ENVIRONMENTAL AUDIT REPORT FOR THE FINANCIAL YEAR 2022-2023

VIJAYANAGAR SUGAR PRIVATE LIMITED,

GANGAPUR VILLAGE, MUNDARGI TQ, GADAG DISTRICT, KARNATAKA

CERTIFICATE

This is to certify that the below mentioned Environmental Audit Report is prepared by Vijayanagar Sugar Pvt. Ltd.

The report submitted is as per the information / details provided by the factory / plant executives / factory staff. The said information has been incorporated in the preparation of this report and is to the best of our knowledge.

For Vijayanagar Sugar Pvt. Ltd

15/7/2021

Authorized Signatory

Vijayanagar Sugar Pvt. Ltd.

INTRODUCTION

PREAMBLE:

The policy statement for abatement of pollution (1992) and the subsequent Environment Protection Act 1986 announced by the Government of India seeks integration of environmental considerations into decision making at all levels. Environmental Audit has been recognized as one of the instruments for achieving this objective.

An Environmental statement is an objective assessment, of the extent of compliance of a company with applicable Environmental laws and regulations. It is based upon a review of pertinent records and technical data. The Environmental statement achieves following purposes,

1. Assuring compliance with various Governmental regulations,
2. Reduces environmental risks and liabilities,
3. Cost savings or increasing the efficiency of corporate operations,
4. Indentifies environmental liabilities, if any.

Accordingly, the survey was carried out to review the operations of, **M/s VIJAYNAGAR SUGAR PRIVATE LIMITED, GANGAPUR – VILLAGE, MUNDARGI -TALUKA, GADAG-DISTRCT** to collect relevant data like finished products, raw materials consumption, water consumption, waste generated and the pollution prevention method practiced by the industry etc. to complete form V. Further improvement plans of the industry during the financial year were also noted. Based on the data collection during our visit we are submitting here with "Environmental Statement"

OBJECTIVES

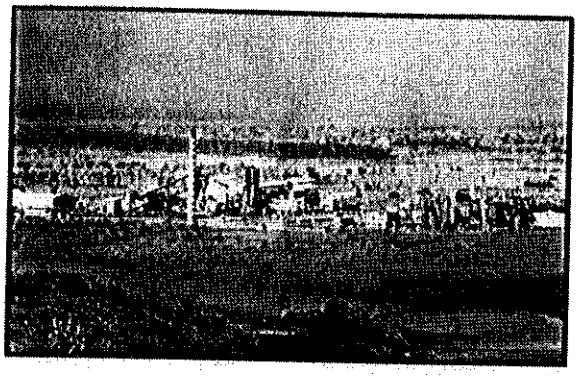
The environmental audit helps in pollution abatement, safety, health and conservation of natural resources focusing attention on areas of concern, practices that need to be changed and plans to deal with adverse effects. The audits would also facilitate the promotion of environmental awareness by companies by framing of proper environmental policies and effective management systems to implement them to achieve sustainable development.

The objectives of an environmental audit in an industry can be summarized as follows

1. To determine the mass balance of various materials used and the performance of various process equipment so as to identify usage of materials in excess than required. To review the conversion efficiency of process equipment and accordingly fix up norms for equipment/ operation performance and minimization of wastes.
2. To identify the areas of water usage and wastewater generation and to determine the characteristics Of wastewater generated and its impact on the environment and also to identify the areas generating Air pollution, Solid Waste, Hazardous Waste, Used Battery etc, and its impact on the environment
3. To determine the emission, the sources, quantities and characteristics.
4. To determine the solid wastes and Hazardous wastes generated, their sources, quantities and characteristics.
5. To identify the possibility of waste minimization, recovery and re-cycling of wastes.
6. To determine the performance of the exiting waste treatment/ control system so as to modify or install additional or alternative control equipment accordingly

PLANTS IN THE PREMISES

BRIEF INTRODUCTION TO OUR COMPANY:



M/s Vijayanagar Sugar Private Limited, Gangapur - Village, Tq: Mundargi, Dist: Gadag, Karnataka - state involved in production capacity of 5000 TCD Sugar Cane crushing and we have produced **high quality Non Sulphited Sugar it is first in Karnataka**, 42 MW Co gen power plant and 300 KLPD Distillery Unit and 32 TPH incineration boiler.

We are deeply committed to a larger vision of our social responsibility, of looking after the needs and quality of life of the farmers and local communities. Through our effective farmer partnership model we provide assistance in farming practices and undertake various economic initiatives for the benefit of the local communities

ENVIRONMENT, OCCUPATIONAL HEALTH AND SAFETY POLICY

The organization will strive for continual improvement in achieving Environmental, Occupational, health, and safety management system by

1. Providing good working condition and healthier environment to all employers
2. Optimum usage of natural resources by reducing, recycling and re using
3. Prevention of pollution by minimizing waste generation and proper disposal of waste generated by all activities
4. Prevention of health and injuries by adopting safe working practices in all operations
5. Comply with all applicable environmental requirements

FORM - V

PART – A

1.	Name and address of the owner/occupier Occupier of the industry,	: Sri: B. Sivarami Reddy (Director), Vijayanagar Sugar Private Limited, Gangapur -village, Tq: Mundargi , Dist: Gadag – 582 118.
2.	Industry Category	: Large Red
3.	Production Capacity	: 5000 TCD Sugar cane crushing capacity, 42 MW Co-gen plant, 32 TPH incineration Boiler and 300 KLPD Distillery unit.
4.	Year of Commissioning	: Co gen - April-2010 & Distillery - July -2011

PART – B

WATER AND RAW MATERIAL CONSUMPTION

a. Water and Raw Material Consumption m^3 /day

i)	Water consumption m^3/ Day	During the Previous financial year 2021-22. m^3/ Day	During the current financial year 2022-23. m^3/ Day
	1. Boiler	160	140
	2. Domestic	07	07
	3. Process	40	45
	4. Washing	03	03
	5. Cooling	480	470
	6. Others	30	25
	Total Consumption/Day	720	690

(b) Water Consumption per unit of output m3/MT:

Name of Product	During the previous financial year 2021-22	During the current financial year 2022-23
Sugar	0.063	0.062

2. Raw Material Consumption:

Name of the Raw Materials	During the previous financial year 2021-22	During the current financial year 2022-23
Sugar Cane (MT)	800914.778	774347.757
Lime (MT)	664.75	658.96
Sulphur	Not applicable	Not applicable

PART-C

Pollution Generated

A) Water pollution

Sl. No	Particulars	During the previous financial year 2021-22	During the current financial year 2022-23
1	Boiler	NIL	NIL
2	Domestic	07	07
3	Process	80	80
4	Washing	04	03
5	Cooling	NIL	NIL
6	Others	05	05

B) Air pollution

i) Ambient Air Quality Monitoring Data

Sl. No	Particulars	Near Admin Office	Near Main Gate	Near Chimney
01	RSPM µg/m3 i) PM_{10} ii) $PM_{2.5}$	 45.30 27.95	 50.95 32.12	 54.7 36.25
02	Sulphur di oxide µg/m3	4.21	5.31	6.49
03	Oxides Of Nitrogen µg/m3	9.2	10.78	11.7

ii) 120 TPH Boiler Stack Monitoring Report:

Sl. No	PARAMETERS	Results
1	Flue Gas Temperature °C	138
2	Ambient Temperature °C	33 - 34
3	Flue Gas velocity m/sec	8.02
4	Particulate Matter µg/Nm3	92.65
5	Sulphur dioxide µg/Nm3	13.7
6	Oxides of Nitrogen µg/Nm3	28.22

PART-D

HAZARDOUS WASTES

[As specified under Hazardous waste (Management & Handling) &Trans Boundary Movement Rules – 2016

Hazardous Waste	Total Quantity (Lts)	
	During the previous financial year 2021-22	During the current financial year 2022-23
a) From Process	Not Applicable	Nil
b) Waste residue containing oil	Nil	150 kgs
c) DG sets Waste Oil	Nil	100 Ltrs

PART – E

SOLID WASTES QUANTITY

Source	Total Quantity (MT)	
	During previous financial year 2021-22. (MT)	During Current financial year 2022-23. (MT)
a) From Process (By Product)		
1) Bagasse	222974	2388088
2) Press mud	240274	232304
3) Molasses	472539	446024
4) Boiler Ash	3027.03	3073.26
5) Lime Grit	108	123
6) PAC Sludge	137	148
b) From Pollution control facility (ETP Sludge)		
c) Quantity recycled or reutilized within the unit		
1) Bagasse as boiler fuel	222974	2388088
2) Sold		
i) Bagasse	Nil	Nil
ii) Press mud	24027	232304
iii) Molasses	47254	446024
iv) Boiler Ash (Free of Cost)	3027.03	3073.26
d) Disposed	Nil	Nil

PART – F

Please specify the characteristics (In terms of concentration send quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes

The generation of hazardous waste is from DG sets of 1250 KVA, 320 KVA and 1250 KVA.The used oil from DG sets can be classified as hazardous waste as per the hazardous waste(management and handling) rule amendments 2008. The category of the waste according to Schedule – I is 5.1. The quantity is Nil during the current season.

Major by products (solid Waste) are press mud, bagasse, boiler ash, and molasses. By products viz press mud, boiler ash are rich in nutrients and contain Nitrogen, Phosphorus and Potassium and can be used as organic fertilizers. These byproducts are given to the

farmers on free of cost. Because of their rich nutrient value, they act as soil conditioners and help in better yield of sugarcane.

Total molasses produced and sold to our own distillery as a raw material for manufacturing rectified spirit and potable alcohol in the same premises.

PART – G

RESOURCES CONSERVATION AUDIT

Impact of Pollution Control Measures Taken on Conservation of Natural Resources and on the cost of production.

With the conservation of resources upper most in the mind the industry has taken effective steps to educate the workers to use the water rationality and carefully. Domestic waste after treatment is used for gardening and land irrigation.

(A) Impact of Pollution abatement on Conservation

The activities responsible for the same are as follows:

1. **Water Consumption**

   Effluent generation in sugar industry is from milling plant, lime house and boiling house etc. The consumption of fresh water is totally controlled by proper production planning, recirculation of cooling water and optimizing wash-water amount. The factory has installed water meters to assess exact consumption of fresh water going in for process, cooling & domestic purposes.

   84 – 85% of the Distillery process condensate and spent leese recycled to Distillery.

2. **Compliance with Effluent Discharge Standards**

   The industry is achieving the discharge standards as prescribed by KSPCB by running the ETP efficiently. The industry spent Rs.55 Lakhs on the operation & maintenance of effluent treatment plant.

   Online Monitoring: As per CPCB/KSPCB guidelines we have installed on line water analyzer for analyzing the treated trade effluent. The following parameters are measured 1) pH, 2) TSS, 3) COD 4) BOD and 5) Flow and also connected to CPCB/KSPCB servers.

3. **A. Maintenance of Ambient Air Quality**

We have installed high efficiency ESP for 120 TPH boiler (Co gen Boiler) and 32 TPH Incineration boiler The wet scrubber and ESP both installed for 32 TPH Incineration boiler are helping in effectively maintaining the ambient air quality in the factory premises. Kindly refer to annexure II (b) for the ambient air quality in the factory premises.

Online Stack Monitoring: We have installed online stack monitoring equipment to 32 TPH incineration boiler and online parameters are connected to CPCB/KSPCB Servers.

(B) Impact of pollution Abatement on the Cost of Production

The total expenditure incurred on the operation and maintenance of ETP & Air Pollution Control Measures in 125 lakhs.

(C) Around 62,500 tree plantation was done in and around the premises of the Plant and also we have done plantation near our factory villages.

PART – H & I

ENVIRONMENT INVESTMENT AUDIT & MISCELLANEOUS

Cost of Health, Safety and Pollution Control Monitoring:

Description	Total amount in (Rs)
Pollution control like Air, Water and Noise (Installing of Wind Ventilators, Smoke Detectors, STP etc)	125 lakhs
Safety, protective Providing personal equipment for employees	16 lakhs
ETP Treatment Set up	55 lakhs
GRAND TOTAL	**196 lakhs**

Any other particulars in respect of environment protection and abatement of pollution

1. The tree plantation drive within the premises up to 75 acres
2. No generation of hazardous waste.
3. Proper monitoring of stacks and chimneys
4. Proper monitoring of water usage, STP etc.,
5. The industry is taking up various measures to educate member farmers to get a better yield of sugar cane
6. Online Stack monitoring of 32 TPH incinerations Boiler and Online water analyzer for treated trade effluent installed and commissioned. The online parameters are connected to CPCP/KSPCB servers.

TABLE – I

SEASONAL WORKING OF THE FACTORY

Sl.No	Particulars	During previous financial year 2021-22. (MT)	During Current financial year 2022-23. (MT)
1	Working days for the season	163	153
2	Total Sugarcane crushed during the season (MT)	800914.778	774347.757
3	Total Sugar Produced (MT)	69359	67445
4	Daily average of cane crushed(MT)	4941	5073
5	Daily average of sugar produced (MT)	425	441

ANNEXURE-II(a)

Analysis Report of Waste Water

Sl. No	PARAMETERS	UNTREATED	TREATED
1	Colour and Odour	Light Brown & Sugary	Colorless & Odorless
2	pH	5.5 - 5.8	7.5 – 7.8
3	Total dissolved solids mg/L	550 - 650	250 - 300
4	Total suspended solids mg/L	720 - 800	60 - 70
5	BOD mg/L	1200 - 1500	45 - 60
6	Oil and Grease mg/L	3 - 5	Not Detectable

NOTE: These results are for the year 2015-2016 REFS-IS 3025 / KSPCB methods of measurement are adopted and test is carried as per KSPCB guidelines every month. The above table shows variation in test results

ANNEXURE-II(b)

Ambient Air Quality Monitoring Data

Sl.No	Sampling Station	Near Time Office	Near cane weigh bridge	Near ETP
01	Respirable suspended particulate matter µg/m3	30.25 18.56	32.14 20.35	28.65 16.54
02	Sulphur di oxide µg/m3	4.15	4.36	4.06
03	Oxides Of Nitrogen µg/m3	9.15	9.28	9.04

NOTE: These results are for the year 2015-2016 REF- IS 5182 / KSPCB methods of measurement are adopted and test is carried as per KSPCB guidelines

ANNEXURE-II(c)

Stack Monitoring Report

Sl. No	PARAMETERS	Results
1	Flue Gas Temperature °C	138
2	Ambient Temperature °C	33 - 34
3	Flue Gas velocity m/sec	8.02
4	Particulate Matter µg/Nm3	92.65
5	Sulphur dioxide µg/Nm3	13.7
6	Oxides of Nitrogen µg/Nm3	28.22

NOTE: These results are for the year 2015-2016 REF-IS 11255 / KSPCB methods of measurement are adopted and test is carried as per KSPCB guidelines

ANNEXURE-III

Characteristics of Bagasse

Sl. No	PARAMETERS	Results
1	pH	6.5 – 7.2
2	Moisture (%)	48 - 49
3	Nitrogen (%)	0.21 – 0.28
4	Phosphorus (%)	0.2 – 0.25
5	Potassium (%)	0.01 – 0.03
6	Organic Carbon (%)	26 - 28

ANNEXURE-IV

Characteristics of Press Mud

Sl. No	PARAMETERS	Results
1	pH (1:10)	5.82
2	Moisture%	63
3	Organic Carbon%	23.65
4	Electrical Conductivity (1:5). uS/cm	1900
5	Total Kjeldhal Nitrogen%	0.62
6	Total Phosphorous%	2.35
7	Total Potassium%	1.35
8	Other Organic Nutrients. ppm	400.25
9	Copper. ppm	25
10	Iron. Ppm	1250
11	Manganese. ppm	720
12	Zinc. ppm	50
13	Sulphur. ppm	Nil
14	Boron. ppm	BDL
15	Chemical Oxygen Demand. ppm	60
16	Biological Oxygen Demand. ppm	20

ANNEXURE-V

Characteristics of molasses

Sl. No	PARAMETERS	Results
1	Water	16-19%
2	Colour	Dark Brown
3	Moisture	27.5
4	pH	5.2-5.5
5	Ash %	10.8
6	Sucrose	33.5
7	Total Dissolved Solids	78.8
8	Cl	0.2
9	SO4	0.1
10	Sulphated Ash	Traces
11	Available Nitrogen (N) %	0.74
12	Phosphorus P2O5	0.30
13	Potassium as K2O	2.6