Godavari
Biorefineries Ltd

GBL/SMR/KSPCB/2021-22/ 529

Date: 25.09.2021

Godavari Biorefineries Ltd

To,
The Environmental Officer
Regional Office
Karnataka State pollution Control Board
Sector No-7, Bypass Road, Navanagar
Bagalkot

Respected Sir,

Sub: Submission of the Environmental statement -reg

With reference to the above subject herewith we are submitting the Environmental statement of the distillery division for the period 1st April 2020 to 31st March 2021 in duplicate.

This is for your kind information and needful.

Thanking you

Yours Faithfully
For Godavari Biorefineries Limited
Distillery Division

Asst. General Manager

FORM- V

ENVIRONMENTAL STATEMENT FOR THE PERIOD 1ST April 2020 to 31st March 2021

Submitted By

Godavari Biorefineries Limited
Distillery Division
Sameerwadi

FORM-V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2021.

DISTILLERY DIVISION

PART- A

1.	Name and address of the owner / Occupier of the industry, operation / Process	Godavari Biorefineries Limited, (Distillery Division) Sameerwadi-587316 Tal: Mudhol ,Dist :Bagalkot State :Karnataka
2.	Industry Category Primary- (SIC Code) Secondary (SIC Code)	**2000**
3.	Installed Capacity-Unit	400 KLPD
4.	Year of Establishment	1984
5.	Date of the last Environmental Statement Submitted	15th September, 2020

PART- B
WATER AND RAW MATERIAL CONSUMPTION

1. Water Consumption (Cum/day) :-

Sr. No.	Operation	During the previous Financial Year 2019– 2020	During the Current Financial Year 2020 – 2021
I	Process	820	820
II	Cooling	Recycled	Recycled
III	Domestic	25	25

2. Products :-

Sr. No.	Name of Product	Process Water Consumption per product output (KL/KL of Spirit Produced)	
		During the previous financial year 2019 – 2020	During the Current Financial Year 2020 – 2021
I	Rectified Spirit	4.18	2.92

2. Raw Material Consumption :

Sr. No.	Raw Material	Product	Consumption of Raw Material Per Unit of Output. (Kgs/KL of Spirit Produced)	
			2019 – 2020	2020 – 2021
1a.	C-gradeMolasses	Rectified Spirit Ethanol Extra Neutral Acohol	3927	3939
b.	B-Heavy Molasses		3245	3236
c.	Sugarcane syrup		3425	3288
d.	Sugarcane Juice		-	12072
2	Yeast Used		Recycled	Recycled
3	Antifoam			
4	Urea		---	---
5	D.A.P.		---	---
6	Bleaching Powder		----	----
7	Steam		5219	4687
8	Power (KWH/ KL)		388	310
		By-Product	Litres/KL of Spirit Produced	
		Fusel Oil	Nil	Nil

Sr. No.	Product	Total Quantity Produced in KL	
		2019 – 2020	2020 – 2021
A	Rectified Spirit	7369.474	11153.9063
B	Extra Neutral Alcohol	6537.146	9991.318
C	Impure Alcohol	868.430	1530.5507
D	Ethanol	41582.400	48682.002
	Total production	56357.413	71357.777
E	Fusel Oil	Nil	Nil

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

PART- C
Pollution Discharged to Environment per unit of output
(Parameter as specified in the Consent Issued)

Sr. No.	Pollutants	Quantity KL/day	Concentration	Concentration Discharged (Mass/Day)	Percentage of Variation prescribed standard with reasons
I	Waste water	1333.5	Nil		
II	Air Stack-1	Not in use			-
	Stack-2	Not in use			-
	Stack -3			-	-

PART- D

HAZARDOUS WASTES

As per specified under Hazardous Waste (Management and Handling) Rules, 1989

Sr. No.	Hazardous Waste From Pollution Control Facilities	Unit	Total Quantity (Tonnes)	
			During the previous financial year 2019 – 2020	During the current financial year 2020 – 2021
I	Cat -5.1	KL/A	Nil	Nil
2	Cat -5.2 (Oil soaked waste)	MT/A	0.005	0..002
3	Cat -5.2 (Oil soaked filters)	Pc	Nil	Nil
4	Cat -33.1 (Empty barrels)	MT/A	0.25	0.2

PART- E

SOLID WASTES

Sr. No.	Solid Waste	Total Quantity in Tonnes	
		During the previous financial year 2019 – 2020	During the current financial year 2020 – 2021
I	From Process (by products) a) Yeast Sludge	7044	8919
II	From Pollution Control Facilities a) Biogas plant Sludge b) Ash	204 22500	95 20237
III	Quantity recycled or reutilised within the unit	7248 MT sludge & 6800 MT of ash utilized for Biocompost activities & 12600 MT sold to brick manufactures Balance qty -19400 MT	9014 MT of sludge & 5750 MT of ash utilized for Biocompost activities & 18773 MT of ash sold to brick manufactures as well as for potash rich manure manufactures Balance qty- 15114 MT

PART-F

Please specify the characteristics (In terms of concentrations and quantity) of hazardous wastes as well as solid wastes and indicate disposal practice adopted for both the categories of wastes.

Hazardous wastes: 1) Uesd Oil : Nil
2) Used Cotton waste : 0.002 MT

PART-G

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

Entire spentwash generated by utilizing the sugarcane syrup as raw material was reduced in three stage evaporation and utilized in Incineration boiler as fuel

PART – H

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

Industry has commissioned the Incineration boiler of 40 TPH for utilization of spentwash after multiple effect evaporation in the boiler as fuel. Entire spentwash generated by utilizing the sugarcane syrup as raw material was reduced in three stage evaporation and utilized in Incineration boiler as fuel.
The electordes of 4th field of Electrostatic precipitator (ESP) are replaced for emission control for the suspended particulate matter through flue gas.

PART- I

Any other particulars for improving the quality of environment.

Condensate polishing unit I (Activated Sludge process) and Unit II(RO Process) are provided for the treatment of process condensate from MEE and spentless generated from process.Treated condensate is recycled back to cooling tower as make up.

This year additional plantation of 7000 trees is being carried out for the minimization of fugitative emissions

The electrodes of field No-4 of ESP are replaced by new to enhance the efficiency .

Godavari Biorefineries Limited
(Distillery Division), Sameerwadi **Annexure No-1**

- **Boiler Stack monitoring results:-**

Month & Year	**Stack No-3, 40 TPH Incineration boiler Stack ID- 1.7 mtr, Height – 81 mtr Fuel : Concentrated Spentwash & Coal, Fuel Ratio : 80 : 20**				
	Flue gas velocity (m/Sec)	**Flue gas Outlet temp deg C**	**Particulate matter(SPM) mg/Nm3**	**SO2 mg/nm3**	**NOX mg/Nm3**
Nov.2020	**12.5**	**146**	**83**	**46**	**32**
Dec.2020	**12.2**	**148**	**82**	**45**	**30**
Jan2021	**1.4**	**143**	**79**	**43**	**31**
Feb.2021	**12.1**	**14**	**60**	**44**	**30**

- **Ambient Air quality monitoring details:**

Month & Year	Location	Wind direction	Parameters			
	Sampling station		$PM_{2.5}$ $\mu g/m^3$	PM_{10} $\mu g/m^3$	NO_x $\mu g/m^3$	SO_2 $\mu g/m^3$
Nov.2020	Near distillery gate	Easterly	29	75	14	12.00
	Near BTP plant	Easterly	25	69	12.00	10.00
Dec.2020	Near distillery gate	Easterly	28	73	14	12
	Near BTP plant		25	68	10	8

Jan.2021	Near distillery gate	Easterly	27	74	12	10
	Near BTP plant		25	69	10	8
Feb.2021	Near distillery gate	Easterly	28	75	12	10
	Near BTP plant		27	71	14	1

- Electrostatic Precipitator Meter reading :

Sl No	Month	Working days	Initial Reading	Final reading	Total MWH	KWH
1	April.2020	26	969.92	1013.55	43.63	43630
2	May.2020	29.6	1013.55	1065.85	52.30	52300
3	June.2020	24.9	1065.85	1102.52	36.67	36670
4	July.2020	28.5	1102.52	1147.90	45.38	45380
5	August.2020	11.5	1147.90	1166.39	18.49	18490
6	September.2020	0	1166.39	1166.39	0	0
7	October 2020	2.0	1166.39	1182.24	15.85	15850
8	November.2020	29.3	1182.24	1221.29	39.050	39050
9	December.2020	30.7	1221.29	1259.04	37.753	37753
10	January.2021	30.9	1259.04	1293.49	34.447	34447
11	February.2021	27.2	1293.49	1326.58	33.093	33093
12	March. 2021	29.4	1326.58	1355.32	28.742	28742
	Total	270				385405
	Average unit consumption : 385405 / 270 =1427.42 KWH					

- **Effluent Sample Analysis report: Biomethanated Spent wash**

Sl No	**Parameter**	**Unit**	**Results**				**Test method**
			1	**2**	**3**	**4**	
			28.11.20	31.12.21	26.01.21	27.02.21	
1	pH		7.87	7.82	8.29	8.29	IS: 3025(P-11)1983
2	Alkalinity	mg/lit	8092	8010	8370	8290	IS: 3025(P-23)1986
3	Volatile acids	mg/lit	3640	3670	3822	3692	APHA 22nd edition2012,5056C
4	COD	mg/lit	41926	40233	35593	35840	IS: 3025(P-58) 2006
5	BOD	mg/lit	5680	5530	5290	5210	IS: 3025(P-44)1993
6	Total solids	mg/lit	77610	72490	69550	70150	APHA 22nd edition2012,2540 B
7	Total Volatile solids	mg/lit	41830	41170	38170	38960	APHA 22nd edition2012, 240-E,G
8.	Total Inorganic solids	mg/lit	35780	3130	31380	31190	APHA 22nd edition2012, 2540 C
9.	Chlorides	mg/lit	6755	6358	6219	6290	IS: 3025(P-32)1988
10.	Sulphates	mg/lit	5137	4760	465	4720	IS: 3025(P-24)1986
11.	Potash	mg/lit	13900	13300	11300	11700	IS: 3025(P-45)1993

- **Trade sample Analysis report: Raw Spent wash sample**

Sl No	Parameter	Unit	Result				Test method
			1	**2**	**3**	**4**	
			28.11.20	31.12.20	26.01.21	27.02.21	
1	pH		2.11	3.46	2.56	2.94	IS: 3025(P-11)1983
2	COD	mg/lit	87091	44468	50847	65041	IS: 3025(P-58) 2006
3	BOD	mg/lit	36180	19310	21410	27290	IS: 3025(P-44)1993
4	Total solids	mg/lit	105250	63840	71590	84710	APHA 22nd edition2012,2540 B
5	Total Volatile solids	mg/lit	46290	9550	32240	35360	APHA 22nd edition2012, 240- E,G
6.	Total Inorganic solids	mg/lit	58960	34290	39350	49350	APHA 22nd edition2012, 2540 C
7.	Chlorides	mg/lit	9040	2631	2845	7995	IS: 3025(P-32)1988
8.	Sulphate	mg/lit	4531	3146	3971	6228	IS: 3025(P-24)1986
9.	Potash	mg/lit	15700	8600	9300	11400	IS: 3025(P-45)1993

❖ **Tade sample Analysis report: Spent wash sample after 1st Stage Evaporation**

Sl No	Parameter	Unit	Results				Test method
			1	2	3	4	
			28.11.20	31.12.20	26.01.21	27.02.1	
1	pH		2.03	3.39	2.53	2.90	IS: 3025(P-11)1983
2	COD	mg/lit	145938	80146	114407	120650	IS: 3025(P-58) 2006
3	BOD	mg/lit	64930	38360	49520	53890	IS: 3025(P-44)1993
4	Total solids	mg/lit	178120	106530	137160	151750	APHA 22nd edition2012,2540 B
5	Total Volatile solids	mg/lit	85340	48790	64790	69120	APHA 22nd edition2012, 240- E,G
6.	Total Inorganic solids	mg/lit	92780	57740	72370	82630	APHA 22nd edition2012, 2540 C
7.	Chlorides	mg/lit	12958	6250	5130	9772	IS: 3025(P-32)1988
8.	Sulphate	mg/lit	8530	4184	6238	8537	IS: 3025(P-24)1986
9.	Potash	mg/lit	16400	9200	13700	15100	IS: 3025(P-45)1993

❖ **Trade sample Analysis report: Spentwash sample after IInd Stage Evaporation**

Sl No	Parameter	Unit	Results			Test method
			1	2	3	
			28.11.20	31.12.0	26.01.21	
1	pH		2.91	3.30	2.49	IS: 3025(P-11)1983
2	COD	mg/lit	555955	252562	625423	IS: 3025(P-58) 2006
3	BOD	mg/lit	240680	116130	257620	IS: 3025(P-44)1993

4	Total solids	mg/lit	594790	290810	671790	APHA 22nd edition2012,2540 B
5	Total Volatile solids	mg/lit	448240	189540	359970	APHA 22nd edition2012, 240- E,G
6.	Total Inorganic solids	mg/lit	146550	101270	311820	APHA 22nd edition2012, 2540 C
7.	Chlorides	mg/lit	34842	15165	25102	IS: 3025(P-32)1988
8.	Sulphate	mg/lit	28612	9430	18658	IS: 3025(P-24)1986
9.	Potash	mg/lit	46800	22700	29300	IS: 3025(P-45)1993

- **Noise Level Measurement Report:**

Date of measurement: 27.11.2020

Sl No	Location	Sampling time	dB(A) Leq
1	Distillery main gate	Day	57.3
		Night	52.8
2.	BTP Plant	Day	68.0
		Night	65.9
3.	Incineration Boiler	Day	71.8
		Night	68.5
4.	Compost yard	Day	64.7
		Night	53.2
5.	Distillery Time Office	Day	58.5
		Night	55.1

- **Borewell Analysis report:** Date of Sampling: 28.11.2020

Sl No	**Test parameter**	**Unit**	**M. S. Chinagundi Handigund**	**Ishwar R Terdal Bisnal Binal**	**Basavaraj Kenchappa Koligud Handigund**	**Test Method**
			1	**2**	**3**	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		6.95	7.10	7.39	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	180	170	140	IS: 3025(P-23) 1986
6	COD	mg/lit	26	25	22	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	< 4	< 4	< 4	IS: 3025(P-44)1993
8	TDS	mg/lit	460	490	390	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	115	102	69	IS: 3025(P-32)1988
10	Hardness	mg/lit	630	390	410	IS: 3025(P-21)1983
11	Calcium	mg/lit	192	115	125	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	37	25	24	IS: 3025(P-46)1994
13	Sodium	mg/lit	84.5	69.1	76.8	IS: 3025(P-45) 1993
14	Potassium	mg/lit	3.2	2.8	3.1	IS: 3025(P-44)1993
15	%sodium	%	22.43	27.63	28.71	By calculation
16	SAR		1.46	1.52	1.64	By calculation
17	RSC	meq/l	-9.08	-4.4	-5.45	By calculation
18	EC	µmhos/cm	810	700	740	IS: 3025(P-14)1984

- **Borewell Analysis report: D**ate of Sampling: 28.11.2020

Sl No	**Test parameter**	**Unit**	**Satyappa Rachyappa Wali**	**Sidappa S Kuribagi, Handigund**	**Sujata Bhadrasheety Handigund**	**Test Method**
			4	**5**	**6**	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.20	6.86	7.24	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.4	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	154	240	210	IS: 3025(P-23) 1986
6	COD	mg/lit	26	37	30	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	< 4	< 4	< 4	IS: 3025(P-44)1993
8	TDS	mg/lit	410	1090	965	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	115	280	174	IS: 3025(P-32)1988
10	Hardness	mg/lit	492	1370	1038	IS: 3025(P-21)1983
11	Calcium	mg/lit	150	440	350	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	29	66	40	IS: 3025(P-46)1994
13	Sodium	mg/lit	90.5	102.5	90.6	IS: 3025(P-45) 1993
14	Potassium	mg/lit	3.9	5.3	4.1	IS: 3025(P-44)1993
15	%sodium	%	28.29	13.93	15.88	By calculation
16	SAR		1.77	1.2	1.22	By calculation
17	RSC	meq/l	-6.83	-22.7	-16.6	By calculation
18	EC	µmhos/cm	720	2140	1830	IS: 3025(P-14)1984

❖ **Borewell Analysis report:**

Date of Sampling: 28.11.2020

Sl No	**Test parameter**	**Unit**	**Bhimappa Gurupadappa Shirol**	**Girish R Kulkarni Handigund**	**Ulliappa Chanal Handigund**	**Test Method**
			7	**8**	**9**	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		6.98	7.80	7.58	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.6	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	160	258	210	IS: 3025(P-23) 1986
6	COD	mg/lit	32	34	31	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	< 4	< 4	< 4	IS: 3025(P-44)1993
8	TDS	mg/lit	650	1070	980	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	145	245	252	IS: 3025(P-32)1988
10	Hardness	mg/lit	810	1150	1244	IS: 3025(P-21)1983
11	Calcium	mg/lit	216	370	395	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	66	55	63	IS: 3025(P-46)1994
13	Sodium	mg/lit	101.2	119.3	97.1	IS: 3025(P-45) 1993
14	Potassium	mg/lit	4.8	6.2	4.8	IS: 3025(P-44)1993
15	%sodium	%	21.22	18.3	14.4	By calculation
16	SAR		1.54	1.53	1.19	By calculation
17	RSC	meq/l	-13.1	-17.9	-20.8	By calculation
18	EC	µmhos/cm	1270	2010	1940	IS: 3025(P-14)1984

- **Borewell Analysis report: Date of Sampling: 28.11.2020**

Sl No	Test parameter	Unit	Sidappa K Biradi Bisnal	KIAAR culture lab	Nagappa Satyappa Banaj Bisnal	Test Method
			10	**11**	**12**	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.55	7.50	7.17	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	165	178	160	IS: 3025(P-23) 1986
6	COD	mg/lit	28	25	32	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	< 4	< 4	< 4	IS: 3025(P-44)1993
8	TDS	mg/lit	438	460	610	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	91	105	124	IS: 3025(P-32)1988
10	Hardness	mg/lit	354	428	608	IS: 3025(P-21)1983
11	Calcium	mg/lit	110	130	141	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	19	25	62	IS: 3025(P-46)1994
13	Sodium	mg/lit	63.4	57.6	135.1	IS: 3025(P-45) 1993
14	Potassium	mg/lit	2.9	3.4	5.8	IS: 3025(P-44)1993
15	%sodium	%	27.89	22.49	32.35	By calculation
16	SAR		1.46	1.21	2.38	By calculation
17	RSC	meq/l	-3.78	-5.02	-9.01	By calculation
18	EC	µmhos/cm	640	770	1030	IS: 3025(P-14)1984

- Piezometer Station Analysis report: date 28.11.2020

Sl No	**Test parameter**	**Unit**	Piezometer Station No-1	Piezometer Station No-2	Piezometer Station No-3	Piezometer Station No-4	Piezometer Station No-5
1	Color	Hazen	Found dry No analysis is carried out	Found dry No analysis is carried out	Found dry No analysis is carried out	Found dry No analysis is carried out	Found dry No analysis is carried out
2	Odor						
3	pH						
4	Turbidity	NTU					
5	Total Alkalinity	mg/lit					
6	COD	mg/lit					
7	BOD(3days @270 C	mg/lit					
8	TDS	mg/lit					
9	Chlorides	mg/lit					
10	Hardness	mg/lit					
11	Calcium	mg/lit					
12	Magnesium	mg/lit					
13	Sodium	mg/lit					
14	Potassium	mg/lit					
15	%sodium	%					
16	SAR						
17	RSC	meq/l					
18	EC	µmhos/cm					

- **Borewell Analysis report:** Date of Sampling: 31.12.2020

Sl No	**Test parameter**	**Unit**	**Test Borewell No-3**	**Test Borewell No-4**	**Mayappa Sanadi Kappalguddi**	**Test Method**
			1	**2**	**3**	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.11	7.33	7.55	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.1	1.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	162	165	240	IS: 3025(P-23) 1986
6	COD	mg/lit	19	30	37	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	538	870	1170	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	115	295	260	IS: 3025(P-32)1988
10	Hardness	mg/lit	252	665	1120	IS: 3025(P-21)1983
11	Calcium	mg/lit	76	230	590	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	15	22	87	IS: 3025(P-46)1994
13	Sodium	mg/lit	71.9	93.7	90.2	IS: 3025(P-45) 1993
14	Potassium	mg/lit	2.6	4.8	4.5	IS: 3025(P-44)1993
15	%sodium	%	38.03	23.3	9.65	By calculation
16	SAR		1.97	1.58	0.91	By calculation
17	RSC	meq/l	-1.81	-10.03	-31.95	By calculation
18	EC	µmhos/cm	889	1520	1871	IS: 3025(P-14)1984

- **Borewell Analysis report:** Date of Sampling: 31.12.2020

Sl No	**Test parameter**	**Unit**	**Mahadev Ajjapagaol Kappalguddi**	**Bhimappa R Uddapagaol Kappalgoddi**	**Bharmappa H Sanadi Kappalgudddi**	**Parmahans G. Bhangi Kappalguddi**	**Test Method**
			4	**5**	**6**	**7**	
1	Color	Hazen	<5	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.73	7.39	7.53	7.60	IS: 3025(P-11)1983
4	Turbidity	NTU	1.2	1.7	1.7	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	340	310	350	170	IS: 3025(P-23) 1986
6	COD	mg/lit	42	41	25	15	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	6	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	1430	1290	1170	510	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	315	308	282	129	IS: 3025(P-32)1988
10	Hardness	mg/lit	1740	1470	1320	590	IS: 3025(P-21)1983
11	Calcium	mg/lit	590	514	479	206	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	65	45	30	18	IS: 3025(P-46)1994
13	Sodium	mg/lit	163.8	108.2	105.3	78.2	IS: 3025(P-45) 1993
14	Potassium	mg/lit	7.3	2.7	6.1	4.9	IS: 3025(P-44)1993
15	%sodium	%	16.91	13.78	14.71	22.24	By calculation
16	SAR		1.7	1.22	1.26	1.4	By calculation
17	RSC	meq/l	-28.11	-23.25	-19.45	-8.4	By calculation
18	EC	µmhos/cm	2144	1990	1895	94	IS: 3025(P-14)1984

- **Borewell Analysis report:** Date of Sampling: 26.01.2021

Sl No	**Test parameter**	**Unit**	**Girish R Kulkarni Handigund**	**Ulleppa S Chanal Handigund**	**Basvaraj K Koligud Handigund**	**Sujata Bhardrashetty Handigund**	**Test Method**
			1	**2**	**3**	**4**	
1	Color	Hazen	<5	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		8.10	7.63	7.42	7.38	IS: 3025(P-11)1983
4	Turbidity	NTU	0.3	0.5	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	210	204	120	192	IS: 3025(P-23) 1986
6	COD	mg/lit	30	30	24	27	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	810	950	370	910	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	194	228	52	161	IS: 3025(P-32)1988
10	Hardness	mg/lit	880	1170	380	982	IS: 3025(P-21)1983
11	Calcium	mg/lit	251	328	117	340	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	61	32	21	32	IS: 3025(P-46)1994
13	Sodium	mg/lit	68.9	91.5	69.4	82.7	IS: 3025(P-45) 1993
14	Potassium	mg/lit	5.2	4.3	3.2	4.8	IS: 3025(P-44)1993
15	%sodium	%	14.49	17.2	28.29	15.42	By calculation
16	SAR		1.01	1.29	1.55	1.14	By calculation
17	RSC	meq/l	-13.43	-14.98	-5.2	-15.82	By calculation
18	EC	µmhos/cm	1690	1870	710	1670	IS: 3025(P-14)1984

- **Borewell Analysis report:** Date of Sampling: 26.01.2021

Sl No	**Test parameter**	**Unit**	**Mahadev Chingundi Handigund**	**Sidappa S Kuribagi Handigund**	**Mahalingappa Muttapagaol Handigund**	**Ishwar Terdal Bisnal**	**Test Method**
			5	**6**	**7**	**8**	
1	Color	Hazen	<5	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.29	6.91	7.83	7.22	IS: 3025(P-11)1983
4	Turbidity	NTU	0.2	0.2	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	170	220	190	180	IS: 3025(P-23) 1986
6	COD	mg/lit	25	33	26	24	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	470	1030	650	470	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	130	254	179	95	IS: 3025(P-32)1988
10	Hardness	mg/lit	620	1290	450	402	IS: 3025(P-21)1983
11	Calcium	mg/lit	188	430	232	110	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	37	52	32	31	IS: 3025(P-46)1994
13	Sodium	mg/lit	89.2	95.8	71.4	72.5	IS: 3025(P-45) 1993
14	Potassium	mg/lit	3.7	5.7	2.9	3.2	IS: 3025(P-44)1993
15	%sodium	%	23.65	13.86	17.85	27.96	By calculation
16	SAR		1.55	1.16	1.16	1.57	By calculation
17	RSC	meq/l	-9.08	-21.4	-10.46	-4.48	By calculation
18	EC	µmhos/cm	840	1960	940	680	IS: 3025(P-14)1984

- **Borewell Analysis report:** Date of Sampling: 27.02.2021

Sl No	Test parameter	Unit	Siddappa K Birdi Bisnal	KIAAR LAB Bisnal	Nagappa S Banaj Bisnal	Satayya R Wali	Test Method
			1	**2**	**3**	**4**	
1	Color	Hazen	<5	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.81	7.84	7.35	7.46	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.1	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	170	980	170	160	IS: 3025(P-23) 1986
6	COD	mg/lit	26	28	29	25	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	460	510	590	440	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	107	114	152	120	IS: 3025(P-32)1988
10	Hardness	mg/lit	285	285	503	430	IS: 3025(P-21)1983
11	Calcium	mg/lit	62	83	116	126	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	32	19	52	28	IS: 3025(P-46)1994
13	Sodium	mg/lit	65.4	62.3	112.5	89.1	IS: 3025(P-45) 1993
14	Potassium	mg/lit	3.1	3.9	4.1	3.7	IS: 3025(P-44)1993
15	%sodium	%	32.88	31.82	32.47	30.84	By calculation
16	SAR		1.68	1.60	2.18	1.86	By calculation
17	RSC	meq/l	-2.36	-1.93	-6.73	-5.43	By calculation
18	EC	µmhos/cm	790	930	980	790	IS: 3025(P-14)1984

- **Borewell Analysis report:** Date of Sampling: 27.02.2021

Sl No	**Test parameter**	**Unit**	**Satayappa R wali Bisnal**	**Ishwar R Terdal Bisnal**	**Bhimappa G Shirol Bisnal**	
			5	**6**	**7**	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.46	7.60	7.28	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	160	162	168	IS: 3025(P-23) 1986
6	COD	mg/lit	25	24	27	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	440	470	670	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	120	77	152	IS: 3025(P-32)1988
10	Hardness	mg/lit	430	295	760	IS: 3025(P-21)1983
11	Calcium	mg/lit	126	81	221	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	28	23	29	IS: 3025(P-46)1994
13	Sodium	mg/lit	89.1	67.1	108.2	IS: 3025(P-45) 1993
14	Potassium	mg/lit	3.7	2.9	4.7	IS: 3025(P-44)1993
15	%sodium	%	30.84	32.68	25.79	By calculation
16	SAR		1.86	1.69	1.81	By calculation
17	RSC	meq/l	-5.43	-2.72	-10.1	By calculation
18	EC	µmhos/cm	790	76	1290	IS: 3025(P-14)1984

- **Condensate polishing unit (BTP) Inlet & Outlet parameter details:** Date: 28.11.2020

Sl No	Test Parameter	Unit	Sugar Inlet	Distillery inlet	Sugar Outlet	Distillery Outlet	Test Method
1	pH	-	8.41	3.52	7.81	7.06	IS: 3025(P-11)1986
2	Chemical Oxygen demand	mg/lit	185	1468	60	161	IS: 3025(P-58) 2006
3	BOD (3days @ 27 OC)	mg/lit	69	560	11	52	IS:3025(P-44)1993
4	Total dissolved solids	mg/lit	310	1050	190	470	IS:3025(P-16)1984
5	Total suspended solids	mg/lit	43	118	30	45	IS:3025(P-17)1984
6	Chloride as Cl-	mg/lit	57	143	38	80	IS:3025(P-32)1988
7	Sulphate as SO4	mg/lit	29	95	21	41	IS:3025(P-24)1986
8	Oil & Grease	mg/lit	ND	ND	ND	ND	IS:3025(P-39)1993(RA 2003)

- **Boiler Ash analysis report:**

Sl No	**Parameter**	**Unit**	**Result**			
			28.11.2020	**31.12.20**	**26.01.21**	**27.02.21**
1	**Moisture**	**%**	**0.26**	**0.35**	**0.67**	**0.52**
2	**pH(Saturated)**		**12.08**	**12.16**	**11.9**	**11.7**
3	**Total Volatile Solids**	**%**	**1.53**	**1.55**	**1.47**	**1.41**
4	**Residual ash**	**%**	**98.47**	**98.45**	**98.53**	**98.59**
5	**Nitrogen**	**%**	**1.01**	**1.08**	**1.02**	**1.02**
6	**Phosphorus as P2O5**	**%**	**1.35**	**1.38**	**1.41**	**1.43**
7	**Potassium as K2O**	**%**	**15.9**	**15.3**	**13.7**	**15.**
8	**Organic carbon**	**%**	**6.1**	**5.8**	**5.72**	**5.69**

- **Press mud Analysis : date 28.11.2020**

Sl No	Parameter	Unit	Result
1	Moisture	%	56.18
2	pH(Saturated)		4.40
3	Total Volatile Solids	%	51.53
4	Residual ash	%	48.47
5	Nitrogen	%	1.96
6	Phosphorus as P2O5	%	1.4
7	Potassium as K2O	%	0.36
8	Organic carbon	%	44.09

Biocompost Analysis Report :

Sl No	Parameter	Unit	Result			
			28.11.2020	31.12.20	26.01.21	27.02.21
1	Moisture	%	32.75	31.57	29.96	29.71
2	pH(Saturated)		6.80	6.88	6.69	6.64
3	Total Volatile Solids	%	63.16	63.71	63.12	63.37
4	Residual ash	%	36.84	36.29	36.88	36.63
5	Nitrogen	%	1.73	1.71	1.68	1.67
6	Phosphorus as P2O5	%	1.8	1.85	1.81	1.84
7	Potassium as K2O	%	3.29	3.37	3.69	3.71
8	Organic carbon	%	28.53	28.62	28.12	28.05
9	C/N		16.49	16.73	16.73	16.79

	Leachate Water (Filtrate					
10	**pH**		**8.10**	**8.15**	**8.29**	**8.25**
11	**COD**	**mg/lit**	**237**	**226**	**229**	**225**
12	**BOD**	**mg/lit**	**25**	**24**	**25**	**23**
13	**Chlorides**	**mg/lit**	**190**	**187**	**172**	**180**
14	**E C**	**µMhos/cm**	**1580**	**1570**	**1520**	**1510**

Environmental monitoring is carried out by the NABL accrediated laboratory . The laboratory details are as follows

Dr.Subbarao's Environment Center
"Arundhati" MSEB Road, Vishrambag
Sangli –416415
State : Mahrastra

ENVIRONMENTAL STATEMENT IN BRIEF

Name of Factory: GODAVARI BIOREFINERIES LTD.,
(Distillery Division)
SAMEERWADI. 587 316,
DIST.: BAGALKOT,
KARNATAKA (STATE).

Units of effluent treatment plant:

Distillery: Bio-digesters, Multiple Effect Evaporators, Biocomposting & Incineration boiler

1) Whether untreated, treated effluents are analyzed regularly?

A: Yes, Untreated, treated effluents are analyzed usually once in a month from third agency.

2) Whether treated effluent is used for irrigation purpose and how much land is used for irrigation?

A : No. Zero liuid discharge method is adopted.

3) Whether soil and ground water are tested regularly?

R: Yes, soil and ground water are tested once in a month. Results are enclosed.

4) Whether stack monitoring arrangement have been made? And if so whether the monitoring is done regularly as per the consent condition?

R: Yes, Results enclosed.

5) What is the capital cost of pollution control measures since the inception of the plant and also mention the details of operation and maintenance cost.

Capital Cost : in lakhs

1) Primary Effluent treatment plant (Biomethanisation) : 680.00
2) Secondary effluent Treatment plant(Biocompost Plant) : 820.00
3) Integrated Evaporation(I^{st} Stage) : 570.00
4) II^{nd} Stage Evaporation : 1180.00
5) SS Techno Evaporation : 920.00

6)	Incineration Boiler	: 2750.00
7)	Biological Treatment plant (CPU)	: 650.00
	Total	: **7570.00**

Operation and maintenance cost per annum:

1)	Primary	: Rs 56.78 Laks
2)	Secondary	: Rs 361.03 laks
3)	Air pollution control equipment	: Rs 40.21 Laks

6) How many trees are planted in the factory premises?

R: About 7500 tree plantation is under progress in the factory premises. About 6.5 acres of land will be covered under greenbelt.

ENVIRONMENTAL OFFICER

Asst. GENERAL MANAGER