



Godavari
Biorefineries Ltd

Godavari Biorefineries Ltd

Distillery Division
Date: 24.09.2022

GBL/SMR/KSPCB/2022-23/ 810

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 for the period 2021-22 -reg

With reference to the above subject herewith we are submitting the Environmental statement of the distillery division for the period 1st April 2021 to 31st March 2022 in duplicate.

This is for your kind information and needful.

Thanking you

Yours Faithfully
For Godavari Biorefineries Limited
Distillery Division

Umesh Bennalli
Asst.General Manager

ಸೀಲಿಸಿದ
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ
ಪ್ರಾದೇಶಿಕ ಕಛೇರಿ, ಬಾಗಲಕೋಟೆ

Works : P O Sameerwadi, Tal Mudhol, Dist Bagalkot, Karnataka State - 587 316, INDIA
Tel : (91-0835) 260046-47/48 Fax : (91-08353) 880707 "SRI" "SUDAR MILLS" Sameerwadi.

Regd. Office : Somaiya Bhavan, 45/47, Mahatma Gandhi Road, Fort, Mumbai - 400 001 INDIA
Tel: (91-22) 2204 8272 / 2285 8430 Fax : (91-22) 2204 7297 www.somaiya.com

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GST No: 29AABCG2543C1ZZ

FORM- V

**ENVIRONMENTAL STATEMENT
FOR THE PERIOD 1ST April 2021 to
31st March 2022**

Submitted By

**Godavari Biorefineries Limited
Distillery Division
Sameerwadi**

FORM-V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2022.

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) **2000**
Secondary (SIC Code)
3. Installed Capacity-Unit **400 KLPD**
4. Year of Establishment **1984**
5. Date of the last Environmental Statement Submitted **28th September, 2021**

PART- B

WATER AND RAW MATERIAL CONSUMPTION

1. Water Consumption (Cum/day) :-

| Sr. No. | Operation | During the previous Financial Year 2020- 2021 | During the Current Financial Year 2021 - 2022 |
|---------|-----------|---|---|
| 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 2020 - 2021 | During the Current Financial Year 2021 - 2022 |
| I | Rectified Spirit | 2.92 | 2.91 |

2. Raw Material Consumption :

| Sr. No. | Raw Material | Product | Consumption of Raw Material Per Unit of Output. (Kgs/KL of Spirit Produced) | |
|---------|------------------|--|---|-------------|
| | | | 2020 - 2021 | 2021 - 2022 |
| 1a. | C-grade Molasses | Rectified Spirit Ethanol Extra Neutral Acohol | 3939 | 3991 |
| b. | B-Heavy Molasses | | 3236 | 3247 |
| c. | Sugarcane syrup | | 3288 | 3203 |
| d. | Sugarcane Juice | | 12072 | 12369 |
| 2 | Yeast Used | | Recycled | Recycled |
| 3 | Antifoam | | | |
| 4 | Urea | | --- | --- |
| 5 | D.A.P. | | --- | --- |
| 6 | Bleaching Powder | | ---- | ---- |
| 7 | Steam | | 4687 | 4507 |
| 8 | Power (KWH/ KL) | | 310 | 463 |
| | | By-Product | Litres/KL of Spirit Produced | |
| | | Fusel Oil | Nil | Nil |

| Sr. No. | Product | Total Quantity Produced in KL | |
|---------|-----------------------|-------------------------------|------------|
| | | 2020 - 2021 | 2021 -2022 |
| A | Rectified Spirit | 11153.9063 | 11929.5493 |
| B | Extra Neutral Alcohol | 9991.318 | 1750.479 |
| C | Impure Alcohol | 1530.5507 | 329.9401 |
| D | Ethanol | 48682.002 | 63442.448 |
| | Total production | 71357.777 | 77452.4164 |
| 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 | | 82 | - | - |

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 2020 - 2021 | During the current financial year 2021 - 2022 |
| I | Cat -5.1 | KL/A | Nil | Nil |
| 2 | Cat -5.2 (Oil soaked waste) | MT/A | 0.002 | 0.001 |
| 3 | Cat -5.2 (Oil soaked filters) | Pc | Nil | Nil |
| 4 | Cat -33.1 (Empty barrels) | MT/A | 0.2 | 0.15 |

PART- E

SOLID WASTES

| Sr. No. | Solid Waste | Total Quantity in Tonnes | |
|---------|---|--|---|
| | | During the previous financial year 2020 - 2021 | During the current financial year 2021 - 2022 |
| I | From Process (by products) a) Yeast Sludge | 8919 | 6130 |
| II | From Pollution Control Facilities a) Biogas plant Sludge b) Ash | 95 20237 | 125 18220 |
| III | Quantity recycled or reutilised within the unit | 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 | 6255 MT of sludge & 3700 MT of ash utilized for Biocompost activities & 21094 MT of ash sold to brick manufactures as well as for potash rich manure manufactures Balance qty- 8540 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) Used Oil : Nil
2) Used Cotton waste : 0.001 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 electrodes of 5th & 6th field of Electrostatic precipitator (ESP) will be replaced for emission control for the suspended particulate matter.

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.

Plantation of 3500 trees is carried out for the minimization of fugitive emissions

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

Analysis reports

❖ **Boiler Stack monitoring results: -**

| Month & Year | Stack No-3, 40 TPH Incineration boiler Stack ID- 1.7 mtr, Height – 81 mtr Fuel: Concentrated Spent wash & Coal, Fuel Ratio: 65 :35 | | | | |
|-------------------------|--|---|--|-----------------------|-----------------------|
| | Flue gas velocity (m/Sec) | Flue gas Outlet temp deg C | Particulate matter (SPM) mg/Nm3 | SO2 mg/nm3 | NOX mg/Nm3 |
| April .2021 | Due to Covid -19 movement restrictions from one state to another state we are unable to carry out the monitoring during the period April 2021to July .2021. | | | | |
| May.2021 | | | | | |
| June.2021 | | | | | |
| July.2021 | | | | | |
| August. 2021 | 12.9 | 145 | 66 | 47 | 34 |
| September 2021 | Plant Stopped for general maintenance | | | | |
| November 2021 | 12.6 | 147 | 80 | 45 | 32 |
| December 2021 | 12.9 | 145 | 82 | 46 | 33 |
| January 2022 | 12.7 | 143 | 86 | 44 | 29 |
| February 2022 | 12.8 | 147 | 85 | 47 | 34 |
| March 2022 | 12.9 | 145 | 85 | 46 | 33 |

❖ **Ambient Air quality monitoring details:**

| Month & Year | Location | Wind direction | Parameters | | | |
|----------------|----------------------|----------------|--|---------------------------------------|--------------------------------------|--------------------------------------|
| | | | PM _{2.5} µg/m ³ | PM ₁₀ µg/m ³ | NO _x µg/m ³ | SO ₂ µg/m ³ |
| August.2021 | Near distillery gate | Easterly | 22 | 61 | 12 | 09.00 |
| | Near BTP plant | Easterly | 20 | 54 | 10.00 | 07.00 |
| September.2021 | Near distillery gate | Easterly | 18 | 52 | 09.00 | 07.00 |
| | Near BTP plant | | 15 | 47 | 08.00 | 06.00 |
| November .2021 | Near distillery gate | Easterly | 25 | 70 | 10.0 | 8.0 |
| | Near BTP plant | | 24 | 67 | 10.0 | 8.0 |
| December 2021 | Near distillery gate | Easterly | 31 | 74 | 14.00 | 10.00 |
| | Near BTP plant | | 30 | 71 | 12.00 | 10.00 |
| January 2022 | Near distillery gate | Easterly | 30 | 70 | 12.00 | 10.00 |
| | Near BTP plant | | 28 | 68 | 10.00 | 08.00 |
| February 2022 | Near distillery gate | Easterly | 32 | 75 | 15.00 | 12.00 |
| | Near BTP plant | | 30 | 72 | 12.00 | 10.00 |
| March 2022 | Near distillery gate | Easterly | 33 | 78 | 15.00 | 12.00 |
| | Near BTP plant | | 31 | 73 | 12.00 | 10.00 |

❖ Electrostatic Precipitator Meter reading :

| Sl No | Month | Working days | Initial Reading | Final reading | Total MWH | KWH |
|---|-----------------|--------------|-----------------|---------------|-----------|--------|
| 1 | April. 2021 | 26.2 | 1355.325 | 1386.052 | 30.727 | 30727 |
| 2 | May.2021 | 30.2 | 1386.052 | 1419.013 | 32.961 | 32961 |
| 3 | June.2021 | 29.1 | 1419.013 | 1456.311 | 37.298 | 37298 |
| 4 | July.2021 | 28.4 | 1456.311 | 1494.179 | 37.868 | 37868 |
| 5 | August.2021 | 10.3 | 1494.179 | 1516.885 | 22.706 | 22706 |
| 6 | September. 2021 | - | 1516.885 | 1516.885 | 0.00 | |
| 7 | Oct.21 | 5.9 | 1516.88 | 1524.37 | 7.49 | 7490 |
| 8 | Nov . 2021 | 25.2 | 1524.37 | 1564.01 | 39.64 | 39640 |
| 9 | Dec .2021 | 30.8 | 1564.01 | 1606.00 | 41.99 | 41990 |
| 10 | Jan .2022 | 30.7 | 1606.00 | 1649.92 | 43.92 | 43920 |
| 11 | Feb .2022 | 27.3 | 1649.92 | 1687.86 | 37.94 | 37940 |
| 12 | March .2022 | 29.5 | 1687.86 | 1727.75 | 39.89 | 39890 |
| | | 273.6 | | | 372.43 | 372430 |
| Average unit consumption : 372430 / 273.6 =1361 KWH | | | | | | |

❖ Noise Level Measurement Report:

| Sl No | Location | Sampling time | 04.08.2021 | 30.09.2021 | 17.12.2022 | 24.03.2022 |
|-------|----------------------|---------------|------------|------------|------------|------------|
| | | | dB(A) Leq | | | |
| 1 | Distillery main gate | Day | 64.2 | 54.5 | 55.9 | 57.2 |
| | | Night | 52.9 | 51.1 | 51.2 | 51.5 |
| 2. | Distillery plant | Day | 68.5 | 56.5 | 69.3 | 68.7 |
| | | Night | 62.1 | 51.9 | 66.1 | 65.5 |
| 3. | Near Boiler | Day | 69.8 | 57.1 | 72.4 | 72.3 |
| | | Night | 64.3 | 52.3 | 69.8 | 69.3 |
| 4. | Near BTP plant | Day | 52.8 | 50.8 | 65.7 | 65.1 |
| | | Night | 41.7 | 42.5 | 61.5 | 61.4 |
| 5. | Compost yard | Day | 56.1 | 48.2 | 59.2 | 58.6 |
| | | Night | 47.5 | 43.7 | 50.1 | 50.2 |

❖ **Trade Sample Analysis report: Raw Spent wash**

| Sl No | Parameter | Unit | Result | | | | | |
|-------|------------------------|--------|------------|----------|----------|----------|-------------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 |
| | | | 04.08.2021 | 24.11.21 | 17.12.21 | 12.01.22 | 11.02.2022 | 24.03.2022 |
| 1 | pH | | 2.61 | 2.68 | 3.58 | 3.16 | 2.59 | 2.84 |
| 2 | COD | mg/lit | 118310 | 31535 | 34538 | 42454 | 70781 | 44356 |
| 3 | BOD | mg/lit | 53890 | 1517 | 14830 | 18668 | 29053 | 18207 |
| 4 | Total solids | mg/lit | 157170 | 68460 | 56930 | 66022 | 95960 | 65340 |
| 5 | Total Volatile solids | mg/lit | 71920 | 31950 | 30480 | 35280 | 61180 | 39190 |
| 6 | Total Inorganic solids | mg/lit | 85250 | 36510 | 26450 | 30742 | 34780 | 26150 |
| 7. | Chlorides | mg/lit | 6738 | 2578 | 2191 | 2276 | 4715 | 4638 |
| 8. | Sulphates | mg/lit | 4712 | 3560 | 3368 | 3122 | 3940 | 2965 |
| 9 | Potash | mg/lit | 13700 | 9100 | 8400 | 8640 | 12500 | 9600 |

❖ **Trade sample Analysis report: Spent wash sample after Integrated Evaporation (IMEE)**

| Sl No | Parameter | Unit | Result | | | | Test method |
|-------|-----------|--------|----------|----------|----------|----------|---------------------|
| | | | 1 | 2 | 3 | 4 | |
| | | | 04.08.21 | 24.11.21 | 12.01.22 | 24.03.22 | |
| 1 | pH | | 2.69 | 2.50 | 2.96 | 2.81 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 151830 | 63900 | 86530 | 74962 | IS: 3025(P-58) 2006 |
| 3 | BOD | mg/lit | 63270 | 22310 | 36724 | 30520 | IS: 3025(P-44)1993 |

| | | | | | | | |
|----|------------------------|--------|--------|-------|--------|-------|---|
| 4 | Total solids | mg/lit | 189640 | 97480 | 106650 | 95370 | APHA 22 nd edition2012,2540 B |
| 5 | Total Volatile solids | mg/lit | 103970 | 62720 | 64884 | 51580 | APHA 22 nd edition2012, 240- E,G |
| 6. | Total Inorganic solids | mg/lit | 85670 | 35120 | 41766 | 43790 | APHA 22 nd edition2012, 2540 C |
| 7. | Chlorides | mg/lit | 9285 | 3257 | 7125 | 5109 | IS: 3025(P-32)1988 |
| 8. | Sulphate | mg/lit | 5971 | 3760 | 6891 | 3128 | IS: 3025(P-24)1986 |
| 9. | Potash | mg/lit | 16800 | 9500 | 11168 | 11300 | IS: 3025(P-45)1993 |

❖ Trade sample Analysis report: Spentwash sample after 1st Stage Evaporation

| Sl No | Parameter | Unit | Result | | | Test method |
|-------|------------------------|--------|----------|----------|-----------|---|
| | | | 1 | 2 | 3 | |
| | | | 04.08.21 | 24.11.21 | 17..12.21 | |
| 1 | pH | | 2.55 | 2.37 | 2.91 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 259160 | 109958 | 84.050 | IS: 3025(P-58) 2006 |
| 3 | BOD | mg/lit | 109240 | 47080 | 35730 | IS: 3025(P-44)1993 |
| 4 | Total solids | mg/lit | 298310 | 152460 | 108360 | APHA 22 nd edition2012,2540 B |
| 5 | Total Volatile solids | mg/lit | 172130 | 70330 | 61910 | APHA 22 nd edition2012, 240- E,G |
| 6. | Total Inorganic solids | mg/lit | 126180 | 82130 | 46450 | APHA 22 nd edition2012, 2540 C |
| 7. | Chlorides | mg/lit | 13629 | 8290 | 7705 | IS: 3025(P-32)1988 |

| | | | | | | |
|----|----------|--------|-------|-------|-------|--------------------|
| 8. | Sulphate | mg/lit | 9485 | 7610 | 6920 | IS: 3025(P-24)1986 |
| 9. | Potash | mg/lit | 21600 | 12600 | 11300 | IS: 3025(P-45)1993 |

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

| Sl No | Parameter | Unit | Result | | | | | Test method |
|-------|------------------------|--------|----------|----------|----------|----------|----------|---|
| | | | 1 | 2 | 3 | 4 | 5 | |
| | | | 04.08.21 | 24.11.21 | 17.12.21 | 12.01.22 | 24.03.22 | |
| 1 | pH | | 2.53 | 3.35 | 2.62 | 2.64 | 2.11 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 491730 | 298754 | 450821 | 446284 | 218342 | IS: 3025(P-58)2006 |
| 3 | BOD | mg/lit | 210910 | 124610 | 187370 | 183730 | 92580 | IS: 3025(P-44)1993 |
| 4 | Total solids | mg/lit | 528670 | 355920 | 395190 | 398910 | 275310 | APHA 22 nd edition2012,2540 B |
| 5 | Total Volatile solids | mg/lit | 347390 | 194370 | 209520 | 208290 | 163570 | APHA 22 nd edition2012, 240- E,G |
| 6. | Total Inorganic solids | mg/lit | 181280 | 161550 | 185670 | 190620 | 111740 | APHA 22 nd edition2012, 2540 C |
| 7. | Chlorides | mg/lit | 21833 | 23752 | 28507 | 26705 | 13835 | IS: 3025(P-32)1988 |
| 8. | Sulphate | mg/lit | 15409 | 16410 | 19210 | 18384 | 9718 | IS: 3025(P-24)1986 |
| 9. | Potash | mg/lit | 26100 | 26500 | 29700 | 27490 | 28220 | IS: 3025(P-45)1993 |

❖ **Spentless:**

| Sl No | Parameter | Unit | Result | | | | Test method |
|-------|------------------------------|--------|----------|----------|----------|----------|------------------------------|
| | | | 1 | 2 | 3 | | |
| | | | 04.08.21 | 12.01.22 | 11.02.22 | 24.03.22 | |
| 1 | pH | | 3.29 | 1.67 | 2.69 | 2.73 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 212 | 147 | 390 | 290 | IS: 3025(P-58) 2006 |
| 3 | BOD (3 days @27deg C) | mg/lit | 40 | 56 | 120 | 102 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 105 | 113 | 110 | 105 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | <4 | <4 | ND | ND | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 72 | 18 | 15 | 23 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 10 | 10 | 8 | 9 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

❖ **Trade sample Analysis report: Integrated MEE Process Condensate**

| Sl No | Parameter | Unit | Result | | | | Test method |
|-------|-----------|--------|----------|----------|----------|----------|---------------------|
| | | | 1 | 2 | 3 | 4 | |
| | | | 04.08.21 | 12.01.22 | 11.02.22 | 24.03.22 | |
| 1 | pH | | 2.42 | 1.35 | 3.80 | 2.31 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 690 | 1698 | 3546 | 2576 | IS: 3025(P-58) 2006 |

| | | | | | | | |
|----|------------------------------|--------|-----|-----|------|------|------------------------------|
| 3 | BOD | mg/lit | 210 | 744 | 1570 | 1140 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 195 | 230 | 210 | 215 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 10 | 12 | 15 | 10 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 162 | 32 | 38 | 54 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 35 | 12 | 12 | 11 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

❖ Trade sample Analysis report: Ist Stage MEE Process Condensate

| Sl No | Parameter | Unit | Result | | | Test method |
|-------|------------------------------|--------|----------|----------|----------|---------------------|
| | | | 1 | 2 | 3 | |
| | | | 12.01.22 | 11.02.22 | 24.03.22 | |
| 1 | pH | | 1.35 | 3.80 | 2.31 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 1698 | 3546 | 2576 | IS: 3025(P-58) 2006 |
| 3 | BOD | mg/lit | 744 | 1570 | 1140 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 230 | 210 | 215 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 12 | 15 | 10 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 32 | 38 | 54 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 12 | 12 | 11 | IS: 3025(P-24)1986 |

| | | | | | | |
|----|--------------|--------|----|----|----|------------------------------|
| 9. | Oil & Grease | mg/lit | ND | ND | ND | IS: 3025(P-39)1991 (RA 2003) |
|----|--------------|--------|----|----|----|------------------------------|

❖ **Trade sample Analysis report: IInd Stage MEE Process Condensate**

| Sl No | Parameter | Unit | Result | | Test method |
|-------|------------------------------|--------|----------|----------|------------------------------|
| | | | 1 | 2 | |
| | | | 24.11.21 | 24.03.22 | |
| 1 | pH | | 1.75 | 2.05 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 7889 | 5425 | IS: 3025(P-58) 2006 |
| 3 | BOD | mg/lit | 3340 | 2090 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 290 | 260 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 15 | 10 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 142 | 89 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 70 | 34 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

❖ **Condensate polishing Unit (BTP)**

| Sl No | Parameter | Unit | Result | | Test method |
|-------|--------------------|--------|------------|--------|---------------------|
| | | | Inlet | Outlet | |
| | | | 04.08.2021 | | |
| 1 | pH | | 8.32 | 7.82 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 610 | 86 | IS: 3025(P-58) 2006 |
| 3 | BOD (3 days @27deg | mg/lit | 190 | 20 | IS: 3025(P-44)1993 |

| | | | | | |
|----|------------------------------|--------|-----|-----|---------------------------------|
| | C) | | | | |
| 4 | Total dissolved solids | mg/lit | 260 | 180 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 30 | 24 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 52 | 29 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 45 | 30 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

❖ **Date 24.11.2021**

| Sl No | Parameter | Unit | Result | | Test method |
|-------|------------------------------|--------|--------|--------|---------------------------------|
| | | | Inlet | Outlet | |
| 1 | pH | | 3.03 | 7.92 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 415 | 58 | IS: 3025(P-58) 2006 |
| 3 | BOD (3 days @27deg C) | mg/lit | 170 | 14 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 810 | 290 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 90 | 24 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 240 | 85 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 102 | 90 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

| Sl No | Parameter | Unit | Result | | Test method |
|-------|------------------------------|--------|----------|--------|------------------------------|
| | | | Inlet | Outlet | |
| | | | 17.12.21 | | |
| 1 | pH | | 2.64 | 7.04 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 725 | 24 | IS: 3025(P-58) 2006 |
| 3 | BOD (3 days @27deg C) | mg/lit | 310 | <4 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 370 | 170 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 50 | 10 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 62 | 18 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 21 | 7 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

| Sl No | Parameter | Unit | Result | | Test method |
|-------|------------------------------|--------|------------|--------|------------------------------|
| | | | Inlet | Outlet | |
| | | | 12.01.2022 | | |
| 1 | pH | | 2.82 | 7.14 | IS: 3025(P-11)1983 |
| 2 | COD | mg/lit | 786 | 28 | IS: 3025(P-58) 2006 |
| 3 | BOD (3 days @27deg C) | mg/lit | 324 | <4 | IS: 3025(P-44)1993 |
| 4 | Total dissolved solids | mg/lit | 348 | 154 | IS: 3025(P-16)1984 |
| 5 | Total suspended solids | mg/lit | 54 | 8 | IS: 3025(P-17)1984 |
| 7. | Chlorides as CL ⁻ | mg/lit | 72 | 12 | IS: 3025(P-32)1988 |
| 8. | Sulphates as SO ₄ | mg/lit | 26 | 6 | IS: 3025(P-24)1986 |
| 9. | Oil & Grease | mg/lit | ND | ND | IS: 3025(P-39)1991 (RA 2003) |

❖ **Borewell Analysis report:** Date of Sampling: 04.08.2021

| Sl No | Test parameter | Unit | Girish Kulkarni Handigund | Vijay N Bhasme Handigund | Ulleppa Chanal 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 | | 8.04 | 7.53 | 7.58 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.5 | 0.1 | 0.2 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 190 | 185 | 192 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 27 | 25 | 28 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 730 | 710 | 810 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 154 | 145 | 195 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 790 | 816 | 940 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 246 | 258 | 268 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 43 | 42 | 66 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 71.2 | 85.2 | 103.1 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 5.8 | 5.3 | 4.7 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 16.24 | 18.37 | 19.15 | By calculation |
| 16 | SAR | | 1.1 | 1.29 | 1.46 | By calculation |
| 17 | RSC | meq/l | -12.08 | -12.7 | -15.06 | By calculation |
| 18 | EC | µmhos/cm | 1510 | 1540 | 1710 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report: Date of Sampling: 04.08.2021**

| Sl No | Test parameter | Unit | Mahadev Chingundi Handigund | Sidappa Kuribagi Handigund | B K Koligud Handigund | M M Mutapagaol Handigund |
|-------|-------------------|----------|-----------------------------|----------------------------|-----------------------|--------------------------|
| | | | 4 | 5 | 6 | 7 |
| 1 | Color | Hazen | <5 | <5 | <5 | <5 |
| 2 | Odor | | Agreeable | Agreeable | Agreeable | Agreeable |
| 3 | pH | | 7.24 | 7.38 | 7.35 | 7.59 |
| 4 | Turbidity | NTU | 0.1 | 0.1 | 0.1 | 0.1 |
| 5 | Total Alkalinity | mg/lit | 150 | 198 | 126 | 160 |
| 6 | COD | mg/lit | 21 | 30 | 21 | 21 |
| 7 | BOD(3days @270 C | mg/lit | < 4 | < 4 | < 4 | < 4 |
| 8 | TDS | mg/lit | 410 | 930 | 350 | 530 |
| 9 | Chlorides | mg/lit | 92 | 212 | 61 | 145 |
| 10 | Hardness | mg/lit | 560 | 970 | 340 | 430 |
| 11 | Calcium | mg/lit | 161 | 310 | 109 | 218 |
| 12 | Magnesium | mg/lit | 38 | 48 | 17 | 28 |
| 13 | Sodium | mg/lit | 84.8 | 91.7 | 64.9 | 69.7 |
| 14 | Potassium | mg/lit | 4.1 | 5.3 | 3.5 | 2.8 |
| 15 | %sodium | % | 24.66 | 16.93 | 28.95 | 18.6 |
| 16 | SAR | | 1.56 | 1.28 | 1.53 | 1.18 |
| 17 | RSC | meq/l | -8.21 | -15.54 | -4.35 | -10.03 |
| 18 | EC | µmhos/cm | 724 | 1820 | 640 | 830 |

❖ **Borewell Analysis report:** Date of Sampling: 30.09.2021

| Sl No | Test parameter | Unit | Bharmappa Sanadi Kappalguddi | Mayappa Sanadi Kappalguddi | Mahadev Ajjapagaol Kappalguddi | Bhimappa Uddapagaol Kappalguddi |
|-------|-------------------|----------|------------------------------|----------------------------|--------------------------------|---------------------------------|
| | | | 1 | 2 | 3 | 4 |
| 1 | Color | Hazen | <5 | <5 | <5 | <5 |
| 2 | Odor | | Agreeable | Agreeable | Agreeable | Agreeable |
| 3 | pH | | 7.28 | 7.75 | 7.40 | 7.62 |
| 4 | Turbidity | NTU | 1.7 | 1.4 | 1.8 | 0.7 |
| 5 | Total Alkalinity | mg/lit | 380 | 370 | 350 | 420 |
| 6 | COD | mg/lit | 31 | 33 | 41 | 52 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | 5 | 7 |
| 8 | TDS | mg/lit | 1070 | 1210 | 1350 | 1130 |
| 9 | Chlorides | mg/lit | 340 | 319 | 650 | 495 |
| 10 | Hardness | mg/lit | 610 | 590 | 860 | 610 |
| 11 | Calcium | mg/lit | 156 | 142 | 240 | 172 |
| 12 | Magnesium | mg/lit | 54 | 57 | 63 | 44 |
| 13 | Sodium | mg/lit | 107.3 | 109.3 | 125.2 | 109.2 |
| 14 | Potassium | mg/lit | 5.6 | 5.8 | 6.8 | 6.5 |
| 15 | %sodium | % | 27.38 | 28.5 | 23.9 | 27.74 |
| 16 | SAR | | 1.89 | 1.96 | 1.86 | 1.92 |
| 17 | RSC | meq/l | -4.7 | -4.45 | -10.25 | -3.86 |
| 18 | EC | µmhos/cm | 1580 | 1680 | 1780 | 1680 |

❖ **Borewell Analysis report:** Date of Sampling: 30.09.2021

| Sl No | Test parameter | Unit | Tukaram Uddapagaoli Kappalguddi | Parmahans Bhangi Kappalguddi | Azadnagar Saidapur | Test Borewell No-3 | Test Borewell No-4 |
|-------|-------------------|----------|---------------------------------|------------------------------|--------------------|--------------------|--------------------|
| | | | 5 | 6 | 7 | 8 | 9 |
| 1 | Color | Hazen | <5 | <5 | <5 | <5 | <5 |
| 2 | Odor | | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable |
| 3 | pH | | 7.76 | 7.62 | 7.52 | 7.22 | 7.17 |
| 4 | Turbidity | NTU | 1.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| 5 | Total Alkalinity | mg/lit | 350 | 230 | 210 | 150 | 190 |
| 6 | COD | mg/lit | 27 | 18 | 14 | 18 | 29 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | <4 | <4 | <4 |
| 8 | TDS | mg/lit | 1025 | 580 | 490 | 460 | 575 |
| 9 | Chlorides | mg/lit | 407 | 204 | 142 | 162 | 209 |
| 10 | Hardness | mg/lit | 560 | 460 | 390 | 300 | 350 |
| 11 | Calcium | mg/lit | 118 | 140 | 112 | 56 | 60 |
| 12 | Magnesium | mg/lit | 65 | 27 | 27 | 39 | 49 |
| 13 | Sodium | mg/lit | 97.5 | 84.3 | 65.1 | 75.2 | 95.8 |
| 14 | Potassium | mg/lit | 6.1 | 5.8 | 3.3 | 3.8 | 5.2 |
| 15 | %sodium | % | 27.12 | 28.15 | 26.39 | 34.9 | 36.78 |
| 16 | SAR | | 1.78 | 1.7 | 1.43 | 1.88 | 2.22 |
| 17 | RSC | meq/l | -4.31 | -4.65 | -3.65 | -3.05 | -3.28 |
| 18 | EC | µmhos/cm | 1530 | 890 | 840 | 870 | 960 |

❖ **Borewell Analysis report: Date of Sampling: 24.11.2021**

| Sl No | Test parameter | Unit | Kiaar LAB Bisnal | P R Wali Bisnal | H S Banaj Bisnal | 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 | | 7.52 | 7.65 | 7.33 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.1 | 1.1 | 0.6 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 170 | 190 | 184 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 25 | 28 | 26 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 490 | 560 | 540 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 102 | 115 | 138 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 280 | 430 | 476 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 76 | 126 | 130 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 22 | 28 | 37 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 59.7 | 76.2 | 102.8 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 3.5 | 4.5 | 4.3 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 31.32 | 27.56 | 31.67 | By calculation |
| 16 | SAR | | 1.55 | 1.59 | 2.04 | By calculation |
| 17 | RSC | meq/l | -2.23 | -4.83 | -5.9 | By calculation |
| 18 | EC | µmhos/cm | 870 | 960 | 960 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report: Date of Sampling: 24.11.2021**

| Sl No | Test parameter | Unit | S B Banaj Bisnal | S P Maygur Bisnal | S. P. Naik Bisnal | 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 | | 7.73 | 7.46 | 7.92 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.2 | 0.5 | 0.8 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 210 | 192 | 220 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 29 | 27 | 28 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 570 | 550 | 590 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 144 | 129 | 162 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 480 | 460 | 490 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 134 | 124 | 138 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 35 | 37 | 35 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 107.1 | 102.7 | 126.2 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 4.0 | 4.3 | 4.8 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 32.5 | 32.34 | 35.69 | By calculation |
| 16 | SAR | | 2.12 | 2.07 | 2.48 | By calculation |
| 17 | RSC | meq/l | -5.41 | -5.44 | -5.41 | By calculation |
| 18 | EC | µmhos/cm | 980 | 960 | 1030 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report: Date of Sampling: 24.11.2021**

| Sl No | Test parameter | Unit | H S Naik Bisnal | B G Shirol Bisnal | Test Method |
|-------|-------------------|----------|--------------------|----------------------|---------------------|
| | | | 7 | 8 | |
| 1 | Color | Hazen | <5 | <5 | IS: 3025(P-04)1983 |
| 2 | Odor | | Agreeable | Agreeable | IS: 3025(P-05) 1983 |
| 3 | pH | | 7.80 | 7.62 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.9 | 1.2 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 205 | 180 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 26 | 25 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 570 | 610 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 140 | 148 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 510 | 680 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 152 | 216 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 32 | 34 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 121.9 | 105.8 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 5.3 | 4.3 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 33.86 | 25.15 | By calculation |
| 16 | SAR | | 2.34 | 1.76 | By calculation |
| 17 | RSC | meq/l | -6.16 | -10.03 | By calculation |
| 18 | EC | µmhos/cm | 1030 | 1120 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report:** Date of Sampling: 17.12.2021

| Sl No | Test parameter | Unit | G R Kulkarni Handigund | V N Bhasme Handigund | U S Chanal 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 | | 7.51 | 7.56 | 7.29 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 2.1 | 1.3 | 2.5 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 230 | 210 | 260 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 29 | 24 | 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 | 762 | 740 | 870 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 162 | 148 | 204 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 820 | 794 | 930 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 248 | 246 | 272 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 49 | 44 | 61 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 104.7 | 96.7 | 116.5 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 5.2 | 5.1 | 4.9 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 21.58 | 20.78 | 21.3 | By calculation |
| 16 | SAR | | 1.58 | 1.49 | 1.66 | By calculation |
| 17 | RSC | meq/l | -11.88 | -11.76 | -13.48 | By calculation |
| 18 | EC | µmhos/cm | 1570 | 1560 | 1740 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report:** Date of Sampling: 17.12.2021

| Sl No | Test parameter | Unit | S S Kuibagi Handigund | M S Chingundi Handigund | Test Method |
|-------|-------------------|----------|-----------------------|-------------------------|---------------------|
| | | | 4 | 5 | |
| 1 | Color | Hazen | <5 | <5 | IS: 3025(P-04)1983 |
| 2 | Odor | | Agreeable | Agreeable | IS: 3025(P-05) 1983 |
| 3 | pH | | 7.19 | 7.37 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.7 | 0.3 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 190 | 170 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 28 | 23 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 870 | 460 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 205 | 108 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 950 | 554 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 304 | 168 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 46 | 33 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 102.4 | 95.3 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 5.2 | 4.1 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 18.91 | 27 | By calculation |
| 16 | SAR | | 1.44 | 1.75 | By calculation |
| 17 | RSC | meq/l | -15.23 | -7.75 | By calculation |
| 18 | EC | µmhos/cm | 1780 | 780 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report: Date of Sampling: 12.01.2022**

| Sl No | Test parameter | Unit | B H Sanadi Kappalguddi | B R Uddapagaol Kappalguddi | M L Ajjapagaol 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 | | 7.28 | 7.42 | 7.49 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 1.7 | 0.6 | 1.6 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 408 | 482 | 389 | IS: 3025(P-23)1986 |
| 6 | COD | mg/lit | 31 | 50 | 40 | IS: 3025(P-58)2006 |
| 7 | BOD(3days @270 C | mg/lit | < 4 | 6 | < 4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 1093 | 1110 | 1360 | IS: 3025(P-16)1984 |
| 9 | Chlorides | mg/lit | 478 | 451 | 642 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 512 | 645 | 890 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 128 | 178 | 256 | IS: 3025(P-40)1991 |
| 12 | Magnesium | mg/lit | 46 | 48 | 60 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 112 | 108 | 128 | IS: 3025(P-45)1993 |
| 14 | Potassium | mg/lit | 6.2 | 5.9 | 7.9 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 32.22 | 26.56 | 23.70 | By calculation |
| 16 | SAR | | 2.32 | 1.85 | 1.87 | By calculation |

| | | | | | | |
|----|-----|----------|-------|------|-------|--------------------|
| 17 | RSC | meq/l | -7.63 | -8.9 | -13.8 | By calculation |
| 18 | EC | µmhos/cm | 1763 | 1790 | 2250 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report:** Date of Sampling: 12.01.2022

| Sl No | Test parameter | Unit | P.K. Bhangi Kappalguddi | Near Hanuman temple Azadnagar | CBSE school Saidapur | 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 | | 7.87 | 7.52 | 7.64 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.5 | 0.1 | 0.2 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 256 | 226 | 146 | IS: 3025(P-23)1986 |
| 6 | COD | mg/lit | 22 | 14 | 12 | IS: 3025(P-58)2006 |
| 7 | BOD(3days @270 C | mg/lit | < 4 | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 675 | 560 | 560 | IS: 3025(P-16)1984 |
| 9 | Chlorides | mg/lit | 204 | 162 | 158 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 518 | 443 | 297 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 154 | 124 | 62 | IS: 3025(P-40)1991 |
| 12 | Magnesium | mg/lit | 32 | 32 | 34 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 92.8 | 71.2 | 72.4 | IS: 3025(P-45)1993 |

| | | | | | | |
|----|-----------|----------|-------|-------|-------|--------------------|
| 14 | Potassium | mg/lit | 5.7 | 3.6 | 3.6 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 27.83 | 25.66 | 34.48 | By calculation |
| 16 | SAR | | 1.77 | 1.47 | 1.83 | By calculation |
| 17 | RSC | meq/l | -6.36 | -4.86 | -1.93 | By calculation |
| 18 | EC | µmhos/cm | 1089 | 903 | 903 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report:** Date of Sampling: 11.02.2022

| Sl No | Test parameter | Unit | Girish R Kulkarni Handigund | Vijay N Basme Handigund | Ulliappa S Chanal 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 | | 7.53 | 7.67 | 7.36 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 1.9 | 1.1 | 2.2 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 218 | 230 | 240 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 27 | 25 | 28 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 754 | 720 | 850 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 156 | 135 | 192 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 790 | 768 | 880 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 245 | 240 | 269 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 43 | 29 | 51 | IS: 3025(P-46)1994 |

| | | | | | | |
|----|-----------|----------|--------|-------|-------|---------------------|
| 13 | Sodium | mg/lit | 102.3 | 93.1 | 119.2 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 5.1 | 4.6 | 4.5 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 21.86 | 21.84 | 22.61 | By calculation |
| 16 | SAR | | 1.58 | 1.51 | 1.71 | By calculation |
| 17 | RSC | meq/l | -11.47 | -981 | -12.9 | By calculation |
| 18 | EC | µmhos/cm | 1490 | 1430 | 1690 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report: Date of Sampling: 11.02.2022**

| Sl No | Test parameter | Unit | Sidhappa S Kurbagi Handigund | Mahadev S Chingundi Handigund | Test Method |
|-------|-------------------|--------|------------------------------|-------------------------------|---------------------|
| | | | 4 | 5 | |
| 1 | Color | Hazen | <5 | <5 | IS: 3025(P-04)1983 |
| 2 | Odor | | Agreeable | Agreeable | IS: 3025(P-05) 1983 |
| 3 | pH | | 7.28 | 7.53 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 1.2 | 0.8 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 196 | 186 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 26 | 24 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 880 | 450 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 204 | 91 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 910 | 538 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 295 | 162 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 42 | 32 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 109.3 | 93.7 | IS: 3025(P-45) 1993 |

| | | | | | |
|----|-----------|----------|--------|-------|--------------------|
| 14 | Potassium | mg/lit | 4.8 | 4.3 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 20.61 | 27.34 | By calculation |
| 16 | SAR | | 1.57 | 1.76 | By calculation |
| 17 | RSC | meq/l | -14.33 | -7.04 | By calculation |
| 18 | EC | µmhos/cm | 1720 | 750 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report:** Date of Sampling: 24.03.2022

| Sl No | Test parameter | Unit | Ishwar Rudrappa Terdal Bisnal | Sidhappa Kallappa Biradi Bisnal | KIAAR Culture Lab Bisnal | 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 | | 7.71 | 7.69 | 7.59 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.2 | 0.5 | 0.2 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 184 | 168 | 230 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 27 | 28 | 28 | IS: 3025(P-58) 2006 |
| 7 | BOD(3days @270 C | mg/lit | <4 | <4 | <4 | IS: 3025(P-44)1993 |
| 8 | TDS | mg/lit | 480 | 440 | 430 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 121 | 116 | 88 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 310 | 336 | 482 | IS: 3025(P-21)1983 |
| 11 | Calcium | mg/lit | 75 | 104 | 156 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 30 | 19 | 22 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 63.7 | 53.3 | 45.7 | IS: 3025(P-45) 1993 |

| | | | | | | |
|----|-----------|----------|-------|-------|-------|--------------------|
| 14 | Potassium | mg/lit | 3.9 | 2.9 | 3.1 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 30.5 | 25.34 | 17.04 | By calculation |
| 16 | SAR | | 1.57 | 1.26 | 0.9 | By calculation |
| 17 | RSC | meq/l | -2.57 | -3.42 | -5.03 | By calculation |
| 18 | EC | µmhos/cm | 890 | 810 | 750 | IS: 3025(P-14)1984 |

❖ **Borewell Analysis report:** Date of Sampling: 24.03.2022

| Sl No | Test parameter | Unit | Prakash Dundappa Naik Bisnal | Hanamanth Satyappa Banaj Bisnal | Shivling Basappa Banaj Bisnal | Bhimappa Gurupadappa Shirol Bisnal | 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 | | 8.19 | 7.62 | 8.15 | 7.93 | IS: 3025(P-11)1983 |
| 4 | Turbidity | NTU | 0.5 | 0.3 | 0.5 | 1.5 | IS: 3025(P-10)1984 |
| 5 | Total Alkalinity | mg/lit | 188 | 190 | 220 | 205 | IS: 3025(P-23) 1986 |
| 6 | COD | mg/lit | 25 | 28 | 31 | 28 | 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 | 530 | 580 | 640 | IS: 3025(P-16) 1984 |
| 9 | Chlorides | mg/lit | 98 | 132 | 145 | 158 | IS: 3025(P-32)1988 |
| 10 | Hardness | mg/lit | 320 | 488 | 496 | 710 | IS: 3025(P-21)1983 |

| | | | | | | | |
|----|-----------|----------|-------|-------|-------|--------|---------------------|
| 11 | Calcium | mg/lit | 84 | 132 | 138 | 214 | IS: 3025(P-40) 1991 |
| 12 | Magnesium | mg/lit | 27 | 39 | 37 | 43 | IS: 3025(P-46)1994 |
| 13 | Sodium | mg/lit | 65.6 | 105.1 | 113.5 | 109.2 | IS: 3025(P-45) 1993 |
| 14 | Potassium | mg/lit | 3.1 | 4.2 | 4.3 | 4.6 | IS: 3025(P-44)1993 |
| 15 | %sodium | % | 30.52 | 31.57 | 32.9 | 24.88 | By calculation |
| 16 | SAR | | 1.59 | 2.06 | 2.21 | 1.78 | By calculation |
| 17 | RSC | meq/l | -2.69 | -6.05 | -5.58 | -10.18 | By calculation |
| 18 | EC | µmhos/cm | 870 | 940 | 1030 | 1150 | IS: 3025(P-14)1984 |

❖ **Soil analysis report:** Date of Sampling: 04.08.2021

| Sl No | Test parameter | Unit | Girish Kulkarni | Vijay Bhasme | Ulleppa Chanal | Mahadev Chingundi | Test Method |
|-------|-----------------------|----------|-----------------|--------------|----------------|-------------------|-------------|
| | | | 1 | 2 | 3 | 4 | |
| 1 | pH | - | 7.69 | 7.82 | 7.81 | 7.93 | PP-77 -78 |
| 2 | Conductivity | mmhos/cm | 0.340 | 0.370 | 0.430 | 0.290 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.061 | 0.063 | 0.069 | 0.068 | PP-89 -91 |
| 4 | Available Phosphorus | Kg/ha | 53 | 51 | 57 | 56 | PP-96 -98 |
| 5 | Available Potassium | Kg/ha | 490 | 590 | 410 | 470 | PP-99 -100 |
| 6 | Organic carbon | % | 0.67 | 0.68 | 0.65 | 0.65 | PP-84 -85 |
| 7 | Calcium (as Ca) | % | 2.85 | 2.77 | 2.91 | 2.34 | PP-103 -104 |
| 8 | Magnesium(as Mg) | % | 0.21 | 0.26 | 0.23 | 0.19 | PP-104 -105 |

| Sl No | Test parameter | Unit | Basvaraj Koilgud | Mahalingappa Muttapagaol | Test Method |
|-------|-----------------------|----------|------------------|--------------------------|-------------|
| | | | 5 | 6 | |
| 1 | pH | - | 8.19 | 7.92 | PP-77 -78 |
| 2 | Conductivity | mmhos/cm | 0.298 | 0.382 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.067 | 0.064 | PP-89 -91 |
| 4 | Available Phosphorus | Kg/ha | 47 | 53 | PP-96 -98 |
| 5 | Available Potassium | Kg/ha | 410 | 560 | PP-99 -100 |
| 6 | Organic carbon | % | 0.64 | 0.68 | PP-84 -85 |
| 7 | Calcium (as Ca) | % | 2.79 | 2.71 | PP-103 -104 |
| 8 | Magnesium (as Mg) | % | 0.26 | 0.26 | PP-104 -105 |

❖ **Soil analysis report:** Date of Sampling: 30.09.2021

| Sl No | Test parameter | Unit | Bharmappa Sanadi | Mayappa Sanadi | Mahadev Ajjapagaol | Bhimappa R Uddapagaol | Test Method |
|-------|-----------------------|-----------|------------------|----------------|--------------------|-----------------------|-------------|
| | | | 1 | 2 | 3 | 4 | |
| 1 | pH | - | 7.79 | 7.63 | 7.65 | 7.88 | PP-77 -78 |
| 2 | Conductivity | mmhos /cm | 0.210 | 0.290 | 0.326 | 0.530 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.043 | 0.043 | 0.057 | 0.049 | PP-89 -91 |
| 4 | Available | Kg/ha | 46 | 45 | 54 | 52 | PP-96 -98 |

| | | | | | | | |
|---|---------------------|-------|-------|-------|-------|-------|-------------|
| | Phosphorus | | | | | | |
| 5 | Available Potassium | Kg/ha | 310 | 360 | 510 | 720 | PP-99 -100 |
| 6 | Organic carbon | % | 0.62 | 0.68 | 0.82 | 0.78 | PP-84 -85 |
| 7 | Calcium (as Ca) | % | 2.92 | 2.61 | 2.30 | 2.15 | PP-103 -104 |
| 8 | Magnesium (as Mg) | % | 0.063 | 0.025 | 0.041 | 0.063 | PP-104 -105 |

| Sl No | Test parameter | Unit | Tukuram Udupagaol 5 | Parmahans Bhangi 6 | Test Method |
|-------|-----------------------|----------|------------------------|-----------------------|-------------|
| 1 | pH | - | 8.12 | 7.83 | PP-77 -78 |
| 2 | Conductivity | mmhos/cm | 0.364 | 0.270 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.056 | 0.048 | PP-89 -91 |
| 4 | Available Phosphorus | Kg/ha | 71 | 61 | PP-96 -98 |
| 5 | Available Potassium | Kg/ha | 540 | 370 | PP-99 -100 |
| 6 | Organic carbon | % | 0.82 | 0.69 | PP-84 -85 |
| 7 | Calcium (as Ca) | % | 2.73 | 2.68 | PP-103 -104 |
| 8 | Magnesium (as Mg) | % | 0.039 | 0.046 | PP-104 -105 |

❖ **Soil analysis report:** Date of Sampling: 24.11.2021

| Sl No | Test parameter | Unit | P R Wali Binal | H S Banaj Bisnal | S B Banaj Bisnal | S P Maygur Bisnal | S P Naik Bisnal | Test Method |
|-------|-----------------------|----------|----------------|------------------|------------------|-------------------|-----------------|-------------|
| | | | 1 | 2 | 3 | 4 | 5 | |
| 1 | pH | - | 7.82 | 8.12 | 8.24 | 7.92 | 8.23 | PP-77 -78 |
| 2 | Conductivity | mmhos/cm | 0.390 | 0.280 | 0.290 | 0.260 | 0.290 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.064 | 0.061 | 0.064 | 0.061 | 0.064 | PP-89 -91 |
| 4 | Available Phosphorus | Kg/ha | 55 | 53 | 54 | 52 | 57 | PP-96 -98 |
| 5 | Available Potassium | Kg/ha | 450 | 540 | 610 | 590 | 530 | PP-99 -100 |
| 6 | Organic carbon | % | 0.68 | 0.65 | 0.62 | 0.65 | 0.68 | PP-84 -85 |
| 7 | Calcium (as Ca) | % | 2.19 | 2.35 | 2.29 | 2.35 | 2.21 | PP-103 -104 |
| 8 | Magnesium(as Mg) | % | 0.04 | 0.029 | 0.021 | 0.026 | 0.019 | PP-104 -105 |

| Sl No | Test parameter | Unit | H S Naik Bisnal | B G Shirol Bisnal | Test Method |
|-------|-----------------------|----------|-----------------|-------------------|-------------|
| | | | 6 | 7 | |
| 1 | pH | - | 8.16 | 8.09 | PP-77 -78 |
| 2 | Conductivity | mmhos/cm | 0.270 | 0.320 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.063 | 0.065 | PP-89 -91 |
| 4 | Available Phosphorus | Kg/ha | 55 | 58 | PP-96 -98 |
| 5 | Available Potassium | Kg/ha | 510 | 390 | PP-99 -100 |
| 6 | Organic carbon | % | 0.64 | 0.67 | PP-84 -85 |

| | | | | | |
|---|------------------|---|-------|-------|-------------|
| 7 | Calcium (as Ca) | % | 2.26 | 2.35 | PP-103 -104 |
| 8 | Magnesium(as Mg) | % | 0.022 | 0.028 | PP-104 -105 |

❖ **Soil analysis report:** Date of Sampling: 17.12.2021

| Sl No | Test parameter | Unit | Girish Kulkarni | Vijay Bhasme | Ulleppa Chanal | Sidappa Kurbagi | Mahadev Chingundi | Test Method |
|-------|-----------------------|----------|-----------------|--------------|----------------|-----------------|-------------------|-------------|
| | | | 1 | 2 | 3 | 4 | 5 | |
| 1 | pH | - | 7.82 | 7.89 | 7.92 | 8.03 | 8.13 | PP-77 -78 |
| 2 | Conductivity | mmhos/cm | 0.370 | 0.360 | 0.410 | 0.340 | 0.280 | PP-81 -82 |
| 3 | Mineraliable Nitrogen | % | 0.062 | 0.062 | 0.068 | 0.062 | 0.061 | PP-89 -91 |
| 4 | Available Phosphorus | Kg/ha | 55 | 53 | 56 | 55 | 52 | PP-96 -98 |
| 5 | Available Potassium | Kg/ha | 410 | 570 | 370 | 470 | 510 | PP-99 -100 |
| 6 | Organic carbon | % | 0.64 | 0.61 | 0.68 | 0.63 | 0.63 | PP-84 -85 |
| 7 | Calcium (as Ca) | % | 2.73 | 2.71 | 2.88 | 2.68 | 2.39 | PP-103 -104 |
| 8 | Magnesium (as Mg) | % | 0.26 | 0.23 | 0.21 | 0.24 | 0.18 | PP-104 -105 |

❖ **Boiler Ash analysis report:**

| Sl No | Parameter | Unit | Result | | |
|-------|-----------------------|------|--------------|----------|------------|
| | | | 04.08.2021 | 24.11.21 | 17.12.2021 |
| 1 | Moisture | % | 0.71 | 0.64 | 0.69 |
| 2 | pH(Saturated) | | 11.4 | 11.6 | 11.2 |
| 3 | Total Volatile Solids | % | 1.49 | 1.44 | 1.53 |
| 4 | Residual ash | % | 98.51 | 98.56 | 98.47 |
| 5 | Nitrogen | % | 1.04 | 1.03 | 1.03 |
| 6 | Phosphorus as P2O5 | % | 1.37 | 1.38 | 1.35 |
| 7 | Potassium as K2O | % | 14.3 | 13.9 | 9.3 |
| 8 | Organic carbon | % | 5.6 | 5.7 | 3.7 |

❖ **Pressmud Analysis :**

| Sl No | Parameter | Unit | Result | |
|-------|-----------------------|------|----------|------------|
| | | | 24.11.21 | 17.12.2021 |
| 1 | Moisture | % | 63.71 | 55.07 |
| 2 | pH(Saturated) | | 5.31 | 4.35 |
| 3 | Total Volatile Solids | % | 84.29 | 52.12 |
| 4 | Residual ash | % | 15.71 | 47.88 |
| 5 | Nitrogen | % | 1.16 | 1.88 |
| 6 | Phosphorus as P2O5 | % | 1.07 | 1.50 |
| 7 | Potassium as K2O | % | 0.81 | 0.39 |
| 8 | Organic carbon | % | 46.2 | 43.74 |

❖ Yeast Sludge Analysis.

| Sl No | Parameter | Unit | Result |
|-------|-----------------------|------|-------------------|
| | | | 17.12.2021 |
| 1 | Moisture | % | 54.37 |
| 2 | pH(Saturated) | | 4.69 |
| 3 | Total Volatile Solids | % | 81.53 |
| 4 | Residual ash | % | 18.47 |
| 5 | Nitrogen | % | 1.03 |
| 6 | Phosphorus as P2O5 | % | 1.12 |
| 7 | Potassium as K2O | % | 3.72 |
| 8 | Organic carbon | % | 5.9 |

❖ Biocompost Analysis Report :

| Sl No | Parameter | Unit | Result | | | |
|-------|-----------------------|------|---------|----------|----------|----------|
| | | | 04.8.21 | 30.09.21 | 17.01.22 | 24.03.22 |
| 1 | Moisture | % | 24.91 | 23.69 | 24.21 | 30.25 |
| 2 | pH(Saturated) | | 6.61 | 6.53 | 6.60 | 6.59 |
| 3 | Total Volatile Solids | % | 63.57 | 63.84 | 64.02 | 62.47 |
| 4 | Residual ash | % | 36.43 | 36.16 | 35.98 | 37.53 |
| 5 | Nitrogen | % | 1.72 | 1.69 | 1.74 | 1.69 |
| 6 | Phosphorus | % | 1.89 | 1.85 | 1.73 | 1.85 |

| | | | | | | |
|----|------------------|-------------------------|-------|-------|-------|-------|
| | as P2O5 | | | | | |
| 7 | Potassium as K2O | % | 3.77 | 3.72 | 3.53 | 3.34 |
| 8 | Organic carbon | % | 27.59 | 26.35 | 27.04 | 28.13 |
| 9 | C/N | | 16.04 | 15359 | 15.54 | 16.64 |
| | | Leachate water Analysis | | | | |
| 10 | pH | | 8.18 | 7.91 | 7.83 | 7.56 |
| 11 | COD | mg/lit | 224 | 221 | 218 | 223 |
| 12 | BOD | mg/lit | 23 | 22 | 23 | 25 |
| 13 | Chlorides | mg/lit | 168 | 153 | 162 | 141 |
| 14 | E C | µmhos/cm | 1460 | 1390 | 1421 | 1410 |

Environmental monitoring is carried out by the third agency on monthly basis by Dr. Subbarao's Environment Center, Sangli.

Address of the Environmental consultant.

Dr.Subbarao

Dr.Subbarao's Environment Center

"Arundhati", Opp Sahayognagar, MSEB Road

Vishrambag, Sangli - 416415

Phone : 0233- 2301857, Moblie: 9372109522

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 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 liquid 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) Water Pollution control | : Rs 495.42 Laks |
| 2) Air pollution control equipment | : Rs 40.36 Laks |

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

R: About 3500 tree plantation is done in the factory premises. About 3.0 acres of land is covered under greenbelt.


ENVIRONMENTAL OFFICER


Asst. GENERAL MANAGER

