

# **EXECUTIVE SUMMARY**

**OF**

## **EIA & EMP REPORT**

**FOR**

**PROPOSED RESIN MANUFACTURING UNIT**

**LOCATED AT**

**SURVEY NO.: 173/1, PADANA-BHIMSAR ROAD,  
VILLAGE PADANA, TALUKA GANDHIDHAM,  
DISTRICT KUTCH, GUJARAT**

**OF**

**M/S. MAPLE PANELS PVT. LTD.**

## EXECUTIVE SUMMARY OF EIA & EMP REPORT

### 1 INTRODUCTION

M/s. Maple Pane Pvt. Ltd. proposed project to set up resin manufacturing unit (12,000 MTPM) at Survey No. 173/1, village Padana, Padana-Bhimasar Road, Taluka Gandhidham, District Kutch, Gujarat.

### 2 PROJECT DESCRIPTION

#### 2.1 PROJECT DETAILS

Category of the project	A (Outside the Notified Industrial Area)
S. No. In the schedule	5(f), Synthetic Organic Chemicals as per EIA Notification dated 14 <sup>th</sup> September, 2006 & its amendments.
Location of the project	Survey No. 173/1, village Padana, Padana-Bhimasar Road, Taluka Gandhidham, District Kutch, Gujarat.
Project cost for Resin Unit	Rs. 1350 lacs
Cost for EPCM (Environmental Pollution Control Measures)	Capital cost: Rs. 205 lacs & Recurring cost: Rs. 10 lacs per annum.
Cost for CSR activities	Rs. 33.75 lacs for first five years

#### 2.2 PRODUCT AND CAPACITY

Maple Panels Pvt. Ltd. is intend to establish its resin manufacturing unit with the capacity of 12,000 MTPM in existing particle board and pre-laminated board unit at Gandhidham. There are four products i.e., Urea Formaldehyde Resin (4,000 MTPM), Melamine Formaldehyde Resin (2,000 MTPM), Formalin (5,000 MTPM) Phenol Formaldehyde Resin (500 MTPM), Wax (500 MTPM)

#### 2.3 PROJECT REQUIREMENT:

Land requirement	The company has acquired total land area of 40,469 m <sup>2</sup> from which 8,628.7 sq. m (resin, formalin, storage, Boiler and ETP) land area will be utilized and rest area is for the particle board manufacturing unit and common facilities.
Water requirement & its source	Total water requirement will be 129 KLD (Fresh 126 KLD and Reuse 3 KLD). Out of total water 1.5 KLD water will be utilized for the domestic purpose, 102.5 KLD water will be required for the industrial purpose (boiler, cooling tower and for process) and rest water 25 KLD will be used only for greenbelt development. Entire water will be sourced from Surface water body through tanker.
Electricity requirement & its source	The total power requirement for the proposed project is 500 KVA which will be sourced from Paschim Gujarat Vij Company Limited (PGVCL).
Manpower requirements	Total manpower requirement for the project will be 30 personnel.
Fuel requirement & its source	Coal/ waste wood/ baggase 10 MT/day from local market. Diesel HSD: 35 lit/hr from nearest petrol pump for 400 KVA DG Set.

#### 2.4 RAW MATERIAL REQUIREMENT, ITS SOURCE AND MODE OF TRANSPORTATION

Details of raw materials, its sources and mode of transportation are given in below table:

SR. NO.	RAW MATERIAL	QUANTITY (MT/MONTH)	SOURCE	MODE OF TRANSPORTATION
1.	Phenol	220	HOCL (India), etc Import through traders	By Road
2.	Melamine	712	GSFC (India), etc Import through traders	By Road
3.	Urea (T. G.)	1000	Imported through traders	By Road
4.	Formaldehyde solution (37%)	4566	In-house production	-
5.	Methanol	2955	GSFC(India), etc Import through traders	By Road
6.	Caustic Soda	10.5	Local market through traders	By Road

## EXECUTIVE SUMMARY OF EIA & EMP REPORT

SR. NO.	RAW MATERIAL	QUANTITY (MT/MONTH)	SOURCE	MODE OF TRANSPORTATION
7.	Acetic Acid	4	Local market through traders	By Road
8.	Paraffin Wax	219	Local market through traders	By Road
9.	Borax Powder	7.5	Local market through traders	By Road
10.	Stearic acid	29	Local & imported through traders	By Road
11.	Aqueous Ammonia	7.5	Local market through traders	By Road

### 2.5 WASTE WATER GENERATION

Waste water generation from industrial process will be 9.75 KLD, which will be treated in effluent treatment plant having evaporation system. Condensate water will be reused in cooling tower. Thus, industry will maintain Zero Discharge Concept.

Domestic wastewater will be generated i.e. 1 KLD and it will be treated through septic tank and disposed through soak pit/well.

### 2.6 AIR EMISSION & AIR POLLUTION CONTROL MEASURES DETAILS

The air emission from the proposed project would be the flue gas emission from steam boiler and thermopack which would be controlled by bag filter and adequate stack height. Emission from D. G. set will be controlled by adequate stack height.

### 2.7 DETAILS OF SOLID/HAZARDOUS WASTE GENERATION AND ITS DISPOSAL

Solid/hazardous waste i.e. used oil (3 lit per annum) will be reused as lubricant in plant machineries and sold to re-processors. Discarded resin (1500 Nos. per annum) will be sent to authorize recycler after decontamination. Salt from evaporator (3 MT/Month) will be sent to TSDF site. Fly ash (15 MT per month) will be sold to brick manufacturer.

## 3 DESCRIPTION OF THE ENVIRONMENT

### 3.1 INTRODUCTION

The baseline environmental quality of Air, water, soil, noise, socioeconomic status, and ecology has been assessed in the post-monsoon season during 1<sup>st</sup> March to 31<sup>th</sup> May, 2016 within study area of 10 km radial distance from the project site.

### 3.2 ENVIRONMENTAL SETTING OF THE AREA

NO.	NEAREST INFRASTRUCTURE FEATURE	DISTANCE FROM PROJECT SITE
1.	Nearest Village	Padana - 1.3 km in South-East Direction
2.	Nearest National Highway	NH-8 A - 2.5 km in North Direction
3.	Nearest State Highway	SH-50 - 2.5 km in North Direction SH-06 – 1.6 km in South-East Direction
4.	Nearest Railway Station	Bhimasar 2.6 km in North Direction
5.	River	No major river within 10 km radius area
6.	Nearest Airport	Kandla Airport - 10 km in South-West Direction Bhuj Airport – 54 km in West Direction
7.	Nearest Sea	Gulf of Kutch – 28 km in South Direction
8.	Nearest TSDF site	SEPPL Bhachau – 23 km in North-East Direction

### 3.3 BASE LINE DATA

The collected base line data (during 1<sup>st</sup> March to 31<sup>th</sup> May, 2016) in the study period has been presented in the following sections.

#### 3.3.1 MICRO-METEOROLOGY

Temperature varies from season to season. Mean daily maximum temperature was recorded in the month of May at 35.4 °C. Highest mean temperature in the month, recorded in May, was 40.3 °C. From November to January, both day and night temperatures begin to decrease rapidly. January is generally the coldest month,

## EXECUTIVE SUMMARY OF EIA & EMP REPORT

with mean morning temperatures of 10.6 °C. Mean daily minimum temperature of about 13.8°C is recorded in January. During the post-monsoon season, day temperatures remain between 30.9 - 34.4 °C. In winters, i.e. January to February, day temperatures remain between 25.3 – 27.7 °C. Mornings are more humid than evenings and humidity ranges from a high of 76 to 82% in monsoon mornings to a low of 63 to 70% in summer evenings. During post-monsoon season, morning humidity remains between 60 to 67 % and during the evening it remains between 39 to 42%.

### 3.3.2 AMBIENT AIR QUALITY

During baseline monitoring, the arithmetic mean values of PM<sub>10</sub> varied between 79.8 – 81.0 µg/m<sup>3</sup> while the 98<sup>th</sup> percentile values of PM<sub>10</sub> ranged between 86.6 – 88.7 µg/m<sup>3</sup>. The arithmetic mean values of PM<sub>2.5</sub> varied between 38.4 – 42.0 µg/m<sup>3</sup> while the 98<sup>th</sup> percentile values of PM<sub>2.5</sub> ranged between 45.3 – 49.4 µg/m<sup>3</sup>. The arithmetic mean value for SO<sub>2</sub> was 8 – 12.9 µg/m<sup>3</sup> and the 98<sup>th</sup> percentile of SO<sub>2</sub> was 13.0 – 17.8 µg/m<sup>3</sup>. The arithmetic mean values of NO<sub>x</sub> varied between 15.7 – 20.7 µg/m<sup>3</sup> while the 98<sup>th</sup> percentile of NO<sub>x</sub> ranged from 16.8 – 24.0 µg/m<sup>3</sup>. The arithmetic mean values of CO varied between 1.0 – 1.6 mg/m<sup>3</sup> while the 98<sup>th</sup> percentile of CO ranged from 1.2 – 2.0 mg/m<sup>3</sup>. The arithmetic mean & 98<sup>th</sup> percentile values of VOC (as Isobutylene) were <1.0 µg/m<sup>3</sup>.

### 3.3.3 GROUND WATER QUALITY MONITORING

Groundwater samples from different villages during study period was collected once during monitoring period and analyzed. The pH varied in the range of 7.2 – 7.7, turbidity 0.9 - 1.9 NTU, total hardness 248 - 452 mg/l, dissolved solids 1268.6 – 3546.7 mg/l, Sulphate 89.3 – 261.8 mg/l and Alkalinity 196 - 260 mg/l. Chloride varied from 110 - 270 mg/l. Nitrate was present in the range 7.3 – 15.7 mg/l.

### 3.3.4 SURFACE WATER QUALITY MONITORING

The pH varied is from 7.6 – 8.3 the turbidity varied from 4.1 – 8.1 NTU, the dissolved solids varied from 579 - 687 mg/l, total hardness varied between 310 - 389 mg/l, chloride varied from 112 - 139 mg/l, the sulphate varied from 14.5 – 19.4 mg/l. The results indicate that the nutrient values in the form of nitrate were found to be varied from 12.1 – 27.9 mg/l. The overall surface water quality was found to be average and the water should be treated before using it for drinking purpose.

The observed higher concentration of TDS, Chloride & Sulphate is due to saline geological formations. Higher concentration of Total Hardness, Nitrate, Fluoride, Calcium and Magnesium is due to near proximity of sea (Gulf of Kutch).

### 3.3.5 BACKGROUND NOISE LEVEL

Background noise levels were measured at eight locations. The noise level at the project was found 42.3 - 66.2 dBA in daytime and 36.6 – 41.2 dBA in night time. The noise levels varied in the residential area of the study area during day time [night time] in the range of 34.2 – 59.9 (29.1 – 44.8) dBA.

### 3.3.6 SOIL QUALITY

The eight soil samples collected from surrounding areas including project site were assessed for physical and chemical quality parameters. The porosity ranged from 26-40 % and WHC from 22-32%. The EC ranged from 0.2 – 0.6 dS/m. The soil pH varied from 6.8 - 8.4. These results indicate that in general soils are non-saline as EC does not exceed 0.8 dS/m, but based on soil pH soil at the site is categorized as alkaline as pH >8.2. The OC varied from 0.30-0.71 and available nitrogen from 160.2-240.4 kg/ha. The available phosphorus and potassium ranged from 6.4-15.8 kg P<sub>2</sub>O<sub>5</sub>/ha and 204.6-365.3 kg K<sub>2</sub>O /ha, respectively. Among basic cations there is predominance of sodium (152.0 to 179.2 mg/kg) followed by calcium (12.8 to 48.2 mg/kg) and magnesium (11.5 to 28.0 mg/kg).

### 3.3.7 LAND USE PATTERN

Land use within 10 km radius of the study area has been determined with the help of satellite imagery, and broadly consists of settlements, Industrial, Tank/River/reservoir, Single crop, land with scrub, land without scrub area and predominant land use is Single crop.

## EXECUTIVE SUMMARY OF EIA & EMP REPORT

### 3.3.8 SOCIO-ECONOMIC STUDY

The study area consist total 16 villages of Bhachau, Anjar, Gandhidham taluka. Total population of the study area as per 2011 census was 60,384 (male 33,595 and female 26,789). Total population of Kutch district was 20, 92,371 out of that 1,096,737 were male and 995,634 were female. Average literacy rate of the study area was 78.8% as per census 2011 but this literacy rate is counted on the basis of literates who can read and write but not higher educated. Industrial activities have major impact of occupation of the people in the study area. All villages are having primary infrastructural facilities.

### 3.3.9 BIOLOGICAL ENVIRONMENT

There is no National park, wild life sanctuary present within the study area of 10 km radius from the project site.

#### 3.3.9.1 FLORAL DIVERSITY OF THE STUDY AREA

The trees, herbs, shrubs, climbers and major crops, observed during the biological survey conducted. During study 29 tree species belong to 18 families, 22 shrubs belong to 14 families, 35 herbaceous species belongs to 18 families and 6 climbers or twiners belongs to 5 families are enumerated from the study area. Among the enumerated flora in the study area, no rare and endangered flora was observed.

#### 3.3.9.2 CULTIVATED PLANTS IN THE STUDY AREA

Even though the dominant land scape of the study area is agriculture lands, during the study period, very limited cultivation was practiced in this region *Ricinus communis L.* (Castor). Certain area like Tapar village, Pasuda village and Ajpar village are practicing comparatively large scale agriculture. As reported by farmers the major agricultural crops, practiced in this area are during monsoon season are *Ricinus communis L.* (Castor), *Gossypium herbaceum L.* (Cotton), Mug (*Vigna radiate*) and Bajra (*Pennisetum typhoides*). During winter Wheat (*Triticum aestivum*) Jeera (*Cumminium cymnium*) and variyali (*Foeniculum vulgare*) are grown in this area.

During summer, few farmers are cultivating Bajra (*Unadadnu Bajri*) and Rajko as fodder substitute.

#### *Horticulture Practices and fruit grown*

Plantation of *Phoenix dactylifera* (Khajur or Dates) was observed a few localities especially near Tapr village, Sukhpar village.

#### 3.3.9.3 FAUNAL BIODIVERSITY OF THE STUDY AREA

For the documentation of the faunal biodiversity of the study area with respect to birds, reptiles, amphibians, and butterfly species, a detailed survey had been conducted. Faunal species recorded in the study area includes 6 types of mammals, 64 types of birds, 8 types of Reptiles and 9 types of butterflies belonging to 3 families. None of the sighted animal species can be assigned endemic species category of the study area.

## 4 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

### 4.1 IMPACT ASSESSMENT

An effort has been made to identify various environmental, social and ecological impacts due to proposed project during construction and operation phases considering present environmental scenario as baseline. The corresponding mitigation measures to take care of the adverse impacts are also discussed in following sections.

### 4.2 IMPACTS DURING CONSTRUCTION PHASE & ITS MITIGATION MEASURES

During Construction Phase, the Fugitive Dust Emission due to civil work and vehicular movement is not expected to spread too far as water spraying will be carried out to suppress the dust emission at the site and as well as on road. The increase in noise levels due to the movement of vehicles will be taken care of by regulating the movement of vehicles and the impact on the human beings will be taken care of by providing the working people with ear plugs / ear muffs. During Construction, drainage pattern and water supply system of overland water flow will not be changed during the site preparation activities. Suspended solids can be controlled by sprinkling water and by employing enclosures to construction area to allow the particles to settle down, prior to discharge. During construction period, the project is likely to generate substantial employment and income.

## EXECUTIVE SUMMARY OF EIA & EMP REPORT

### 4.3 IMPACT DURING OPERATION PHASE & MITIGATION MEASURES

#### 4.3.1 AIR ENVIRONMENT

Major air emissions are anticipated by the gaseous emissions from a single stack is a local phenomenon. The ISCST3 scientific model has been used to predict the proposed air quality on the environment. The maximum 24 hourly average GLC's for PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> is observed to be 2.48818 µg/m<sup>3</sup>, 4.32669 µg/m<sup>3</sup>, and 1.55347µg/m<sup>3</sup> respectively at a distance of 10 km towards east direction. Fugitive Emissions include storage of chemicals, methanol and formaldehyde storage and processing vessels, loading and unloading section, raw material handling and fly ash, hazardous waste storage area and evaporator salt.

#### 4.3.2 NOISE ENVIRONMENT

The noise pollution management will be taken up in the following manner;

- By providing noise barrier to the noise generating equipment, noise level will reduce below 75 dBA noise level at 1 m distance.
- Acoustic enclosures will be provided to D. G. set to reduce the noise level.
- Further, Greenbelt will help to reduce the noise level within the plant.

By these measures, it is anticipated that noise levels in the plant will be maintained below 75 dBA.

#### 4.3.3 WATER ENVIRONMENT

Daily water requirement for the proposed project will be 129 KLD. Out of total water 1.5 KLD water will be utilized for the domestic purpose, 102.5 KLD water will be required for the industrial purpose (boiler, cooling tower and for process) and rest water 25 KLD will be used only for greenbelt development. Waste water generation from industrial process will be 9.75 KLD, which will be treated in effluent treatment plant having evaporation system. Condensate water will be reused in cooling tower. Thus industry will maintain Zero Discharge Concept.

Domestic wastewater will be generated i.e. 1 KLD and it will be disposed off through septic tank/ soak pit/well.

#### 4.3.4 SOIL ENVIRONMENT

The proposed activity will be located on flat terrain no significant topographical change is expected due to construction activities. While during operation phase, domestic waste will be used as manure in gardening and industrial wastes will be sent to common disposal facility.

#### 4.3.5 BIOLOGICAL ENVIRONMENT

Ecological Impact on Surrounding Eco sensitive habitat due to emission from utility emission. Major Pollutants are SPM, SO<sub>2</sub>, and NO<sub>x</sub>. The nearest habitation in village is located far away from the zone of influence, Hence no impact in the village area is anticipated during the operation phase. Moreover, the predicted pollution load after the incremental increase is within the stipulated standard limit prescribed by CPCB for the concerned parameters.

About total 33 % of area (13,597.0 sq. m.) shall be developed as green belt at plant boundary, road side, around offices & buildings.

#### 4.3.6 SOCIO-ECONOMIC ASPECT

Impact on Socio-Economic aspect will be mainly of Population, Cultural lag, Environmental impact, Impact on health which creates adverse impact on these. While the proposed project is also having positive impacts like Employment generation, Enhance Socio- economic status, Positive perception about the industrial projects, Rural Development, Generation of Revenue, Overall Development of the area. For the proposed project total 30 personnel will be employed direct employment moreover indirect employment will be generated which will increase the commercial and economic status of the area.



## EXECUTIVE SUMMARY OF EIA & EMP REPORT

### 5 ANALYSIS OF ALTERNATIVES

#### 5.1 ALTERNATIVE TECHNOLOGIES

The technology adopted for the resin manufacturing unit is universally adopted technology which is having less environment impact.

#### 5.2 ALTERNATIVE SITE

The project is having its particle board manufacturing unit at the same location which requires resin as raw material for the better final product. This is having many benefits like; existing site, cost effective in access of common facilities, developed infrastructure, easy availability of goods and access of Kandla port, easy access to TSDF site, etc.

### 6 ENVIRONMENTAL MONITORING PROGRAMME

#### 6.1 ENVIRONMENTAL MONITORING

A regular monitoring of environmental parameters like air, water, noise and soil as well as performance of pollution control facilities and safety measures in the plant are important for proper environmental management of any project. Therefore, the environment and safety cell will handle monitoring of air and water pollutants as well as the solid wastes generation as per the requirements of GPCB/CPCB.

- Hourly monitoring of meteorological parameters like Temp., Relative Humidity, Wind Speed, Wind Direction, Rain Fall on hourly basis
- Stack monitoring for the parameters like SPM, SO<sub>2</sub>, and NO<sub>x</sub>, once in a month
- Ambient air quality monitoring for the parameters like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and VOC once in a six month.
- Work Zone Environment monitoring for the parameters like VOC once in a year.
- Liquid effluent monitoring once in a month.
- Ground water and soil quality monitoring once in a year.
- Noise monitoring once in a month.

### 7 ADDITIONAL STUDIES

#### 7.1 RISK ASSESSMENT

The management is very much aware of their obligation to protect all persons at work and others in the neighbourhood who may be affected by an unfortunate and unforeseen incidence occurring at the works. Any hazard either to employees or others arising from activities at the plant site shall, as far as possible, be handled by the personnel of the company and prevented from spreading any further. However in the case of eventuality the Disaster Management plan adopted may be able to control the situation.

### 8 PROJECT BENEFITS

#### 8.1 PHYSICAL INFRASTRUCTURE

As a project M/s. Maple Panels Pvt. Ltd. will adopt CSR activities which will surely develop the existing scenario of the area.

#### 8.2 EMPLOYMENT POTENTIAL

Manpower requirement for the proposed Resin manufacturing unit 30 personnel will be required. This is for the direct employment and indirect employment will also increase that will improve the socio-economical status of area.

#### 8.3 CORPORATE SOCIAL RESPONSIBILITY (CSR)

Funds to the extent of Rs. 33.75 lacs i.e. 2.5% of the total project cost i.e. Rs.1350 lacs which will utilize for the CSR activities for the five years after that the company will utilize the fund as per regulations for CSR activities.

Company will carry out the CSR activities in the field of Safe drinking water facility, Health care, Drainage, Education, agriculture, awareness programme, Rain water harvesting, Plantation, Sports, etc.

### 9 ENVIRONMENTAL MANAGEMENT PLAN

#### 9.1 ENVIRONMENTAL MANAGEMENT PLAN (ADMINISTRATIVE ASPECTS)

Environmental monitoring of different parameters will be done regularly and the activity will be coordinated by the Environmental Management Cell (EMC). Mitigation of environmental impact has to be

## **EXECUTIVE SUMMARY OF EIA & EMP REPORT**

implemented according to the suggestions and will be monitored regularly to prevent any lapse. The EMC will be under the overall supervision of the Manager (Environment). The cell will report on a regular basis to the Unit Head. The EMC will prepare a formal report on environmental management and mitigation at six month intervals. The company will undertake various training programme for improving the performance of the working personnel. Special training will be arranged in regular intervals to combat emergency scenarios that may occur during the plant operation.

### **10 CONCLUSION**

Company has committed to implement all the pollution control measures to protect the surrounding environment. The project can definitely improve the regional, state and national economy. Industrial growth is an indication of socio economic development. The implementation of this project will definitely improve the physical and social infrastructure of the surrounding area.