RISK ASSESSMENT

The anticipated risks in the mining operations are mentioned below:

Hazard identification and risk analysis: This deal with the hazards associated with various mining works during operation of the mine and can happen due to excavation, handling of material, machinery breakdown electric failures and natural calamities.

It also presents the calculated frequencies of occurrence of different accident scenarios for the identified potential hazard occurrence.

Risk Reducing Measures based on the calculated frequencies and consequences.

7.3 IDENTIFICATION OF HAZARDS

Technological Hazards

Technological hazards may be due to intense noise during excavation / loading, transportation, drilling & blasting etc. fire in the excavator, and road mishap.

Structural failure

Structural failure is associated with the failure of slope, it can be bench fall, slope failure due to undercutting and fall of machinery and workers due to fall of bench/slope, any of the said activity can cause major injury and fatalities.

7.4 SCENARIOS CONSIDERED FOR RISK ASSESSMENT

Knowledge of work

The application of risk assessment depends upon full understanding of all aspects of the job being undertaken. In carrying out a risk assessment in relation to a particular task, the evaluation must include a review of the knowledge, experience and training of those persons carrying out the work.

Personal Competence

It follows that the knowledge, experience and training of personnel involved in work is critical to evaluate any risk assessment. A knowledgeable, experienced well-trained and competently supervised workforce will be at a lower risk of accidents occurring than a poorly trained and badly supervised workforce.

Co-ordination

It is essential that the coordinator ensures that everyone engaged in the work is capable and understands the role of others and their responsibility for each other.

Health hazards

Health hazards are associated with the dust and noise, it is necessary to quantify the key pollutants during surface mining operations that may result into health hazard.

Inundation

The nearest water body is Amjar river which is flowing at a distance of 9.3 km in the NE direction, Ahu Nadi at 6.4 km in SE direction & Psadi Nadi 7.5 km in SW direction from the lease area. There is no possibility of inundation of mine due to this river.

Noise

Noise is considered as a common occupational hazard in mine environment. Prolonged exposure to noise over a period of years may cause permanent damage to auditory nerves and its sensory components (Noise Induced Hearing Loss). In order to avoid Noise Induced Hearing Loss (NIHL) to the operators of the HEMMs, the cabins of these machines will be made sound proof. Also, the operators and other workers working in the high noise generating areas are being provided with ear plugs/ ear muffs to protect their hearing. No worker will be allowed to enter high noise generating areas without wearing proper protection equipment's.

Surface Fire

There are no ignitable materials in limestone deposit. However, the excavator to be deployed in the mine may catch fire. All precautionary measures will be taken to prevent the occurrence of such activity.

Loading

There will be no risk associated with the activity. However, precautions will be required to be taken to remove workers away from the loading operations, to avoid any fall of material on persons. Also, the loading operations will be supervised by a site supervisor for properly guiding the loading machine operator.

Pit Slope Failure

The sides of the mine benches will be suitably sloped to avoid bench failure. The bench height is planned to be kept 6 to 9m with width more than 6m to 9m of the

bench. The bench sides and edges will be regularly inspected for any signs of failure, development of cracks, etc. Due precautionary measures will be adopted to avoid any bench or pit slope failure.

Heavy Vehicles

Proper care will be taken while loading and transportation of mineral and overburden. Good maintenance and regular testing will be done to avoid any mishap.

Personal Protective Equipment (PPE)

The PPE should be of good construction, where ever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particular hazardous dust and maintained to recommended standards.

Traffic Movement

The mining operation will be of small scale and the machinery proposed to be used for mining is less in number, therefore there will be no risk of accidents due to the traffic movement. However, haulage roads will be properly maintained and the speed limits shall be implied on the vehicles plying for mineral transport to avoid accidents.

7.5 DISASTER MANAGEMENT PLAN

The complete mining operation will be carried out under the management control and direction of qualified Mines Manager. The Directorate General of Mines Safety (DGMS), Dhanbad have issued a number of standing orders, model standing orders and circulars to be followed by the mine management:

- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Provision of pumps for pumping out water from the mining pit.
- Entry of unauthorized persons will be prohibited.
- Fire fighting and first aid provision shall be kept in the mines office complex and mining area.
- Safety equipment such as safety boots, helmets, goggles etc. will be made available to the employees and regular checked for their use.
- Training and refresher courses for all the workers.

- Working of mine as per approved scheme and regular updating for the same.
- Regular cleaning of mine faces.
- Regular maintenance and testing of all mining equipment as per manufacture's guidelines.
- Suppression of dust on the haulage roads.
- Increasing the awareness of safe practices through competitions, posters and other similar drive.

OUTLINE OF DISASTER MANAGEMENT PLAN

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormalities in the course of mining activity leading to a serious danger to workers or any machinery or the environment. The main objectives of preparing a disaster management plan in mining project include:

- To protect workers in mine from accident.
- To prevent or reduce the incidence and severity of injury during mining Operations.
- To respond immediately and adequately in case of a serious accident.

First Aid & medical facilities

The mine management will provide first aid facilities for use in emergency situation. All casualties would be registered and will be given first aid. The mine management will provide all facilities to evacuate the injured person from the accident site to the nearby hospital.