

## **DISTRICT DISASTER MANAGEMENT PLAN FOR SANGLI DISTRICT**

### **1. REGULATORY FRAMEWORKS**

#### **1.1. INTRODUCTION.**

Environmental laws play crucial, preventive, as well as remedial roles in environment management and are prime catalysts for environmentally responsible behavior. There has been a proliferation of the environmental laws in India, especially after the Conference on Human environment in June 1972. Legislation plays an important role in maintenance and implementation of safety measures at national, state, district and MAH factories depending on the scale of emergency. The nodal ministry for drafting the related to the environmental safety is the Ministry of Environment and Forests, Government of India. While the Central Government formulates the Acts, the responsibility for implementation of the Acts, lies with the state Governments and the State Pollution Control Boards/Committees.

#### **1.2 ENVIRONMENTAL PROTECTION ACTS AND RULES**

One of the goals of the existing legal framework on Emergency Planning is to promote emergency planning activities, including safe management of dangerous chemicals, to prevent accidents of the scale of Bhopal Gas tragedy in the country. Several other Indian laws support activities to increase awareness of chemical hazards and to reduce the likelihood of chemical emergency situations, particularly within the industries. The major regulations in India that regulate the environmental safety are :-

- Water (Prevention and Control of Pollution) Act 1974.
- The Air (Prevention and Control of Pollution) Act, 1981.
- Environment (Protection) Act, 1986.
- The Hazardous Waste (Management and Handling) Rules, 1989.
- The Manufacture, Storage and Import of Hazardous Chemicals Rules (MSIHC) 1989 as amended in October 1994 and January 2000.

- Public Liability Insurance Act, 1991.
- The National Environmental Tribunal Act, 1995.
- Chemical Accidents Emergency Planning, Preparedness & Response) Rules 1996.
- The Factories Act 1948 as amendment in 1976 and 1987.
- The Petroleum Act, 1934 and rules framed there under.
- The Motor Vehicles Act as amended in 1988.
- Gas Cylinder Rules 1981.

### **1.3 OFF-SITE EMERGENCY PREPAREDNESS AND RESPONSE**

The major laws that need to be considered for are the Environment Protection Act, 1986 and the rules drafted under this act, particularly MSIHC Rules and CAEPPR Rules. The constitution of offsite emergency plan by the concerned district authorities is obligatory under the MSIHC Rules. A brief account of the relevant acts and rules are given in the following sections for ready reference.

### **1.4. THE ENVIRONMENT PROTECTION ACT, 1986 (EP ACT)**

EP Act, 1986 is an umbrella act, which covers protection and improvement of environment and related issues. The Act defines environment as including water, air and land and the inter relationship, which exists among and between water, air and land and human population. Other living creatures, plants, micro-organism and property. The Act defines environmental pollutant as any solid, liquid or gaseous substance present in such concentration as may be, or tend to be injurious to the environment.

Section 3-7 of the Act confers the Central and the State Governments to formulate laws and take all measures that may be required, and may deem necessary to protect the environmental quality. Persons handling hazardous substances are required to comply with the procedural safeguards as may be prescribed under the rules.

### 1.5. OBLIGATIONS UNDER THE ACT.

- Under the Schedule II of the EIA notification, it is required for project proponent in 23 categories of industrial sector (out of 29 listed) to submit “Risk Assessment Report and Disaster management Plan” along with EIA/EMP for seeking clearance from the MoEF.
- Compliance with the directions issued in writing by the Central Government within a specified time as mentioned in the order.
- Furnishing of information to the prescribed agencies of any accidental or unforeseen event in which environmental pollutant(s) not conforming to the prescribed standards are behind discharged, or are likely to be discharged into the environment.
- Allow entry and inspection by any person empowered by the Central Government industrial establishment at all reasonable times for the purpose of performing any equipment plant, registers, records or documents in case there are reasons to believe any provision of the Act is being contravened.
- Allow Central Government or any official empowered by it, to take samples of air water or any other substance form the industrial establishment for the purpose of analysis.

### 1.6. THE MANUFACTURE, STORAGE & IMPORT OF HAZARDOUS CHEMICAL RULES 1989.

The MSIHC Rules were notified on 27<sup>th</sup> November 1989, under the Environment Protection Act 1986 by the MoEF. These rules were subsequently amended in the year 2000. The principal objectives of the regulation are the prevention of major accidents arising from industrial activities the limitation of the effects of such accidents both on man and on the environment and the harmonization of the various control measures and the agencies to prevent and limit major accidents.

The industrial activities covered by the hazardous chemicals regulation are defined in terms of processes and storages involving specified hazardous chemicals, criteria for which has been laid down in paragraph I of schedule – I and an indicative list is described in part II of the same schedule. These encompass most of the chemicals and petrochemicals industries using

chemicals, which are flammable, explosive, toxic or reactive in nature. The Rules do not oversee any existing regulation like the Explosive Act, the Petroleum Act, the Factories Act, etc. An important feature of the regulation is that the storage of hazardous/toxic chemicals not associated with a process is treated differently from that of chemicals used in a process and a different list of hazardous chemicals is applied.

In exercise of the powers conferred to the Central Government under the sections 9, 8 and 25 of the EPA, 1986 the MSIHC Rules were drafted. Rule 13 of MSIHC requires preparation of an on-site emergency preparedness plan by the MAH units and Rule 14 requires preparation of an off-site emergency plan by the concerned authorities. As per Schedule 5 of the MSIHC rules the district collectors have been declared as authority for preparation of an offsite emergency plan for the district.

**1.7. THE “HAZARDOUS CHEMICALS” AS DEFINED IN THE RULES ARE :-**

- Any chemicals which satisfies any of the criteria laid down in Part I of Schedule 1 or is listed in Part 2 of the said Schedule.
- Any chemical listed in Column 2 of Schedule 2.
- Any chemical listed in Column 2 of Schedule 3.

**1.8. OBLIGATIONS UNDER THE RULES :-**

According to the rules, the occupier of the facility having any of the hazardous chemicals or as isolated storage is.

- Required to identify the major potential accident from his facility and take adequate steps to minimize the consequences and loss thereby.
- Required to notify the occurrence of the accident within 48 hours to the concerned authority.
- Required to inform the persons liable to be affected by a major accident as well.
- Required to set up an on-site emergency plan in case of storage of the hazardous chemicals in excess of the threshold quantity, as given under Schedule 2 and 3.
- Required to prepare an up-to-date off-site emergency plan by the respective authorities which are identified under Schedule 5. The offsite emergency plan needs to

address the emergencies relating to a possible major accident will be dealt with.

**1.9. THE DETAILS TO BE FURNISHED UNDER THE OFF-SITE EMERGENCY PLAN AS PER MSIHC RULES INCLUDE :-**

- The type of accidents and releases to be taken into account.
- Organizations involved including key personnel and responsibilities and liaison arrangements among them.
- Information about the site including likely locations of dangerous substances in the plant.
- Technical information such as chemical and physical characteristics and dangers of the substance and the plant.
- Identifying the facility and transportation routes.
- Contacts for further advice e.g. meteorological information, transport, temporary food and accommodation, first aid and hospital services, water and agricultural authorities.
- Communication links including telephones, radios, and other stand by methods.
- Special equipment including fire fighting materials, damage control and repair items.
- Details of emergency response procedures.
- Notifying the general public.
- Evacuation arrangements.
- Arrangements for dealing with the press and other media interests.
- Long terms clean up process.

**1.10. THE CHEMICAL ACCIDENTS (EPPR) RULES, 1996**

The Chemical Accident (Emergency Planning, Preparedness and Response) Rules drafted under EPA, 1986 compliments the MSIHC Rules, 1989, and envisages a four-tier crisis management system in the country. The rules provide setting up of a crisis group at the central state, district and local levels, which have major accident hazard installations (MAH) and provide information to the public. The rules define MAH units, which include, industrial activity transport and isolated storage at a site handling hazardous chemicals. The central group is the apex body in the country to

deal with, and provide expert guidance form planning and handling of major chemical accidents in the country. Similarly, the state crisis group is the apex body at the state level. The state crises group will review the off site emergency plans at the district level. The district crisis group shall, in turn review the on site emergency plans including hazards due to transportation of hazardous chemicals by both road and pipe line for their adequacy at the district level. A mock drill is mandatory within the stipulated time frame by these groups at different levels of their operation.

Rule 2(a) defines 'chemical accident' as an accident involving a fortuitous, or sudden on unintended occurrence while handling any hazardous chemicals resulting in continuous intermittent or repeated exposure to death, or injury to any person or damage to any property but does not include an accident by reason only of war or radio-activity.

The provisions of the Rules require the constitution of the Central, State, District and Local crisis Group with their regular meetings and further require the Central Crisis Group to set up a crisis alert System in accordance with the provisions of Rule – 4. The functions of the Crisis Groups have been well defined under the law under Rule 5,7 and 9 of the said rules.

#### 1.11. OBLIGATIONS AND RESPONSIBILITIES UNDER THE RULES :-

##### **A. CENTRAL CRISIS GROUP :-**

- The group shall meet at least once in 6 month and continuously monitor the post accident situation arising out of major chemical accident and suggest measures for prevention and to check recurrence.
- Conduct post – accident analysis and evaluate response.
- Periodic Review of the adequacy of district off-site emergency plan.
- Review the progress report submitted by the State Crisis Group.
- Respond to Queries of the State and District Crisis Group.

- Publish a State wise list of experts for handling of chemical accidents.
- Render financial and infrastructural assistance in the event of chemical accident.

**B. STATE CRISIS GROUP:-**

- The group shall meet at least once in 3 months and review all district off-site emergency plans and send a report to Central Crisis Group once every 3 months.
- Assist State Government in managing chemical accidents and in planning, preparedness and mitigation of accidents.
- Continuously monitor and report on post-accident analysis and evaluate response.
- Review the progress report submitted by the District Crisis Group.
- Respond to Queries of the District Crisis Group.
- Publish a State wise list of experts for handling of chemical accidents.

**C. DISTRICT CRISIS GROUP:-**

- The group shall meet at least once every 45 days to review all on site emergency plans and send a report to State Crisis Group.
- Review all on-site emergency preparedness plans of MAH units to prepare district off-site emergency plan.
- Assist the district administration in managing chemical accidents in the district.
- Continuously monitor and report to State Crisis Group (within 15 days) on every chemical accident including response.
- Conduct at least one full scale mock drill each year and send a report to State Crisis Group on strengths and weaknesses of the emergency response plan.

**D. LOCAL CRISIS GROUP:-**

- The group shall meet at least once every month and send a report to the District Crisis Group.

- Prepare local emergency plans for industrial pockets and integrate it with district off-site emergency plan.
- Train personnel identified to assist during chemical accidents.
- Educate likely-to-be-affected population about remedies and existing preparedness in the area and respond to their queries.
- Conduct at least one full scale mock drill every six months and send a report to District Crisis Group on Strength and Weaknesses of the emergency response plan.

### **1.12. THE FACTORIES ACT, 1948 (AS AMENDED IN 1987)**

The Factories Act enforced in 1948 meant primarily for the welfare of the factory workers. However, in order to enhance the workers safety and prevent industrial accidents, the law was amended to include provisions under the hazardous processes. The Act lay down procedures for approval, licensing and registration of factories, power of inspection and pollution control ensuring workers safety and health and controlling hazardous process and dangerous operations. The chief inspectors of factories were assigned more responsibilities and authority to prevent and mitigate the impact of industrial disasters. Various obligations under the amended act are as follows :-

- Constitution of Site Appraisal Committee by the State Government.
- Preparation of On-Site Emergency Plans by the Occupier, detailing Disaster Control Measures with approval of the Chief Inspector of Factories.
- Detailed Health and Safety Policy to be laid down by the occupier.
- Occupier to constitute a Safety Committee comprising workers and management.
- Occupier to provide necessary training within or at specialized Institutions.
- Occupier to disclose all relevant information to the general public.



### **1.13. THE PUBLIC LIABILITY INSURANCE ACT, 1991.**

Accident releases of hazardous constituents and prevention of releases have been the focus of industrial societies for several decades now. Incidents like those that occurred in Bhopal Chernobyl and Sasebo have made the public aware of the considerable risks associated with industrial activities involving hazardous substances. As a result, this legislation aimed at providing relief and compensation to on-site personnel and general public affected by such emergencies. This act was framed with the purpose of making the occupier of a facility liable towards providing immediate relief to persons affected by such disasters. The Act also envisages the creation of an Environment Relief Fund for financing cleanup and enforcement actions.

### **1.14. THE ACT MAINLY FOCUSES UPON THE FOLLOWING POINTS :-**

- As per sections 4 and 5 of the Act, the owner is liable to give relief on account of death or injury to any person (other than a workmen) or damage to property caused by an accident involving the handling of specified hazardous substances as specified in this Act without the claimant having to plead or establish charges. The owner also has to obtain insurance policy as providing for contracts of insurance whereby he is insured against liability to give relief in case of such incidents. This insured amount would be more than the paid capital of the undertaking (ie. the market value of all assets and stocks) but less than Rs. 50 crores before starting the handling of specified hazardous substance.
- The Central Government will set up an Emergency Relief Fund for paying relief under the award made by Collector. The owner of a facility involved in the handling of hazardous substance shall pay additional amounts, as prescribed, to the insurer (but not exceeding the amount of premium) as contribution to the Environment Relief Fund.
- The Central Government has been given the power to send an authorized person to industries to carry out the following functions :-

- # To gather any information required by the government or any of its agencies to ascertain compliance with the provisions of this Act.
- # Inspect or search the place where the industrial activity involving hazardous chemicals is being carried out.
- # The Central Government may also issue directions in writing to any owner or person with specific instructions regarding prohibition or regulation of handling of any hazardous substance, or stoppage or regulation of the supply of electricity, water or any other service.

### 1.15. CONCLUSION

In this chapter the regulatory framework specifying need of offsite emergency has been described. These rules clearly state need for a district offsite emergency plan for SANGLI, as the District has FOUR MAH units and many smaller units storing and handling hazardous substances.

## 2. PURPOSE OF THE PLAN.

The purpose of this plan is to minimize the need to think during emergency and also for planning the resources and for training personnel to minimize the impact of chemical disaster. The Objectives of this plan are to :-

- Focus public activity on emergency preparedness and response.
- Provide public with information useful in organizing the planning task.
- Furnish criteria to determine risk and to help public to decide whether they need to plan for hazardous materials incidents.
- Help public conduct planning that is consistent with their needs & capabilities.

- Provide a method for continually updating a public's emergency plan.

## 2.1. **BRIEF DESCRIPTION OF THE SANGLI DISTRICT.**

- \* **Miraj** : Miraj, Kavathe Mahankal, Tasgaon & Jath.
- \* **Walwa** : Walwa & Shirala.
- \* **Vita** : Palus, Kadegaon, Khanapur & Atpadi.

As there are not large numbers of hazardous chemical industries in the district, it was decided to form District Crisis Group-DCG. In Sangli district, there are only 5 nos. of **MAH** factories handling L.P.G. and motor spirit. So there is a possibility of hazardous like Fire & Explosion.

In addition to these MAH factories, there are **16 nos.** of **Sugar Factories**, out of which **5 nos.** of factories are having **Distilleries**. There are **6 nos.** of **Solvent Extraction Plants** using solvents like Hexane. Moreover, there are water purification plants & textile processors using **Chlorine**. Similarly, there are some ice factories, cold storage & milk chilling plants using **Ammonia**. Thus, there is a possibility of hazards like Toxic Releases. Thus, in addition to MAH factories, there are about **56 Factories** involving **Fire & Explosion Hazard** and about **63 Factories** involving **Risk of Toxic Releases**. The area wise distribution of such factories is as given below.

## 2.2. **AREA WISE LIST OF HAZARDOUS FACTORIES.**

Sub-DN	Taluka	No.of factories involving Fire/Explosion Hazard.	No. of factories involving toxic releases	Total Factories
MIRAJ	Miraj	28+2*	27	55+2*
	Tasgaon	2	20	22
	Kavathe Mahankal	2	0	2
	Jath	2	3	5

		34+2*	50	84+2*
WALWA	Walwa	14	8	22
	Shirala	1	1	2
		15+1*	9	24+1*
VITA	Palus	3+2*	1	4+1*
	Kadegaon	1	1	2
	Khanapur	2	0	2
	Atpadi	1	2	3
		7+2*	4	11+2*
TOTAL		56+5*	63	119+5*

\*MAH Factories

The sizes of the industries also vary greatly, from small scale industries (SSI) to medium, large units. Even industries which are not in the strict sense chemical industries such as Water Works, Textile Processors, Cold Storages etc. also store number of chemicals in various quantities, which may not attract provisions of law but can prove to be dangerous to the surroundings if released i.e. off-site emergency.

Besides the off-site emergencies which are caused by on-site incidents and emergencies, there is another hazard in the area for which there is a need to provide Emergency Control mechanism in off-site plan. These include transportation emergencies.

### **2.3. TYPES OF EMERGENCIES.**

The Off-Site Disaster Control Plan envisages the following type of emergencies :-

- FIRE/EXPLOSION/BLEVE/VAPOUR CLOUD EXPLOSION.
- TOXIC RELEASE OF CHEMICAL SUBSTANCES/GASES.
- SPILLAGE (CORROSIVE CHEMICAL).

#### 2.4. FACTORIES IDENTIFIED AS – MAH.

The following factories are identified as MAH/Chemical Units in the District.

Sr. No.	Name of MAH Factory	Hazardous Chemical	Incident Commander
1.	Bharat Petroleum Corporation Ltd. Opp Railway Goods Shade, Miraj, Dist – Sangli	Motor Spirit HSD Kerosene	Depot Manager
2.	Indian Oil Corporation Ltd Bulk Depot, Railway Siding, Miraj, Dist-Sangli	Motor Spirit HSD Kerosene	Depot Manager
3.	Hindustan Petroleum Corporation Ltd. L.P.G. Bottling Plant, Hazarwadi, Tal-Palus, Dist – Sangli.	L.P.G.	Depot Manager
4.	Hindustan Petroleum Corporation Ltd. IRD Hazarwadi, Tal-Palus, Dist – Sangli.	Motor Spirit HSD Kerosene	Depot Manager
5.	Rajarambapu Patil Sah. Sakhar Karkhana Ltd, Rajarambapunagar, Sakhrale, Tal Walwa, Dist Sangli	Flammable liquids, Distiller, liquor	Depot Manager

#### 2.5. LEGAL AUTHORITY AND RESPONSIBILITY FOR RESPONSE.

Authorizing legislation and regulations central Authority.

Ser No.	District	Responsibility
1.	District Collector	Overall In-charge
2.	Supt. of Police	Law & Order
3.	Fire Officer (Sangli, Miraj)	Fire & Rescue
4.	District Information Officer	Public Information

5.	Joint Chief Controller of Explosives	Indian Explosives Act
6.	District Health Officer/Civil Surgeon	Health & Medical
7.	Chief Medical Officer ZP	Health & Medical
8.	Executive Engineer PWD	Public Works
9.	Sub-RO MPCB	Env. Protection Act & Rules
10.	District Agriculture Officer	Insecticides Act
11.	Deputy RTO	Motor Vehicle Act
12.	Deputy Director, DISH, Sangli	Factories Act 1948.

**2.6. MAP OF SANGLI DISTRICT SHOWING LOCATIONS OF  
MAH FACTORIES.**

### 3.1. **RISK ANALYSIS :-**

Risk analysis is one of the important tool to forecast the consequences of the hazard. Once the consequences are assessed, then it is easy to be prepared for tackling the emergency & to minimize the loss of property & life. In Sangli district, Four Factories are categorized as **Major Accident Hazard Factories (MAH Factories)** which can pose major hazards to life and property.

The individual factories have carried out the Risk Analysis from outside experts. Abstract of the same is reproduced below for reference.

### 3.2. **HINDUSTAN PETROLEUM CORPORATION LTD.**

**Hazarwadi, LPG Bottling Plant, Tal- Palus, Dist – Sangli.**

**Hazardous Chemical – Liquefied Petroleum Gas**

#### (a) **Storage Quantity (Above Ground)**

i)	LPG Storage Sphere No. 1	600 MT
ii)	LPG Storage Sphere No. 2	600 MT
iii)	LPG Storage Sphere No. 3	1200 MT
	Total	2400 MT

#### (b) **Scenario which may lead to Off-site Emergency.**

- i) Leakage of Unloading Hose.
- ii) Rupture of any one hose.



3.3. BLEVE of a Sphere.

3.4. VCE due to Catastrophic Failure of Sphere.

**b) Maximum Credible Loss Scenario** may be caused by Fire Ball and explosion effect due to catastrophic failure of a sphere of 1200 MT.

Results of Hazard Analysis in this case are as follows :-

<b>Radiative Flux (KW/M2)</b>	<b>Distance (M)</b>
1.6	2873
4	1851
12.5	1054
37.5	581.3

**Vapour Cloud Explosion Results are as under :-**

<b>Sr.</b>	<b>Result of Over- Pressure</b>	<b>Distance</b>
i)	Heavy Plant Damage	0.1240
ii)	Repairable Damage	0.2480
iii)	Major Glass Damage	0.6199
iv)	10% Glass Damage	1.653

Dispersion Model for prevailing **Wind Direction and Speed** is required to be superimposed on the surrounding site plan with scale showing population and property so as to know the exact consequences of the hazards.

### 3.5. **HINDUSTAN PETROLEUM CORPORATION LTD.**

**Hazarwadi IRD,** Bhilwadi Station, Tal – Palus, Dist – Sangli.

#### (a) **Storage Quantity :-**

1.	High Speed Diesel (HSD)	12070 KL (9897 MT)
2.	Motor Spirit (MS)	1770 KL (1274 MT)
3.	Kerosene (SKO)	4070 (3093 MT)

#### (b) **Scenarios which may led to Off-Site Emergencies.**

- i) Spilled Oil Fire.
- ii) Jet Fire in POL Pipeline/TLF and TWD Pump House/Tank Farm/TLF Shed/Truck Tanker.
- iii) Pool Fire in Tank Farm.
- iv) Boiling Liquid Expanding Vapors Explosion (BLEVE) in MS Tank.

#### (c) **MAXIMUM CREDIBLE LOS SCENARIOS :-**

Maximum credible loss scenarios identified in this factory is BLEVE at MS (Tank nos 6 & 7). The Results of Hazard Analysis in this case are as below :-

- i) Duration of Fire Ball – 272 Seconds.
- ii) Diameter of Cloud – 492.3 Meters.

**The Table shows the damages.**

Sr. No	Radiative Flux (KW/M2)	Distance	Effect
i)	246.15	246.15	100% lethality
ii)	37.5	93.2	100% lethality
iii)	25	603.85	50% lethality
iv)	12.5	800	1% lethality
v)	4.5	1327.05	First degree burn
vi)	1.6	2293.42	No discomfort

**Damage Distance for Pressure Wave.**

Pressure (Bar)	Distance (M)	Damage effect
0.3	52.46	Heavy
0.1	316.05	Repairable
0.03	1042.98	Damage of Glass

### 3.3. **INDIAN OIL CORPORATION LTD.**

**Miraj, POL Depot**, Opp. Railway Goods Shed, Miraj, Dist – Sangli.

#### a) **Hazardous Storage Quantity.**

i)	High Speed Diesel (HSD)	2667 KL (2186 MT)
ii)	Motor Spirit (MS)	14100 KL (10148 MT)
iii)	Kerosene (SKO)	7489 KL (5691 MT)

b) Scenarios of **BLEVE** is not analyzed by the factory. Scenarios of only **Pool Fire** at different locations is analyzed. Hence in this case, scenario of **Pool Fire** at **HSD Tank** due to rupture of TLF Pump discharge line for 5 minutes, will be as under.

	Radiative Flux – KW/M2	Distance
i)	12.5	158.2
ii)	8	160.8
iii)	4.5	165.5

Also hazard distance for peak Over Pressure for **BLEVE** are not analyzed. **Hazard Damage Distances** for unconfined **Vapour Cloud Explosion** at middle Dyke is as under.

	Peak Over Pressure	Distance (M)
i)	0.3	264
ii)	0.1	278
iii)	0.03	315

#### 3.4. **BHARAT PETROLIUM CORPORATION LTD.**

**Miraj POL Depot**, Opp. Railway Goods Shed, Miraj, Dist – Sangli.

##### a) **Hazardous Storage Quantity.**

i)	High Speed Diesel (HSD)	9600 KL
ii)	Motor Spirit (MS)	3030 KL
iii)	Kerosene (SKO)	3781 KL
iv)	Ethanol	100 KL

b) Scenarios of **BLEVE** is not got analysed by the factory from the Competent Person. Only **Pool Fire** at different locations are analysed. In this case, maximum credible loss scenario, due to failure of tank and pipe line (Not Exactly identified) is as under.

	Radiative Flux (KW/M2)	Distance (M)
i)	37.5	81

ii)	12.5	140
iii)	4	247

Risk of Peak Over Pressure with Distance is not analysed for different scenarios by the factory.

**3.5 Rajarambapu Patil Sahakari Sakhar Karkhana Ltd, Rajarambapu Nagar, Post Sakharale, Tal Walwa, Dist Sangli.**

a) **Hazardous Storage Quantity.**

i)	Alcohol	3665.799 M.T
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**3.5. MSDS for Hazardous Chemicals are enclosed as Annexure – I.**

**4. DIRECTION AND CONTROL.**

**4.1. ORGANISATION ROLES & RESPONSIBILITIES**

**(DISTRICT CRISIS GROUP – DCG)**

This is the apex body for crisis management and is headed by the **DISTRICT COLLECTOR**. The Collector is assisted by members as under.

- Superintendent of Police.
- Civil Surgeon at Civil Hospital.
- Chief Medical Officer. (ZP).
- Chief Fire Officer.
- Public Relations Officer.
- Regional Officer, Pollution Control Board.
- Representative of the concerned industrial Unit.
- City Engineer.
- Deputy RTO Sangli.
- Deputy Director, Industrial Safety & Health, Sangli.(Member Secretary)

The Chairman may co-opt any other officer depending upon the situation for each member of the DCG there is an alternate member. The telephone numbers and addresses of each members are given in list.

The task of the DCG are as under.

1. To exercise board control over emergency operations.
2. To give guidance on matter of basic policy.
3. To provide official information and instruction to the public.
4. During normal times review the operational preparedness and take appropriate measures to rectify the defects.
5. To co-ordinate inter zone emergency response.

#### 4.2. **DUTIES OF DCG MEMBER.**

The duties of the DCG members are given as below.

##### 4.2.1. **DISTRICT COLLECTOR.**

- As Chairman of DCG implement the plan.
- Exercise board control on emergency operation
- Give guidance/decision on matters of basic policy.
- Review operational preparedness of Corporation emergency machinery.
- Hold periodic mock up/training exercise to ensure optimum operational preparedness. If necessary, invoke help from the Army, the Air Force, the Government and any private industries in the area.
- Develop off-site scenarios based On-Site Plans of the industries.
- Relief Operation.

##### 4.2.2. **SUPERINTENDENT OF POLICE.**

- Maintain law and order.
- Regulate traffic.
- Control entry to the emergency area.
- Security arrangements at each industrial unit.
- Protect vital installations.

- Assist in warning public about the emergency.
- Assist in evacuating and sheltering.
- Protect evacuated area.
- Assist emergency services in the performance of their duties.

#### **4.2.3. CIVIL SURGEON/D.H.O.**

- First aid arrangement and availability of On-Site requirement of industries.
- Set up mobile First Aid Posts at Assembly Points.
- Mobilization of emergency medical and health service at Causality Clearance Centres and Base Hospitals.
- Public Health Service at Reception Centres.
- Medical supply of antidotes, special medicines and life saving drugs.
- Corpse disposal service.
- Co-opt voluntary organisation like Rotary Clubs & Lions Clubs.
- Prepare Plan for Health & Medical.
- Training to Medical team & Hospital staff for emergency response.

#### **4.2.4. Dy. DIRECTOR, INDUSTRIAL SAFETY & HEALTH, SANGLI.**

- Ensure On-Site Plans of Industries are submitted.
- Visit industries to see that safety norms are being followed.
- Ensure development of On-Site Plans, Examination of risk.
- Evaluation study and Safety Audit.
- Ensure frequency of Safety Audit and Fire & safety Mock Drills.
- Assist the Collector in developing off-sites scenarios.
- Ensure Safety Education, Safety awareness.
- Pre-emergency & post emergency Task.

#### **4.2.5. CITY ENGINEER.**

- Organise Reception Centres at Assembly Points.
- Co-ordinate resource of voluntary organisation.
- Prepare Plan for the Public Work.

- Assist to prepare Plan to Sub-Regional Officer MPCB of containment & Clean-up.

#### **4.2.6. CHIEF FIRE OFFICER.**

- Mobilisation of all fire fighting units from various source.
- Training of fire service personnel in chemical disaster operations.
- Stocking of special fire fighting agents and equipment for chemical emergencies.
- Adequacy of fire fighting/control measures at each industrial location.
- Work out Mutual Aid Arrangement in the cluster.
- Prepare Plan for Human Service required for the emergency response.
- Formulate Chain of Command among the Fire Fighters.
- Prepare Plan for Response Personal Safety.
- Prepare Plan for Fire & Rescue.
- List out Tasks of the Fire Fighters.

#### **4.2.7. DEPUTY CONTROLLER, CIVIL DEFENCE.**

- Function as operations officer.
- Assist District Emergency Authorities in evacuation, medical, rescue activities.

#### **4.2.8. PUBLIC RELATIONS OFFICER.**

- Spokes person for media news on behalf of the Administration of District/Corporation.
- Responsible for dissemination of information to public.
- Establish media Centres.
- Ensure pre-emergency education/information to public at large.

#### **4.2.9. SUB-REGIONAL OFFICER, MAHARASHTRA POLLUTION CONTROL BOARD.**

- Monitor extent and quantum of pollution during the crisis.
- Declare hazardous area safe for re-occupation by population.
- Prepare Plan for the Containment & Clean-up.
- Prepare Plan for On-going incident assessment.



**4.2.10. DEPUTY R.T.O.**

- Ensure strict enforcement of regulations laid down to improve safety in transportation of hazardous substances.
- Organise transportation arrangement for evacuation.
- Ensure TREMCARD is available in the tankers, transporting hazardous chemicals.
- Divert tankers transporting hazardous chemicals in association with traffic police, in case of Disaster, Ganesh Chaturthi/Chaturdashi or any other festivals or mass gathering to safer transport routes.
- Give Training to Tanker Drivers in respect of the hazards during the chemicals transportation in consultation with industries.

**4.2.11. INCIDENT COMMANDER.**

The Incident Commander is responsible for incident activities including the development and implementation of strategic decisions and for approving the ordering and releasing of resources.

- Obtain incident briefing from Past incident commander.
- Assess incident situation.
- Conduct initial briefing.
- Activate elements of the incident command system.
- Brief command staff and section chief.
- Ensure planning meetings are conducted.
- Approve & authorise implementation of incident action plan.
- Determine information needs and inform command personnel of needs.
- Co-ordinate staff activity.
- Manage incident operations.
- Approve requests for additional resources and requests for release of resources.
- Approve the use of trainees on the incident.
- Authorise release of information to news media.
- Ensure incident Status Summary is completed and forwarded to Emergency Control Centre (ECC) and dispatch Centre (s).
- Approve Plan for demobilisation.

#### 4.2.12. **DISTRICT INFORMATION OFFICER.**

The information officer, a member of the command staff is responsible for the formulation and release of information about the incident to the news media and other appropriate agencies and organisations.

- Obtain briefing from incident commander.
- Contact the jurisdiction agency to co-ordinate public information activities.
- Establish single incident information centre whenever possible.
- Arrange for necessary work space, materials, telephones and staffing.
- Prepare initial information summary as soon as possible after arrival.
- Observe constraints on the release of information imposed by incident commander.
- Obtain approval for release from incident commander.
- Release news to news media and post information in command post and other appropriate locations.
- Attend meetings to update information releases.
- Arrange for meetings between media and incident personnel.
- Provide escort service to the media and VIP's.
- Provide fire retardant clothing for media and VIP's.
- Respond to special requests for information.
- Maintain and Submit all records and logs.

#### 4.2.13. **CHIEF EXECUTIVE OFFICER.**

- Act as Alternate Leader, Liaison Officer, Agency Chief, in disaster.
- Check in at the incident command post. Ensure that an agency resource have completed check-up.
- Obtain briefing from liaison officer or incident commander.
- Establish working location. Advise agency personnel on the incident that the agency representative position has been filled.
- Attend planning meetings as required.
- Provide input on use of agency resources if no resource use advisors are assigned.

- Co-operate fully with incident commander and general staff on agency's Involvement at the incident.
- Oversee the well being and Safety of agency personnel assigned to incident.
- Advise liaison officer of any special agency needs or requirements.
- Determine, if any special reports or documents are required.
- Report to agency dispatch or headquarters on prearranged schedule.
- Ensure that all agency personnel and/or equipment is properly accounted for and released prior to your departure.
- Ensure that all required agency forms, reports, and documents are completed prior to your departure from the incident.
- Have debriefing session with liaison officer incident commander prior to departure.

#### 4.3.14. **GENERAL MANAGER TELEPHONES.**

The Communication unit officer under the direction of the Chief Fire Officer is responsible for developing plans for the effective use of incident communications equipment and facilities, installing & testing of communication and equipment; supervision of the Incident communications Centre; distribution of communication equipment to incident personnel; and the maintenance and repair of communications equipment.

- Obtain briefing from Chief Fire Officer.
- Determine unit personnel needs.
- Advise on communication capabilities and/or limitations.
- Prepare and implement the Incident Radio communication plan.
- Ensure the Incident Communications Centre and Message Centre are established.
- Set up the telephone and public address systems.
- Establish appropriate communication distribution and/or maintenance locations within the base and/or map.
- Ensure Communications systems are installed and tested.
- Ensure and equipment accountability system is established.

- Ensure personal portable radio equipment from cache is distributed per radio plan.
- Provide technical information as required on :
  - Adequacy of communication system currently in operation.
  - Geographic limitation on communications systems.
  - Equipment capabilities.
  - Amount and types of equipments available.
  - Anticipated problems in the use of communication's equipment.

**4.2.15. RAILWAYS : STATION MASTER,**

- Ensure availability of local trains in case of evacuations.
- Rail traffic Control in Emergency.

**4.2.16. DIV.CONTROLLER – MSRTC.**

- Ensure availability of Buses in case of evacuations.

**4.2.17. EXECUTIVE ENGINEER MSEB.**

- Ensure electricity supply to all MAH units, streets, Police stations, Fire brigades.
- Emergency Control Centre & other offices of emergency response personnel.

**4.2.18. DISTRICT SUPPLY OFFICER.**

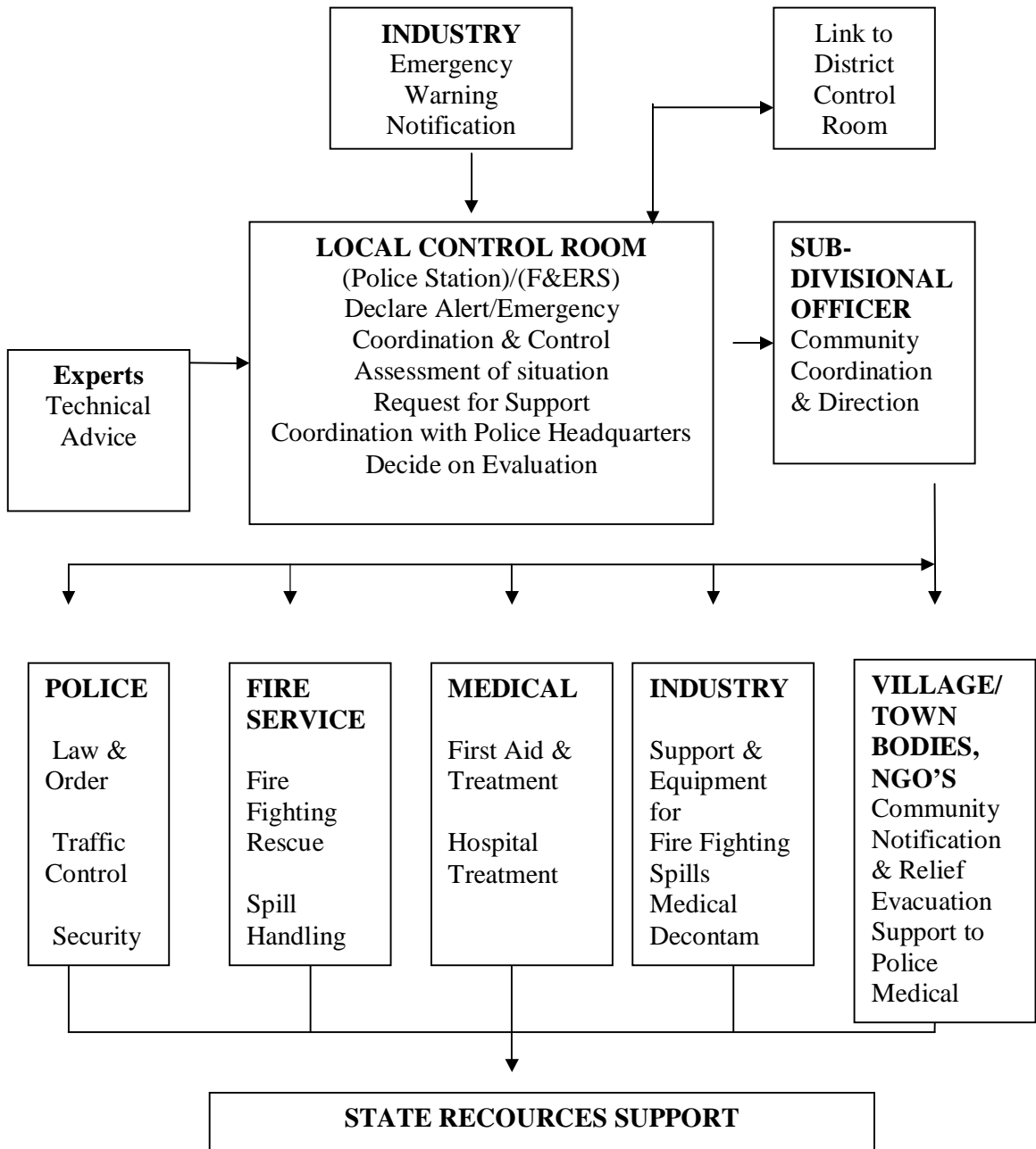
He is responsible for determining feeding requirements at all incident facilities, menu planning, determining cooking facilities required and general maintenance of the food service areas.

**4.2.19. EXECUTIVE ENGINEER – PWD.**

- Report and obtain special instructions from COLLECTOR.
- Participate in the development of the Incident Action Plan, and review general control objectives including alternative strategies presently in effect.
- Collect and validate water resource information within the incident actions.
- Prepare information on available water resources.
- Establish water requirements needed to support fire suppression actions.

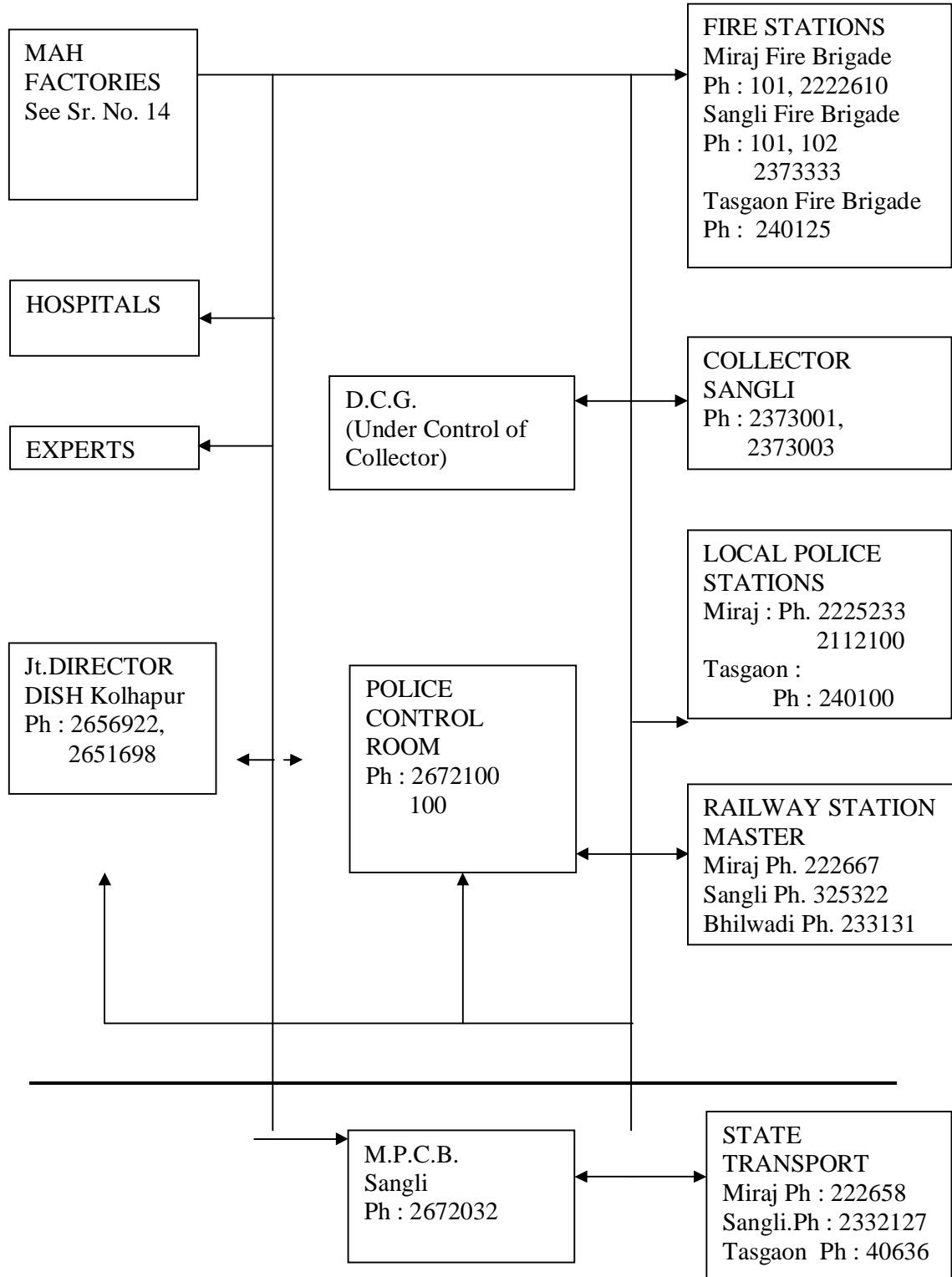
- Compare incident control objectives as stated in the plan with available water resources and report inadequacies or problems to local authority.
- Participate in the preparation of Incident Action Plan when requested.
- Respond to requests for water Information. Collect and transmit records and logs to documentation unit at the end of each operational period. Maintain and Submit all records and logs.

4.2.20. **COMMAND STRUCTUE.**



4.2.21. COMMUNICATION AMONG RESPONDERS.

AREA COMMUNICATION CHART



## 5. **EVACUATION PLAN**

In a disaster situation, evacuation from hazardous areas may be the most effective way to obviate casualties. It is a complex exercise requiring multidisciplinary inputs. A comprehensive and coordinating preplanning is necessary to implement orderly evacuation of population. The weather conditions obtained through the meteorological department would dictate to a large extent the area to be evacuated.

On hearing the disaster warning the population should quickly move to the assembly area as announced on the public address system and should wait for the transportation facility. If assembly area is not announced then they should move out of the threatened area at the right angle to the prevailing wind away from the industrial area. Those personnel who cannot move out of their homes are advised to stay indoors and cover their noses with the wet cloth.

Following steps would be taken before the crisis by the DCG.

- Public information and education on measures for chemical hazardous.
- Installations of siren or Remote public address system in likely affected area.
- Formulations of detailed contingency plan of evacuation.
- Working out evacuation plan of sensitive areas like Jail prisoners, Mental/other hospitals, schools, bus stations etc.

### 5.1. **FIRE & RESCUE**

#### 5.1.1. **Planning Team.**

- \* Chief Fire Officer-Sangli-Miraj-Kupwad Corporation.
- \* Fire Officer - Miraj.
- \* Fire Officer – Tasgaon.



### 5.1.2. NAME & TELEPHONE NOS. OF FIRE STATIONS.

Ser No.	Name of Fire Station	Telephone No.
1.	Main Fire Station, Sangli	101,102,2325612, 2373333, 9822185922
2.	Fire Station No. 4, Miraj	101,2223300, 2223301, 9822185923
3.	Fire Station, Tasgaon	242125, 240620, 240143

### 5.2. RESOURCES FOR CLEAN-UP AND DISPOSAL.

#### 5.2.1. CONTAINMENT AND CLEAN-UP.

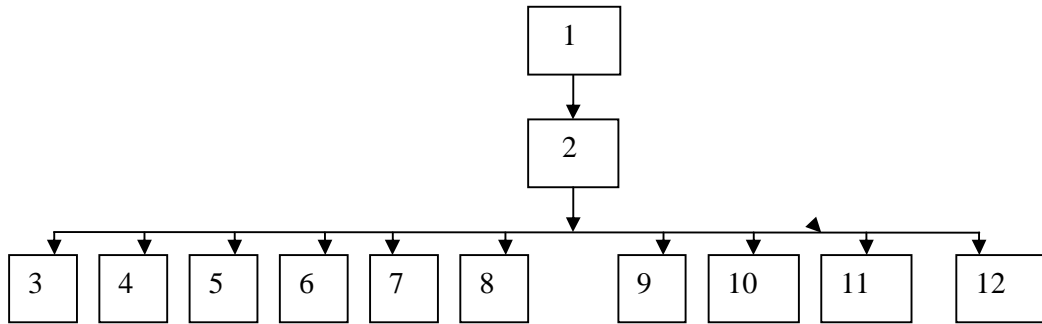
##### Planning Team.

- Regional Officer MPCB – In charge.
- Chief Medical Officer, Sangli.
- Executive Engineer – PWD.
- Fire Officer Miraj & Tasgaon.
- Dy. RTO Sangli.
- District Agriculture Officer.
- Sub-Divisional Officer.
- Expert from MAH Industries.
- NGOs.
- District Sports Officer.
- S.P. Sangli.
- Rep. of Transport Contractors.

### 5.3. TECHNIQUES FOR SPILL CONTAINMENT AND CLEAN-UP FACTORS.

<b>Actions</b>	<b>Responsibility</b>
Containment and mitigation actions	DCG
Clean-up Methods	DISH, MPCB, CCE, RTO
Re-storation of the surroundings environment.	Collectorate
Clean-up/disposal-Contractors & Services Provided.	PWD
Communication equipment.	PWD
Provision for long-term site control during extended cleanups.	PWD
Emergency transportation (e.g. aircraft, vehicles)	PWD
Cleanup Personnel.	PWD
Personal protective equipment	Industries/DCG.
Approved disposal sites.	PWD

5.4

**CHAIN OF COMMAND**

<b>Ser No</b>	<b>Authority</b>	<b>Function</b>
1.	District Collector, Sangli.	Overall I/C of District
2.	SDO-Miraj, Vita, Walwa.	Overall I/C of Sub division
3.	District Information Officer	Public Information
4.	PRO Sangli	Community Relations
5.	Chief Fire Officer, Sangli.	Manpower, Fire & Rescue & Response Personal Safety.
6.	Chief Medical Officer, Sangli	Health & Medical
7.	City Engineer, Sangli	Public Works
8.	Sub-Regional Officer MPCB, Sangli	On-going Incident Assessment & Containment/Clean-up.
9.	General Manager, Telephones, Sangli	Communication
10.	S.P. Sangli.	Rescue, Transport & Relief.
11.	Dy. RTO, Sangli	Transport Routes
12.	Dy. Director, DISH Sangli	Updating & Testing of the Plan

**FACILITIES & RESOURCES AVAILABLE.****ANNEXURE - 1****REVENUE DEPARTMENT.**

<b>Sr No</b>	<b>Faci- lity</b>	<b>Locat- ion</b>	<b>Authority</b>	<b>Phone No</b>	<b>Alternate Authority</b>	<b>Phone Nos</b>	
1.	Car-1	Sangli	Collector	O-2373001 R-2373063 9423037499	RDC	O-2326824 R-2323195	
2.	Car-1	Sangli	Additional Collector	O-2372889 R-2377676 9922889981			
3.	Jeep-1	Sangli	Dist Supply Officer	O-2373512 R-2373548 9689993035	Asst. Dist Supply Officer		
4.	Jeep-1	Sangli	Dist Resettle ment Offr	O-2376019 9975532173			
5	-	Sangli	Dist Election Officer	O-2326200			
6.	Jeep-1	Sangli	Dy Collector E.G.S	2373707 8975411908			
7.	Jeep-1	Sangli	Dist Planning Officer	2373525	Asst Dist Planning Officer	2374513	
8.	Jeep-1	Miraj	Sub Div Officer Miraj	2222683 2222904 9423284888			
9.	Jeep-1	Walwa	Sub Div Officer Walwa	(02342) 222673 9423232559			
10.	Jeep-1	Vita	Sub Div Officer Khanapur	(02347) 272777 9881002321			
11.	Jeep-1	Palus	Sub Div Officer Palus	(02346) 226888 9049200841			
12.	Jeep-1	Kadegaon	Sub Div Officer Kadegaon	(02347) 243122 9767072331			
13.	-	Sangli	Dy.	2323128			

			Collector Urban Land Ceiling				
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6.2.

**ANNEXURE-II****FIRE-BRIGADE.**

<b>Ser No</b>	<b>Name of Fire Station</b>	<b>Name</b>	<b>Phone No</b>	<b>No. of Staff</b>	<b>No. of Tenders</b>
1.	Main Fire Station, Behind Bhide Mangal Karyalaya, Timber Area, Sangli	Shivajirao Dudhal	101, 102 2373333		1
2.	Chief Fire Officer, Fire Station No 1, Revani Road, Sangli	K.G. Sagaonkar	2325612 2373333		1
3.	Fire Station No. 2 Near RTO Office, Madhavnagar, Sangli		2310500		1
4.	Sub-Fire Officer, Fire Station No 4, Mali Market, Near Corporation Building, Miraj	Srikant Waghmare	101 2222610		1
5.	Krishna Valley Chamber of Industries and Commerce, MIDC Kupwad.		264001 265001		1
6.	Fire Station, Tasgaon, Near Parishad, Tasgaon		(02346) 240143, 240125		1
7.	Fire Station, Islampur, Near	Sahebrao Jadhav	(02342) 223398,		1

	Parishad, Islampur		222159,		
8.	Fire Station, Ashta, Near Parishad, Ashta	R.M. Kamble	(02342) 242163		1
9.	Kranti Sahakari Sakhar Karkhana Ltd Kundal				1
10	Rajarambapu Patil Sah. Sakhar Karkhana Ltd, Sakharale				
11	Kirloskar Brothers Ltd, Kirloskarwadi				
12	Cane Agro Engry Ltd, Raigaon				
13	Jollyboard Ltd Deshing				
14	Shri Dutt Sugar Mills, Shirol				
15	Jaysighpur Nagar Palika				
16	Sonhira Sah. Sakhar Karkhana Ltd, Kadegaon				

6.3.

**ANNEXURE-III****POLICE DEPARTMENT.**

Ser No	Designation of Incharge Officer	Name	Phone Nos.	No. of Staff Available	No. of Vehicles Available
1.	Supdt of Police	D.T. Shinde	2672323 R-2671221	4	2
2.	Addl. S.P Sangli	Krishakant Upadhyay	2672550 R-2672018	4	1
3.	Dy. SP. (Home)	B.B. Patil	2671042 9823219999	2	1
4.	S.D.P.O. Sangli City	D.S. Patil	2377744, R-2671577	3	1

5.	S.D.P.O Jath	NP Wakude	(02344) 247900		
6.	S.D.P.O. Tasgaon Vita	K.M. Pingale	(02346) 242200		
7.	S.D.P.O. Islampur	V.V. Shinde	(02342) 222059		
8.	L.C.B. Sangli		2673853	34	1
9.	P.I.D.S.B		2671696	15	1
10.	P.I.S.B.			3	-
11.	Control Room Sangli	MS Kumbhar	2672100, 9422374368	43	2
12.	P.C.R. Sangli		2671012	2	0
13.	P.I. Sangli City	S.M. Awate	2373033, R-2373933	142	3
14.	P.I. Miraj City	RP Kunte	2212100 R-2225233	116	4
15.	P.I. Vishrambag	A.K. Chormale	2370033 R-2670197	31	1
16.	A.P.I. MIDC Kupwad	A.A. Bhawad	2644333 R-2232033	31	1
17.	P.I. Sangli Rural	P.D. Jadhav	2373252 9923400427	42	1
18.	P.I. Miraj Rural	RD More	2232133 9923112661	53	1
19.	S.D.P.O. Miraj	D.S. Patil	2222539 R-223568	-	-
20.	P.I. Kavathe Mahankal	M.S.H. Inamdar	(02341) 222033	43	1
21.	P.I. Jath	S.D. Pingle	(02344) 246233	47	1
22.	P.S.I.Umadi	G.S. Waghmode	(02344) 228033 9623411002	32	1
23.	P.S.I. Kurlup	SC Kamble	(02342) 255533	25	1
24.	P.I. Tasgaon	AM Kadam	(02346) 240100	63	1
25.	P.S.I. Kundal	BD Dhere	(02346) 271111	20	1

26.	P.I. Islampur	PV Mankar	(02342) 222033	59	2
27.	P.I. Ashta	PD Poman	(02342) 242033	38	1
28.	P.I. Shirala	AV Gujar	(02345) 272133	31	1
29.	P.S.I. Kokrud	BP Shinde	(02345) 224133	33	1
30.	P.S.I. Kasegaon	NP More	(02342) 239233	20	1
31.	P.I. Vita	MT Jadhav	(02347) 272633	49	1
32.	P.S.I. Kadegaon	AB Londhe	(02347) 242233	18	1
33.	P.I. Atpadi	SG Shelar	(02343) 220233	31	1
34.	P.S.I. Palus	JY Patil	(02346) 228100		
35.	P.I. Bhilwadi	RA More	(02346) 237233		
36.	P.S.I. Chinchani	MP Sonwalkar	(02347) 235100		



6.4.

**ANNEXURE-IV.****MEDICAL RESOURCES.**

Sr No	Name of Incharge	Name of Hospital	Phone Nos.		No of Doctor	No. of Staff	No. of Beds
			Office	Resi			
1.	M.B. Sangle	GH Sangli	237465	2374654	20	619	388
2.		PHC Arag	264428	-	2	22	6
3.		PHC Mhaisal	251260	-	2	22	6
4.		PHC, Belanki	263628	253284	2	27	6
5.		PHC Erandoli	269528	331017	2	21	6
6.		PHC Bhose	257244	302340	2	21	6
7.		PHC Kavthepiran	485432	324880	1	29	6
8.		PHC Kavalapur	464258	310129	2	22	6
9.		PHC Nandre	473203	-	2	29	6
10		PHU Malgaon			1	8	-
11		MH Miraj	223291	-	-	-	-
12		PHC Chinchani	-	-	1	23	6
13		PHC Hatnur	253045	254014	2	23	6
14		PHC Waiphale	-	-	2	21	6
15		PHC Sawalaj	254049	254222	2	23	6
16		PHC Manerajuri	265148	254519	2	22	6
17		PHC Manjarde	252244	250085	2	21	6
18		PHC Yelavi	239241	-	2	8	6
19		PHU Savarde	-	-	1	8	-
20		RH C Wangi	245525	-	3	28	30
21		RH Palus	226211	-	1	9	30
22		RH Tasgaon	240657	-	1	9	30
23		PHC Shirala	272149	-	2	23	6
24		PHC Shirasi	272135	-	2	27	6

.								
25		PHC Sagaon	225145	225167	2	23	6	
.								
26		PHC Kokrud	224153	-	2	23	6	
.								
27		PHC Charan	223939	-	2	17	6	
.								
28		PHC Mandur	226212	-	2	19	6	
.								
29		PHC Mangle	224663	-		2	6	
.								
30		RH Shirala	223149	-	3	28	30	
.								
31		PHC Bavachi	249053	237592	2	23	6	
.								
32		PHC Borgaon	-	-	2	19	6	
.								
33		PHC Bagani	246758	-	2	20	6	
.								
34		PHC Walwa	-	237645	2	23	6	
.								
35		PHC Yade- machindre	235288	235007	2	22	6	
.								
36		PHC Kurlup	255536	255655	2	27	6	
.								
37		PHC Yelur	235581	-	2	23	6	
.								
38		PHC Kameri	253640	-	2	18	6	
.								
39		PHC Peth	252006	-	2	21	6	
.								
40		PHC Nerle	-	-	2	25	6	
.								
41		PHC Kasegaon	237256	-	2	14	6	
.								
42		RH Islampur	223158	-	3	28	30	
.								
43		PHC Kadegaon	242346	-	2	21	6	
.								
44		PHC M. Vadgaon	252085	-	2	23	6	
.								
45		PHC Kherade Wangi	241543	-	2	21	6	
.								
46		PHC Hingangaon	-	-	2	19	6	
.								
47		PHC Borgaon	226211	262779	2	25	6	

48		PHC Kundal	226277	226076	2	23	6	
49		PHC Bhilvadi	232135	372080	2	23	6	
50		PHC, Vita	273638	-	2	35	6	
51		PHC Vajegaon	246537	-	2	35	6	
52		PHC Khanapur	257169	273278	2	29	6	
53		RH, Vita	273275	-	3	28	30	
54		PHC, Atpadi	222308	222053	1	21	6	
55		PHC, Didhanchi	226312	-	2	22	6	
56		PHC Kargani	224693	-	2	23	6	
57		PHC, Kharsundi	226670	-	2	24	6	
58		RH Atpadi	222308	-	3	28	30	
59		PHC Madgyal	283527	-	2	31	6	
60		PHC, Umadi	288183	-	2	31	6	
61		PHC, Sunkh	287023	287138	2	21	6	
62		PHC, K.Boblad	287931	-	2	19	6	
63		PHC Jath/ Valsung	246229	-	2	21	6	
64		PHC, Billur	284139	-	2	21	6	
65		PHC, Shegaon	283039	-	2	25	6	
66		PHC, Daflapur	282146	-	2	21	6	
67		RH, Jath	246288	247290	2	29	30	
68		PHC, Dhalgaon	245531	-	2	27		
69		PHC, Agalgaon	243049	-	2	26		
70		PHC, Deshing	248023	-	2	23		
71		PHC, Ranjani	244227	-	2	25		
72		Rural Hosp, Kavathe Mahankal	222047	222115	3	24		

6.5.

**ANNEXURE-V****LIST OF DCG MEMBERS.**

Sr. No.	Name and Designation	Phone Office	Phone Resi.	Post Held in DCG
1.	Shri. Shekhar Gaikwad, District Magistrate, Chairman,	2373001	9423037499	Chairman
2.	Shri.Ravindra Khebukar Commissioner-Municipal- Corporation	2323167		Member
3.	Dr.M.B. Sangale Civil Surgeon, Sangli.	2374651	2374654	Member
4.	Shri. R.S. Hankare, D.H.O. – Z.P.	2373032	9422618468	Member
5.	Shri. Subhash Borkar, Sub-Div. Officer, Fort, Miraj	2222683	9423284888	Member
6.	Shri. Sachin Ethape Sub.Div.Officer, Vita.	(02347) 272777	9881002321	Member
7.	Shri D.T. Shinde, Supdt of Police, Sangli	2672323	2671221	Member
8.	Shri. S.M.Dudhal, Chief Fire Officer, Sangli	2373333	9822185923	Member
9.	Shri. Srikant Waghmare, Dy. Chief Fire Officer, Miraj	2222610	9922507426	Member
10.	Shri. Sampada Bidkar, Dist. Info Officer, Sangli	2373059	9421394587	Members
11.	Shri. L.S. Bhad Sub Regional Officer, M.P.C.B.	2672032	7588048223	Member
12.	Shri. Dashrath Wagule Dy. R.T.O. Sangli	2310555	9769927804	Member
13.	Shri. R.J. Bhosale Dist. Agri. Officer – ZP Sangli	2372718	9404448291	Member

14	Sarpach, Hazarwadi.	2325787	2323659	Member
14.	Chairman, Sarva Shramik Sangh Nr. Damani High School, Chandani Chowk, Sangli	231505		Member
15.	Chairman, Sarva Shramik Sangh.	2325405	-	Member
	Shri. Pravinchan Lukad. Chairman, Krishna Valley Chamber of Industries & Commerce, MIDC Kupwad	2644524		
17.	Jt.Chief Controller of Explosives, West Circle, A- 1/A-2 Wing, CBD Belapur, Navi Mumbai-14	(022) 27575946 27573081	-	Member
18.	Shri. P.P. Mahadik, Sr.Depot Manager, IOCL, Miraj	2211216 2211729	-	Member
19.	Shri. D.B. Thakur, Depot Manager, BPCL, Miraj	2211707 2211990	-	Member
20.	Shri. V.G. Rai. Depot Manager, HPCL – IRD, Hazarwadi, Sangli	233152 233393	-	Member
21.	Shri. G.K. Patel, Plant Manager, HPCL – LPG, Hazarwadi, – Sangli	233121 233138	-	Member
22	Shri. R.D. Mahuli Manager, Rajarambapu Patil Sah. Sakhar Karkhana		-	Member
22.	Shri. A.M.Avasare, Dy. Director, Industrial Safety & Health, Sangli.	2672359	9423237345	Member Secretary

6.6.

**ANNEXURE – VI****LIST OF EXPERTS**

Ser No	Designation	Name of the Institution	Phone No Office/Mob	Field of Experts
1.	Head of The Department	Padm. Vasantdada Patil Institute of Technology Budhagaon, Sangli	9890156076	Chemical Engineering
2.	Director	Institute of Chemistry	9850010123	Chemistry
3.	Depot Manager	Bharat Petroleum Corporation Ltd, Miraj	9579447665	
4.	Depot Manager	Indian Oil Corporation Ltd, Miraj	9422616123	
5	Depot Manager	Hindustan Petroleum Corporation (IRD) Bhilwadi	9011065340	
6	Depot Manager	Hindustan Petroleum Corporation (LPG) Bhilwadi	7720036186	

## Annexure – I

### Material Safety Data Sheet (MSDS) for MS

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#### A. Identification

CAS No.	: Not Available.
Typical Composition	: Blend of paraffin's, Naphthenes, aromatics & olefins
Characteristics	: Orange to bronze in appearance, Liquid with perceptible odor, immiscible in water, Lighter than water.

#### B. Physical Properties.

Specific Gravity	: 0.72 (Range)
Boiling Point	: 25 degree C to 225 degree C (Variable with season & location)
Flash Point	: -45 degree C.
Auto Ignition Temp	: 280 to 429 degree C.
Vapor Pressure	: 0.35-1.05 Kgf/cm <sup>2</sup> (max) @ 37 degree C.
Vapor Density	: 3 to 4 (Range) (Air = 1)
Percent Volatile	: 99+
Flammability Limits	: Lower (LEL) = 1.4%; Upper (UEL)=7.4%
Category	: Class A (Flash Point < 23 degree C)
Reactivity	: On exposure to thermal energy & light, it is stable. Incompatibility with strong oxidizers. Normal combustion forms CO <sub>2</sub> & water. Incomplete combustion can produce Carbon Monoxide (CO).

**C. Fire/Explosion Hazards.**

This oil presents an extreme fire hazard. Liquid evaporates very quickly, even at low temperatures, and forms vapor which can catch fire & burn with explosive violence. Invisible vapor is heavier than air & spreads along the ground (that is why more susceptible to meet with an ignition source). It can be set on fire by many sources such as pilot lights, welding unit, and spark from electrical motors & switches. Heating can cause pressure rise with risk of bursting & subsequent explosion.

Fire Fighting : Foam, carbon dioxide, dry chemical powder, halones or water sprays/fog to be used.

**D. Health Hazards.**

IDLH	: 5000 ppm.
TLV/TWA	: 300 ppm.
Target Organs	: Respiratory system, Eyes, Skin.
Pathway	: Inhalation, Ingestion, Skin & Eye contact.
Symptoms	: Lightheadedness, drowsiness, irritation in eyes, nose, skin, dermatitis.

**E. First Aid.**

- Eye - If this chemical contact the eyes, immediately wash the eyes with large amount of water, occasionally/lifting lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.
- Skin - If this chemical contacts the skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly.



- Breath - If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.
- Swallow - If this chemical has been swallowed, get medical attention immediately. Do not make person vomit.

### **Material Safety Data Sheet (MSDS) For SKO**

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#### A.. Identification.

- CAS No. : 8008-20-6  
Typical Composition : Blend of aromatics & olefins  
Characteristics : Colorless liquid, insoluble in water,  
Lighter than water.

#### B. Physical Properties.

- Specific Gravity : 0.76 (Range)  
Boiling Point : 180 to 250 degree C (Variable  
with season & location)  
Flash Point : 21 degree C to 55 degree C.  
Auto Ignition Temp : 254 degree C.  
Vapor Density : 4.5 (Air = 1)  
Category : Class B (23 degree C < F.P. > 65  
degree C)  
Reactivity : Stable under normal storage  
conditions. Incomplete  
combustion can produce Carbon  
Monoxide.

C.. Fire/Explosion Hazards.

This oil presents a moderate fire hazard. The vapor is invisible, heavier than air and spreads along the ground. Heating can cause pressure rise with risk of bursting and subsequent explosion.

Fire Fighting : Foam, carbon dioxide, dry chemical powder, halones or water sprays/fog to be used.

D. Health Hazards.

IDLH : Not Available.  
TLV/TWA : 200 ppm.  
Target Organs : Eyes & Skin.  
Pathway : Inhalation, Ingestion, Skin & Fie contact.  
Symptoms : Irrigation in skin, nose & eyes,  
headache.

E. First Aid.

Eye - If this chemical contact the eyes, immediately wash the eyes with large amount of water, occasionally/lifting lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.

Skin - If this chemical contacts the skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly.

Breath - If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped perform mouth-to-mouth resuscitation. Keep the affected erson warm and at rest. Get medical attention as soon as possible.

Swallow - If this chemical has been swallowed, get medical attention immediately. Do not make person vomit.

### **Material Safety Data Sheet (MSDS) for HSD**

---

#### A. Identification

CAS No. : Not Available.  
Typical Composition : Mixture of aromatics & olefins.  
Characteristics : Pale yellow oily liquid with odor, insoluble in water.

#### B. Physical-Properties.

Specific Gravity : 0.82 (Range)  
Boiling Point : 225 to 300 degree C (Variable with season & location)  
Flash Point : 55 degree C to 100 degree C.  
Auto Ignition Temp : 277 degree C.  
Flammability Limits : Lower (LEL) : 1.3%; Upper (UEL) : 6%  
Category : Class B (23 degree C < F.P. > 65 degree C)  
Reactivity : Stable under normal storage conditions. Incomplete combustion can produce Carbon Monoxide.

#### C.. Fire/Explosion Hazards.

This oil presents a moderate fire hazard. Heating can cause pressure rise with risk of bursting and subsequent explosion. Can form explosive mixture with air particularly in empty containers.

Fire Fighting : Foam, carbon dioxide, dry chemical powder, halones or water sprays/fog to be used.

D. Health Hazards.

IDLH : Not Available.  
TLV/TWA : Not Available.  
Target Organs : Respiratory system, CNS.  
Pathway : By Inhalation.  
Symptoms : Lightheadedness, drowsiness, Irrigation  
in eyes, nose, skin, dermatitis, vomiting.

E. First Aid.

Eye - If this chemical contact the eyes, immediately wash the eyes with large amount of water, occasionally/lifting lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.

Skin - If this chemical contacts the skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly.

Breath - If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.

Swallow - If this chemical has been swallowed, get medical attention immediately. Do not make person vomit.

## Material Safety Data Sheet (MSDS) For Ethanol

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### A. Identification

CAS No. : 64-17-5.  
Typical Composition : Mixture of aromatics & olefins.  
Characteristics : Colorless liquid with Alcohol odor, soluble in water, miscible with chloroform & ether.

### B. Physical Properties.

Specific Gravity : 0.7893.  
Boiling Point : 78.32 degree C.  
Flash Point : 17.8 degree C (OC).  
Auto Ignition Temp : 422.7 degree C.  
Flammability Limits : Lower (LEL) : 3%; Upper (UEL) : 19%.  
Category : Class A (F.P. < 23 degree C).  
Reactivity : Stable under normal storage conditions. Reacts violently with Acetyl bromide (Evolves hydrogen bromide) Dichloromethane + Sulfuric Acid + Nitrate or Nitrite, Disulfuryl. Tetrachlorosilane + water and strong oxidents..

### C.. Fire/Explosion Hazards.

Forms explosive products on reaction with ammonia + silver nitrate (forms silver nitrite and silver fulminate)

Fire Fighting : Alcohol Foam, carbon dioxide, dry chemical powder, halones be used.

### D. Health Hazards.

IDLH : Not Available.  
TLV/TWA : 1000 ppm.  
Target Organs : Respiratory system, Liver.

Pathway : By Inhalation, Ingestion, Eyes, Skin.  
Symptoms : Lightheadedness, drowsiness, Irrigation  
in eyes, nose, throat skin.

E. First Aid.

Eye - If this chemical contact the eyes, immediately wash the eyes with large amount of water for 15 min, occasionally/lifting lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.

Skin - If this chemical contacts the skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly.

Breath - If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.

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**DISTRICT DISASTER MANAGEMENT PLAN**  
**(FOR CHEMICAL ACCIDENTS)**  
**FOR**  
**SANGLI DISTRICT**  
**(UP DATED TILL JULY 2016)**