

Executive Summary
For
PROPOSED EXPANSION PROJECT FOR
MANUFACTURING OF IMAGING CHEMICALS
At
Survey No. 143,144 & 145,
Village- Kaire, Taluka-Khalapur,
District-Raigad, Maharashtra-410220, India

Project Proponent

M/s. Chameleon Aaron Chemicals Pvt. Ltd.

At

Survey No. 143,144 & 145,
Village- Kaire, Taluka-Khalapur,
District-Raigad, Maharashtra-410220, India

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Accredited By: NABET- Quality Council of India



EXECUTIVE SUMMARY

1. INTRODUCTION

M/s Chameleon Aaron Chemical Private Limited (CACPL) is an existing industry manufacturing Paper Coating Slurry @155 MT/Month. CACPL now wishes to expand this unit of imaging chemicals manufacturing plant by 134 MT/Month proposed project will be set up in total land admeasuring 9090 sq. m. at Survey No. 143, 144 & 145, Village- Kaire, Taluka-Khalapur, District-Raigad, Maharashtra-410220, India.

The proposed products are eventually ground into slurry form and coated on paper to produce Thermal Sensitive Papers.

M/s. Chameleon Aaron Chemicals Pvt. Ltd. firm possess certificate of Importer- Exporter Code (Number- AAJCC8571E). The proposed products have high demand in the thermal sensitive papers manufacturing industry. The proposed products to be manufactured will have an export potential of 75% of its production.

The proponent has a consent to establish for existing unit issued by the MPCB, No:- Format1.0/RO/UAN No. MPCB Consent to Establish - 0000163281/CE/2304000840 dated. 13/04/2023. The consent to establish is granted to the existing unit for a period up to commissioning of the unit or up to 5 year whichever is earlier.

Application for proposed expansion had been submitted to MoEF&CC vide proposal number IA/MH/IND3/434197/2023 dated 22/06/2023 for the grant of Terms of Reference (ToR) to the project under the provision of the EIA Notification 2006-and as amended thereof. Fresh TOR has been granted by MOEF&CC dated 21.07.2023, vide ID TO23A0202MH5395146N, File No. IA-J-11011/210/2023-IA-II(I). As per ToR for this project this is a Category A project.

2. PROJECT DESCRIPTION

M/s. Chameleon Aaron Chemicals Pvt. Ltd. is located at Survey No. 143,144 & 145, Kaire Village, Khalapur Taluka, Raigad District, Maharashtra-410220. The location map of the proposed project is shown in following **Figure E.1** and Google image of the project is shown in **Figure E.2:**

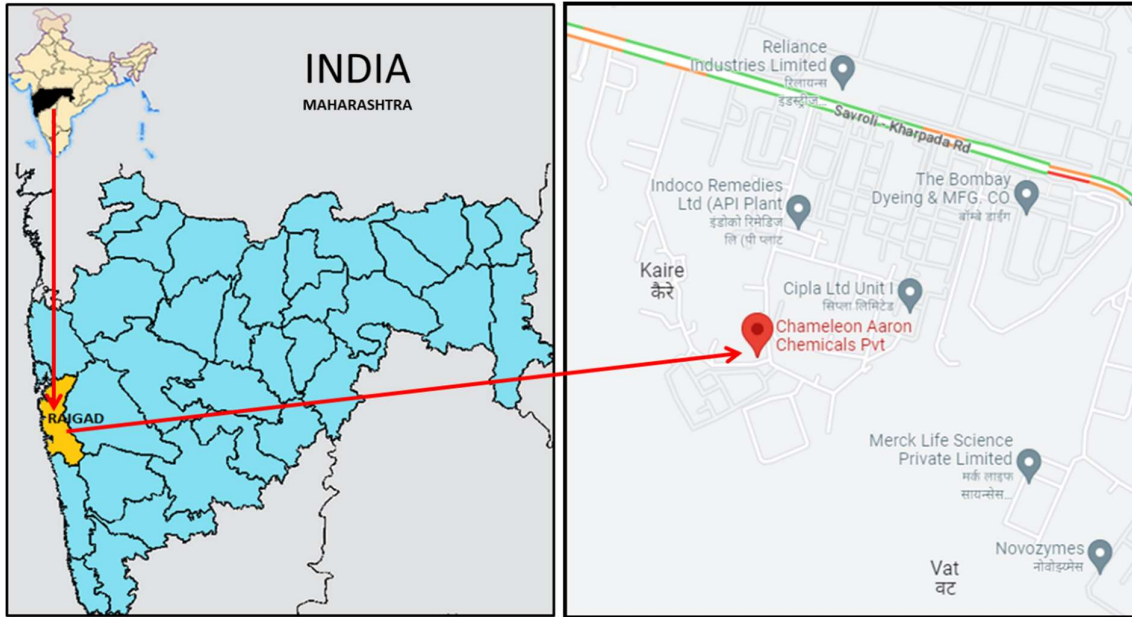


Figure E.1: Location Map of M/s Chameleon Aaron Pvt. Ltd.



Figure E.2: Google Earth Image of Project Location

PROJECT LAYOUT

The layout plan of the proposed expansion project is presented in following **Figure E.3:**

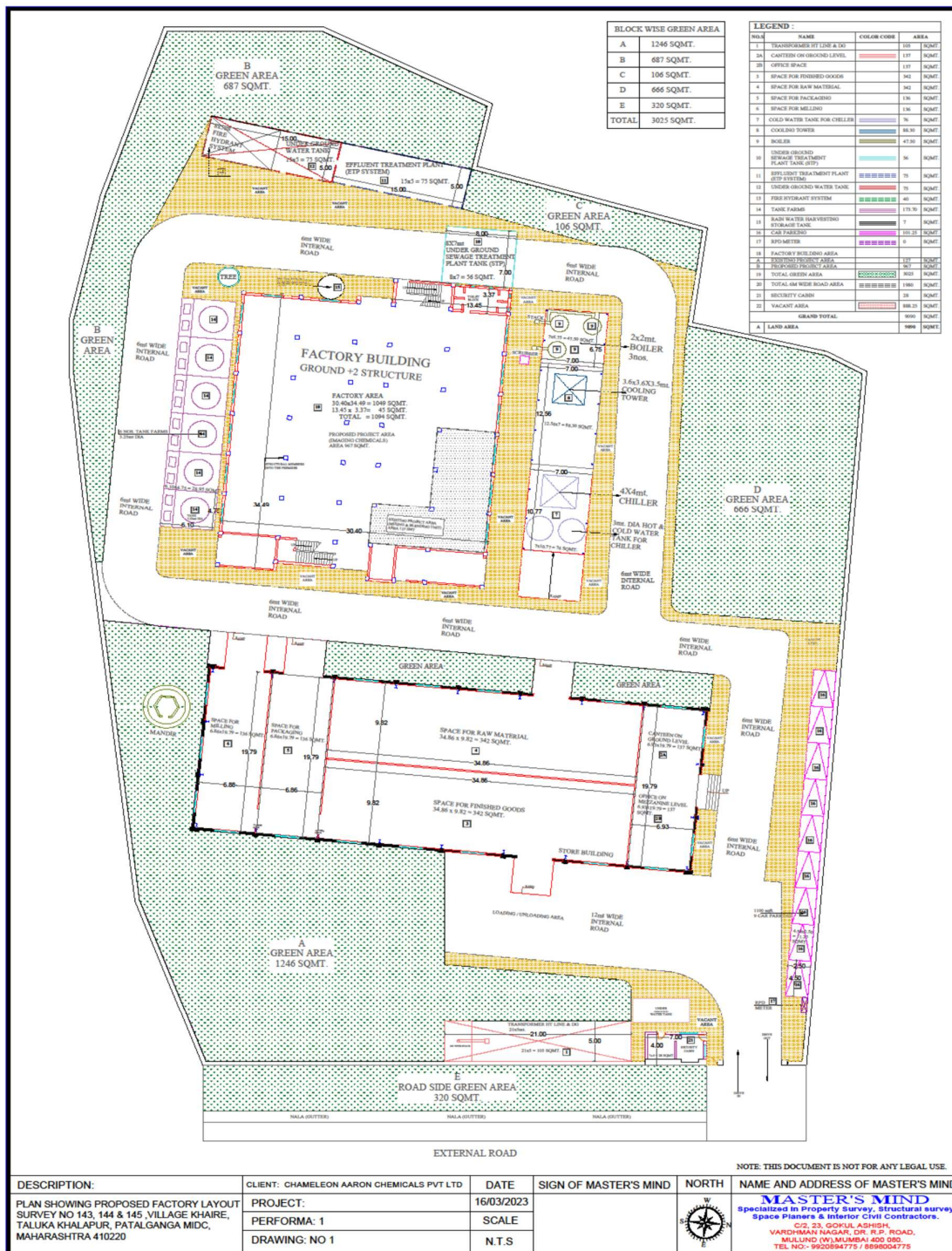


Figure E.3: Layout Plan of Project Site

Production Details

The proponent is having a mixing and blending unit for the ‘Paper Coating Slurry’ to produce @ 155 MT/Month simply by blending and mixing as a product without any manufacturing process. The proponent is now proposing to manufacture various types of products which are ‘Imaging Chemicals’ at a quantity of 134 MT/Month which is an expansion project. The existing product may be as stated in **Table E-1(A)**.

Table E-1 (A): Existing Project’s Production Capacity

Sr. No.	Products	CAS No.	Proposed to Mfg. Per month	Mode of Storage	Storage Capacity per month
1.	Paper Coating Slurry	N.A.	155 MT	Drums	50 MT

The product for proposed expansion is given in **Table E-1 (B)**.

Table E-1 (B): Proposed Expansion Project’s Production Capacity

Sr. No.	Products	CAS No.	Proposed to Mfg. Per month	Mode of Storage	Storage Capacity per month
1.	Imaging Chemicals	N.A.	134 MT	Bags	50 MT

Basic Requirements

i. Raw Materials

Following raw materials are required for proposed products as mentioned in **Table E-2**. The properties of the Raw materials, quantity required and mode of storage & transport are mentioned in **Table E-2**.

Table E-2 Main Raw Materials of Proposed Expansion of Imaging Chemicals Manufacturing

Sr. No	Names of all Raw Material	Physical form	Source	Quantity (MT/ Month)	Storage Drums/Bags	Mode of transportation
1.	1,2 Dichloroethane	Liquid	Local	40.3	Drums	By-Road
2.	CACO ₃	Liquid	Local	15	Drums	By-Road
3.	Clay	Solid	Local	7	Bags	By-Road
4.	2- Methylindole	Solid	Local	1.32	Bags	By-Road
5.	2,4 Toluene diisocyanate	Liquid	Local	5.0	Drums	By-Road
6.	3-Methylphenol	Liquid	Local	17.85	Drums	By-Road

Sr. No	Names of all Raw Material	Physical form	Source	Quantity (MT/ Month)	Storage Drums/Bags	Mode of transportation
7.	4,4'-diaminodiphenyl sulphone	Solid	Local	3.42	Bags	By-Road
8.	Acetic Anhydride	Liquid	Local	2.27	Drums	By-Road
9.	Active Carbon	Solid	Local	1.62	Bags	By-Road
10.	Allyl Chloride	Liquid	Local	35.31	Drums	By-Road
11.	Bisphenol sulphone	Solid	Local	38.46	Bags	By-Road
12.	Caustic soda	Liquid	Local	199.7	Drums	By-Road
13.	N,N-Dimethyl acetamide	Liquid	Local	12.47	Drums	By-Road
14.	Ethanol	Liquid	Local	32.175	Tank	By-Road
15.	m-Aminophenol	Solid	Local	8.13	Bag	By-Road
16.	Methanol	Liquid	Local	54.1	Tank	By-Road
17.	Methyl ethyl ketone	Liquid	Local	15.3	Drums	By-Road
18.	1,2,4-trichlorobenzene	Liquid	Local	26.3	Drums	By-Road
19.	N,N-Dimethylacetamide	Liquid	Local	3.84	Drums	By-Road
20.	Phenol	Solid	Local	35.1	Bags	By-Road
21.	p-Toluenesulphonyl chloride	Solid	Local	15.66	Bags	By-Road
22.	p-Toluene sulphonyl isocyanate	Liquid	Local	15.36	Drums	By-Road
23.	Sulphuric acid	Liquid	Local	63.67	Drums	By-Road
24.	Toluene	Liquid	Local	27.2	Tank	By-Road

ii. Land

The total land, purchased for the proposed project is 9090.00 sq. m, which is located at Plot Survey No. 143,144 &145, Village- Kaire, Taluka-Khalapur, District-Raigad, Maharashtra-410220, India. The total land area is 9090.00 sqm. There is provision of 33.28 % of land area for greenbelt. The break-up of the plot area is as mentioned below:

This is the land used for existing production by blending and mixing. Expansion will be carried out in same land and no extra land will be required.

iii. Water

The total water requirement for the proposed expansion project including recycled and reused water will be 38.46 KLD, which is mainly required for process and utilities (Boiler, Cooling Tower and Chilling Unit) followed by domestic, greenbelt development along with dust suppression and plant washing purposes. The total fresh water requirement is 28.0 KLD, which is mainly used for industrial purpose is 18.0 KLD, for domestic purpose is 5.00 KLD and 5.0 KLD of water will be used for gardening.

iv. Power

The total power requirement for the entire project will be 612 kW/day sourced from the Maharashtra State Electricity Distribution Company Limited (MSEDCL). The proponent will install solar panels for generating energy in a sustainable way. 15 kW capacity solar unit will be installed to meet the alternative source of energy requirement.

The D.G. Set of 250 kVA which will be installed as standby facility for existing as well as for the proposed expansion project during power failure.

v. Fuel

Natural gas will be required as a fuel for boilers of both existing and proposed project. HSD will be required for D.G. Set which will be operated for both existing and proposed expansion project. The details of fuel consumption are given hereunder in **Table E-3**.

Table E-3: Brief of Fuel Requirement

Sr. No.	Fuel Type	Fuel used for	Quantity		Source	Mode of Transport
			Existing	Proposed Additional		
1.	Natural Gas	Boiler No. 1	1700 SCMD	-	Mahanagar Gas Limited	Pipeline
2.	Natural Gas	Boiler No. 2& 3	-	3400 SCMD (1700 SCMD for each boiler)	Mahanagar Gas	Pipeline
3.	HSD	D.G. Set (250 kVA)	25 Lt./hr.		Local	Road

vi. Man Power

M/s. Chameleon Aaron Chemical Pvt. Ltd has generated employment for 30 persons in Existing Project and additional 20 persons will be employed for proposed expansion Project as full time employees for operations and administration purpose. The local population will be given preference for employment as per their qualifications; which is expected to improve their living standards and livelihood.

vii. Capital Cost

Total cost of the project is Rs. 700.00 Lacs. Rupees 200.00 lacs is the cost of existing project and Rs. 500.00 Lacs will be spent for proposed expansion project. The commercial operation date (COD) is envisaged in **six (6) months** reckoned after obtaining environment clearance.

3. POLLUTION POTENTIAL AND MANAGEMENT

The proposed project will create minor pollution mainly due to the wastewater generation, flue gas emission from utilities and hazardous waste generation. These details of pollution are described below under respective heading with necessary details.

Water Pollution

For existing project, domestic wastewater generated from the plant will be disposed of through septic tank/soak pit system. In existing operation, waste water from the process, chilling unit and cooling tower is treated in the ETP and the treated water is used in boilers.

For proposed expansion project also, domestic wastewater generated from the plant will be disposed of through septic tank/soak pit system. In proposed expansion project, waste water from the process, chilling unit and cooling tower will be treated in the ETP. Then, the treated water will be stored in a storage tank and used in boilers as well as for plant washing and dust suppression. The water balance is given in **Table E-4**.

Table E-4: Water Balance of Proposed Project

Sr. No.	Particulars	Waste Water Generation (KLD)	
		Existing	Proposed Expansion
1.	Domestic	5.00	4.00
Industrial			
2.	Process	5.00	15.0
3.	Boilers	2.50	6.00
4.	Cooling Towers	1.00	2.00
5.	Chilling Units	1.00	1.00
Sub-Total: Industrial		9.50	24.00
Grand Total		14.50	28.00

Air Pollution

Flue gas emission will be from stacks attached to the boilers where emission will generate due to the combustion of natural gas. The main probable pollutants are SPM, SO₂ and NO_x from this combustion. To combat emissions from combustion, the unit has proposed a stack and scrubber to control air pollution. For existing project, one stack of 15 m. height will be attached to a boiler and one stack of 3.50 m. height will be attached to D.G. Set.

For the proposed expansion project, one stack of 30 m. height and will be attached to two boilers, along with a mist scrubber of 12 m. height that will be attached to the reactor will be installed to control and disperse the air pollutants within a satisfactory level.

DG set of 250 kVA will be operated only in case of power failure or non-availability of grid power supply for existing as well as for the proposed expansion project.

Solid Waste

Municipal Solid Waste:

Expected solid non-hazardous waste generation is shown in the following Table:

Table E-5: Solid Waste Generation and Disposal of Existing and Proposed Expansion Project

Sr. No.	Waste	Quantity (MT/Month)		Disposal
		Existing	Proposed Expansion	
1.	Plastic bags	0.12	0.12	Sold to authorized scrap dealer
2.	Paper sack bags	0.12	0.12	Sold to authorized scrap dealer
3.	Broken drums	0.12	0.12	Sold to authorized scrap dealer
4.	Wooden pallets	0.12	0.12	Sold to authorized scrap dealer

Industrial hazardous Solid Waste:

The main source of hazardous waste generation from proposed activity is discarded containers/ Barrel / bags from storage and handling of raw materials and spent/used oil generation from plant machinery.

The unit has provided dedicated storage area for the hazardous waste storage within premises having impervious floor and roof cover system. The details of hazardous waste generation and handling / Management are given in **Table E-6**.

Table E-6: Details of Industrial Waste Generation and Disposal

Sr. No.	Waste	Category No.	Quantity (MT/Month)		Disposal
			Existing	Proposed Expansion	
1.	Chemical Residues	24.1	5.0	-	CHWTSDF
2.	Chemical sludge from waste water treatment	35.3	2.0	5.0	CHWTSDF
3.	Ethanol residue	-	-	25.05	CHWTSDF
4.	Salt	-	-	76.47	CHWTSDF
5.	Methanol residue	-	-	21.23	CHWTSDF
6.	Carbon	-	-	3.01	CHWTSDF
7.	TCB residue	-	-	4.3	CHWTSDF

Noise & Vibration

The only source of noise generation may be from D.G. Set, which will be kept as standby and no other source of noise and vibration from the proposed manufacturing activity except Plant machineries. The adequate precautions will be taken for abatement of noise pollutions, which are as follows.

- The unit will install latest technology based low noise D.G. Set with acoustic enclosures

- Proper and timely oiling, lubrication and preventive maintenance will be carried out for the machineries and equipments to reduce noise generation
- All the vibrating parts will be checked periodically and serviced to reduce the noise generation. The equipment, which generates excessive noise, will be provided with enclosures etc.
- To minimize the adverse effect on the health, Ear muffs/ earplugs will be provided to the working under high noise area.
- To reduce the noise generation during the transportation activities; the vehicle will be periodically serviced and maintain as per the requirement of latest trend in automobile industry. Only those vehicles with PUC's will be allowed for the transportation
- Green belt area will be developed to prevent the noise pollution outside the factory premises. It will be increased after proposed project
- Noise monitoring will be done regularly at different parts of the plant
- Steadily Non vibrating foundation on rubber pads, tree barriers, side cladding and machines kept centrally on plot

Aesthetics

There will be no nuisance from noise. DG set will be run occasionally during the emergencies. Normal operation will be done using Grid Power Supply.

4. BASELINE ENVIRONMENT STUDIES

- Study Period: March 2023 to May 2023
- Study Area : 10 Km radius surrounding the project site

➤ *Ambient Air Quality*

The baseline status of the ambient air quality has been established through field monitoring data collected for three months of summer season on PM₁₀, PM_{2.5}, Sulphur dioxide (SO₂), Oxides of nitrogen (NO_x), and CO at 8 locations within the study area. Summary of ambient air quality monitoring results are summarised in the following Table:

Table No E.9: Summary of Ambient Air Quality Monitoring Results

Location		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)
1. Project Site	Min	74.00	41.00	8.00	16.00	1.20
	Average	82.00	43.00	10.00	19.00	1.60
	98 Perc.	89.00	45.00	12.00	22.00	2.20
2. Near Rees Village, Dand Apta Road	Min	58.00	30.00	6.00	12.00	0.80
	Average	67.00	33.00	8.00	15.00	1.00
	98 Perc.	74.00	36.00	10.00	16.00	1.30
3. At Talegaon Village	Min	56.00	25.00	7.00	10.00	0.50
	Average	60.00	32.00	9.00	15.00	0.90
	98 Perc.	64.00	36.00	11.00	18.00	1.20

Location		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)
4. Near Panchyat Office ,Posari	Min	62.00	36.00	5.00	11.00	0.80
	Average	71.00	39.00	6.00	13.00	0.90
	98 Perc.	76.00	43.00	8.00	15.00	1.30
5. Kasap Village, Near Savroli Kharpada	Min	72.00	26.00	5.00	10.00	0.80
	Average	77.00	31.00	7.00	12.00	0.90
	98 Perc.	84.00	36.00	8.00	13.00	1.20
6. Near shree Krupa Soc, Apta Village	Min	63.00	23.00	5.00	9.00	0.50
	Average	69.00	27.00	6.00	11.00	0.70
	98 Perc.	75.00	32.00	8.00	13.00	0.90
7. Near Vadgaon Gym ,Vadgaon	Min	56.00	30.00	5.00	15.00	0.60
	Average	61.00	34.00	8.00	18.00	0.90
	98 Perc.	67.00	37.00	9.00	22.00	1.10
8. Near Nateya Gruh ,Chowk Village	Min	56.00	29.00	7.00	14.00	0.60
	Average	61.00	34.00	8.00	15.00	1.10
	98 Perc.	65.00	39.00	10.00	18.16	1.30

Results

Values of PM₁₀ in the background environment ranged from 64.00 µg/m³ to 89.00 µg/m³. Average values of PM₁₀ found to be maximum of 82.00 µg/m³ was observed to be within the permissible limit of 100 µg/m³. The values of PM₁₀ concentration is bit higher in the study area probably because of the nearby industries and traffic movement through the adjacent road. The values of PM_{2.5} range from 32.00 µg/m³ to 45.00 µg/m³. The average value of PM_{2.5} was found to be maximum of 43.00 µg/m³, which is within NAAQ standard of 60 µg/m³. The values of Sulphur dioxide levels were found to vary from 8.00 µg/m³ to 12.00 µg/m³. The values of SO₂ were found to be well within NAAQ standard of 80 µg/m³. The value of Nitrogen oxide ranged from 13.00 µg/m³ to 22.00 µg/m³. The values of oxides of Nitrogen were observed to be well within the NAAQ standard of 80 µg/m³. The value of CO ranged from 900.00 µg/m³ to 2200.00 µg/m³, the value of ammonia found to be within the NAAQ standard of 4000 µg/m³.

➤ *Noise Level*

The noise monitoring was conducted at eight locations in the study area during monitoring period. Eight sampling locations were selected for the sampling of noise.

Results

The values of noise level parameters like Leq (day), and Leq (night), were monitored during study period. It is observed that both inside (industrial) and outside (residential) of project area the day and night equivalent noise level is within the stipulated limit given by the CPCB.

Permissible noise limits for residential area prescribed by CPCB are 55 dB (A) during day time and 45 dB (A) during night time and for Industrial area 75 dB (A) during day time and 70 dB (A) during night time. Recorded noise levels are within the permissible limits.

Noise levels were monitored at Eight locations including project within the study area. The noise levels ranged between 49.0 to 61.1 dB (A) during day time and noise levels ranged between 39.2 to 52.1 dB (A) during night time. Over all the monitored noise levels are found to be within the stipulated standards set by CPCB.

➤ ***Water quality:***

Ground water collected from eight locations and surface water also collected from eight locations in the study area during the study period.

Results

Ground water samples analyzed during the study period indicate that all parameters are found to be within the drinking water IS 10500:2012 limits.

Surface water samples analysed during the study. Surface Water sampling has been done from seven locations.

As per the CPCB water quality criteria for surface water the SW1, SW2, SW5 falls under Class B, SW6 falls under Class C and SW3, SW4, SW7, falls under Class E.

➤ ***Soil quality***

Representative soil samples from study area were collected from 8 water sampling locations.

Results

- It has been observed that the pH of the soil in the study area ranged from 7- 7.6 the maximum pH observed at S8, whereas the minimum was observed at S5,7.
- The electrical conductivity was observed to be in the range of 43-561 μ mhos/cm, the maximum Electrical Conductivity observed at S7 and minimum Electrical Conductivity was observed at S1.
- The Potassium values range between 0.4 – 0.6, with the maximum was observed at S5,8 and the minimum observed at S2,3,4,6,7.
- The Sodium values range between 1.2 to 1.4, with the maximum was observed at S5,8 and the minimum observed at S2,3,4,6,7.
- The Nitrogen values range between 137 to 163 with the maximum was observed at S7 and the minimum observed at S2.
- The soil is moderately fertile;

5. **ECOLOGY AND BIODIVERSITY**

M/s. Chameleon Aaron chemical Pvt. Ltd is located at Survey No. 143, 144 & 145, Village-Kaire, Taluka- Khalapur, District-Raigad, Maharashtra-41022. As per guidelines of MoEF&CC for Environmental Impact Assessment, the study area was restricted up to 10 km periphery of the project site. All observations were undertaken in March 2023 in the study area.

Flora:

Based on field survey primary data were generated by preparing a general checklist of the plants encountered in this area. The study showed overall 76 species from 66 genera and 40 families. The floristic survey reveals that the study area is having dominance of trees viz. *Mangifera indica*, *Syzygium cumini*, *Pongamia pinnata*, *Michelia champaca*. etc. and certain shrubs viz. *Calatropis procera*, *Euphorbia thymifolia*, *Lantana camera*, *Ricinus communis*, besides herbs like *Ageratum conyzoides* *Abutilon indicum*, *Parthenium hysterophorus*, *Tridax procumbens* etc.

Fauna:

Field observations of fauna were carried out. The commonly available mammals, reptiles, amphibian's birds, butterflies and dragonflies within 10 km surroundings were enumerated.

- 8 Mammal species like *Bubalus bubalis*, *Bubalus bubalis*, *Capra hircusaegagrus* etc. has been identified.
- 20 bird species like *Cuculus canorus*, *Corvus macrorhynchos*, *Strepto peliachinensis* etc has been identified.
- 2 reptile and amphibian species like *Calotes versicolor* and *Psammophilus blanfordanu* etc. has been identified during study period.
- 13 butterfly species like *Euploea core*, *Papilio demoleus*, *Catopsilia Pomona*, *Eurema hecabe* and *Danaus chrysippus*. etc. has been identified during the study period.

Phytoplankton

Phytoplankton counts, recorded at different sampling stations, Altogether 18 genera of phytoplankton and 16 genera of Zooplankton were recorded.

6. SOCIO ECONOMICS

Sex Ratio

While dealing study area (10 Km radius from project site) as per secondary data (Population Census 2011) out of the total population of 277346 the male population is 63339 and female population is 58561a.

Religion

Majority of population in study area is Hindu religion followers. Nearly 85% of total population in area is Hindus. Muslims, Buddhist, Jains, Christian and others forms the rest proportion. People of different religion worship their religious beliefs in Churches, Masjids, Gurudwaras, Jain temples and other religious places that is located in the city. Marathi and Kokani is the most widely spoken language in study area and project surrounding area.

SC and ST Population

According to the 2011 census, the ratio of scheduled caste population in the study area to the total population is 4.4% which is lower as compared to the SC population in the district.

7. ENVIRONMENTAL IMPACT ASSESSMENT, PREDICTION AND MITIGATION MEASURES

➤ *During Construction*

Environmental Impact:

Total construction activity involves construction of factory sheds, installation of boiler, kettle, DG set, APC devices etc and erection of storage tanks, Office buildings, etc. Therefore there will be no significant impact on environment during construction phase.

The construction Phase involves the following activities

- Erection of plant and Construction
- Installation of equipments
- Transportation
- Material Handling
- Employment of Labour

Air, Noise level, Soil and flora and fauna parameters are likely to be affected by above said activities.

Mitigation Measures:

- The construction of proposed units would result in the increase of SPM concentrations, which can be controlled by frequent sprinkling of water.
- It will be ensured that diesel powered vehicles will be properly maintained to comply with exhaust emission requirements.
- For the labours, proper sanitation facility will be available.
- The noise control measures during the construction phase include provision of caps on the construction equipment and regular maintenance of the equipment.

➤ *During operation*

Environmental Impacts:

Air Quality:

The main source of air pollution will be the flue gas from Boiler and D.G Set contains PM, SO₂ and NO_x as air pollutants. Air quality modeling been carried out for the contribution at each ambient air quality monitoring locations during the worst-case meteorological conditions as per CPCB Guidelines. The predicted air quality of the area was found to be well within the stipulated standards. Therefore, air quality will not be degraded due to the operation of the proposed project.

Water Quality:

The total fresh water requirement is 28.0 KLD, which is mainly used for industrial purpose is 18.0 KLD, domestic purpose 5.00 KLD and 5.0 KLD of water will be used for gardening purpose. The required water shall be taken from pipeline of the MIDC. Proponent is having permission for drawing the water for industrial use. Generated wastewater shall be treated in properly designed ETP, treated waste water will be recycled and reused in the premises of the

project. The project will follow the Zero Liquid Discharge (ZLD) concept. Therefore, impact on water quality is not expected.

Soil Quality:

In the proposed unit, during operational phase of the project, there is no chance of soil contamination due to water or air quality.

Noise Quality:

Noise from machinery, D.G. sets, and vehicular movement will not impact the noise quality of the surrounding areas.

Biological Environment:

Proposed project site is located in Khalapur Taluka of Raigad district in the state of Maharashtra. Direct or indirect impacts are not envisaged on nearby ecological environment. Further greenbelt development will help in improve the aesthetics and ecology. Necessary environmental protective measure has been planned under EMP for air, water and hazardous waste management systems and regular environmental surveillance will be carried out so as to prevent any short-term or cumulative effect on the crops and natural vegetation of the surrounding area.

Socio Economic Environment

There will be a growth in both direct, indirect and secondary jobs and business opportunities to the local and surrounding people such as daily wage labourers, transporters and raw material suppliers due to the expansion of proposed industry in the area.

Future generation of Cultivators/farmers at local and regional level will be benefited through industrial growth in the area provided adequate measures to control pollution are undertaken Infrastructure viz. Road, transport, electricity and water supply in the surrounding villages will be improved.

Mitigation Measures

a) Air

Ambient air quality will be within NAAQS 2009 as mentioned above. Multi Cyclone Separator is proposed as air pollution control measures to proposed boiler. Also, stacks of adequate height i.e., 30 m and 7 m for boiler and DG set, respectively are proposed to disperse flue gases.

b) Water

The action plan is prepared to ensure that there is no discharge of effluent creating nuisance during rainy season.

- There will be no unattended storage of effluent.
- Pre-monsoon inspection shall be carried out to ensure that there will not be any rain-wash pollution in the eventuality of rain run on or rain run-off.
- Planned storm water drainage network will be provided and maintained to avoid contamination of rain water with factory untreated waste water and other waste materials.

- Control of water taps, hose pipe washings, leakages from pump glands and flanged joints and overflow of vessels are monitored and controlled.

c) Soil

- RCC flooring will be done at manufacturing and materials storage area.
- The preventive maintenance will be planned to avoid the failure of valve, pipe lines and other component of transferring line
- All the chemical handling will be carried out on proper RCC area to prevent from soil contamination.
- Municipal Solid waste will be disposed of as per MSW Rules.
- The unit will obtain membership of active Common Environmental Infrastructure TSDF for proper disposal of hazardous waste.
- The unit has provided dedicated storage area for the hazardous waste storage within premises having impervious floor and roof cover system.

d) Noise-

- Acoustic enclosures for the DG sets will be used to reduce the noise.
- Ear-Muffs and plugs will be provided to the labours wherever required in the working area.

e) Biological Environment

- Greenbelt/plantations will be developed at the periphery of the company premises.
- Adequate stack height will be provided as per CPCB guidelines for the proper dispersion of pollutants, so that it will not hamper the plants. There will be no disposal of effluent from the unit.

f) Socio Economic Environment

In order to mitigate the adverse impacts likely to arise in social, cultural and economic aspects in the surrounding area due to project activity, it is necessary to formulate effective recommendations for smooth initiation and functioning of the project:

- Project authorities should organize awareness and guidance centre for youths, technical education centre and training programme.
- Community Development Programmes will be initiated in the nearby villages as a goodwill gesture.
- Information regarding the proposed development plan, social welfare programmes etc. will be communicated to the local community in the form of booklets and audio-visuals.
- For all the social welfare activities to be undertaken by the project authorities, collaboration will be sought with the local administration and Gram Panchayat for better co-ordination to reach to the public.

8. ENVIRONMENT MONITORING PROGRAMS

M/s. Chameleon Aaron chemical Pvt. Ltd will adopt comprehensive environmental monitoring programs which is essential to take into account the changes in the environment. The objective of monitoring is:

- I. To verify the result of the impact assessment study in pertaining to proposed expansion.
- II. To follow the trend of parameters which have been identified as critical
- III. To check or assess the efficiency of controlling measures

- IV. To ensure that new parameters, other than those identified in the impact assessment study, do not become critical after the commissioning of proposed expansion.

9. PROJECT BENEFITS

It is seen that the Project is aimed to fulfil the objective of Sustainable Development. It will improve economic status of the nearby area by improving physical, social infrastructure, providing employment, social development activities and other benefits. Provision of greenbelt plantation will improve the surrounding aesthetics of the area.

10. ENVIRONMENT MANAGEMENT PLAN (EMP)

The management of M/s Chameleon Aaron Chemicals Pvt. Ltd. will take care of all the necessary steps to control and mitigate the environmental pollution and risk in the planning stage and operational phase of the project. Disaster Management Plan (DMP) has been formulated to tackle the emergency arises, if any during the handling of hazardous chemicals at project site. The EMP and DMP operation/implementation will be the responsibility of the “HSE Officer”, who will be coordinating and arranging the collection and reporting of the results of all emissions, ambient air quality, noise and water quality monitoring and any risk arise due to expansion activities of the project.

While implementing the project M/s Chameleon Aaron Chemicals Pvt. Ltd. will follow the guideline specified under the Corporate Responsibility for Environmental Protection (CREP) for proposed expansion project.

The EMP task will likely be administered by the “Health, Safety and Environment (HSE) Department”, who will have the authority where necessary to “stop the job” if an environmentally detrimental activity is being conducted.

The unit proposes to have a green belt programme for the proposed plant. The green belt will be developed on an area of 9090 sq m of land which is about 33.28% of the entire project area. CPCB guidelines pertaining to plantation will be followed in green belt development. Shrubs and trees will be planted in encircling rows. Native plant species shall be grown in consultation with local forest Department.

Rain water will be collected from the roof of sheds and office building. The same will be directed towards the proposed water storage tank for various uses. The water from this tank shall be used in sprinkling for dust suppression and gardening purpose. The overflow, if any, from the tank shall be discharged through the storm water drain.

Budgetary provision of expenses has been made for environmental management plan (EMP) and Corporate Environmental Responsibility (CER). The proponent proposes to invest nearly 2% of the project cost expenses over a period of next 5 years, to be considered for implementing the need-based activities in the context of the local scenario as a part of CER/CSR. Expenses as capital and recurring cost on various heads for various environmental and social activities over the period of 5 years. This cost will be provided as per regulatory requirement.

11. CONCLUSION

Provision of the above measure for proposed expansion will help in improving the environmental quality of the surrounding areas of the proposed project. Socio-economic condition of the surrounding villages will also improve due to flow of money through direct, indirect and secondary employment generation. Proposed plantation and implementation of CER/CSR schemes will improve the aesthetic of the surrounding environment.