

**ENVIRONMENTAL STATEMENT FORM-V**  
**(See rule 14)**

Environmental Statement for the financial year ending with 31<sup>st</sup> March 2016

**PART-A**

- i. Name and address of the owner : RADICO NV DISTILLERIES  
Occupier of the industry MAHARASHTRA LTD.  
Operation or process. Works: D- 192 to D – 195,  
MIDC Shendra, AURANGABAD  
431201, MAHARASHTRA
- ii. Industry category Primary  
(STC Code) Secondary- (STC Code):
- iii. Production category Units. :
- iv. Year of establishment. : 2008
- v. Date of the last environmental  
Statement submitted. : 22 Sep. 2014

**PART .B**

**Water and Raw Material Consumption:**

**I. Water consumption in m<sup>3</sup>/day (Molasses Spirit Plant)**

	During the previous financial year 2014- 2015	During the current financial year 2015-2016
Process :	486	490
Cooling :	896	981
Domestic :	05	05

## II. Raw material consumption: (for Molasses spirit plant)

Name of raw materials*	Name of Products	Consumption of raw material per unit of output (Kgs. /KL of spirit produced.)	
		During the current financial year-2014-2015	During the current financial year-2015-2016
1. Molasses	A) Extra Neutral Alcohol (Rectified Spirit)	3695	3536
2. Yeast		Nil	Nil
3. Urea		0.00018	0.00014
4. D.A.P.		Nil	Nil
5. Anti- foam		0.00012	0.00045
6. MgSO4.		0.00032	0.00031
7. bleaching Powder		0.00005	0.00005
8. Steam		3034	4183

Note: - Total Extra Neutral Alcohol (Rectified Spirit) Produced during the Financial Year 2015-16 = 37936542.00 BL =37936.542 KL.

Total working days of Distillery unit = 296 days only.

### I. Water consumption in m3/day (Grain Spirit Plant)

	During the previous financial year 2014-2015	During the current financial year 2015-2016
Process :	161	151
Cooling :	311	291
Domestic :	04	04

### II. Raw material consumption: (for Grain spirit plant)

Name of raw materials*	Name of Products	Consumption of raw material per unit of output (Kgs. /KL of spirit produced.)	
		During the previous financial year-2014-2015	During the current financial year-2015-2016
1. Grain	A) Extra Neutral	2559	2630
2. Yeast	Alcohol	1.91	1.70
3. Urea	(Rectified Spirit)	Nil	Nil
4. Enzyme	B) Cattle feed	2.53	2.20
5. bleaching Powder	(Byproduct)	0.08	0.09
6. Steam		3602	3729
7. Caustic		5.76	8.23

**Note:** Total Extra Neutral Alcohol (Rectified Spirit) Produced during the Financial Year 2015-16 = 10443753.00 BL = 10443.753 KL

Total working days of Distillery unit = 276 days only.

### PART-C

#### Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with Reasons.
(A) Water	Not mentioned in the Consent	Sample collected by MPCB ,	N.A
(B) Air	--do--		
(C) Noise	--do--		

### PART-D

#### HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Wastes	Total Quantity (MT)	
	During the previous financial year 2014-15	During the current financial year 2015-16
1. From Process	578	673
2. From Pollution Control Facilities	Not Applicable	Not Applicable

Yeast sludge is sold to Farmers as manure or mixed in Bio-composting.

## PART. E

### SOLID WASTES:

Solid Wastes	Total Quantity (Tones)	
	During the previous financial year 2013-14	During the current financial year 2014-15
a. From process	Not Applicable	Not Applicable
b. From Pollution Control Facility	--do--	--do--
c. Quantity recycled or re-utilized within the unit	--do--	--do--

## PART. F

Please specify the characteristics (in terms of concentration and quantum) Of hazardous as well as solid wastes and indicate disposal practice Adopted for both these categories of wastes.

### Hazardous Wastes

#### Characteristics of Yeast Sludge

Sr. No.	Parameters	Yeast Sludge
1.	pH	4.5-4.7
2.	Nitrogen %	2.8-3.5
3.	Phosphorous %	1.2-2.5
4.	Potassium %	4.5-6.5
5.	Volatile Matter %	68-78
6.	Ash Content	26-35

**Yeast sludge is sold to Farmers as Biomanure**

## **PART-G**

Impact of the pollution control measures taken on conservation of natural Resources and consequently on the cost of production.  
At present 125-140 MT/day Bagasse is saved. The industry is highly benefited by using Bio-gas using as a fuel.

## **PART. H**

### **Additional measures / investment proposal for environmental protection including abatement of pollution.**

We have adopted primary effluent treatment plant as Biomethanation since February – 2009 and the plant is working satisfactory, followed by(MEE) Multiple Effect Evaporator plant supplied by M/S Praj industries Ltd., Pune. August – 2013. Which is capacity having 1200 m<sup>3</sup> /day and the system is working satisfactory & condensate is used as process water, & reject from MEE plant is used for Bio-composting using press-mud as a filler material.

**Sludge handling system:** - we have installed three numbers of Decanters (Alfa Laval make) for yeast sludge removal in raw spent wash & supernatant spent wash feed to Bio-Digester.

**Post Biomethanation system:** - in this system after biomethanation effluent passing through Lamella clarifier - pre aeration tank - primary clarifier - flash mixture - secondary clarifier & Thickener & sludge is removed before feed to the MEE plant.

**A) Improvement in Operation of Bio-composting:**

We have purchased additional bigger capacity bio composting machine with 90 HP tractors. Now total four machines are operative. Well-developed 5 Nos composting yard on 16 acres, out of which 4.5 acres is covered & covering of another 2.5 acres land is in progress for bio composting during rainy season

**B) We have installed **Electrostatic Precipitator System (ESP)** for control air pollution at our boiler which is capacity having 104400 Nm<sup>3</sup>/hr. & Working satisfactory.**

## **PART. I**

Apart from above system, our Management has taken a decision to recover maximum quantity of clear water by using new technology after Bio-methanation i.e. seven effect falling film Evaporation Plant for further reduction in Effluent generation and recycle by adopting advanced proven following Technological steps by awarding with M/s Praj Industries Ltd. Pune

### **1. Technology up gradation for Reduction in effluent from Distillery**

In continual efforts to reduce effluent generation, Distillery has undertaken following up gradation in the existing Distillery technology.

**Fermentation House** – Presently company has upgraded present Fermentation technology and created a facility for recycle of Effluents streams like Spent lees from Distillation, Pump sealing water etc. and now marinating average alcohol of 9.5-10% v/v in the fermented wash generated from Molasses based feed stock in order to reduce effluent volume to 1:10 as against industry norms of 1:12.

**Distillation Plant** – Presently Multi pressure plant technology is being up graded for

- ✓ Further reduction in effluent volume by 1.8 Liter/liter of alcohol produced in distillation section by installing Reboiler facility to existing Analyzer column operating on spent wash. After modernization Total spent wash generated in the distillery will come down to 8.2 liter/liter to total of 1200 m<sup>3</sup>/day, achieving reduction of 216m<sup>3</sup>/day.
- ✓ Steam consumption will be reduced to 2.8 kg/liter against earlier figs of 3.2kg/liter.

### **Installation of Multi effect evaporator for Bio-methanated spent wash-**

As a major step towards strengthening the existing Zero Liquid Discharge facility, we are improving in the direction of reduction in the effluent generated from our Distillery and making its day to day operations more sustainable in a coming future. As part of these efforts our Distillery has under taken a project to install "Multi effect evaporator for Bio-methanated spent wash" along with conservation of water requirement for Distillery operation.

We have started above evaporation system and making it operational, Bio methanated spent wash will get concentrated from 4% to 25% wt./wt. at minimum steam consumption. With this additional facility getting added in the existing distillery set up, effective effluent (spent wash) volume will remain to 160m<sup>3</sup>/day against 1200 m<sup>3</sup>/day only. Thereby to achieve effluent generation ratio of 1:1.3

It will give major reduction of 1040 m<sup>3</sup>/day spent wash generation from our distillery plant as against present generation of 1200 m<sup>3</sup>/day. Expected outcome of this facility will be reduction of load on composting facility and making it more manageable to achieve Zero Liquid Discharge. This kind of the state of art technology being adopted first time in the country

### **Installation of -Process condensate treatment plant ("PCTP")**

In order to reduce the water consumption we are adopting a unique feature getting added in existing Distillery set-up as a major Mile stone by reducing total water requirement of Molasses based distillery to 1: 8 Liter from present norms of 1:12 liter.



## **PART .I**

### **MISCELLANEOUS:**

Any other particulars for improving the quality of the environmental protection and abatement of pollution.

### **ENVIRONMENTAL STATEMENT IN BRIEF**

Name of Factory: RADICO NV DISTILLERIES  
MAHARASHTRA LTD.  
Works: D- 192 to D – 195, MIDC  
Shendra, AURANGABAD -431201.

### **UNITS OF EFFLUENT TREATMENT PLANT FOR DISTILLERY & CHEMICAL PLANT.**

1. Methane Recovery plant (Anaerobic – Biogas plant).
2. Multiple Effect Evaporator (MEE – 7 effect)
3. Process Condensate Treatment Plant (PCTP)
4. Bio-Composting.

Q. 1. Where water quality measurements are made by installing water meters?

R. Yes, we installed water meter at the intakes MIDC water supply pipeline.

Q. 2. Where untreated, treated effluents are analyzed regularly?

R. Untreated and treated effluents samples are analyzed regularly.

Q. 3. Where the Hazardous waste classification is applicable to the industry?

R. Yes.

Q.4. Whether solid waste measurements are done?

R. The sludge from E.T.P. is considered as by-product & given to farmers as manure by weighing the quantity.

Q. 5. Where raw water quantity is tested regularly and is there any treatment for drinking and process water?

R. Water quality is tested regularly. The boiler feed water is passed through softening plant. For drinking water, we provided Reverse Osmosis plant.

Q. 6. Where the operation and maintenance scheme is followed?

R. Yes,

Q. 7. Where the soil and ground water samples are tested regularly?

R. Yes. Soil & ground water samples are tested regularly.

Q. 8. Where air quality and sound levels are as per the consent conditions?

R. Yes,

Q. 9. What is the capital investment of pollution controls measures and also mention the details of the operational & maintenance costs?

R. **Capital Cost:**

**Total Rs.7410 Lacks. For the following plants.**

1. Methane Recovery Plant (Biogas plant)
2. Decanters
3. Post Clarification System
4. Multiple Effect Evaporator plant
5. Process Condensate Treatment Plant
6. Bio – Composting.

**Operation & Maintenance Cost:**

Total Recurring (O & M) Rs. 612.5 Lacks

Q. 10. Where the "Environmental Management Cell" is established in the industry?

R. "Environmental Management Cell" is already established and pattern is as below—

1. Vice President (operation)	01 No.
2. Jr. Manager(E.T.P.)	01 No.
3. Jr.Manager (MRP)	01 No.
4. Sr. Executive(PCTP)	01 No
5. MRP Executive	04 Nos.
6. Bio-Compost Sr. Executive	04 Nos.
7. Biogas plant Operator	04 Nos.
8. PCTP plant Operator	04 Nos.

Q. 11. What are laboratory facilities available for effluent analysis?

R. Laboratory Space – 30 Sqr.mtr.  
Following laboratory Equipments & Accessories are available for Effluent Analysis

<b>Sr. No.</b>	<b>Name of laboratory Equipment &amp; Accessories</b>	<b>Approx. Cost. (Rs.)</b>
1.	Electronic Top Pan Balance	20000
2.	BOD Incubator.	50000
3.	Centrifuge.	10000
4.	COD Reflux unit.	25000
5.	Distillation unit	5000
6.	Drying Oven.	20000
7.	Magnetic Stirrer.	8000
8.	Microscope.	12000
9.	Muffle Furnace.	22000
10.	PH meter.	10000
11.	Chemicals.	30000
12.	Glassware.	15000
13.	Orsat gas apparatus	10000
14	Moisture meter	15000
		----- 238500/-

Q. 12. Where the standards for Waste – water, Air & Noise are known?

R. Yes.

Ref.No. RNVDM/ETP/16/24

Date: 18/06/2016

To,  
**The Member Secretary,**  
Maharashtra Pollution Control Board,  
Kalpataru point, 3<sup>rd</sup> floor,  
Sion -Matunga Scheme Rd.No.8,  
Opp.Sion Circle, Sion (East),  
Mumbai - 400 022  
Maharashtra

**Subject: "ENVIRONMENTAL STATEMENT" for the financial year 2015-2016**

**Reference: Consent No: Format-1.0/BO/CAC-CELL/EICNO.AD17309-15/R/CAC-395 dated 08.01.2016**

Respected Sir,

With reference to above mentioned subject, we are submitting herewith the **"ENVIRONMENTAL STATEMENT"** for the financial year 2015-2016.

Yours faithfully

**FOR RADICO NV DISTILLERIES MAHARASHTRA LTD.**

**Ashish Kapoor**  
**(Vice President)**

CC: The Regional officer, MPCB, Aurangabad  
CC: The Sub Regional officer, MPCB, Aurangabad

To,  
**The Member Secretary,**  
Maharashtra Pollution Control Board,  
Kalpataru point, 3<sup>rd</sup> floor,  
Sion – Matunga Scheme Road No.8,  
Opp. Sion Circle, Sion (East),  
**Mumbai – 400 022**  
Maharashtra