

Executive Summary

For

M/s. Witmans Industries Pvt. Ltd.

At

Gat no. 20/2, Biloshi, Palghar,

Maharashtra - Pin : 421312

Production of Synthetic Ester, General Plasticizers, Fire Retardant Plasticizers, and Speciality Plasticizers

Schedule 5 (f) Category A

Environmental Consultant

M/s. Enviro Analysts & Engineers Pvt. Ltd.

B-1003, Enviro House, 10th Flr, Western Edge II,

W.E Highway Borivali (E) Mumbai

Tel: +91 22 2854 1647/48/49

Email : info@eaapl.com / ec@eaapl.com



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1. EXECUTIVE SUMMARY

1.1 Introduction

The proposed project is project will be developed by M/s. Witmans Industries Pvt. Ltd. It is a green field project to be established over area of 34,400 m², at Gat No. 20/2, Biloshi, Thane, Maharashtra Pin-421312.

The proposed project is a green field project under category 5(f) of the EIA Notification SO 1553 dated September 14, 2006 and its amendments thereof. The project proposes to manufacture Synthetic Ester (36 products), General Plasticizers (15 products), Speciality Plasticizers (7 products), Fire Retardant Plasticizers (6 products) and Lubricants and Lubricating oil (1 product) with total production of 61,320 MTPA with 1,392 MTPA byproducts (Recovered Xylene, 30% HCl)

Currently the company manufactures and markets industrial paints and protective coatings at different manufacturing facilities at Daman and Wada. It is also one of the leading Lubricant Manufacturing Company and is currently producing ~50,000 MT of various lubricants per annum. Witmans is an ISO 9001:2015 certified company.

The project under consideration is a green field project under Category A, under schedule of 5(f) - Synthetic Organic Industry of the EIA Notification SO 1533 dated September 14, 2006 and its amendments thereof. The project is for Manufacturing of Synthetic Esters, General Plasticizers Specialty Plasticizers, Fire Retardants Plasticizers and Lubricants and Lubricating oils with total production of 61,320 MTPA .

1.2 Location of the Project

Proposed project is a greenfield project to be established over area of 34,400 m², at Gat no. 20/2, Biloshi, Thane, Maharashtra, Pin 421312. It is proposed to have 10,993 m² of Greenbelt Area, approximately 33% of available open area.

Latitude: 19°34'8.65"N, Longitude: 73°4'19.74"E

The nearest railway station is Vaitarna Railway Station and National Highway 32 is 4 km from the project site. The location of the Plant is shown in Figure 1 and the layout is presented in Figure 2.

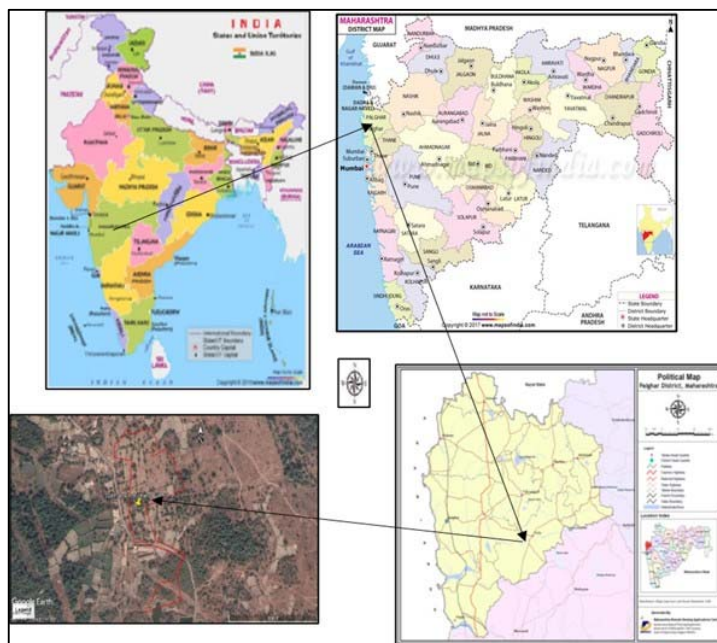


Figure 1: Location Plan



Figure 2: Google Image of Proposed Project site

Table 1: Connectivity from Project Site

1.	Village/District/State	Biloshi/ Wada/ Thane / Maharashtra
2.	Coordinates	Latitude: 19°34'8.65"N, Longitude: 73° 4'19.74"E
3.	Nearest Highway	NH32 ~ 4 km
4.	Nearest Railway Station	1.Thane Railway Station- 35 km 2. Vaitarna Railway Station-24 km
5.	Nearest Airport	Chhatrapati Shivaji Maharaj International Airport- 57.00km
6.	Nearest River	Vaitarna River – 6.4 km
7.	Nearest Habitation	Biloshi Village -1 Km
8.	Village/District/State	Biloshi/ Wada/ Thane / Maharashtra
9.	No Forest land involved in the project	

Table 2: Area Statement

Sr. No.	Description	Area m ²
1.	Total Plot Area as per 7/12	34400
2.	Area left for Road Widening	-1122
3.	Area available for development	33278
4.	Plant Facility	1525.8
5.	Raw Material Storage	632.8
6.	Finished Good Storage	223
7.	Area under internal Road	4900
8.	Area under Green Belt	10993
9.	Parking area	3996
10.	Roads	4900
11.	Services area (STP, ETP)	447
12.	Permissible Built-up area	6694.50
13.	Others	11682.4
14.	Proposed Built up Area	5459.67

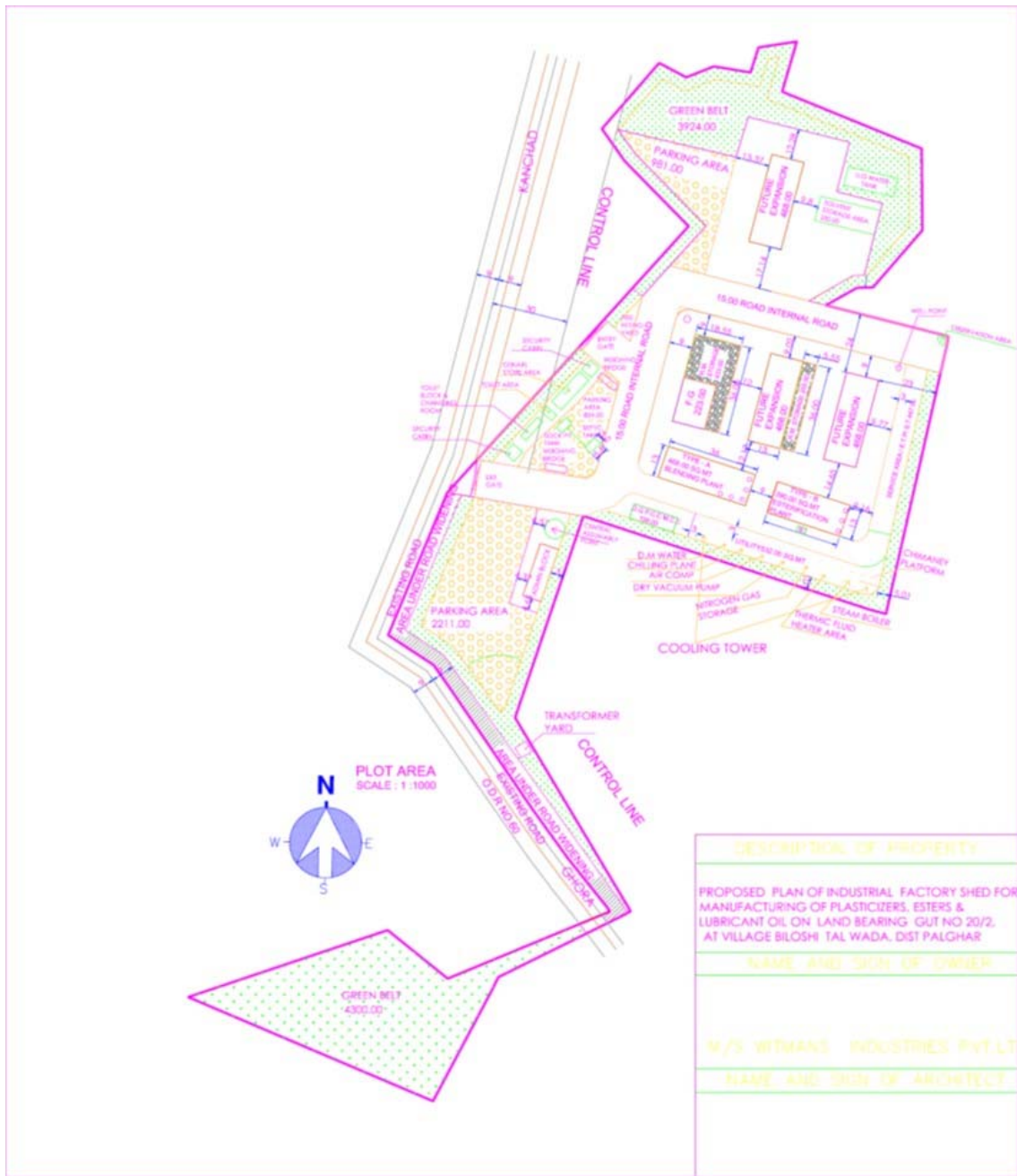


Figure 3: Proposed Project Layout

2 PROJECT DETAILS

Table 3: Project Details

Particulars	Details																																												
Project Location	Plot No: Gat no. 20/2, Biloshi, Thane, Maharashtra Pin – 421312																																												
Production Capacity	Total production of 61,320 MTPA with 1,392 MTPA byproducts																																												
Project Area	34,400 m ²																																												
Water Requirement	Total Water requirement of the project: 226 m ³ /d (121 m ³ /d from borewell + 105 m ³ /d recycled) <ul style="list-style-type: none"> • DM Water Plant: 40 m³/d • Cooling Tower: 80 m³/d • Boiler: 20 m³/d • Drinking/Domestic: 15 m³/d • Floor / Vessel washing: 07 m³/d • Green Belt: 56 m³/d (from fresh-07 + from recycle-49 m³) 																																												
Effluent Generation	<ul style="list-style-type: none"> • Effluent to ETP: 39 m³/d • Sewage to STP :13 m³/d 																																												
Effluent treatment plant	<ul style="list-style-type: none"> • ETP Capacity –45 m³/d • STP Capacity – 15 m³/d 																																												
Power Requirement	Proposed Demand Load: 500 kVA; Source: MSEDCL																																												
Fuel Requirement	LSHS: 350 Lit./day, Diesel-55Lit./day																																												
Green Belt Area	10,993 m ²																																												
Man Power Requirement	~100 Nos																																												
Project Cost	Rs. 48 Cr.																																												
Products	<table border="1"> <thead> <tr> <th>S. No.</th> <th>Production</th> <th>No. of products</th> <th>TPA</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Synthetic Esters</td> <td>36</td> <td>6600</td> </tr> <tr> <td>B</td> <td>General Plasticizers</td> <td>15</td> <td>22800</td> </tr> <tr> <td>C</td> <td>Specialty Plasticizers</td> <td>7</td> <td>720</td> </tr> <tr> <td>D</td> <td>Fire Retardant Plasticizers</td> <td>6</td> <td>1200</td> </tr> <tr> <td colspan="3" style="text-align: center;">Total</td> <td>31320</td> </tr> <tr> <td>E</td> <td>By products</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Recovered Xylene</td> <td>1</td> <td>98</td> </tr> <tr> <td></td> <td>30 % HCL</td> <td>1</td> <td>1294</td> </tr> <tr> <td colspan="3" style="text-align: center;">TOTAL</td> <td>65</td> </tr> <tr> <td>F</td> <td>Lubricants and Lubricating oil</td> <td>1</td> <td>30000</td> </tr> </tbody> </table>	S. No.	Production	No. of products	TPA	A	Synthetic Esters	36	6600	B	General Plasticizers	15	22800	C	Specialty Plasticizers	7	720	D	Fire Retardant Plasticizers	6	1200	Total			31320	E	By products				Recovered Xylene	1	98		30 % HCL	1	1294	TOTAL			65	F	Lubricants and Lubricating oil	1	30000
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2.1 Proposed Production Details

Proposed project is a green field project for manufacturing of Synthetic Ester (36 products), General Plasticizers (15 products), Specialty Plasticizers (7 products), Fire Retardant Plasticizers (6 products) and Lubricants and Lubricating oil (1 product).

Total Production Capacity will be 61320 MTPA with 1392 MTPA byproducts. The proposed products are present in Table 4

Table 4: Proposed Product List

Sr	Name of the Product	Max Production, TPA	
A Synthetic Esters			
10	2 Ethyl Hexyl Coccoate	6600 Environmental Clearance Required	
11	PEG 400 Mono Coccoate		
12	PEG 600 Mono Coccoate		
13	Neo Pentyl Glycol Dicoccoate		
14	Trimethylolpropane Tricoccoate		
15	PEG-400 Mono Laurate		
16	LA 15 Mole Laurate		
17	Glycerine 20 Mole Laurate		
18	2 Ethyl Hexyl Laurate		
19	2 Ethyl Hexyl Oleate		
20	Butyl Oleate		
21	Methoxy Glycol Oleate		
22	PEG-200 Mono Oleate		
23	PEG -400 Mono Oleate		
24	PEG 600 Mono Oleate		
25	Penta Erythriatol Mono Oleate		
26	PEG -400 Dioleate		
27	PEG 600 Dioleate		
28	NPG Dioleate		
29	Propylene Glycol Dioleate		
30	Trimethylol Propane Trioleate		
31	Pentaerythritol Tetra Oleate		
32	2 Ethyl Hexyl Palmitates		
33	Butyl Stearate		
34	Peg 600 Mono Sterate		
35	Iso Tri Decyl Sterate		
36	2 Ethylhexyl Stearate		
37	Peg 400 Adipate		
38	Di Iso Tridecyl Adipate		
39	Pentaerythritol Tetra 2-Ethylhexanoate		
40	Mono Ethanol Oleio Amide		
41	N-N Diethanol Oleo Amide		
42	Polyricin Oleate Resin (1200)		
43	Poly Diethylene Glycol Resin		
44	Sulpho Ethoxy Phosphate Ester		
45	Fatty Acid Polyol Ester		
B General Plasticizers			
15	Di Octyl Terphthalate		22800 Environmental Clearance Required
16	Di Octyl Pthalate		
17	Di Isononyl Pthalate		
18	Mix Aromatic Polyglyceride		
19	Mix Fatty Acid Glycerides		
20	Di Octyl Adipate		
21	Cyclohexane 1, 2 Di Isononyl Carboxylate		
22	Di Ethylene Glycol Dibenzoate		
23	Polyethylene Glycol Dibenzoate		
24	Di Propylene Glycol Di Benzoate (Dpgdb)		
25	Tri Isooctyl Trimeliatate		
26	Polymeric Adipic Ester		
27	Di Iso Nonyl Terephthalate		

Sr	Name of the Product	Max Production, TPA
28	Witplast 115	
29	Witplast 160	
C Specialty Plasticizers		
1.	Di Butoxy Ethoxy Ethyl Adipate	
2.	Dibutoxy Triglycol Adipate	
3.	Butyl Carbitol Formal	
4.	Di Octyl Sebacate	
5.	Xylene Formaldehyde Resin (Xf) / Vulkanol Fh	
6.	PEG 300 2 Ethyl Hexanoate	
7.	Alkyl Sulphonic Phenyl Ester	
D Fire Retardant Plasticizers		
1.	Tri Butyl Phosphate	
2.	Tri Cresyl Phosphate	
3.	Tri Phenyl Phosphate	
4.	Iso Propyl Diphenyl Phosphate	
5.	2 Ethyl Hexyl Diphenyl Phosphate	
6.	Iso Decyl Diphenyl Phosphate	
E. Name of the Byproducts		Max Production, TPA
1.	Recovered Xylene	98
		Environmental Clearance Required
2.	30% HCl	1294
		Environmental Clearance Required
Total (Byproducts)		1,392
F. Lubricants and Lubricating Oil		30000
		Environmental Clearance not Required
1.	Antistatic Oil and Industrial Lubricants	18000
2.	Paraffin Oil	6000
3.	Polished Oil	6000

Detailed production details are covered in EIA Report and enclosed as Annexure A herewith

3 BASELINE MONITORING

We have conducted baseline monitoring for Air, water, soil & noise for various locations within 10 Km.

3.1.1 Air, water, soil & noise Environment

- Air - 8 locations, results within the prescribed limit.
- Surface Water: 8 locations, results are found to be satisfactory.
- Ground Water: 8 locations, results are found to be satisfactory.
- Soil: 8 locations and
- Noise: 8 locations,

All the baseline monitoring results are within the prescribed limit.

3.1.2 Biological Environment:

The flora and fauna studies was carried out in the 10 km radius. Few trees and shrubs are present at the site. Some trees and shrubs were observed in the proposed plot area *Azadirachta indica*, *Tectona grandis*, *Ziziphus jujuba* etc. No primary and secondary evidences of major faunal species were observed in and around the site.

The domestic animals found in the study area are pig, goat, cow, cat and dog etc. The survey revealed that 5 species of common mammals were recorded in the study area, while no wild mammal was observed in this area. Besides avifauna, which has been addressed separately, 1 species of amphibians

and 2 species of reptiles were recorded. None of these animals are endangered (Schedule I) as per Wildlife (Protection) Act 1972.

3.1.3 Socio-Economic:

The data is collected and analyzed using secondary sources viz. Census Reports, District Statistical Abstract etc. It demonstrates that the proposed site for the project is abutted within the jurisdiction of Nashik Municipal Corporation. The 5 km radius area is covering 7 Municipal wards and 6 villages. Zone-wise segregation shows that the first zone (0-2 KM) consists of 3 wards. The second zone (2-5Km) is constituted of 11 wards.

The total population of study area, 210533 nos. The data of children below six years of age group indicated 24213 children in the study area. Out of total population male were 109668 (52.09%) and female were 100865 (47.90%). It indicated equal population growth in both male and female categories.

3.1.4 Infrastructure:

Educational facilities, medical facilities, drinking water, road and rail connectivity are good.

3.2 Impact & mitigation measures: Air Environment:

The air pollution caused by this industry is mainly from dust as SPM and fumes. The dust is due to the composition and handling of raw material and fumes are from boiler level as well as from ladle and roof level.

3.2.1 Pollution Control measures – Air

The air pollution is caused mainly by particulate matter and fumes during operation. For pollution control proposed vent scrubber, alkali scrubber, 2 process stacks and 1 DG set stack to minimize the air pollution.

Fugitive:

Fugitive emission will be controlled by:

- Regular water sprinkling
- Rubber tired trolleys for material handling
- Adopting layout to minimize manual material movement
- Tree plantation

Ground level concentrations (GLCs) have been predicted using AERMOD Cloud software. The application incorporates popular U.S. EPA air dispersion models AERMOD and ISCST3 into one integrated graphical interface. The model follows rural dispersion and regulatory defaults options as per guidelines on air quality models (PROBES/70/1997-1998).

Ambient air quality in study area w.r.t. PM, SO₂ and NO_x is within NAAQS 2009 as seen. Hence, any significant impact is not envisaged within study area.

3.2.2 Water Environment:

Water is required for cooling water makeup and domestic purposes. Domestic wastewater is treated in STP (15 m³/day) with overflow being used for green belt. Water from the process will be treated in ETP (39 m³/day) Total water requirement will be 226 m³/day

Pollution Control --Water and Wastewater Water Quality: Total water requirement is 218 m³/day, which will be met from ground water. Water is required for cooling purpose and boiler. Only domestic wastewater will be generated in the project and it shall be treated in Sewage Treatment Plant. Treated water will be reused for landscaping after disinfection.

Mitigation: As additional mitigation measures are as under:

- To spread awareness to the workers about the importance of water conservation.
 - Shop-floor supervisors are encouraged for mopping up, dry collection and good house-keeping.
- Maximum recycling of water.

3.2.3 **Stormwater Management:**

A proper stormwater management system has been proposed. For rainwater harvesting total 6 Nos. of Recharging pits are recommended.

3.2.4 **Solid Waste**

The main source of hazardous waste generation from proposed activity is Dried Sludge from ETP, Distillation Residue from manufacturing process & Salts. The other source of hazardous waste generation from proposed activity are discarded containers/Bags/Barrel from storage and handling of raw materials and spent/used oil generation from plant machinery.

Table 5: Non Hazardous Solid Waste

Sr. No.	Waste	Quantity	Disposal
1.	Dry Garbage	16 kg/d	Hand over to authorized recyclers
2.	Wet Garbage	11 kg/d	Vermi Composting
3.	Paper waste	40 kg/d	Handover to authorized recyclers
4.	Engineering waste (i.e. Scrap, Pump seals, damage valves etc.)	60 kg/d	Handover to authorized recyclers
5.	Waste cotton rags	100 kg/month	Re-use or sell to scrap vendors

Table 6: Hazardous Solid Waste

Cat.	Type of Waste	Qty.	Method of Disposal
35.3 Sch - I	ETP Sludge	90 kg/d	Sent to CHWTSDF
5.1 Sch - I	Used Lubricants	100 kg / month	Authorized recyclers
33.1 Sch - I	Used Containers (Metal & Plastic)	1000 Nos./month	Decontamination & Re- use or sell to Scrap vendors
37.3 Sch - I	MEE Residue	2T/d	Sent to CHWTSDF
	High boiling Organic residue	2T/d	
28.1 Sch - I	Process (distillation)Residue	50 kg/d process waste	Sent to CHWTSDF
36.2 Sch-I	Spent Carbon	30 kg/d	Sent to CHWTSDF
	Spent Clay	570 kg/d	Sent to CHWTSDF
	Glass/ PPE waste	50 Kg/d	Handover to CHWTSDF

4 TRAFFIC STUDY

Traffic Surveys are necessary to capture the existing pattern and volume of traffic as baseline data. This data can be utilized to determine the residual capacity of the surrounding roads. Mitigation measures are given below;

1. Surrounding roads should be widened/constructed to the full extent as per the DP widths.
2. Care shall be taken that the heavy truck movement related to proposed project is scheduled during non-peak hours for the conveniences of the local people.
3. Preferences to the local people for the employment in the factory will be given, so the traffic attraction from the far places will be considerably reduced.
4. The on-street parking will be prohibited.
5. Public transport will be promoted for the employees.
6. Use of Bicycles will be encouraged for reducing the Air pollution.
7. E-vehicles and Shared Intermediate Public Transport (IPT) services would be promoted and encouraged to reduce pollution levels.

5 RISK ASSESSMENT

There are various types of studies were carried out for the proposed project. Following are the step-wise risk assessment is done

- Hazard identification (HIRA)
- Hazop study
- Frequency and Consequence analysis
- Event tree development
- Impact Assessment modelling
- Disaster management and mitigation measures.

5.1 Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk

Activities requiring assessment of risk due to occurrence of most probable instances of hazard and accident are both onsite and off-site.

On-site

- Exposure to fugitive dust, noise, and other emissions
- Housekeeping practices requiring contact with solid and liquid wastes
- Emission/spillage etc. from storage and handling

Off-site

- Exposure to pollutants released from offsite/ storage/related activities
- Contamination due to accidental releases or normal release in combination with natural hazard
- Deposition of toxic pollutants in vegetation / other sinks and possible sudden releases due
- to accidental occurrences
- Disaster at plant may occur due to following hazards:
- Fire in Electric Panels & fuel storage area
- Runaway reaction
- Explosion in Boiler house
- Electrocutation
- Cleaning of barrels, which have held chemical substances
- Fall of material

5.2 Emergency preparedness plan in case of natural or in plant emergencies

5.2.1 Onsite Emergency Plan

- The onsite emergency is an unpleasant situation that causes extensive damage to plant
- personnel and surrounding area and its environment due to in operation, maintenance,
- design and human error. Onsite plan will be applied in case of proposed expansion.
- Following point are to be taken into consideration:
- To identify, assess, foresee and work out various kinds of possible hazards, their places,
- potential and damaging capacity and area in case of above happenings
- Review, revise, redesign, replace or reconstruct the process, plant, vessels and control
- measures if so assessed
- Measures to protect persons and property of processing equipment in case of all kinds of accidents, emergencies and disasters
- To inform people and surroundings about emergency if it is likely to adversely affect them

5.2.2 Off-Site Emergency Planning

The off-site emergency plan is an integral part of any hazard control system. It is based on those accidents identified by the works management, which could affect people and the environment outside the works. Thus, the off-site plan follows logically from the analysis that took place to provide the basis for the on-site plan and the two plans therefore complement each other. The roles of the various parties that may be involved in the implementation of an off-site plan are described below. The responsibility for the off-site plan will be likely to rest either with the works management or with the local authority.

Either way, the plan must identify an emergency coordinating officer who would take overall command of the off-site activities. Consideration of evacuation may include the following factors:

- In the case of a major fire but without explosion risk (e.g. an oil storage tank), only houses close to the fire are likely to need evacuation.
- If fire is escalating very fast it is necessary to evacuate people nearby as soon as possible.
- In acute emergency people are advised to stay indoors and shield themselves from the fire.

6 POST PROJECT MONITORING PLAN

Table 7: Post project monitoring plan

S. No.	Area of monitoring	Sampling locations	Parameters to be Analyzed	Frequency of Sampling
1	Stack Emission	Flue gas Stack	PM2.5, PM10, SO2, NOx, VOC, HCl	Twice in Month through third party.
2	Ambient Air Quality	Two location within plant premises	PM2.5, PM10, SO2, NOx, VOC, HCl	Once in Month through third party.
3	Liquid effluent	Inlet and outlet of Effluent Treatment Plant.	As per consent of GPCB	Daily basis and Once in a month through third party.
4	Ground and Surface water	Two sampling locations in 10 Km radius.	As per IS Standards	Once in a year through third party
5	Soil	Two sampling locations in Impact Area	As per consent of MPCB	Once in year through third party
6	Noise	Noise generating units	Sound Pressure Levels (Leq)	Weekly and once in a month through third party
7	Occupational Health Monitoring	Periodical Check up	Spirometry, Urin, RBS, LFT, complete blood count, dental X ray, Anemia, etc.	<30 yrs. Once in five years 31-40 yrs. Once in four years 41-50 yrs. Once in two years Above >50 yrs. once every year
8	Greenbelt	Green belt area	Number of plantation (Units), Number of Survived plants/ trees, Number of poor plants/ Trees	Ongoing round the year
9	Socio Economic	core zone and Study area	Workers, employment pattern, CSR activities, Budget, expenses etc	Yearly