

**PRE- FEASIBILITY REPORT  
FOR  
NEW TECHNICAL GRADE PESTICIDES PLANT**

**AT  
PLOT NO. PLOT NO. 546/A BELUR INDUSTRIAL AREA, BELUR  
DISTRICT DHARWAD**

**Project Proponent  
M/s Bonageri Life Science Limited**

**Submitted to  
Ministry of Environment, Forest & Climate Change  
New Delhi**

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## 1 EXECUTIVE SUMMARY

M/s Bonageri Life Science Limited proposed to setting a production unit for new technical grade pesticides capacity of 600 MTPA at. Plot No. 546/A belur industrial area, belur district dharwad

Proposed Capacity : 600 MTPA technical grade pesticide.

**Project Cost is Rs 15 Crores**

As per EIA Notification dated 14.09.2006 and as amended till date, the project falls in Category 'A', S. No. - 5(b).

**Table 1: Salient Features of the Project**

<b>Plot/Survey/KhasraNo.</b>	Plot No. 546/A,
<b>Village</b>	Belur Industrial area.
<b>Tehsil</b>	Belur Industrial area.
<b>District</b>	Dharwad
<b>State</b>	Karnataka
<b>Nearest Railway Station / airport along with distance in KMs</b>	Dharwad Railway Station : 12 KM (SE) Hubbali Airport : 19 KM (S)
<b>Nearest Town, city, District headquarters along with distance in Kms</b>	Belur, 2.19 km, N
<b>Village Panchayats, Zilla Parishad, Municipal Corporation, local body (complete postal address with telephone nos. to be given)</b>	Dharwad

### 1.1 Plant location and area classification

The proposed project is located in Plot No. 546/A belur industrial area, belur district dharwad. Total plot area is 13741 m<sup>2</sup>.

### 1.2 Green belt

34 % Green belt is allocated for the greenbelt which have been maintained..

### 1.3 Water requirement

The source of water for the proposed project will be meeting through Tankers/groundwater. The proposed site lies in non notified semi critical area as per CGWA.

Total Fresh water requirement – 8 KLD,

### 1.4 Power requirement & supply/ source

Total power requirement will be 400 KVA which will be sourced from State electricity board. DG set to be installed for power backup.

### 1.5 Effluent Management

Industrial waste water generated will be treated in the proposed ETP . The treated water from the ETP will be used for toilet flushing & for gardening purpose. All hazardous waste will be handled as per the HW (MH & TM) Rules, 2008 and sold to authorized dealer.

Domestic waste water sent to soak pit through septic tank

### 1.6 Air emission & Management

All the vents from reactors, vessels, filters and spot ventilation ducts are collected and sent to a set of scrubbers – one acid scrubber followed by an alkali scrubber and finally a carbon tower to remove acidic gases, alkaline fumes and VOC respectively. The gases escaping the last tower will be having less than permissible

### 1.7 Solid & Hazardous waste management

Solid hazardous wastes will be sent to TSDF site while other solid wastes will be segregated in salable and non salable waste. Salable waste will be sold off. Non salable waste will be sent to land fill.

## 2 INTRODUCTION

The role of the pesticides in the well-being of human race needs no emphasis. Pesticide usage has become essential in order to maximize agriculture production and reduce public health pestilence. The rapid changes in cropping patterns, increased fertilization and adoption of programs for high yielding varieties have all contributed to increased use of pesticides. Further, pest problems keep on changing with the changing environment. New physiological kinds evolve as a result of mutations to withstand new conditions in nature. Many pest species develop resistant strains when the same Pesticide is used far too often. The problems of pest resurgence and secondary pest out-breaks crop up with the indiscriminate use of pesticides. These associated problems offer a great scope for revolutionizing the use of pesticides. However, in India though the overcall pesticide growth figures may appear impressive, the rate of consumption per hectare of cultivated land is very low in comparison per hectare of cultivated land is very low in comparison to other countries. India used 180 g of pesticides/ha. as against 10,790g, 1870 g and 1490 g/ha used in Japan, Europe and U.S.A. respectively. India spent just Rs. 2.15/ha. on pesticides while Japan and U.S.A spent Rs.110/ha and Rs.35/ha respectively during the same period. India consumed 12 gm. of pesticides per kg. of fertilizer used against 146 gm. in Japan in 1960 and 19 gm in U.S.A in 1960. This is one of the major factors that can be attributed to low per hectare yields in our country since the crops and especially the high yielding varieties cannot manifest their production potential in absence of proper pest protection. That the production potential remains suppressed for want of protection can be exemplified by considering how in wheat, a crop comparatively resistant to insect pestilence, we have had a “revolution” where as in paddy which is one of the most heavily infested crops, we have had no break-through. In case of wheat, the per hectare yield in India rose from 827 kg.to 1338 kg. Corresponding yields of paddy in India on the other hand was 1826 kg. as against 6185 kg. 5326 kg. , 5105 kg.and 4000 kg. in Japan, Egypt, USA and USSR respectively.

Within the country itself, there is a great imbalance between different regions with regard to the use of pesticides. Of the total of approximately Rs.5000 million spent on pesticides in at the farm level, south contributed for about 45 per cent of the total consumption in the rest of the country.

## **2.1 Identification of Project & Project Proponent**

M/s Bonageri Life Science Limited proposed to setting a production unit for new technical grade pesticides capacity of 600 MTPA at. Plot No. 546/A belur industrial area, belur district dharwad

The new plant will be designed with the basic concept of green chemistry with modifications to optimize energy utilization and with significant reduction of manual interface. To meet the target production rate, all equipments capacities and their sizes will be optimized. An equipment list is prepared which includes the capacities and equipment sizes with minimum other details required to finalize the overall land requirement and cost.

## **2.2 Demand/Supply gap:**

Since the requirement of Pesticides is increasing @ 10% to 15% every year, there is a huge gap between the demand and supply.

## **2.3 Need for the project and its importance to region**

Pesticides are essential input for agriculture and the project will provide adequate availability of the required products at cheaper rates and will also reduce the import quantities.

## **2.4 Employment Generation (Direct and Indirect) due to the project**

Employment Generation (Direct and Indirect) due to proposed project will be around 100.

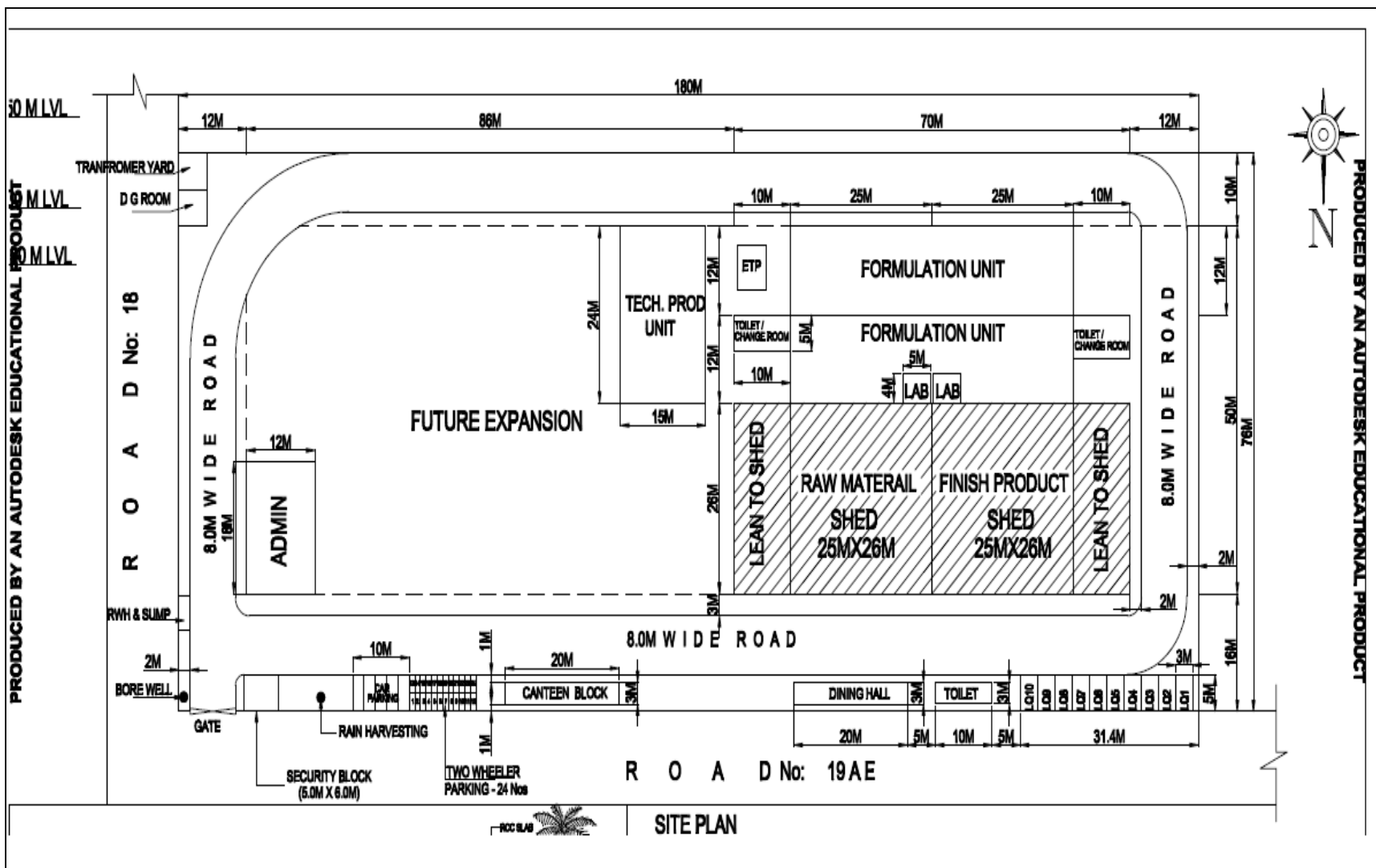


Figure 1: Plant Lay Out

### 3 PROJECT DESCRIPTION

The proposed project involves the production of technical grade pesticide along with formulation unit.

#### 3.1 Type of Project including interlinked and interdependent projects, if any

The proposed project involves the production of technical grade pesticide along with formulation unit. There is no interlinked project with this project.

#### 3.2 Location (specific location and project boundary & project lay out) with coordinates

The latitude and longitude of proposed site is 15°30' 29.0" N and 75°54'53.75" E. The proposed project will be coming up Plot No. 546/A belur industrial area, belur district dharwad.

#### 3.3 Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted

Alternative sites have not been considered for proposed project because the proposed project is coming in existing non operational plant area inside the Belur industrial area, Dharwad. Major Factor involved in the selection of site are listed below

- The project site is in industrial area
- Site is connected with state highway for easy transport of product.
- Site is near to railway station
- Availability of sufficient land inside the existing plot
- Availability of water, electricity facilities
- Raw materials will be easily available
- Availability of skilled and unskilled manpower

#### 3.4 Size or Magnitude of Operation

Pesticides will be produced in batch process. The total installed capacity of proposed plant will be of 600 TPA. All the solvents used will be recovered and recycled for all products. Energy efficient equipment will be installed at all location. Waste water will also be reused after proper treatment. There will be no discharge from the site. Total plot area is 13741 sq.m. and 34 % Green belt is allocated for the greenbelt which already maintained in the non operational unit..

**Table 2: List of Products**

1.	Chloropyriphos	100 MTA
2.	Pachilibutrazole	50 MTA
3.	Thiram	50 MTA
4.	Ziram	50 MTA
5.	Glyphosate	50 MTA
6.	Fipronil	50 MTA
7.	Difenconazole	50 MTA
8.	Chlorothanonil	50 MTA
9.	Bispirbiac sodium	50 MTA
10.	Tebuconazol	50 MTA
11.	Myclobutanil	50 MTA

**LIST OF PLANT AND MACHINES**

<b>S. No.</b>	<b>Machine Description</b>	<b>Capacity – No.</b>
1	S.S. REACTOR	2KL-2
2	S.S. REACTOR	3KL-2
3	S.S. REACTOR	4KL-2
4	S.S. REACTOR	5KL-2
5	S.S. REACTOR	6KL-2
6	S.S. REACTOR	8KL-1
7	FILTER PRESS	23*18-2
8	FILTER PRESS	46 x 36-1
9	ROTATORY VACCUM DRIER	760 Kg.-2
10	NOTCH FILTER	1200 LT-2
11	NOTCH FILTER	2000 LT-1
12	CENTRIFUGE	24-25 Kg.-2
13	CENTRIFUGE	36-150 Kg.-2
14	CENTRIFUGE	250-300 Kg.-1
15	FLUID BED DRIER	60 Kg.-2
16	RIBBON BLENDER	600 Kg.-2
17	LATHE MACHINE 14'	14'-2
18	DRILL MACHINE	Normal-1
19	GRINDER MACHINE	Normal-1
20	COOLING TOWER	25 TR-2
21	COOLING TOWER	35 TR-2
22	HOT WATER BATH	1 KL-2
23	CHILLING COMP.	17 TR-2
24	HOT WATER BATH	3 KL
25	CHILLING COMP.	17 TR
26	OIL BOILER (THERMAL)	850 kg/hr-2
27	VACCUM EJECTOR	730 mm/hg-2
28	STEAM EJECTOR	740 mm/hg-2
29	OXYGEN FEEDER	10 cylinder-2
30	OPIIL VACCUM PUMP	730 mm/hg-3
31	SCRUBBER SYSTEM	1500 rpm-2
32	SUBMERSIBLE BOREWELL-1	Size 4''-3

**LIST OF UTILITIES**

S.NO.	MACHINE DESCRIPTION	MAKE	CAPACITY
1	TUBEWELL PUMP	ROCKWELL	700 LTR/MIN
2	FIRE PUMP	KIRLOSKAR	18LPS/90M/30HP RPM2830
3	BLOWER (AIR POLLUTION)	AIR TECH	1000CFM
4	BLOWER (AIR POLLUTION)	AIR TECH	100 CFM
5	GEN-SET	CIMINS	250 KVA
6	AIR COMPRESSOR	IONGERSOL RAND	12 CFM
7	FIRE SIREN	EXPRESS	50 KM
8	SOLVENT PUMP-1	KIRLOSKAR	6.0 KL/HR
9	SOLVENT PUMP-2	KIRLOSKAR	6.0 KL/HR
10	SOLVENT STORAGE TANK	SAIFA ENGG.	100 KL
11	SOLVENT STORAGE TANK	SAIFA ENGG.	100 KL
12	WATER COOLER	SHRI RAM	80 LTR/Hrs/60/120

**LIST OF LABORATORY EQUIPMENT**

S. No.	Machinery Description	Make	Model No.	No.
1	HPLC (Chemistration)	Agilent	1100	2
2	HPLC with Software	Thermo-separation	P100	2
3	Gas Chromatograph with Software	Nucon	5765	2
4	U.V. Spectrophotometer	Perkin Ekmer	--	1
5	Ph. meter	Lab India Effem Technology	0006NBS DBK Digital Instruments	2
6	Polarimeter	Rajdhani Scientific	12 SPI	1

		Instrument Co.		
7	Oven	Elcon	--	1
8	Vaccum Oven	--	--	1
9	Analytical Balance	Sartrius	BP121S	2
10	Analytical	Metler Toledo	AB1045	2
11	Wrist Action Shaker	PR Scientific	--	1
12	Vaccum Pump	Farcov	--	2
13	Vaccum Pump	Local	--	1
14	Water Bath	SM Industries	--	1
15	Magnetic Sttiner	Local	--	2
16	Flash Point Apparatus	Ashain Scientific	--	1
17	Refrigerator	BPL, Godrej	--	2
18	Bod Incubator	Calton	--	2
19	Melting Point Apparatus	Local	--	1

**3.5 Raw material required along with estimated quantity, likely source, marketing area of final products, mode of transport of raw material and finished product.**

Raw material will be supplied by approved vendors from domestic market as well as from global market. Finished product will be sold in domestic as well as global market.

**List of Raw Material Required.**

1. Dimethyl amine
2. Carbon disulphide
3. Caustic soda
4. Zinc Sulphate
5. Hydrogen peroxide
6. Hydrochloric Acid
7. Acrylonitrile
8. Trichloroacetylchloride
9. Diethyl chlorothiophosphite
10. Sodium hydroxide
11. DMS
12. PTSA
13. Anhydrous aluminium chloride
14. Dichlorobenzene

15. Acetyl chloride
16. Bromine
17. 1,2-Pentane diol
18. 1,2,4-Triazole
19. Benzene
20. Dichloromethane
21. PIMIDA
22. Carbon powder
23. Ammonia
24. 2,4-Dichloro acetophenone
25. Bromine
26. 1,2,4-Triazole
27. Parachloro Phenol
28. Glycol propylene

**3.6 Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.**

All the solvents used will be recovered and recycled for all products. Energy efficient equipment will be installed at all locations. Waste water will also be reused after proper treatment. There will be no discharge from the proposed site.

**3.7 Transportation details of Raw Materials**

The raw material will be transported through trucks from approved vendors.

**3.8 Availability of water its source, energy/power requirement and source should be given**

**3.8.1 Water Source**

The source of water for the proposed project will be meeting through Tankers/Borewell. The proposed site lies in non notified semi critical area.

Fresh water requirement- 8 KLD

**3.8.2 Electricity & Fuel Requirements**

Total power requirement 400 KVA to be provided by State Electricity Board. Also for Power backup, HSD used as a fuel for D.G sets DG set of adequate capacity will be provided for emergency power supply.

### **3.9 Quantity of waste to be generated (liquid and solid) and scheme for their management /disposal**

#### **3.9.1 Waste Water generation & Management plan**

The sources of waste water from the proposed plant will be from canteen facilities and office building. The waste water will be treated in sewage treatment plant and will be reused for gardening and other activities like toilet flushing and cleaning purposes.

For industrial effluent Zero Liquid Discharge (ZLD) is proposed. There is no process effluents generated. Hence impact on water quality from the proposed project is insignificant

#### **3.9.2 Solid & Hazardous waste generation & Management plan**

Solid hazardous wastes will be sent to TSDF site while other solid wastes will be segregated in salable and non salable waste. Salable waste will be sold off. Non salable waste will be sent to land fill.

## 4 SITE ANALYSIS

### 4.1 Connectivity

- Nearest railway station : Dharwad Railway Junction, 12 km (SE)
- Nearest highway: SH-51 at a distance of 800 m(N.)
- Nearest Airport: Hubballi Airport – 19 km

### 4.2 Land Form, Land Use and Land Ownership

8.24 percent of the total reporting area of the district is under forest. The magnitude of forest area is high in north western part due to sahyadri hills and ridges. Talukas like, Kalghatgi accounts for 28.40 percent and Dharwad 12.23 percent which accounts for more than the district average. Land not available for cultivation in the district is 6.21 percent of the total area of the district. Hubli taluka occupied 9.1 percent area under land not available for cultivation followed by Dharwad taluka 8.49 percent, and Kalghatgi taluka 6.83 percent, which exhibit higher than the district average. The land other than the cultivated land i.e. permanent pasture is 0.83 percent of the total area of the district. At taluka level, the percentage varies from 0.00 percent Navalgund taluka to 1.75 percent Dharwad taluka. The proportion of fallow land to the total reporting area is 9.68 percent. Navalgund taluka accounts for 19.70 followed by Hubli taluka 13.15 percent that represent more than the district average. It is important to note that the net sown area of the district is very high with 72.73 percent. The study region falls under semi-malnad and maidan region,

The proposed unit is located in notified industrial Area of Belur . The copy of notification of UP State Government notifying this industrial Area is given in Annexure III.

34 % Green belt is allocated for the greenbelt which already maintained in the non operational unit.

### 4.3 Topography (along with map).

Topographically the area is flat terrain and the elevation of the plant site is between 690 - 713m above Mean Sea Level. The District lies approximately about 800 mts above the sea level, which is why it enjoys a moderate and healthy climate. The District may be divided into 3 natural regions, viz., the Malnad, Semi-Malnad and Maidan. These regions, on an average, receive moderate to heavy rainfall and have dense vegetation. Kalghatagi and Alnavar area in Dharwad taluka in particular receive more rainfall than other talukas of the District

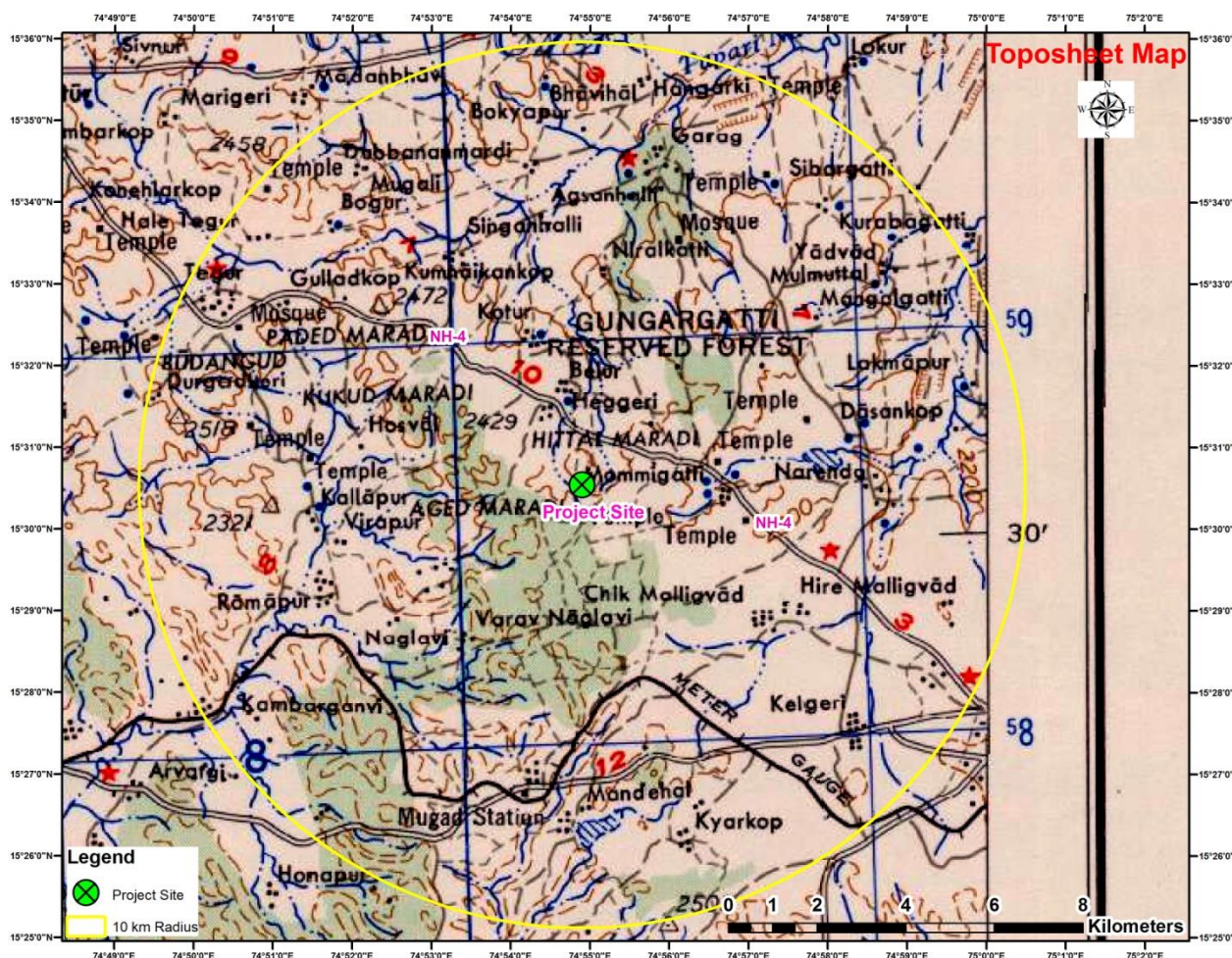


Figure : Topo map of the Project site

#### 4.4 Existing land use pattern

The project area is flat terrain, located inside notified Industrial area of Belur .

CRZ is not applicable to the proposed project. Details study area map is given above.

#### 4.5 Existing Infrastructure

The proposed site is to come inside the Belur Industrial area which is very well connected to NH-4 and is also having very well developed internal road and other required infrastructure. The proposed project site is to come inside the non operational Formulation & R& D technical unit with existing building and other infrastructure which will be utilised according to the requirement.

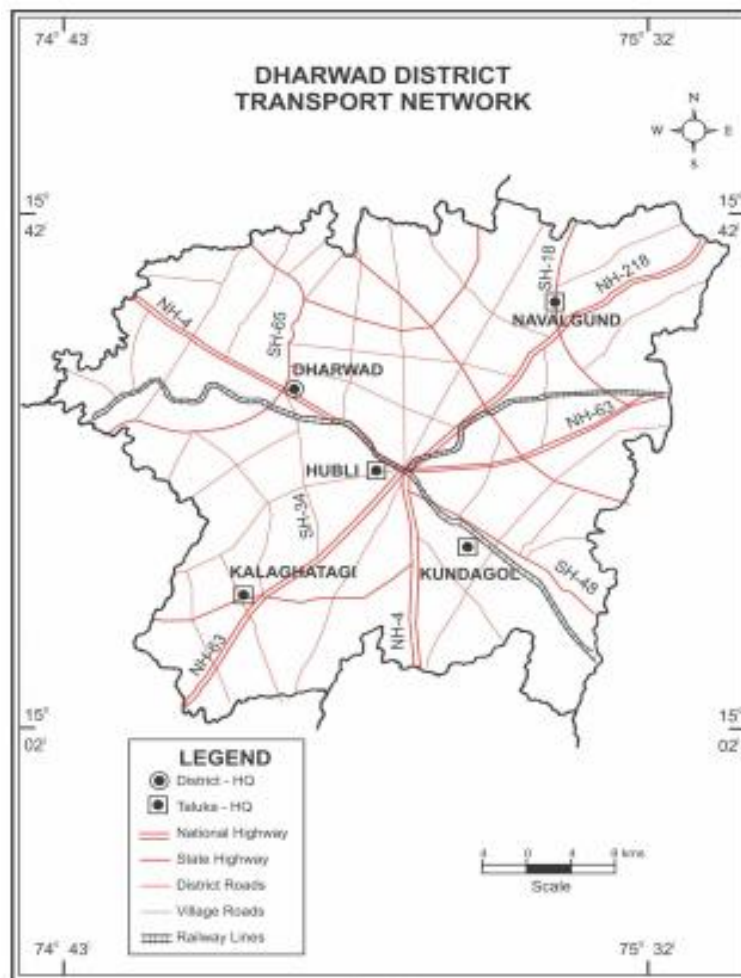


Figure: Transport Network

#### 4.6 Soil Classification Soil investigation will be done during construction of the proposed technical unit of pesticide

##### General Characteristics of the Soil in the District

Soil is closely associated with vegetation, climate, parent rock and slope. It is essential for geographers to study the soil because all kinds of life forms entirely depend on the soil. The soil of Dharwad district may be generally classified into black soil, red soil, and laterite soils. The great part of Dharwad district is covered by black soil. Black soil is found in the Maidan areas of Navalgund, eastern portion of Hubli taluka and Kundgol taluka. The medium black soil is formed by the Deccan volcanic rock, schist, limestone. The deep black soil is formed by the Deccan volcanic rock schist limestone etc. Normally, this soil is made of natural erosion and mostly found in river valleys. These soils are found with brown mixed

black colour, black and brown mixed gery colour, pure black color and pure brown colour. Deep black soil types can be seen in places like western parts of Hubli, eastern parts of Dharwad. Red soil is found some part of Dharwad, Hubli and Kalghatgi talukas. Laterite soil is found in hilly areas, where undulated rocks are found with gneiss rock and in plain (maidan) areas. On the western part of Dharwad district, this type soil is found. The laterite soil is formed due to excessive rain and excessive temperature and the main elements are drained due to these factors. Silica, iron and aluminum oxide have more influence on the soil. These are found to be yellow mixed red, black mixed red colour. The laterite soil occurs in the western high rain fall track of the district in Kalghatgi and Dharwad taluks.

#### **4.7 Climatic data and Rainfall data**

The mean annual rainfall for the period 2001-2010 in the Dharwad district is 735mm. The mean pre monsoon rainfall is 146 mm, mean South West monsoon rainfall is around 468 mm and North East monsoon season is around 122 mm. Annual rainfall during 2011 is 734mm in which 112 mm during premonsoon, 447mm during monsoon and 175mm during post monsoon. Maximum annual rainfall of highest 1497mm is recorded during 2005 in Hubli taluk. Minimum annual rainfall of lowest 340mm is recorded during 2003 in Navalgund taluk. Overall rainfall distribution shows that northeast part is receiving lowest rainfall. Similarly southwest part receiving highest rainfall

##### **Rainfall**

The average rainfall of the district is recorded as 734.5 millimeter in the year 2011. The annual rainfall occurs between June to September. Maximum rainfall occurs in the month of July. Sometimes, heavy rainfall accompanied thunder occurs during later half of summer and northeast monsoon months. Northeast Monsoon winds contribute about 22 percent of rainfall of the district.

## 5 PLANNING BRIEF

### 5.1 Planning Concept (type of industries, facilities, transportation etc) Town and Country Planning/Development authority classification.

Type of Industry: Technical grade pesticide plant with proposed capacity 600 TPA

#### **Transport network:**

Transport and communication plays an imperative role in not only the growth of rapid socio-economic development of region but also enhance the comfortable life of the people in any geographical region improved and effective transportation is indispensable to economic progress. Transportation is a service by which persons, goods etc. are moved from different location from producer to consumer. In this regard, the study area is favorable placed at it has a good network of roads, railways and airways. At present, the study area connects different types of roads, i.e. National Highway with a length of 208.2 kilometers, State Highways 369.03 kilometers followed by Major District roads 448.05 kilometers, Village roads with a length of 2788 kilometers and other roads 131 Kilometer sand are interrelated to each other.

### 5.2 Population Projection

Population characteristic plays a very imperative role in any economic activity of the region. the fact that the total population of the Dharwad district is 1847023, out of which 797484 rural populations, i.e. 43.17 percent among them 409416 male (51.33) percent and 388068 female population (48.66) percent has been registered. The urban population of the district is 1049539 which is 56.82 percent out of which 527790(50.28) percent male population and the share of female population is 521749(49.71) percent respectively. Hubli- Dharwad Municipal Corporation (HDMC) occupied half of the population of the district i.e. 943788 population (51.09) percent which bagged first rank fallowed by Dharwad taluka 249993 population (13.53) percent. The Navalgund taluk has the population of, 190208 (10.29) percent. Kundgol taluka is having the total population of 165568 (8.96) percent, Kalghatgi taluka 154659 (8.73) percent. It is noticed that Hubli taluka is having less population i.e. 142807 (7.73) of the district.

An official Census 2011 detail of Dharwad, a district of Karnataka has been released by Directorate of Census Operations in Karnataka. Enumeration of key persons was also done by census officials in Dharwad District of Karnataka.

In 2011, Dharwad had population of 1,847,023 of which male and female were 937,206 and 909,817 respectively. In 2001 census, Dharwad had a population of 1,604,253 of which males were 823,204 and remaining 781,049 were females

**5.3 Assessment of Infrastructure Demand (Physical & Social)**

On the basis of the preliminary site visit, the infrastructure demand in the villages was assessed on the basis of need and priority. Employment would be as per prevailing norms of state government for skilled and unskilled people for the proposed project activity.

**5.4 Amenities/Facilities**

Proper site services such as First Aid, Canteen, Drinking Water, etc. will be provided to the workers.

## 6 PROPOSED INFRASTRUCTURE

### 6.1 Industrial Area (processing area)

The project is fall in Belur Industrial area. No additional land will be required.

### 6.2 Residential Area (non-processing area)

No residential area proposed in upcoming project

### 6.3 Green belt

34 % Green belt is allocated for the greenbelt which already maintained in the non operational unit.

### 6.4 Drinking water management (source & supply of water)

Drinking water will be taken from Borewell/Tankers.

### 6.5 Sewage system

Domestic waste water send to soakpit

### 6.6 Industrial waste management

Solid hazardous wastes after incineration will be sent to TSDF site while other solid wastes will be segregated in salable and non salable waste. Salable waste will be sold off. Non salable waste will be sent to land fill.

### 6.7 Power requirement & supply/ source

Total power requirement 400 KVA to be provided by State electricity board. Also for Power backup, HSD used as a fuel for D.G sets. DG set of adequate capacity will be provided for emergency power supply.

## **7 REHABILITATION AND RESETTLEMENTS (R& R) PLAN**

### **7.1 Policy to be adopted (central/state) in respect of the project affected persons including home oustees, land oustees and landless labourers (a brief outline to be given)**

Not applicable because the proposed project is located inside the Belur Industrial area.

## 8 PROJECT SCHEDULE AND COST ESTIMATE

### 8.1 Likely date of start of construction and likely data of completion (time schedule for the project to be given)

Terminal Likely time schedule for completion of project is 28 months

### 8.2 Estimated project cost along with analysis in terms of economic viability of the project.

Total cost for proposed project is Rs 15 Cr.

## **9 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)**

### **9.1 Financial and social benefits with special emphasis on the benefit to be local people including tribal population, if any, in the area.**

The project will be beneficial to people as the company progress and expands its activity gradually. Through CSR activity company management will be committed to improve infrastructural facilities for the local people in fields of Environmental, Medical, and Transportation etc. The local people will be benefited by way of indirect employment opportunities which will improve the socioeconomic environment of the area.

ANNEXURE I: TOPOMAP OF PROJECT SITE

