

	M/s. Privi Organics Limited - Unit III	
	Environmental Impact Assessment Report	
	REPORT NO.:- GCI/V/EIA/Privi-III/2013-2014/May-01/R05	

Executive Summary

1.0 PROJECT DESCRIPTION

1.1 Introduction

M/s Privi Organics Ltd Unit III was commissioned in 2008. There has been no commercial production in Unit III so far. Unit III has ETP and Utility boiler which cater to Unit I of Privi Organics Ltd. It has been planned to start manufacturing aroma chemicals/resins. The proposed plant is located at plot no- A-3, MIDC, Taluka- Mahad, District- Raigad, Maharashtra. It is now planned to manufacture nine new products in which seven products are aroma chemicals whereas two products are resin.

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 of Industrial project is located at plot no. A-3, MIDC, Taluka: Mahad, District: Raigad, Maharashtra - 402309. The site is located on 18°06.340'N Latitude and 73°28.795'E 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 Birwadi town (5 km).

1.4 Proposed Production capacity

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

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Table: 1.1 Details of Proposed Production Capacity

S. No.	Product	Category	Qty in MTPM
1	Terpineol & Its Derivatives	Aroma chemical	200
2	Terpinyl acetate & Its Derivatives	Aroma chemical	100
3	Dipentene varieties a) Terpinolene 20 b) Terpinolene 40 c) Terpinolene 90	Aroma chemical	80
4	Prionyl	Aroma chemical	30
5	Terpene-Phenol based resin	Resin	150
6	Terpene(Polyterpene) based resins	Resin	150
7	Para-Cymene	Aroma chemical	100
8	Camphene	Aroma chemical	250
9	Isobornyl acetate	Aroma chemical	100
	Total		1160

Table: 1.2 Details of by-products

S.no.	Description	Existing (MT/M)	Proposed (MT/M)	Utilize
Product: Terpineol & Its Derivatives				
1	Recovered acetone	0.0	320.0	Reuse or Sale to PCB registered party
2	Ammonium sulphate solution (22-30 %)	0.0	460.0	Sale to PCB registered party
3	Recovered Toluene	0.0	140.0	Reuse or Sale to PCB registered party
4	Dipentene	0.0	110.0	To make value addition products or Sale to PCB registered party
5	Column Tops	0.0	18.0	Sale to PCB registered party
6	Column Bottom mass	0.0	15.8	Sale to PCB registered party
Product: Terpinyl acetate & Its Derivatives				
7	Acetic acid solution (23-30%)	0.0	212.0	Sale to PCB registered party
8	Column Tops	0.0	13.0	Sale to PCB registered party
9	Column bottom mass	0.0	4.0	Sale to PCB registered

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				party
Product: Prionyl**				
10	Spent Aq. Aluminium chloride solution (30-38%)	343.0	453.0	Sale to PCB registered Party
11	Spent Aq.Triethyl amine Hydrochloride (29 to 33%)	187.20	507.0	Sale to PCB registered Party
12	Recovered Triethanolamine	0.0	195	Reuse or Sale to PCB registered Party
13	Recovered EDC	0.0	471.0	Reuse or Sale to PCB registered Party
14	Column Tops	0.0	18.0	Sale to PCB registered party
15	Column Bottom mass	0.0	42.0	Sale to PCB registered party
16	Recovered Methanol	0.0	114.0	Reuse or Sale to PCB registered Party
17	Spent (Sod.Sulphate) & Methanol solution	0.0	405.0	Sale to PCB registered Party
18	Recovered MDC	0.0	186.0	Reuse or Sale to PCB registered Party
19	Spent DMH Solution (DMH 8-10 %)	0.0	93.0	Sale to PCB registered Party
20	Recovered Cyclohexane	0.0	24.0	Reuse or Sale to PCB registered Party
21	Recovered Methanol	0.0	39.0	Reuse or Sale to PCB registered Party
22	Aq.methanol solution (15-18 %)	0.0	294.0	Sale to PCB registered Party
Product: Terpinolene				
23	Column Tops	0.0	15.6	Sale to PCB registered Party
24	Column bottom mass	0.0	1.9	Sale to PCB registered Party
25	LF (Mix of alcohols like Fenchyl alcohol , Borneol etc)	0.0	7.5	Sale to PCB registered Party
Product: Terpene-Phenol Resin				
26	Aq.fluoroboric acid (Fluoboric acid) solution	0.0	51.0	Sale to PCB registered Party
27	Recovered Xylene	0.0	55.5	Sale to PCB registered Party
Product: Polyterpene				
28	Spent Aq.Aluminium chloride solution	0.0	39.0	Sale to PCB registered Party
29	Recovered Xylene	0.0	115.5	Sale to PCB registered Party
Product: Para-Cymene				

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30	Recovered catalyst	0.0	0.2	Sale to PCB registered Party
31	ColumnTops	0.0	63.0	Sale to PCB registered Party
32	Column Bottom mass	0.0	13.0	Sale to PCB registered Party
Product: Camphene				
33	Recovered catalyst	0.0	10 .0	Sale to PCB registered Party
34	Column Tops	0.0	60 .0	Sale to PCB registered Party
35	Column Bottom mass	0.0	12.5	Sale to PCB registered Party
Product: Isobornyl acetate (IBA)				
36	1st Aq. Layer Acetic acid solution (20-30%)	0.0	156.0	Sale to PCB registered Party
37	Recovered Camphene	0.0	35.0	Reuse or sale to PCB registered party
38	Column Tops	0.0	55.0	Sale to PCB registered Party
39	Column Bottom mass	0.0	24.0	Sale to PCB registered Party
40	Recovered Indion catalyst	0.0	21.0	Sale to PCB registered Party

** Product- Prionyl is already in existing consent to establish (CTE), but there is no production as there is no manufacturing facility available in Unit-III.

1.5 Land Details

The total land area for the proposed project is 12000.0 M². Whereas the green belt area is 300.0 M².

1.6 Water requirement

Total Water Requirement for the proposed unit is 610.19 M³/day, out of which for Industrial use is 570.19 M³/day, for domestic use is 40 M³/day and for greenbelt is 10.0 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 20.0 M³/day and effluent generated from process/industrial use is 123.8 M³/day and it will be treated in ETP followed by RO and MEE. The

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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 Taloja for further process.

1.9 Power requirement

The total power requirement for the proposed project (Existing + Proposed) is 2575 KVA. The electricity shall be met from MSDDL. The existing DG set with capacity of 1 X 380 KVA and proposed DG set with capacity of 1 X 750 KVA will be as back power supply.

1.10 Stack details

Table: 1.3 Stack details

S.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	8 TPH	16 TPH	42 m	44.5 m	Coal, 20 TPD	Coal, 72 TPD	950/1950	1500/2500	160	160
2.	DG set	Exist 380 KVA	Pro. 750 KVA	Exit. 11 m	Pro. 11m	Exit. Diesel, 70 L/hr	Pro. Diesel, 250 L/hr	Exit. 150	Pro. 150	Exit. 80	Pro. 80

1.11 Manpower requirement

During construction phase, around 40 laborers will be hired for construction activity. During operation phase around 98 nos. of people will work directly in the facility other than sale and marketing team and indirect employment will be around 25 nos. making total employment generation 103 people.

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1.12 Green Belt Development

There is total 300.0M² area 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 37.5 Crores. Out of which Rs 86.3 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.

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.

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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.

- 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.
- Concentration of SO₂ was observed to be varying from 16.8-24 µg/M³, NO_x was observed to be varying from 33-45 µg/M³ and CO was observed to be varying from 0.35 to 0.45 mg/m³.

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- 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.

2.7 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	2707675	271	0.86
Agriculture land	3294775	329	1.05
Fallow land	73168100	7317	23.32
Degraded land	19494650	1949	6.21
Forest	88598975	8860	28.23
Degraded forest	125321925	12532	39.94
Settlements	111200	11	0.04
Road	1106199.7	111	0.35
Area	313803500	31380	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.

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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 1.298, 0.128, 0.565 µg/M³ respectively.
- These predicted ground level concentrations when added to baseline scenario, the overall scenario levels of PM₁₀, SO₂, NO_x, are well within the permissible limits specified by CPCB.
- VOCs and other NAQQS parameters are observed with below detectable limit, the detail explanation is mentioned in Basline 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.

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3.3 Water Environment

Total water requirement of the plant is 610.19 M³/day. This requirement will be met from MIDC, Mahad water supply.

3.4 Waste Water generation and treatment

The waste water generated from domestic use is 20 M³/day and it will be disposed into soak pit and septic tank followed by ETP. Effluent generated from process/industrial use is 123.8 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.

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.

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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.

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.
- Sponsoring /providing hobby workshop for ladies and children.
- Tree plantation in rural areas.
- 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.

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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

- 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.