <b>Table No.22 &amp; Table No.23</b> Monthly Report from Unistar Refer as <b>Annexure-6.</b>

**Table No. 22**

Third Party Lab Details	Month	Rayon Plant	
		CS2 (Kg/ Tone of Fibre)	H2S (mg/nm3)
	Consent Value	50	-
<b>Agency:</b> - Unistar Environment & Research lab Pvt. Ltd	Apr-18	44	154.0
<b>Address:</b> -GIDC, Char Rasta, Vapi	May-18	45.0	163.0
<b>NABL :</b> - NABL Certificate Number TC-7753	June-18	42.0	148.0
<b>Details of instrument Used for Monitoring: -</b>  <b>Instrument Name:</b> - Stack Monitoring Kit Vss1 <b>Serial No.:-</b> 467 DTJ 15 <b>Calibration Date:-</b> 05.02.18 <b>Expiry Date:</b> - 05.02.19	July-18	38.0	131.0
	Aug-18	41.0	125.0
	Sep-18	38.0	113.0
	<b>Min</b>	<b>38</b>	<b>113</b>
	<b>Max</b>	<b>45</b>	<b>163</b>
	<b>Avg</b>	<b>41</b>	<b>139</b>

**Agency :** - Unistar Environment & Research Lab Pvt. Ltd

**Instrument ID & Name:** -1) UERL/AIR/RDS/02 – Respirable Dust Sampler (Calibration Period: - 10.08.2018 – 09.08.2019)

2)UERL/AIR/FPS/08 – Fine Particulate Sampler (Calibration Period: - 10.08.2018 – 09.08.2019)

**Monthly Report from Unistar refer as Annexure- 8**

**Table No. 23 (For Ambient Air)**

Month	Near ETP MCC Room						Near ER Office					
	SPM PM10	SPM PM2.5	SO2	NO2	H2S	CS2	SPM PM10	SPM PM2.5	SO2	NO2	H2S	CS2
	µg/m3						µg/m3					
<b>Norms -&gt;</b>	100	60	80	80	150	100	100	60	80	80	150	100
Apr-18	84	26	26	34	6.1	BDL	91	32	22	28	BDL	BDL
May-18	86	26	28	32	5.6	ND	94	28	26	31	BDL	BDL
Jun-18	93	33	30	39	4.8	BDL	96	35	31	40	BDL	BDL
Jul-18	86	26	25	28	4.8	BDL	88	33	27	31	BDL	BDL
Aug-18	82	31	23	26	3.4	BDL	90	35	26	31	BDL	BDL
Sep-18	78	27	22	25	4.2	BDL	85	36	25	32	BDL	BDL
<b>Min</b>	<b>78</b>	<b>26</b>	<b>22</b>	<b>25</b>	<b>3.4</b>	<b>BDL</b>	<b>85</b>	<b>28</b>	<b>22</b>	<b>28</b>	<b>BDL</b>	<b>BDL</b>
<b>Max</b>	<b>93</b>	<b>33</b>	<b>30</b>	<b>39</b>	<b>5.6</b>	<b>BDL</b>	<b>96</b>	<b>36</b>	<b>31</b>	<b>40</b>	<b>BDL</b>	<b>BDL</b>
<b>Average</b>	<b>84.8</b>	<b>28.2</b>	<b>25.7</b>	<b>30.7</b>	<b>4.8</b>	<b>BDL</b>	<b>90.7</b>	<b>33.2</b>	<b>26.2</b>	<b>32.2</b>	<b>BDL</b>	<b>BDL</b>

	At no time, the emission shall exceed the prescribed limits.	Till date, the emission level has never exceeded prescribed limits. (Refer Table No.22)
	In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put of the operation and shall not be restarted until the desired efficiency has been achieved	We Will put of operation in case of failure of any pollution control system In the event of failure of any pollution control system adopted by the unit, the unit will immediately put of the operation and will not restart until the desired efficiency has been achieved
IV)	The location of Ambient Air Quality (AAQ) monitoring stations shall be reviewed in consultation with SPCB and additional shall be installed, if required, in the downwind direction as well as where maximum ground level concentration is anticipated.	The location of Ambient Air Quality (AAQ) monitoring stations have been reviewed & there are 4 nos. AAQ monitoring stations installed in consultation with GPCB in nearby 4 villages, at Derol, Vilayat, Sarnar and Argama within 2-3 kms radius.
V)	Dedicated scrubbers and stack of appropriate height as per CPCB guidelines shall be provided to control the emissions from various stacks/vents.	Dedicated scrubbers and stack of appropriate height as per CPCB guidelines are provided to control the emissions from various stacks/vents. <b>Rayon plant</b> – 175m stack (As per stack height formula $H(m) = 11Q^{0.41} - 3V_s * D/U$ Q- CS2 emission rate (kgs/hr) Vs-Stack Velocity (m/sec) D- Diameter of Stack, U- Annual Avg Wind speed at top of stack (m/sec)  <b>H2SO4 plant</b> – 50m stack <b>CS2 Plant</b> – 100m stack provided
	The scrubber water shall be sent to ETP for further treatment	The scrubber water is routed through ETP.
VI)	All the chemicals / solvents storage tank shall be under negative pressure to avoid any leakages. Breather valve, N2 blanketing and secondary condensers with brine chilling system shall be provided for all the storage tanks to minimize vapor loses. All liquid raw material shall be stored in storage tanks and drums.	All storage tanks are suitably designed to avoid leakages for storage under atmospheric conditions. CS2 is stored under water due its volatile nature. Dykes re provided at all chemical storage area as per guidelines to arrest spillages / leaks with Emergency response plan for any such event.

vii)	The company shall undertake following waste minimization measures;	
	- Metering & control of quantities of active ingredients to minimize waste	Metering & measurement system is in place. Reduction in wastage is also reflected in specific consumption of chemicals
	- Reuse of by-products from the process as raw material or as RM substitution in other processes	Sodium Sulphate is bye-product. Though it is not used in our process, it is being utilized by detergent, glass, & paper industries
	- Use of automated filling to minimize spillages	Chemicals such as Caustic, Sodium hypochlorite, Sulphuric acid, Carbon disulphide is transported through pipelines. Sodium sulphate is bagged through automatic bagging M/c.
	- Use of "closed feed" system into batch reactors	Not Applicable as ours is continuous process
	- Venting equipment through vapor recovery system	There is one CS2 recovery system/machine (total 4 nos.) wherein CS2 is being recovered by condensation.
VIII)	Fugitive emissions in the work zone environment, product & raw materials storage area shall be regularly monitored. The emissions shall confirm to the limits imposed by SPCB/ CPCB	Fugitive emissions in work zone environment & storage area are monitored by our Lab on monthly basis and are well within stipulated norms. Lab data are tabulated as <b>Table No. 24</b>
	<p><b>Agency:</b> - Environmental Monitoring Lab</p> <p><b>Address:</b> -Internal Lab</p> <p><b>Details of instrument Used for Monitoring: -</b></p> <p><b>Inst. Calibration done by :</b> - Respo Products</p> <p><b>Instrument Name:</b> - Toxirae III (for H2S Measurement) &amp; For CS2 measurement following IS 5182 (Part 20) : 1982 method</p> <p><b>Serial No.:-</b> G011236349</p> <p><b>Calibration Date:-</b> 09.08.18</p> <p><b>Expiry Date:</b> - 08.02.19</p> <p><b>Note:</b> - The Third Party Monitoring will be started by Nov-18</p>	



**Table No. 24**

Area	Std (ppm)	Apr-18		May-18		June-18		July-18		Aug-18		Sep-18	
		H2S (ppm)	CS2 (ppm)	H2S (ppm)	CS2 (ppm)	H2S (ppm)	CS2 (ppm)	H2S (ppm)	CS2 (ppm)	H2S (ppm)	CS2 (ppm)	H2S (ppm)	CS2 (ppm)
Xanthation	10	0-0	1-2	0	1-2	0	1-2	0	1-2	0	1-2	0	1-2
Spinning machine	10	1-2	4-6	2-3	4-6	2-2	3-6	2-2	3-6	1-3	3-6	1-3	2-5
Stretch bath	10	1-2	4-6	1-3	4-6	2-3	3-6	1-3	3-6	1-3	4-6	1-3	4-6
Cutter	10	2-2	4-6	1-2	5-6	1-2	3-5	1-2	1-5	1-2	3-6	1-2	3-6

IX)	<p>The project authorities shall strictly comply with the rules and guidelines under manufacture, storage and import of hazardous chemicals Rules 1989 as amended up to date and Hazardous waste (management &amp; handling) Rules 1989 as amended time to time. Authorization from the GPCB shall be obtained for collection, storage, treatment and disposal of hazardous wastes</p>	<p>Deputy Controller of Explosive from M/s PESO (PETROLEUM &amp; Explosives Safety Organization), has granted license for storage of 60 KL light diesel oil and storage of 10 KL HSD at 2 location in plant area for DG sets. We have valid factory license from DISH. Copy of factory &amp; Petroleum License copy attached as <b>Annexure -13</b></p> <p>Hazardous waste Rules 2000 is fully complied as per the consent stipulated norm and Unit is complying all the waste defined in CC&amp; A. Hazardous waste is being disposed to M/ 5. BEIL, Dahej TSDF facility and annual hazardous waste disposal details are submitted on GPCB XGN online site and waste disposal online report is attached as <b>Annexure-14</b>. Unit has obtained CC&amp;A # AWH 62510 for collection, storage, treatment and disposal of hazardous waste from GPCB dated 7th Jul 2014 which is valid up to 23rd Mar 2019.</p>
X)	<p>The overall noise levels in and around the plant area shall be kept well within the standard by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (P) Act, 1986 Rules 1989 viz. <b>75 dB (day time and 70 dB (night time)</b></p>	<p>Following measures taken to control noise level:</p> <ul style="list-style-type: none"> <li>- Provision of Silencers</li> <li>- Acoustic Enclosures</li> <li>- Rubber pads for rotating equipment</li> </ul>

**The Noise level (dB) at workroom for last 6 months is tabulated as under Table No. 25:**

**Calibration Period:** - 17.01.18 – 17.01.19

**dB Meter:** - Make: - Lutron SL-4010

**Certification Agency:** - Tools MRO Safety / **Address:** - 806 – 808, Abhinandan Royale, Opp. Rajhans Olympia, Bhatar Road, Surat – 395007, Gujarat, India

**Reference Standard :** - Sound Level Calibrator, Sr. No. 3421624, **Calibration Validity Up to :** - 28.11.2018

**Table No. 25**

Area	Apr-18		May-18		June-18		July-18		Aug-18		Sep-18	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
Main Gate	60	58	63	59	61	59	62	58	59	55	60	59
Material Gate	58	54	59	55	62	56	64	56	62	59	61	57
OHC	65	60	64	59	66	63	68	62	63	62	63	60
Derol	56	52	56	54	55	54	58	54	58	56	57	56
Vilayat	57	56	56	53	55	54	59	55	58	55	55	52
Sarnar	54	50	55	53	56	53	56	52	56	55	56	54
Argama	54	52	56	53	53	49	56	51	57	54	56	54

<b>XI)</b>	The company shall develop rain water harvesting structures to harvest the runoff water for recharge of ground water	We have assigned job to experts M/s Allegiance Enterprises, Vadodara in the field of rain water harvesting. They have surveyed our plant site and submitted final proposal. Required action will be taken for development of rain water harvesting system based on receiving final proposals. Pl. refer <b>Annexure-15</b>
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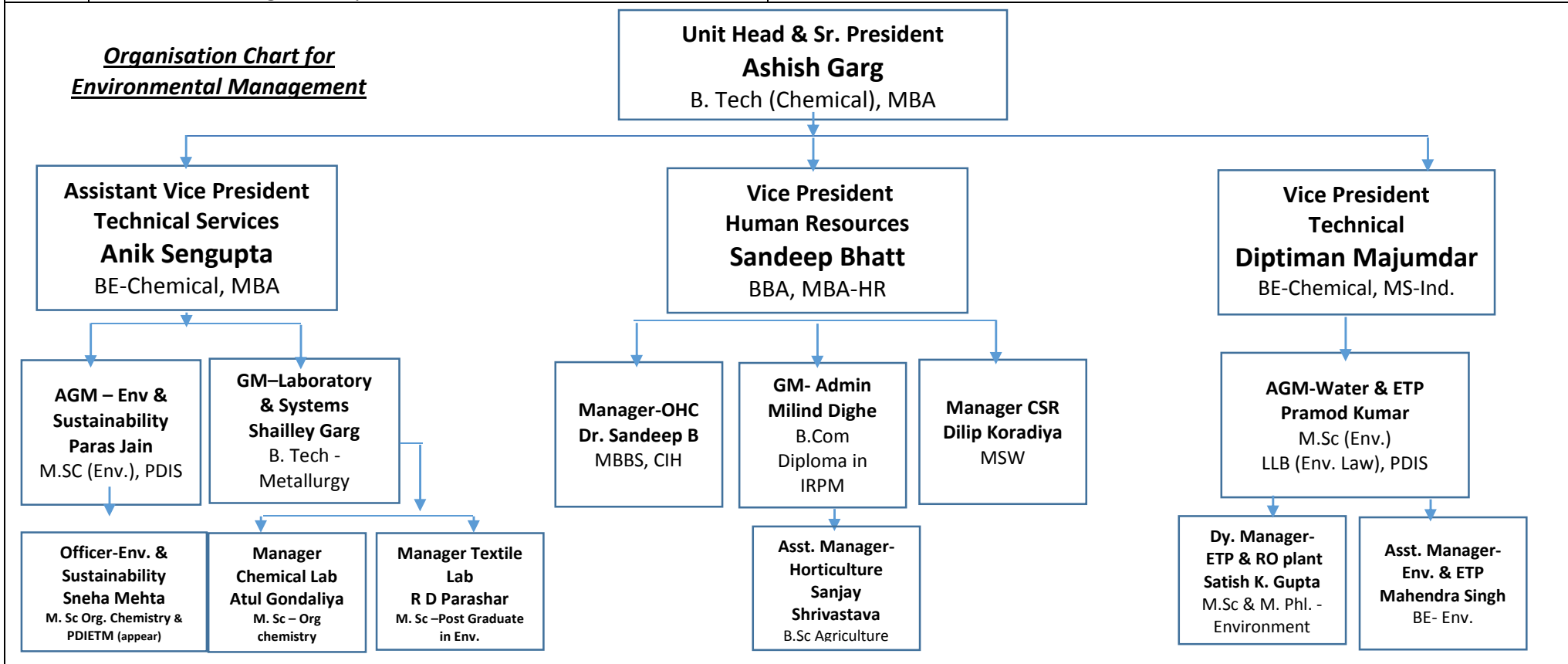
<b>xii)</b>	The company shall undertake eco-development measures including community welfare measures in the project area for the overall improvement of the environment.	We have been undertaking various community development measures in and around 25 Villages and 61,515 nos. of beneficiaries covered in FY'18 (April'17 to March'18} Unit has proposed Eco development plan yearly basis through CSR activities and submitting CSR activities update in Annual Environment Audit Report to GPCB on yearly basis.
	The eco development plan should be submitted to SPCB within three months of receipt of this letter for approval	Eco development measures including community welfare being done under CSR initiatives as attached in <b>Annexure-16</b> & its expenditure details are in below <b>Table No.26</b>

**Table No. 26**

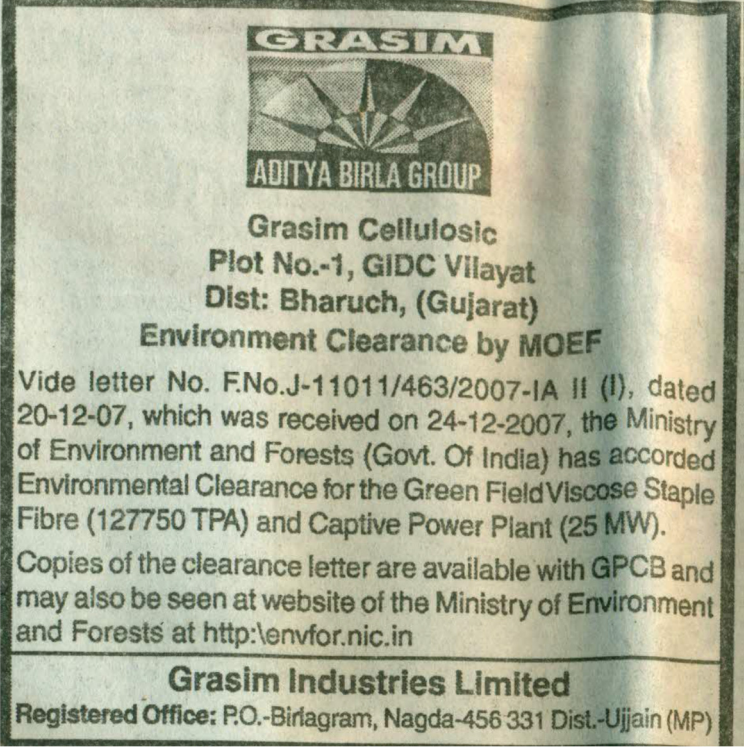
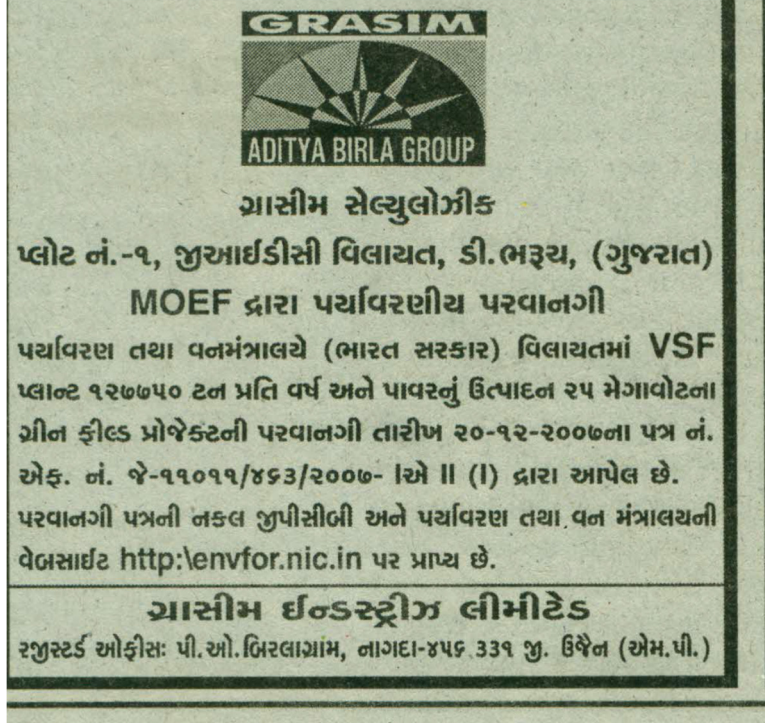
Financial Year	Average Net Profit (in Crore) of the company (As per 135(S) company's Act)	Allocate CSR Amount (2%)	Actual Spent in CSR (Amount in Crore)	% Spent CSR against Net Profit
2015-2016	791	15.82	15.05	
2016-2017	790	15.80	18.06	
2017-2018	1107	22.14	29.84	
<b>Total=&gt;</b>	<b>2688</b>		<b>62.95</b>	<b>2.34%</b>

XIII) A separate Environment Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions. The details of the Cell shall be submitted to MoEF regional officer prior to commissioning of the plant

We have personnel within Environment Management/ Engineering, Chemical, botany & water resources and also from Process & Engineering. Pl. refer below Organization chart.



xiv)	The project authorities shall earmark separate funds to implement the condition stipulated by MoEF as well as state government along with the implementation schedule for all the conditions stipulated herein	Total project cost was Rs. 1200 Crores as mentioned in EC. As committed in the EIA/EMP, unit has allocated capital cost Rs. 170.5 Crores and recurring cost Rs. 15.5 Crores per annum respectively for implementation of environmental pollution control measures as per condition stipulated by the MoEF as well as state Govt.												
	The funds so provided shall not be diverted for any other purpose.	Funds are used in Air pollution control measures, water pollution control measures, Environmental monitoring & management, waste management, green belt development. We hereby declare that the capital & recurring fund is not diverted for other purpose.												
<b>Fund Utilize for environmental Management are under (Rs. In Crore)</b>														
<b>Sr. No.</b>	<b>Perticular</b>	<b>Capex</b>	<b>Opex FY-17</b>	<b>Opex FY-18</b>										
1	Effluent Water	79.00	11.50	10.56										
2	Air Pollution Control	91.00	03.50	04.00										
3	Green Belt Development	00.50	00.50	00.55										
4	Waste Management	01.50	00.50	00.60										
	<b>Total Amount=&gt;</b>	<b>172.00</b>	<b>16.00</b>	<b>15.71</b>										
xv)	The implementation of the project vis-a-vis environmental action plans shall be monitored by the concerned regional office of MoEF/ GPCB/ CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the website of the company.	Six monthly compliance status report is being regularly submitted, pl. refer attached <b>Annexure-7</b> of last report as acknowledgement, dated 21/05/2018.												
		<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Compliance Period</th> <th style="text-align: center;">Date of Report Submission</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Apr-16 to Sep-16</td> <td style="text-align: center;">10.11.2016</td> </tr> <tr> <td style="text-align: center;">Oct-16 to Mar-17</td> <td style="text-align: center;">24.04.2017</td> </tr> <tr> <td style="text-align: center;">Apr-17 to Sep-17</td> <td style="text-align: center;">14.06.2017</td> </tr> <tr> <td style="text-align: center;">Oct-17 to Mar-18</td> <td style="text-align: center;">21.05.2018</td> </tr> </tbody> </table>			Compliance Period	Date of Report Submission	Apr-16 to Sep-16	10.11.2016	Oct-16 to Mar-17	24.04.2017	Apr-17 to Sep-17	14.06.2017	Oct-17 to Mar-18	21.05.2018
Compliance Period	Date of Report Submission													
Apr-16 to Sep-16	10.11.2016													
Oct-16 to Mar-17	24.04.2017													
Apr-17 to Sep-17	14.06.2017													
Oct-17 to Mar-18	21.05.2018													

<p><b>XVI)</b></p>	<p>The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at website of MoEF <a href="http://envfor.nic.in">http://envfor.nic.in</a>. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned regional office of the Ministry.</p>	<p>EC issued on 20.12.2007, received on 24.12.2007 following are the advertisement details.</p>
	<p><b>Name of Paper :</b> - Indian Express  <b>Date of Issue:</b> - 28.12.2007  <b>In :</b> - English language</p>	<p><b>Name of Paper :</b> - Gujarati Loksatta  <b>Date of Issue:</b> - 28.12.2007  <b>In :</b> - Gujarati language</p>
		

<p><b>EC Amendment on 15.01.2018 &amp; following are the advertisement details.</b></p> <p><b>Name of Paper :- Times of India</b>  <b>Date of Issue :- 19.01.2018</b>  <b>In :- English language</b></p>	<p><b>Name of Paper :- Gujarat Samachar</b>  <b>Date of Issue :- 19.01.2018</b>  <b>In :- Gujarati language</b></p>
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XVII) The project authorities shall inform the Regional Office as well as Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of the start of the project

10. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory

We have submitted the same in last six monthly EC compliance report & BSE – NSE report to MoEF & CC, Bhopal. Pl. refer **Annexure-7** for EC compliance report & for BSE-NSE refer **Annexure-17**.

Project / plant activities are as under;

- (1) EC received on 20<sup>th</sup> Dec-07,
- (2) Civil & other const. work started in Jun-2011.
- (3) 1<sup>st</sup> line commissioned in Mar-2014.
- (4) All 4 lines commissioned by Jan-2015.

Noted & will abide

11.	The Ministry reserves the rights to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.	-NA to PP
12.	The above conditions will be enforced, inter-alia under the provision of the Water (Prevention & control of pollution) Act-1977, the Air (Prevention & control of pollution) Act-1981, the Environment (Protection) Act-1986, Hazardous waste (Management & Handling) Rules-2003 and the Public Liability Insurance Act-1991 along with their amendments and rules.	-We are following terms & conditions GPCB CC&A compliance. (Detailed report attached in General Condition Point No. I)

# **Compliance Status Report for “Environmental Clearance” Accorded by the MoEF**

**For  
Grasim Cellulosic Division (GCD), Vilayat Project**

## **Monitoring of Ambient Air Quality, Noise Levels & Surface water quality**

### **Ambient Air Quality:**

The scenario of existing Ambient Air Quality in the study area has been assessed through a network of 06 Ambient Air Quality locations which are established in and around the plant premises. The monitoring stations are established based on the consultation with the Regional office of Gujarat Pollution Control Board, Bharuch.

Third party NABL & GPCB accredited laboratory has been entrusted for carrying our Environmental monitoring, analysis & reporting of environmental parameters at locations designated within and around plant premises.

Pre- calibrated Fine dust samplers have been used for carrying out ambient air quality monitoring in line with provisions of National Ambient Air Quality Standards (NAAQS). The parameters monitored are PM10, PM 2.5, Sulphur dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>) & Carbon mono oxide (CO).

### **Noise Environment:**

Noise level being monitored in Ambient & Work zone area at different Locations once in a quarter. The noise levels at each location were recorded for 24 hours, using integrated sound level meter.

### **Water Quality:**

The existing status of water quality for surface water was assessed by collecting the water samples from nearby Bhookhi Khadi for upstream & downstream. Portable water from Plant & Labor Camp is also analyzed. The overall water quality parameters have been found to be below the stipulated permissible limits.



# Compliance Status Report for “Environmental Clearance” Accorded by the MoEF

## For Grasim Cellulosic Division (GCD), Vilayat Project

### Green belt development

#### **Green Belt Development:**

A green belt is being developed along the plant boundary, along the roads & other available open space, using native species avenue plantation as per the CPCB guidelines for curbing emission and providing aesthetic look.

> 40,000 trees covering an area of 25 Hact, with survival rate of 80 % have already been planted till date. A nursery for growing the saplings, being used for plantation purposes, has also been established inside the plant premises.

Criteria used for selection of species for greenbelt:

- Fast growing
- Thick canopy cover
- Perennial & evergreen
- Large leaf area index
- High sink potential
- Efficient in absorbing pollutants without affecting their growth
- Suitable for the local seasons

#### **Plantation Species:**

Neem (*Azadirachta indica*), Kasood (*Cassia siamea*), Pine/Junglisaru (*Casuarina equisetifolia*), Orchid tree (*Bauhinia blakeana*), Gulmohar (*Delonix regia*), Rain tree (*Samanea saman*), Yellow Gulmohar (*Peltophorum ferrugineum*), Bottle brush (*Callistemon sp.*), Earleaf Acacia (*Acacia auriculiformis*), Kadamb (*Neolamarckia cadamba*), Basant Rani (*Tabebuia rosea*), Safeda (*Eucalyptus*), *Bougainvillea spectabilis*, Lawn Plantation and Shrubbery.

## **Compliance Status Report for “Environmental Clearance” Accorded by the MoEF**

**For**

**Grasim Cellulosic Division (GCD), Vilayat Project**

### **Green belt development**

#### **Plant species for Odor management:**

Neem (*Azadirachta indica*), Saptparni (*Alstonia scholaris*), Guh babool (*Acacia farnesiana*), Morpankhi (*Thuja occidentalis*), Bougainvillea (*Bougainvillea spectabilis*), Lemon (*Citrus lemon*), Kaner (*Nerium indicum*), Mehndi (*Lawsonia inermis*), Champa (*Plumeria rubra*), Holy basil (*Ocimum tenuiflorum*), Tulsi (*Ocimum sanctum*), Sankuppi (*Clerodendrum inerme*), Jasmine tree (*Plumeria alba*), Jarul (*Lagerstroemia speciosa*), Gurhal (*Hibiscus rosa sinensis*), Bunchgrass (*Vetiveria zizanioides*) etc.

#### **Gaseous emission (SO<sub>2</sub> & NO<sub>x</sub>) tolerant species:**

Neem (*Azadirachta indica*), Bel (*Aegle marmelos*), Kasood (*Cassia siamea*), Earleaf Acacia (*Acacia auriculiformis*), Saptparni (*Alstonia scholaris*), Aldu (*Ailanthus excelsa*), Siris (*Albizia lebbeck*), Shisham (*Dalbergia sissoo*), Pipal (*Ficus religiosa*), White fig (*Ficus infectoria*), Maulsari (*Mimusops elengi*), Kaner (*Nerium indicum*), Jarul (*Lagerstroemia speciosa*) etc.