
	M/S. Privi Organics Limited UNIT-I	
	ENVIRONMENTAL IMPACT ASSESSMENT REPORT	
	REPORT NO.: GCI/V/Privi-I/EIA/2013-2014/MAY-01/R03	

Executive Summary

1.0 PROJECT DESCRIPTION

1.1 Introduction

M/s Privi Organics Ltd Unit 1 was commissioned in 1992 followed by commercial production commencement in the same year. The manufacturing plant is located at plot no. A-7, MIDC, Taluka: Mahad, District: Raigad, Maharashtra. The unit Proposes for expansion of aroma chemicals. At present 16 products are manufacturing while it is planned to manufacture 5 new products i.e Amber gamma, Myrcene 90, L-Limonene, Aldehyde C11, Citral extra pure and 1 product expansion of existing product Amber Fleur.

1.2 Type of Project

The proposed unit is Synthetic Organic Chemicals manufacturing unit covered under the category 'B', **5(f) of EIA notification** "Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)" of EIA Notification-2006.

1.3 Location of Project Site

The proposed expansion for Industrial project is located at plot no. A-7, MIDC, MIDC, Taluka: Mahad, District: Raigad, Maharashtra - 402309. The site is located on 18°06'509" North Latitude and 73°28'864" East Longitude. The site is well connected by national highway (NH-17) around 2.2 Km, Veer railway station (18 km) and Pune Airport (130 km) and Mahad city (8 km).

1.4 Proposed Expansion production capacity

The proposed expansion of project is the manufacturing of aroma chemicals. The details of products and by-products along with their capacity are given in Table: 1.1 and Table: 1.2

Table: 1.1 Details of Proposed Production Capacity

S.no.	Products	Existing (MT/A)	Proposed (MT/A)	Total (MT/A)
1	Amber Fluer and its derivatives	237.0	163.0	400.0
2	Amber gamma	-	50.0	50.0
3	Myrcene 90/Myrcene Supra	-	50.0	25.0
4	L-Limonene	-	25.0	25.0
5	Aldehyde C11	-	12.0	12.0
6	Citral extra pure	-	30.0	30.0
	Total			567.0

Table: 1.2 Details of by-products

Sl.No.	Products	By-Products	Existing Quantity (MT/M)	Proposed Quantity (MT/M)	Total Qty in (MT/M)	Utilization
1.	Amberfleur & Derivatives	Aqueous Fluoboric acid (Fluoroboric acid)	0.0	115.88	115.88	Sale to PCB registered party
2.		Spent Acid Layer (Spent phosphoric Acid)	40.0	40.0	80.0	Sale to PCB registered party
3.		Recovered Toluene	0.0	111.51	111.51	Reuse or Sale to PCB registered party
4.		Column Tops	0.0	120.41	120.41	Sale to PCB registered party
5.		Column Bottom mass	0.0	86.50	86.50	Sale to PCB registered party
6.	Amber Gamma	Aqueous Fluoboric acid (Fluoroboric acid)	0.0	16.30	16.30	Sale to PCB registered party
7.		Spent Acid Layer (Spent phosphoric acid)	0.0	24.30	24.30	Sale to PCB registered party
8.		Recovered Toluene	0.0	60.15	60.15	Reuse or Sale to PCB registered party
9.		Column Tops	0.0	20.25	20.25	Sale to PCB registered party
10.		Column Bottom mass	0.0	15.65	15.65	Sale to PCB registered

						party
11.	Myrcene 90/Myrcene Supra	Column Tops	0.0	13.8	13.8	Sale to PCB registered party
12.		Column Bottom mass	0.0	8.0	8.0	Sale to PCB registered party
13.	L-Limonene	Column Tops	0.0	61.6	61.6	Sale to PCB registered party
14.		Column Bottom mass	0.0	11.50	11.50	Sale to PCB registered party
15.	Aldehyde C11	Column tops	0.0	1.8	1.8	sale to PCB registered party
16.		Column bottom mass	0.0	6.7	6.7	sale to PCB registered party
17.		Reaction bottom mass	0.0	4.0	4.0	sale to PCB registered party
18.	Existing Byproducts	Rose Dial	2.2	0.0	2.2	Sale to PCB registered party
19.		Spent Sulphuric Acid	475.0	0.0	475.0	Sale to PCB registered party
20.		Tops and Residues	20.0	0.0	20.	Sale to PCB registered party

1.5 Land Details

The total land area for the proposed project is 6525.0 M². Whereas the green belt area is 21.0 M².

1.6 Water requirement

Total Water Requirement for the proposed unit is 320.97 M³/day, out of which for Industrial use is 308.47 M³/day, for domestic use is 12.5 M³/day and for greenbelt is 5.0 M³/day (which will be recycle). The required source of water shall be met from MIDC, Mahad water supply.

1.7 Waste water generation and management

The waste water generated from domestic use is 10.0 M³/day and effluent generated from process/industrial use is 112.24 M³/day and it will be treated in ETP followed by RO and MEE at unit-III through over headed pipeline. The recycle water will be reuse in industrial activity and in green belt development. The rest of the effluent will be transferred to CETP after treatment.

1.8 Solid and hazardous waste management

Domestic waste generated during the operation phase will be handed over to Authorized parties. Hazardous waste generated from process will be send to TSDF site at Talaja for further process.



1.9 Power requirement

The total power requirement for the proposed project is 685 KVA. The electricity shall be met from MSEDCL. The existing DG sets are with capacity of 2x380 KVA for back power supply.

1.10 Stack details

Table: 1.3 Stack details

Sr.N	Details	Capacity		Stack Ht.		Fuel/Fuel consumption		Stack Dia(mm)		Stack gas temp(°C)	
		Exist.	Pro.	Exit.	Pro.	Exit.	Pro.	Exit.	Pro.	Exit.	Pro.
1.	Boiler	*3 TPH (Standby). & **8 TPH	-	13m & 42 m	-	4.4 KL & 20 TPD	--	550 & 950	-	160	-
2.	DG set	Exist 2x 380 KVA	Pro. -	Exit. 04 m	Pro. -	Exit. 200 L/hr	Pro. -	Exit. 150	Pro. -	Exit. 150	Pro. -

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Note: *3 TPH furnace oil/Biofuel boiler is a stand by for Unit-I, **8 TPH coal fired boiler common for Unit-I and Unit-III.

1.11 Manpower requirement

During construction phase, around 25 laborers will be hired for construction activity. During operation phase around 5 nos. of people will work directly in the facility other than sale and marketing team.

1.12 Green Belt Development

There is total 21.0 M² area including open space will be taken for green cover / lawn development in the existing facility. Suitable plant species of local varieties will be planted with adequate spacing and density for their fast growth and survival.

1.13 Cost of Project

The expected cost for the proposed project will be around Rs 4.5 Crores. Out of which Rs 34.7 Lakhs shall be earmarked for development of EMS (Environment Management Systems).

2.0 DESCRIPTION OF THE ENVIRONMENT



2.1 Study Area included in Environmental Setting

Studies were carried out in about 10 km radius area from the proposed site with respect to meteorology, flora, fauna, land, geology, hydrogeology and socio-economics of the area. Further, the air quality, water quality, noise level and soil quality sampling and analysis was carried out. The air quality, water quality, noise level and soil quality in the study area is evaluated based on this physical sampling and analysis.

The base line data were monitored for study period of March 2013 to May 2013. The study team conducted site surveys and field experiments to gathering the information on Meteorology, Air Quality, and Water Quality, Soil Quality, Noise Quality, Biological environment, and traffic.

2.2 Proximity to Water Bodies

Kal River flows at 1.20 Km and Savitri River 2.20 Km (aerial distance) to Project site.

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2.3 Important Features within the Periphery of the Study Area

No major eco-system / biosphere reserves have been identified within the periphery of the project site. The nearest archaeological monument is Pandav Leni, which is at a distance of approximately 10 Km from the project Site.

2.4 Climate of the Study Area

The climate of study area varies with hot summer, cold winter and rainfall. Climate of study area is warm and dry from mid march to June, during season of summer, climate remains warm and dry, while during rainy season, from mid June to end of September climate is humid and pleasant. From October to November mild warm climate prevails and from December to February climate is cold.

i) Relative humidity-

The maximum relative humidity is around 94 % during July to September and minimum 78 % during November to March.

ii) Temperature-

The maximum temperature of the city during March and July is 32°C and the minimum temperature is 22.7°C. The maximum temperature winter season from November to February is 20°C and minimum is 15°C.

iii) Rainfall-

The average annual rainfall of Mahad region is recorded as an average of 3413 mm.

iv) Wind-

The average wind speed is 1.25 m/s. The minimum and maximum wind speed experienced were 0.5 m/s and 6.1 m/s respectively based on historical data.

2.5 Ambient Air Quality

Ambient air quality monitoring was carried out on selected locations within the 10 km radius of the proposed Project. Ambient air quality was monitored on 10 locations to generate representative ambient air quality data.

- a. The concentration of PM₁₀ was found in the average range of 141-419 µg/ M³ and PM_{2.5} was observed to be varying from 40-82 µg/M³.
- b. Concentration of SO₂ was observed to be varying from 16.8-24 µg/M³, NO_x was observed to be varying from 32-45 µg/M³ and CO was observed to be varying from 0.35 to 0.45 mg/m³.
- c. Concentration of PM₁₀ and PM_{2.5} is exceeding applicable limit of 100 µg/ M³ and 60 µg/ M³ respectively, this may be due to the burning of dry grasses and agricultural residues.

2.6 Water Quality

Surface Water:

- a. Surface water sample was collected from Kal River, Savitri River, MIDC Nala and Chavdar Tale Lake, Mahad city.
- b. Analysis of the samples revealed that all parameters are within the permissible limit specified for drinking water as per IS: 10500: 1991.

Ground Water:

- a. Groundwater samples were collected from six different locations.
- b. Analysis of samples revealed that all parameters are below the permissible limit specified for drinking water as per IS: 10500: 1991.

2.7 Noise Environment

- a. Noise level was measured in day time and night time at six different locations.
- b. Comparison of the ambient noise levels with the standards specified by CPCB reveals that the noise level at all locations is below the specified limit.

2.8 Land Use of the Study Area

Landuse	AREA (M ²)	Area (ha)	Area (%)
Water	3525850	353	1.12
Agriculture land	4549850	455	1.45
Fallow land	101886685	10189	32.47
Degraded land	24760510	2476	7.89
Forest	55452075	5545	17.67
Degraded forest	121921875	12192	38.85
Settlements	151400	15	0.05

Road	1542881	154	0.49
Area	313791125	31379	100

- Soil: Soil samples from 7 locations were collected and analyzed to assess the soil quality prevailing in the study area.

2.9 Biological Environment

Flora:

The tree plantations include Aam, Sitaphal, Ashok, Saptaparni, Kaner, Neem, Pipal, Gulmohar, Jamun; etc are found to be growing in the Mahad.

Fauna:

The various animal species in the study area are found, detailed study is given in Baseline chapter-3. No endemic or threatened plant species were observed during the survey in the vicinity of the Project.



2.10 Demographic and Socio-economic Profile

- The socio-economic profile of the study area is based on Census of India 2011.
- Total of 40 villages are comes under 10 km radius of study area.
- Total population of study area is 45241. Out of this male population is about 22831 and female population is about 22410. The sex ratio in the study area is around 981.56 females per 1000 males and the no of household is approx. 10608.
- Total literate population is 33016 and average literacy rate is 72.9 % in study area.
- In the study area SC population is about 2116 and ST population is 2008.
- Villages in study area have fairly good infrastructural, health, Drinking water, Electricity and communication facilities.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Ambient Air

- In order to estimate the ground level concentrations due to the emission from the proposed project, an EPA approved ISCST - 3 version 98356 (Industrial Source Complex Short Term dispersion model) has been employed.
- The predicted ground level concentrations of PM₁₀, SO₂, NO_x are found to be 1.288, 0.119, 0.568 µg/M³ respectively.
- These predicted ground level concentrations when added to baseline scenario, the overall

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scenario levels of PM₁₀, SO₂, NO_x, are well within the permissible limits specified by CPCB.

- VOCs and other NAQOS parameters are observed with below detectable limit, the detail explanation is mentioned in Baseline chapter-3.
- Adequate mitigation measures will be proposed to control air pollution.

3.2 Noise

The major noise source includes various machines, pumps, motors, DG sets and vehicular traffic. The noise levels were below the stipulated standards of CPCB for residential and industrial areas.

Every effort would be taken to minimize the noise levels including Periodic maintenance of machinery, mandatory use of equipment with operable mufflers, oiling and lubrication, Noise suppression measures such as enclosures, buffers, green belt development etc.

3.3 Water Environment

Total water requirement of the plant is 348.47 M³/day. This requirement will be met from MIDC, Mahad water supply.



3.4 Waste Water generation and treatment

The initial treatment will be done in the unit-1 after this the effluent is forwarded through over headed pipeline to unit-3 for further treatment.

The waste water generated from domestic use is 10 M³/day and it will be disposed into soak pit and septic tank. Effluent generated from process/industrial use is 112.24 M³/day and it will be treated by ETP followed by RO and MEE. The recycle effluent will be use in industrial process and gardening.

3.5 Land Environment

Development of green belt and other landscape on the proposed site would enhance the visual aesthetics of the area. No construction activity will carried out during rainy season. There is no discharge of solid as well as liquid effluent in open land. Thus no adverse impact envisaged on land environment.

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3.6 Biological Environment

Flora: Analysis of abiotic factors reveals that ambient air and fresh water quality will remain practically unaffected. Thus, indirect adverse impact on flora is ruled out.

Fauna: The quality of ambient air and fresh water system will remain practically unaffected. Thus indirect impact on fauna, due to these abiotic factors is ruled out.

3.7 Socio - Economic Environment

- The project will contribute to the socio-economic development of the area at the local level.
- The direct and indirect employment to the local population during the operation of the project.
- All these will be beneficial to the local economy.

4.0 ENVIRONMENTAL MONITORING PROGRAM



Environmental Monitoring Network is designed for construction and operation phase of the project for monitoring of various environmental parameters like air, water, noise, soil and ecology etc.

4.1 Implementing Schedule of Monitoring Measures

Monitoring should be done as periodically to understand the environmental condition of the site. The mitigation measures suggested in the Chapter-4 should be implemented so as to reduce the impact on environment due to the operations of the proposed project. In order to facilitate easy implementation, mitigation measures are phased as per the priority implementation. Air pollution control measures will be installed as per CPCB norms. During construction phase monthly monitoring will be carried out and during operation phase monitoring will be done on quarterly basis or as per MPCB/CPCB guideline.

5.0 PROJECT BENEFITS

Growth in the industrial sector creates new opportunities for employment and can also help diversify the economy.

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5.1 Improvement in Social Infrastructure

From the very initial stage of the inception of the project, infrastructure development in and around the project site has been kept into consideration. Infrastructure development will be done based on actual requirement rolled out as part of company's CSR activity.

5.2 CSR Activities



- Planning to create residential, medical, educational and recreational facilities for our employees.
- Rural development programs for upliftment of people in the form of de-addiction, self help, vocational training and guidance etc.
- Blood donation camp
- Food and cloths distribution to old age home.
- Special Health awareness camp and medical camps for primary check up will be arranged at least once in a year in nearby villages for health check-ups, etc.

6.0 ENVIRONMENT MANAGEMENT PLAN

The EMP presents the project specific guidelines on:

- Environmental management strategies
- Specialized engineering construction procedures in relation to environmental guidelines of the country
- Spill prevention and control
- Management of wastes and hazardous chemicals
- Air, water and soil quality protection
- Noise control
- Soil erosion control and slope stabilization
- Vegetation, wildlife and habitat protection
- Socio-economic and welfare considerations
- Risk and disaster management plan
- To prepare a checklist for statutory compliance
- Budget allocation for environment management plan.

6.1 Environmental Objectives

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- To adopt construction and operational methods that will limit environmental degradation.
- To protect physical environmental components such as air, water and soil.
- To conserve terrestrial and aquatic flora and fauna.
- To protect historic and cultural sites.
- To incorporate the views and perceptions of the local inhabitants in the project.
- To generate employment opportunities wherever possible and feasible.
- To provide environmental guidelines and stipulations to the construction contractors to minimize the impact of those activities around the proposed site.
- To establish a long term program to monitor effects of the project on the environment.