

7.2 Risk Assessment: The mining operations involve various types of risks.

Risk : The risk is the chance of something happening that will ultimately have a negative effect on health and safety of the person, as well as material & resources. The risk is measured in terms of likelihood of events & their consequent loss.

Risk : **Likelihood (Probability) x consequence loss.**

7.2.1 Risk from side fall: This is a manual and open pit mine. No drilling and blasting is done. The rocks are soft and benches are vertical. Along the periphery of the mine pit, a 3m wide strip is constantly kept free from loose boulders/stones/other articles to prevent the same from slipping down in the pit and causing injuries.

Prevention from side fall: The mining supervisor are been strictly been instructed to check the mine pit top start of the shift and rock behavior are constantly been monitored.

7.2.2 Possibility of outbreak of fire: This being a small manual mine, the fire hazards are practically nonexistent.

- Sufficient supply of sand, or portable fire extinguishers used as fire fighting arrangement.
- Workers will be regularly trained in fire fighting.

7.2.3 Risk in Storage of Diesel and oil lubricants:

Prevention: The diesel in the mines is being stored in drums and the same will be issued to tractors under supervision of a competent person. Proper fencing of the storage area will be done, fire extinguisher and sand filled buckets will be regularly maintained. No unauthorized person will be allowed.

7.2.4 Vehicle Movement and prevention of accident from vehicles:

Tractor trailers are used for transporting mineral and the speed of these vehicles will be kept within prescribed safe limits.

Environmental Hazard: Dust is a constant hazard in the mining area. The main sources of dust generation.

Dust sources	Dust control measures in mines.
Manual Loading & Unloading	Negligible
Tractor drawn trailer moving on road	Dust suppression by water sprinkling on haul road.

7.2.5 Risk of employment of untrained person: Before being deployed on work, every person will be given vocational training under Mines Vocational Training rules 1966. This practice will ensure safe working in the mines.

7.3 Disaster Management Plan: The aim of disaster management plan is to minimize the adverse effects of a hazard through effective precautionary actions and to ensure timely, appropriate and efficient organization and delivery of emergency response following the occurrence of a disaster.

The pit safety committee (PSC) will be constituted at the mines level consisting of a mine manager and persons with adequate experience in the mines. Safety education & training will be provided to the workers and employees of the mines at regular periodicity.

The pit safety committee will discuss remedial measures for resolving safety problems It will also organize the Mines Safety Week and other safety related competitions.

The mine supervisory officials will be provided first aid kits and they will be required to hold a valid first aid certificate. The telephone numbers of the prominent primary health centers and hospitals in the nearby areas will be prominently displayed on the notice board. An alarm or hooter will also be provided to call all the available staff for help in case of any emergency situation.

7.3.1 Safety Management:

Safety management for mining operations is governed by a very well defined set of rules, regulations framed by Government of India.

Legislative Frame Work: All the operations in every Metalliferrous mines is carried out under the provisions of Mines Act, 1952, Mines Rules and Metalliferrous Mines Regulations.

Safety Policy: Safety of both men and materials is accorded top priority in the mine. A occupational health and safety policy has been framed with the following objectives. In general following measure will be taken:-

- Δ To improve working conditions and environment;
- Δ To propagate safety measures and create safety consciousness among workmen, supervisors and officials;
- Δ To train workmen as well as the supervisors in their respective fields of operations;
- Δ To reduce the scope of accidents and to aim at accident free performance;
- Δ To adopt measures for improvement in occupational health standards;
- Δ To ensure that no adverse effects on health take place due to industrial environment.
- Δ To ensure that all statutory provisions relating to safety are followed.

7.3.2 Proper selection of mining operations:

- Allocate sufficient resources to maintain safe and healthy conditions of work
- Ensure that adequate safety instructions are given to all employees while imparting training under Mines Vocational Training Rules
- Provide, wherever necessary, protective equipment, safety appliances and clothing and to enforce their proper use
- Prevent entry of authorized vehicles in mine premises by establishing check gate at the entrance and maintaining record of entry and exit of vehicles and also check the road worthiness of each vehicle

Table _Statutory and welfare provisions for workers

S. No.		Capital cost		Annual recurring cost	
		Existing	Proposed	Existing	Proposed
1	Canteen	0.0	0.10	0.0	0.40
2	Others (specify)	0.20	0.25	0.10	0.20
	Shoes, Ear mufs/plugs, mask, gloves, helmet provided to 30 workers @1500	0.20	0.25	0.10	0.20
	Total	0.20	0.35	0.10	0.60