MINERAL RESOURCES AND THEIR CONSERVATION

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This article explains about mineral resources of India. Minerals like iron ore, mica, copper, gypsum, bauxite, lead, etc are the non-renewable and exhaustible resources. Minerals in certain areas are on the verge of extinction and hence it is necessary to conserve them.

Introduction

The naturally occurring materials (in form of ore) obtained below the earth's crust having a definite structure and chemical composition are called minerals. Minerals are non-renewable natural resources. A variety of minerals are found in India. Some of them are found on a large scale whereas certain minerals are found on a small scale. In India, mineral resources are being used since ancient times. The use of minerals has increased tremendously after the independence of India. Minerals are used for production of medicines, machines and agricultural activities. Generally, minerals are the raw materials for manufacturing industry. Hence, minerals play a key role in the development of any country. On the basis of properties, minerals are broadly classified into metallic minerals and non-metallic minerals. Manganese, copper, aluminum, zinc, iron, bauxite, gold, lead, etc are metallic minerals. Metallic minerals are mainly occurring in igneous and metamorphic rocks. Diamond, gypsum, mica, kainite, stones, potash, etc are non metallic minerals.

Manganese

Manganese is used in steel industries and in making paints, glass, insecticides, batteries, chemicals, bleaching powder, etc. India stands second in

the reserves of manganese in the world. Manganese ore is exported from India. Generally, manganese ores are located near iron ores. Manganese ore deposits are at Nagpur and Bhandara of Maharashtra, Balaghat of Madhya Pradesh, West Singhbhum of Jharkhand, Udaipur of Rajasthan, Bellary of Karnataka and Srikakulam of Andhra Pradesh. The other states like Gujarat and Goa have also manganese ores.

Iron ore

Iron ore is used in the manufacture of steel and iron. Hematite, limonite, magnetite and siderite are the varieties of iron ore. Iron ore is a basic and important raw material of most of the manufacturing industries. Iron ore mines are found at Bhandara, Chandrapur and Gadchiroli districts of Maharashtra. Some iron ore deposits are in East Singhbhum and West Singhbhum districts of Jharkhand, Dantewara and Durg districts of Chhattisgarh; Chigmagalur and Bellary districts of Karnataka; Mayurbhunj, Keonjhar, Sundergarh districts of Orissa. Goa has also deposits of iron ore. Iron ore is exported from India.

Mica

Mica is used in electrical and electronics industries. It is also used in production of medicines, paints, etc. Mica has an insulating property. The states like Rajasthan, Bihar, Jharkhand, Andhra Pradesh, etc have deposits of mica. It is interesting fact that demand for mica is continuously decreasing due to the use of artificial materials as a substitute for mica.

Copper

Copper is a good conductor of electricity. Copper is used for making alloys, electric wires and utensils. It is also used in the manufacture of medicines. The demand of copper is always more due to its non-rusting property. India has very limited copper ore deposits. The states like Meghalaya, Sikkim, Jharkhand, Karnataka, Uttar Pradesh, Andhra Pradesh, etc have copper ore deposits. Copper ore mines are found in Balaghat district of Madhya Pradesh, Alwar and Jhunjhunu districts of Rajasthan.

Lead

Lead is a heavy and soft metal. It does not conduct heat. It is used in the manufacture of ammunition, glass, rubber, paints, etc. The states like Orissa, Uttar Pradesh, Rajasthan, Madhya Pradesh, West Bengal, Gujarat, Tamil Nadu etc have ores of lead.

Bauxite

Bauxite is used in industries as raw materials. India has large deposits of bauxite ore. It is used in industries which manufacture ships, aeroplanes, automobiles, electric wires, etc. Ores of bauxite are found in Jamnagar and Kuchchh of Gujarat, Sambalpur and Koraput districts of Orissa, Bilaspur of Chhattisgarh, Balaghat of Madhya Pradesh, Ranchi and Palamau of Jharkhand, Belgaum district of Karnataka, etc. Maharashtra state has largest bauxite ores. Sangli, Satara, Kolhapur, Thane, Raigad, Ratnagiri and Sindhudurg districts of Maharashtra have ores of bauxite.

Conservation of minerals

Minerals are formed by inorganic processes of long duration. Minerals are exhaustible and non-renewable resources. Extraction of minerals has increased at large scale to meeting the ever increasing population of country. Due to improper and excessive use, minerals in certain regions are on the verge of extinction. Hence, there is a need of conservation of minerals. Following measures are necessary for the conservation of minerals:

- Control population growth to reduce demand for minerals.
- Create social awareness regarding conservation of minerals.
- Reuse and recycle minerals.
- Avoid use and acceptance of minerals which are not essential.
- Modern technology plays an important role in the conservation of minerals.

MINES ENVIRONMENT IN OPEN PIT & ON MINE SURFACE

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INTRODUCTION:-

The working conditions in the opencast mines are usually much more healthy and safe those in the underground mines. But, the opencast mines have their own environmental problems. The impact of surface mining in all the major area has already become an area of major concern vis-a-vis environment. The on-site impacts , including the problems of ground vibrations and fly rock , air pollution and water pollution etc have posed major problems in specific locations.

PROBLEMS OF ENVIRONMENT IN MINING AREAS:-

In the iron ore mining belts of MP, Bihar, Orissa and Karnataka , apart from the land degradation problems of stWacking fines, and problems of de-forestation of the mining sites ,serious problems of water pollution are being faced. Slimes from ore processing plants and wash-offs from dumps, which constitute 25-75% of the ROM ore, pose a serious threat to the water resources.

In Goa, the environmental problems are compounded by heavy rainfall, giving rise to drastic erosion of the mined out areas and waste dumps, increased sediment load, scored micro-topography, and impoverished agricultural land. The water courses have been significantly polluted.

In Rajasthan, small scale mining for Gypsum, Fuller's earth, Sandstone, marble and soapstone, has triggered off problems of ''desertification'', viz land degradation, destruction and removal of trees and shrubs in the mined areas, and, in some cases, development of salinity.

In the Himalayan regions of Uttar Pradesh, limestone mining in Dehradun and Tehri Garhwal districts,with selective sizing of the material, has proposed problems of unnatural scarification of land ,landslides, and rapid silting of the drainage system. The surface mining of phosphorite in Maldeota has likewise significantly added to the erosive processes and problems of land stability.

In every case, deforestation leads to accelerated erosion of land,damaged water-sheds, floods, and sedimentation of reservoirs etc. Surface mining,comprehensive exploration, and beneficiation of mineral products, impinge on the environment in a number of ways. Of major concern are land use and landscape, degradation of surface and underground water by drainage and seepage, waste-management, noise and health hazards from fugitive dust and vibrations and damage to flora and fauna. A number of factors govern the nature and degree of disturbance and environmental effects e.g. size, shape, depth and grade of deposit, production rates and production economics, physical and chemical characteristics of ore and waste rock, quality of air, vegetation and wild life ,social and political setting, geology, topography, hydrology climate, amount of solid, liquid and gaseous wastes ,and the technical means of their control.

The foremost problem in the opencast mines is that of the air-borne dust, produced as a result from mining, as well as from the high winds. The problem is more acute in the dragline dumping and the land restoration operations; in the later case, specially because soils have to be handled only when dry.

The another problem is creation of huge ugly sites by dumping the overburden nearby. These heaps not only present an ugly scenery, but also creates the problem of dust nuisance, specially in summer. They also cause the landslides and the rolling of boulders on the unsuspecting pedestrians walking nearby. And then there is the loss of the valuable land, which might otherwise be used for cultivation and/ or forestry.

CONTROL MEASURES:-

The problem with drilling may be controlled by using wet drilling and dust extractors on the drills, proper controlled blasting techniques ,and regular wetting of the surface of the working faces and the haul roads, on which the heavy transport vehicles ply. Wheel washers may be installed at all sites where trucks/dumpers leave for disposal points. Overloading of vehicles should not be permitted so as to prevent spillages. Individual protection to the workmen might be provided by the use of respirators. Mass plantation should carry all along the haul roads and waste dumps to avoid the dust, nearly one Hectare of plantation area will arrest 30 to 50 tons of dust throughout a year.

THE ENVIRONMENTAL LAWS:-

United Nations Conference on Human Environment, known as Stockholm Conference, held in 1972, has been a trend-setter, as environmental issues were, for the first time, discussed on a transnational and global scale.

In India, Article 48A and 51A of the Constitution have laid down the following obligations of the State and the citizen.

Art.48A:- The State shall endeavor to protect and improve the environment, and to safe guard the forests and wild life of the country.

Art.51A:- It shall be the duty of every citizen of India to protect and improve the natural environment, including forests, lakes, rivers, and wildlife, and to have compassion for the living creatures.

Under the Water (Prevention and Control of Pollution) Act, 1977, and the Air (Prevention and Control of Pollution) Act, 1981, the Central and State Boards of Control of Air and Water Pollution have been set up.

The Water (Prevention and Control of Pollution) Act,1977, and Rules made there under, prohibit the use of a stream or well for the disposal of polluting material, etc, restrict new outlet and new discharge in the natural watercourse without obtaining No Objection Certificate from the concerned State Pollution Control Board, after completing the required formalities.

The Air (Prevention and Control of Pollution) Act, 1981, and Rules made there under, restrict the establishment or operation of an industrial plant, without the previous consent of the State Pollution Control Board, in an air pollution control area, notified by the Board.

The Central Pollution Control Board has prescribed the ''National Ambient Air Quality Standards'' vide SO 384(E) dated 11.04.1994. The Board has prescribed annual average and 24 hour concentration of the different pollutants i.e.$SO_{2,}$ $NO_{2,}$ suspended particulate matter (SPM), respirable particulate matter(RPM) size less than 10 micrometer, lead and CO in ambient air.

CONCLUSION:-

Establishing suitable Air Quality monitoring stations and Water analysis regularly, one can have the control on the pollution sources, establishing and maintaining ISO 14001 (Environmental Management System) will give better focus and results in mineral conservation, usage of top soil, plantation activities. The

implementation will facilitate in reduction of air, water, noise pollution, ground vibrations during blasting, land contamination, fuel consumption and power consumption etc.

REFERENCE:-

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MINING v/s ENVIRONMENT

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The Mining Industry in our country is more than 100 years old, it is only after Independence, that exploration, development and production strategies were made scientifically planned under successive Five years plans. Presently about 52 types of ores and minerals are being mined.

POLLUTANT DISCHARGES FROM MINES

Among the public at large, the Mining Industry is considered to be a highly polluting industry. This opinion was true in the case of large mechanized mines a few decades ago, however, this impression should be revised now on account of installation of numerous pollution control systems, technical advances in mining operations, and stringent government laws.

The pollutant discharges in mines can be classified under air, water, solid waste and noise pollution heads. The environmental consequences due to pollutants, therefore, needs to be examined taking into account the source and its effects on environment.

AIR — In the case of air, the possible effect on environment due to mining will be in the form of

- Dust pollution &
- Gaseous pollution.

WATER—As far as water pollution due to mining is concerned, the major polluting factors are:

- Toxicity to aquatic life.
- Lowering of dissolved oxygen in the receiving water.
- Deposition of suspended matter on the bed of receiving water course.
- Causing taste and odor problems in the receiving water course.
- Floating of oils and grease in the water leading to ugly oil slicks.

SOLID WASTE — The solid waste generated in a mine has to be considered in the context of dumping on neighbouring land, leaving it degraded for productive use.

NOISE & VIBRATION — As for noise pollution in mining industry is concerned, the noise and vibration problems arise due to usage of machinery and blasting and they have to be kept within the limits of permissibility.

In respect of above all there are several pollution control regulatory standards framed by the Government which are to be adhered to by mines.

The table shows an overview of various aspects of activity in a mine and its effect on the environment.

Sl. No	Activity	Source of effect	Effect	Environmental consequences
1.	Baseline data	——	Information on background air, water, noise, soil, ecology, geology, hydrology, meteorology, socio economics land use pattern.	——
2.	Preliminary works	Temporary construction	Sewage / Garbage	——
3.	Site preparation	Removal of vegetative cover, construction of road, etc,	Erosion ground water changes in the receiving streams change of natural drainage.	——
4.	Drilling	Use of drill machine	Noise, dust, vibration	——
5.	Blasting	Explosives	Noise, Dust, Vibration	——
6.	Pumping	Pumps	DS, pH, Turbidity, SS BOD, COD heavy metals, acid, oil, grease	——
7.	Transportation	i) Material handling ii) Reject handling iii) Dumping	Noise, Dust Noise, Dust Degradation of productive land	——

As could be seen from the above, the possible adverse effect from the mining activity to the environment, had the source of effect were to be large.

MEASURES FOR ACHIVEING BETTER ENVIRONMENT

Provision of environmental control aspects has become obligatory due to general awareness amongst workers and public at large. The enactment of stringent pollution control laws by the government has brought in concern for proper environmental management in mining industry. The Department of Environment, Government of India, lays special stress to ensure that adequate steps are being taken at the conceptual stage itself to protect environment and control pollution.

The above diagram gives an idea of various laws existing and their objectives. In order to meet the statutory requirement, these laws are being adhered to. In India the Government has made it obligatory for large mining projects to draw up elaborate plans for protection. Such requirements are not yet being insisted upon in the case of small mines in general as the impact of small scale mining operations on the environment may not be significant. In special cases, the environmental impact is studied and action taken on merit.

The mining industry is indispensable to national economy; especially the contribution made by mines to the mineral extraction is quite laudable.

GENERAL

Environmental protection is an increasingly pressing issue all over the world. Ozone depletion, green house effect, global climate changes or global warming, etc, are the main issues in environment. Recent years, many countries and various organizations have paid more attention into environmental protection. Some pacts and protocols have been delivered. A treaty about global environmental protection will be discussed by 192 nations in Copenhagen this December although it seems unpractical to complete a new bill within three months.

About environmental issue, we could not deny it is unrealistic to expect individual nations to make, independently, the sacrifices necessary to prevent environment changes. International leadership and worldwide cooperation are essential if we expect to protect the world for the future generations.

A clean and healthy environment is part and parcel of the wealth and quality of life that we desire for ourselves now and for our children in the future. Every one demand that the air they breathe, the water they drink, and the food they eat is free of pollution and contaminants; they want to live undisturbed by noise, and they want to enjoy the beauty of the countryside, unspoiled coastlines and mountain areas. They also want a world that is not threatened by climate change.

Healthy and balanced natural systems are essential for supporting life on this planet. Society relies on nature to provide us with the resources for our survival: air, water, food, fibers, medicines, and building materials. Children need to grow up aware of the nature around them.

As human beings we have a responsibility to preserve the actual value of nature both for ourselves and for future generations.

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ENVIRONMENTAL COSTS OF EXTRACTING MINERAL RESOURCES!

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The rational use of natural resources should guarantee that exploitation of one resource does not harm others. It is from this standpoint that the harmful effects of mining operations on environment should be considered. They include dumping, open pits, waste piles, sinkholes, water, soil and air pollution problems.

Exploration, production and transport of non-fuel minerals may generate negative externalities. These include surface mining, accumulation of tailings, pollution of water, air and waste generation. The trends in developing countries during the past 50 years have been to require that the producers and consumers of minerals internalize these negative externalities. However, environmental protection in non-fuel minerals production is not well developed in the underdeveloped countries.

Extraction of a mineral resources may impose an environment cost on society. In situations like this, property rights are not usually well-defined and hence this cost is not internalized by the extractors. The aesthetic costs of strip mining, the occupational health hazards associated with coal mining and the acid leached into streams from mine operations are all examples of associated environmental costs.

The cost of extraction and sale (including user cost) is borne by the resource owner and taken account of (internalized) in the calculation of how much of the resource to extract. The environmental damage is an external cost and is not borne by the owner and as such it will not be part of the extraction decision. It is important to know how the market allocation, based on only the former cost would differ from the optimal allocation (depletion) which is based on both.

The inclusion of environmental costs results in higher resources prices, which tend to lower demand. All other things being equal, it would allow the resource to last longer. On the other hand, when environmental side-effects are ignored by the resource extracting firm, the price of the exhaustible resource would be too low, demand too high and the resource would be extracted too rapidly over time.

Environmental Impacts of Mineral Resource Extraction and Use:

Environmental costs of extracting mineral resources are explained in terms of land degradation, solid waste, air and water pollution, vibrations and health hazards.

(a) Land Degradation:

In Underdeveloped Countries, land degradation is from strip-mining of coal, the disposal of deep-coal mine tailing and acid mine drainage. Regional effects include acid precipitation, primarily from coal and oil combustion with its impact on soil, vegetation and lakes. Fine particles of toxic trace metals which accumulate in soil and in animal and human food chains are often dispersed during mining and refining operations.

(b) Solid Waste:

The mineral production is always associated with the solid waste generated in the form of overburden dumps, tailings and slimes. Areas around smelting

and mining complexes are usually soiled by metals. Solid waste generated by mining production result in soil erosion, loss of fertile land and also soil pollution.

(ñ) Air Pollution:

An extraordinary wide range of environmental degradation is associated with fossil fuel combustion (sulphur dioxide and particulates), refinery operations (toxic emissions), coal combustion (dust and soot), industrial and automobile fuels (urban smog) etc. About 24 million tonnes of tailings/slimes were generated during 1997-98 from the concentrators and mineral treatment plants installed in copper, lead and zinc, gold, iron ore, chromite and manganese ore mines.

TABLE : 46.1

Sl. No.	Name of Mineral	Quantities Of Tailings/Slimes (Million Tonnes)
1.	Manganese Ore	0.1
2.	Chromite	0.2
3.	Gold Ore	0.4
4.	Lead and line Ore	2.1
5.	Copper Ore	4.3
6.	Iron Ore	16.8

Table 1 shows mineral-wise quantities of tailings/slimes generated during 1999-2000 in India.

(d) Water Pollution:

Water pollution is a common feature of mining and associated mineral processing activities. Erosion of external overburden dumps during heavy rains is a major water pollution problem in mining areas. Abandoned mines and the disposal of chemicals used in refining are significant sources of water pollution in mining areas.

(e) Vibrations:

Explosives are used for fragmentation of rock masses in the mines by blasting. Ground vibrations and air-blasts not only cause nuisance to the residents of nearby areas but they may cause damage to the surface structures.

(f) Health Hazards:

Presence of dust particles in the atmosphere affect the human health in various ways. Workers suffer from lung and skin diseases. Further, they face breathing and vision problems. Improper use of minerals, for example, in asbestos—insulation, lead plumbing, lead and chromium- based paints can threaten human life.

Measures for Sustainable Mining and Minerals Development:

WSSD has suggested the following measures for sustainable mining and minerals development:

(i) To support efforts to address the environmental economic, social impacts and benefits of mining, minerals and metals through their life cycle, including workers' health and safety.

(ii) To enhance the participation of stakeholders, including local communities and women, to play an active role in minerals, metals and mining development throughout the life cycles of mining operations.

(iii) To foster sustainable mining practices through the provision of financial, technical and capacity-building support to developing countries and countries with economies in transition for the mining and processing of minerals.

(iv) To solve the problems of displacement of the native people due to mining sites.

Mineral Conservation and Development Rules (1988):

The Indian Government has passed the Mineral Conservation and Development Rules in 1988. Specific provisions for environment in mining have been made in these rules. According to these rules, every prospective license holder shall take all possible precautions for the protection of environment and control of pollution. Special provisions have been made for proper removal and utilisation of top soil, storage of overburdened and waste rocks, reclamation and rehabilitation of lands, and precautions against air and noise pollution.

Mining is a major industrial sector in India. There are nearly 9000 mining leases with an area of about 7 lakh hectares covered under these rules. Under Special Rule 45, annual returns are furnished by mine owners to the Indian Bureau of Mines.

The returns include such information as lease area utilization, excavation of overburdened rocks, back-filling of waste rocks, ROM ore, consumption of explosives, utilisation of mining machinery and environment related data.

LIME STONE QUARRY – GREEN BELT DEVELOPMENT FOR AIR POLLUTION CONTROL

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1. Introduction

Quarrying is one of the core industries in India and plays a positive role in the economic development of the country. Its environmental impact cannot be ignored and, to some extent, is unavoidable as is evident in few industries like Cement, Steel....etc.

Due to the increasing demand for cement, limestone quarrying and extraction by opencast methods have been intensified in many parts of the country in recent years. However, opencast extraction activities like drilling, blasting, material handling and transport are a potential source of air pollution in lime stone quarries.

On the basis of the predicted increments to air pollutant concentrations, an effective mitigation and environmental management plan can be devised for sensitive areas. A new approach has been adopted in recent years, to grow green plants around quarry site. To limit the dispersion of such air pollution emitted from opencast activities, it is recommended that a green belt be grown around a quarry site.

2. Green Belt Design Aspects

A green belt is the mass planting of pollution-tolerant trees (evergreen and deciduous) for the purpose of mitigating the air pollution in an effective manner by filtering, intercepting and absorbing pollutants. Optimum green belt development is influenced by the factors such as distance of green belt from source, width of green belt and height of green belt etc.

2.1. Green Belt Development

2.1. a. Recommended Plant Species

Plant species selected for planting are listed in the below table (Table 1.1). Plant species having an expected performance index (EPI) more than 60% have been selected to include the following characteristics:

- Native in nature to sustain in the micro-climatic, soil and human interaction.
- Trees growing up to 10 m or more in height with thick perennial foliage.
- Fast growing plant species which can attain their full height in a short period of time (i.e. 5–6 yr).
- Green belt should be implemented after the planning stage and would be able to grow considerably within the development stage of the quarry.

Suggested plant species for green belt development

TABLE 1.1.

Species name	Family	Local Name of Plant	Ever Green (E) or Deciduous (D)	Expected performance index (%)
Azadirachta indica	Meliaceae	వేప చెట్టు	E	63
Dalbergia sisoo	Leguminosae	ఇరిడి చెట్టు	D	81
Mangifera indica	Myrtaceae	మామిడి చెట్టు	E	81
Shorea robusta	Dipterocorpaceae	గుగ్గిలము (లేదా) సర్దాము	D	81
Terminalia arjuna	Combretaceae	యర్రమద్ది	D	75
Teetona grandis	Verbenaeceae	టేకు చెట్టు	D	81
Tamarindus indica	Leguminosae	చింత చెట్టు	D	63
Holarrhena antidysentrica	Apocynaceae	కడసి పాల (లేదా) కొడగ చెట్టు	D	63
Adina cordifolia	Rubiaceae	కదంట చెట్టు	D	69
Bridelia retusa	Euphorbiaceae	టేకు చెట్టు	D	75
Buchanania lanzan	Anacardiaceae	సార చెట్టు	D	75
Madhuca indica	Sapotaceae	ఇప్ప చెట్టు	E	81
Polyalthia longifolia	Anonaceae	అశోక చెట్టు	E	69
Syzygium cumini	Myrtaceae	నేరేడు చెట్టు	E	75

2.1. b. Planting Technique

For planting of small plants, digging of pits is very important for preparing the soil environment near the roots of the plants. The size of the pit should be such as to supply the required nutrients to the roots of the plants. The usual method is to dig a pit of required size 3 to 4 months before planting of species, which is generally done at the break of the monsoon. Pits of 45 X 45 X 45 cm size may be used for planting trees. Planting of trees should be done in eleven rows along the site boundary in staggered rows to prevent horizontal pollution dispersion. The soils should be mixed with one third farm-yard manure before refilling about a week prior to planting.

Effective control measures at the processing plant, excavation area and overburden mounds should also be implemented to mitigate the suspended particulate matter (SPM) emission at source.

3. Conclusion

Limestone quarrying operations do not have a significant impact on airborne levels of SPM, both within the site boundary and beyond the site boundary. but a green belt development around the site boundary with the suggested plant species would reduce the pollutant dispersion.

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ENVIRONMENT PROTECTION MEASURES

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Deep mining impacts the environment in **three different areas**: in the deposit itself and the surrounding rock, in the underground spaces created by and for the mine, and aboveground. Optimal exploitation of the resource with attendant limitation of environmental effects is **dependent on detailed planning** of the sequence of operations and on the mining methods and technology to be employed.

Now a days mining can become more environmentally sustainable by developing and integrating practices that reduce the environmental impact of mining operations. These practices include measures such as reducing water and energy consumption, minimizing land disturbance and waste production, preventing soil, water, and air pollution at mine sites, and conducting successful **mine closure and reclamation** activities.

Although a number of variations exist, sustainable development is most commonly defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

1] The principles of sustainable development involve integrating economic activity with environmental integrity, social concerns, and effective government systems.

2] These principles have had a growing influence on the development of environmental and social policy in recent decades, and have been adopted and promoted by a number of international organizations.

Measures which may be carried out during and after Mining:

1. Dust control measures

- Collect water which falls in rainy season in sumps
- Prevents muddy run-off from mine
- Provides water store which can be used to spray over haul roads.
- Haul roads can be surfaced with laterite to stabilise them - so less dust created by trucks travelling over them or transporting the rock.
- Re-vegetation of landscape - helps to reduce dust pollution from workings.
- Use collection system at the crushing plant to suck in dust (with powerful extractors) and mix it with water so that little can escape into the air
- Site crushing plants in narrow valleys - to cut down pollution
- Use dust monitoring equipment.

2. Noise control measures

- Site crushing and processing plants in narrow valleys - to reduce amount of noise pollution.
- Use noise monitoring equipment
- Re-vegetation of landscape - helps to reduce noise pollution (and also screens the mine workings from nearby villages/towns). Injection of fertilisers into soil helps to speed up growth of vegetation.

3. Environmental control measures

- Remove soils contaminated by lead in mining waste and replace with new top soil re-seeded with “native” grass and flowers to ensure diversity of species after mining completed.

- Fill in pits and re-landscaped sites to recreate original features (e.g. wet land areas) after mining completed.
- Carry out environmental impact reports* before mining starts. These should then be carried out again at each stage of mining i.e.

1. Development stage
2. Operational stage
3. Rehabilitation stage

4. Check Dam Construction:

A check dam is a small, temporary or permanent dam constructed across a drainage ditch, gully, swale, or channel to lower the speed of concentrated flows (like an overflow weir) for a certain design range of storm events. They may be more categorized as a type of floodwater rather than a runoff harvesting technique.

Suitable conditions:

- Locate in natural runoff areas
- Soil in vicinity needs to have sufficient infiltration capacity

Advantages:

Water speed is slowed, which reduces erosion and prevents unwanted gully formation during a flood

- No trench design required, just uses existing gully drainage pattern
- Can assist recharge of shallow wells
- Can reduce salinity in groundwater
- Allows groundwater recharge and sediment to settle out (reduces sediment transport)
- Cost effective – these dams can use locally available materials

Additional Measures to be taken

- Help prevent global warming
- Promote resource efficiency and recycling
- Reduce waste materials
- Better manage chemical substances
- Maintain biodiversity
- Promote our recycling business
- Promote technology and product development and introduce new technologies
- Promote green purchasing
- Conduct training, public relations initiatives, and social activities to communicate our Autonomous Action Plan and raise awareness of our environmental protection measures.

MINE RECLAMATION & REHABILITATION

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Tummalapenta Lst Mine - UTCL

Mine reclamation is the process of restoring land that has been mined to a natural or economically usable state. Although the process of mine reclamation occurs once mining is completed, the planning of mine reclamation activities occurs prior to a mine being permitted or started. Mine reclamation creates useful landscapes that meet a variety of goals ranging from the restoration of productive ecosystems to the creation of industrial and municipal resources. Mine reclamation is a regular part of modern mining practices. Modern mine reclamation minimizes and mitigates the Environmental effects of Mining.

Mineral extraction is necessary for our industrial and economic development, maintenance of ecosystem is important for the sustenance of human life on the earth. It is therefore quite pertinent in the present scenario that mining and ecosystem stability should go hand in hand. Mining is one time operations, the impacts of which are mostly reversible, for example the land disturbed by mining activity can be improved for a better productive land use by adopting scientific and the site specific state of the art land reclamation and rehabilitation plans.

The process of mining has changed the physical, biological and sociological environment in terms of land degradation and large unscientific overburdens dumps. The proposed R&R plan has been aimed for topographic reconstruction with engineering and biological measures for erosion control, re-vegetation with adequate soil amendments including mycorrihizal fungi for re-establishment of nutrient cycle for sustainability of restoration.

The steps for the land reclamation process can include:

- Landscape maintenance and design (e.g., map predicting topography, backfill as necessary, examination of drainage)
- Management and restructuring of overburden and soil (e.g., ensuring slope stability)
- Backfilling: Necessary in deep mines to avoid collapse and in surface mines to promote safety and create a smooth landscape
- Topsoil management
- Management and reuse of waste materials

After these steps are taken, the ecosystem can be rebuilt, either actively or passively. The case studies presented here highlight several examples of how ecosystems were rebuilt, which can be contingent on the type of land use intended.

Options for Mine Reclamation:

Several options are available for uses for reclaimed mining sites; the selection for the land usage must be based on economic considerations, location, societal needs, and the local ecosystem. There are economic uses for the land (e.g., industry or housing) as well as productive uses (cultivation, grazing, fishing, parking, etc.).

In some cases, it could also be appropriate to open the reclaimed mine site to community use, such as a public park, nature conservancy, etc. The optimal use of closed mining sites must be based on the needs of the local community. In most cases worldwide, reclaimed mining sites are converted into lands suitable for forestry or agriculture.

Rehabilitation and Reclamation plan will be useful in providing a framework and process to various target groups, the Industry, Regulatory Agencies, the Mine Companies and others interested for undertaking scientific rehabilitation and reclamation of mined out areas. This will also provide the essential insight in environmentally safe planning of mining.

The rehabilitation and reclamation program is aimed to produce an ecosystem which fulfills and encourages the development of floral, faunal and soil characteristics similar to that of the pre-mining stage. Regular monitoring of the R&R programme will not only establish valuable reference data for authorities to ensure and demonstrate compliance with regulatory requirements but also in subsequent decision-making on operational parameters needed to ensure better oversight of the entire site specific land use for sustainable management. However, the success of the Reclamation and Rehabilitation plan will depend upon its proper implementation and rigorous monitoring which can be ensured only through a specialized institution that has the requisite competence, composite scientific expertise and professionals. The capacity building of the personals involved in implementation of this plan by an expert scientific organization is also an essential input for the successful implementation of this plan.

The R & R Plan which synthesizes a very specialized ecological, vegetation and other biological and engineering measures needs to be executed and monitored annually by the organizations/institutes having specialization in scientific aspects of complex vegetation site interactions and energy flux in the ecosystem over time and space.

Biological measures for management of overburden dumps, dump, mine pit area, refractory sites, mine drainage, surface water, haul road etc., with reconstruction of suitable techniques to improve the ability and to support the vegetation growth has been recommended with the application of organic matter.

Continued Improvement:

A successfully reclaimed mining site can be valuable to a community long after mining operations have ceased. Several examples have been provided of successfully reclaimed lands; the final results for these projects included much needed grazing land, a unique park, a research project, and agriculture. Reclaimed mines can benefit the economy and the ecology of the local community if the reclamation process is carried out in a responsible manner.

UTILISATION OF FLY ASH IN STRUCTURAL CONCRETE AS SAND REPLACEMENT FOR SUSTAINABLLE DEVELOPMENT

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Coal-based thermal power plants have been a major source of power generation in India where about 57% of the total power obtained is from coal-based thermal power plants. Fly Ash is a by-product material being generated by thermal power plants from combustion of pulverised coal. High ash content is found to be in range of 30% to 50% in Indian coal. The quantum of Fly Ash produced depends on the quality of coal used and the operating conditions of thermal power plants. Presently the annual production of Fly Ash in India is about 112 million tonnes with 65000 acre of land being occupied by ash ponds and is expected to cross 225 million tonnes by the year 2017 .

Disposal of fly ash is a challenging problem in form of land usage, health hazards and environmental dangers. Both in disposal as well as in utilization, utmost care has to be taken to safeguard the interest of human life, wild life and environment. When pulverised coal is burnt to generate heat, the residue contains 80% Fly Ash and 20% bottom ash. A huge volume of Fly Ash produced from coal-based thermal power plants may bring several problems from environmental point of view. Fly Ash particles ranging in size from 0.5 to 300 micron in equivalent diameter, being light weight, have potential to get airborne easily and pollute the environment. If not managed properly Fly Ash disposal in sea/rivers/ponds can cause damage to aquaticlife also. Slurry disposal lagoons/ settling tanks can become breeding grounds for mosquitoes and bacteria. It can also contaminate

the under-ground water resources with traces of toxic metals present in Fly Ash. Huge investments/ expenditures are made just to get Fly Ash out from the thermal power plants and dump it in the ponds. If understood and managed properly, it can prove to be a valuable resource material.

Application of fly ash

Fly Ash, an industrial by-product from Thermal Power Plants (TPPs) and its proven suitability for variety of applications as admixture in cement/concrete/mortar, limepozzolana mixture (bricks/blocks) etc. Cement and Concrete Industry accounts for 50% Fly Ash utilization, the total utilization of which at present stands at 30MT (28%). The other areas of application are Low lying area fill (17%), Roads & Embankments (15%), Dyke Raising (4%), Brick manufacturing (2%) and other new areas for safe disposal of fly ash is in paint industry, agriculture etc.

Depletion of mineral resources

Over exploitation of resources is what the human being got habituated to do with the environment. Indiscriminate usage and exploitation of resources is causing environmental strain. Mining and quarrying for the natural aggregates which are prerequisites for every construction activity is depleting the natural resources and deteriorating the environment. Activities like mining and quarrying are resulting in the loss of habitat, agricultural lands, forests, Bio-diversity and are also resulting undesirable climatic changes. Mining activities and stone crushing units contribute to both sound and air pollution.

The current years are already witnessing the scenario of fast depletion of natural resources and the construction industry that mostly depends on aggregates is also on the verge of loss due to their shortage and unavailability.Natural aggregates still remain as the most mined material in the world. Environmental laws and restrictions are curbing the mining activities as far as possible.River

sand mining is almost banned in India and there won't be any future contracts given by the government to private mining agencies.Recent decades have seen a marked upsurge in industrial and economic growth, contributing to an improved quality of life and well-being for citizens. However, we should not lose sight of the fact that every production system creates by-products and waste products which can affect the environment. These effects may occur at any point in the product's life-cycle, whether during the initial phase of obtaining raw materials, during the transformation and production phase, during product distribution or when the end user must dispose of products which are no longer required.As a result, recent years have witnessed rising social concern about the problem of waste management in general, and industrial waste and waste from the construction industry in particular. This problem is becoming increasingly acute due to the growing quantity of industrial, construction and demolition waste generated despite the measures which have been taken in recent years.The objective of present study is to make sustainable environment along with tackling depletion of natural resources by utilization of fly ash as a replacement material in concrete.

LITERATURE REVIEW

Utilisation of fly ash in structural concrete is broadly divided into fly ash replacement for cement, fly ash replacement for fine aggregate, fly ash coarse aggregate replacement for natural coarse aggregate.There are plenty of studies are available in replacement of fly ash coarse aggregate with natural coarse aggregate. Few studies are available in replacement of fly ash with fine aggregate.

Siddique (2003) carried an experimental investigation to evaluate the mechanical properties of concrete mixtures in which fine aggregate (sand) was partially replaced with Class F fly ash. Tests were performed for Compressive strength, splitting tensile strength, flexural strength, and modulus of elasticity were determined at 7days to 365 days. Test results indicate significant improvement in

the strength properties of plain concrete by the inclusion of fly ash as partial replacement of fine aggregate (sand) up to 50%, and can be effectively used in structural concrete.Abrasion resistance of concrete was improved approximately by 40% over control mixture with 40%replacement of fine aggregate with fly ash, and concrete with fine aggregate replacement could be suitably used.Parvati and Prakash (2013) investigated strength performance of concrete by replacing natural sand by fly ash in various percentages when subjected to elevated temperature. The replacement of up to 80% of fine aggregate with fly ash is considered and the concrete is exposed to elevated temperature of 200°C to800°C. The mechanical peoperties indicate significant improvement in strength properties of plane concrete with replacement of fine aggregate by fly ash when it is subjected to elevated temperature.Kanthi and Kavitha(2014)studiedpartial replacement of sand with flyash in concrete. Each category comprises of various percentages of sand replacement material in increasing order up to 100%. The compressive and split tensile strengths increase with increase in flyash percentage in the concrete mix up to 40% and decreases beyond 40%. The modulus of elasticity of concrete increases up to 60% replacement of sand with fly ash and it decreasesbeyond 60%.Deo and Pofale (2015) investigated on compressive and flexural strength of concrete mixes with the partial replacement of the sand by the fly ash by the minimum voids method and maximum density method. Based on test result,they concluded that fly ash could be very conveniently used as partial replacement of sand in structural concrete where its proportion and replacement of sand could be efficiently done by using minimum voids method for higher compressive strength, flexural strength and workability and lower voids at lower cost.

Scope of the present study

The scope of present study is to study the effect of different percentage of fly ash as fine aggregate replacement on the mechanical properties of cubes, cylinder and beams.

EXPERIMENTAL PROGRAMME

The characterization of different materials used for this study is done at the beginning.Portland slag cement 43 grade conforming to IS: 455-1989 was used. Itsproperties areshown in Table1.

Table 1. Cement test results

S.No	Character	Experimental value	As per Is:455-1989
1	Consistency	31%	-
2	Specicfic gravity	2.87	-
3	Intial setting time	70 mins	Not less than 30 mins
4	Final setting time	250 mins	Not more than 600 mins

Fine Aggregate

Natural sand conforming to Zone III with specific gravity 2.68, fineness modulus as 2.313 was used. The maximum size of fine aggregate was taken to be 4.75 mm. The testing of sand was done as per Indian Standard Specifications IS: 383-1970 .The sieve analysis results are shown in Table 2.

Table 2. Sieve analysis of fine aggregates

IS sieve size(mm)	Weight retained (gm)	Cumulative % retained	% passing (%)	Requirement IS:383-1970
10	0	0	100	100
4.75	0	0	100	90-100
2.36	15	1.5	98.5	85-100
1.18	64	7.9	92.5	75-100
0.6	332	41.1	58.9	60-79
0.3	426	83.7	16.3	12-40
0.15	134	97.1	2.9	0-10

Coarse Aggregate

Coarse aggregate was used with 20 mm nominal size and specific gravity 2.83, were tested as per Indian Standard specifications IS: 383-1970 . The sieve analysis results are shown in Table 3.

Table 3. Sieve analysis of coarse aggregates

IS sieve size(mm)	Weight retained (gm)	Cumulative % retained	% passing (%)	Requirement IS:383-1970
40	0	0	100	100
20	0	0	100	95-100
10	3.696	73.92	26.08	25-55
4.75	1.178	97.48	2.52	0-10

The (class –F) Fly ash, which is major ingredient of present work was procured from Bhusan steel plant, sampalbur.Potable fresh water available from local sources was used for mixing and curing of these specimens.Conplast (FOSROC) is used for present study as plasticizer.

Mix Proportions

Seven mixture proportions were made. First was control mix (without fly ash), and the other six mixes contained fly ash. Fine aggregate (sand) was replaced with fly ash by weight. The proportions of fine aggregate replaced ranged from 10 to 60%. Mix proportions are given in Table 4. The controls mix without fly ash was proportioned as per Indian standard Specifications IS: 10262-2009to obtain a 28-days cube compressive strength of 26.6 MPa.

Mix proportion becomes 1:1.7:3.18

Preparation and casting of test specimens

The 150mm concrete cubes were casted for compressive strength. After casting, all the test specimens were finished with a steel trowel. All the test specimens were stored at temperature of about 27ÚC ± 2ÚC in the casting room. They were de molded after 24 hours, and were put into a water-curing tank.Quantities for 1 m3 of compacted concrete and concrete properties given in Table 4.

Table 4 Mix proportion

Mixture no	M-1	M-2	M-3	M-4	M-5	M-6	M-7
Cement(Kg/m^3)	383.2	383.2	383.2	383.2	383.2	383.2	383.2
Fly ash(%)	0	10	20	30	40	50	60
Fly ash (Kg/m^3)	0	65.12	130.25	195.37	260.5	325.62	390.74
water(Kg/m^3)	191.6	206.81	225.82	246.7	249.08	284.61	326.92
w/c	0.5	0.54	0.59	0.64	0.65	0.74	0.85
w/(c+ fly ash)	0.5	0.46	0.44	0.43	0.39	0.4	0.42
Sand SSD (Kg/m^3)	651.24	586.116	521	455.87	390.74	325.62	260.5
Coarse aggregate (Kg/m^3)	1219.73	1219.73	1219.73	1219.73	1219.73	1219.73	1219.73
Super plasticizer (l/m^3)	0	2.24	4.11	7.52	12.884	14.33	15.61
Slump(mm)	50	55	60	65	10	20	25
Fresh concrete density(Kg/m^3)	2446	2463	2484	2508	2516	2553	2596

RESULT AND DISCUSSION

The Compressive strength of (150mm cubes) were found for different proportions of fly ash and given in table 5.

Table 5. compressive strength test result

Mix	Percentage of Fly ash	Compressive Strength N/mm^2	
		7 Day strength	28 Day strength
M-1	0%	22.09	28.195
M-2	10%	23.25	28.05
M-3	20%	20.92	25.724
M-4	30%	22.38	27.32
M-5	40%	23.98	24.29
M-6	50%	23.11	23.55
M-7	60%	21.66	22.81

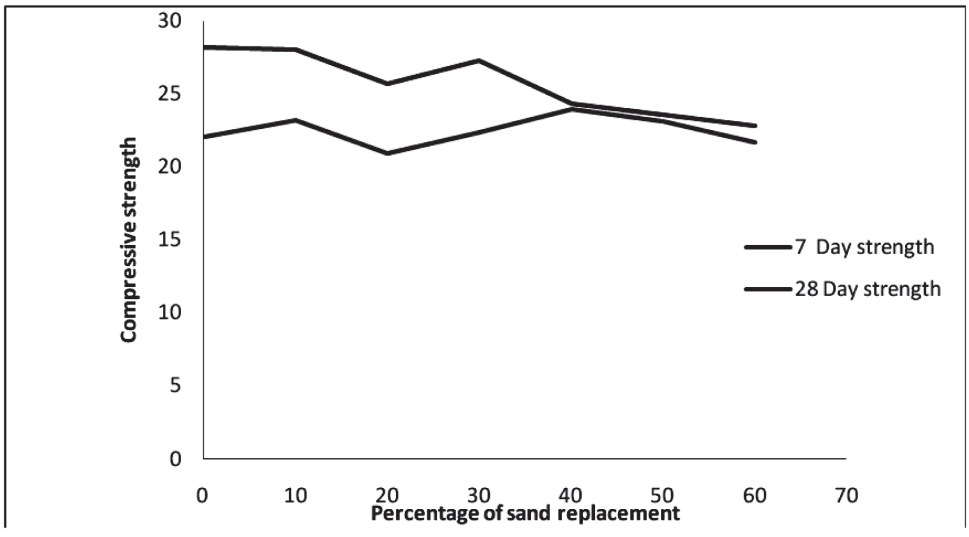

Fig 1. Variation of compressive strength with percentage of fly ash

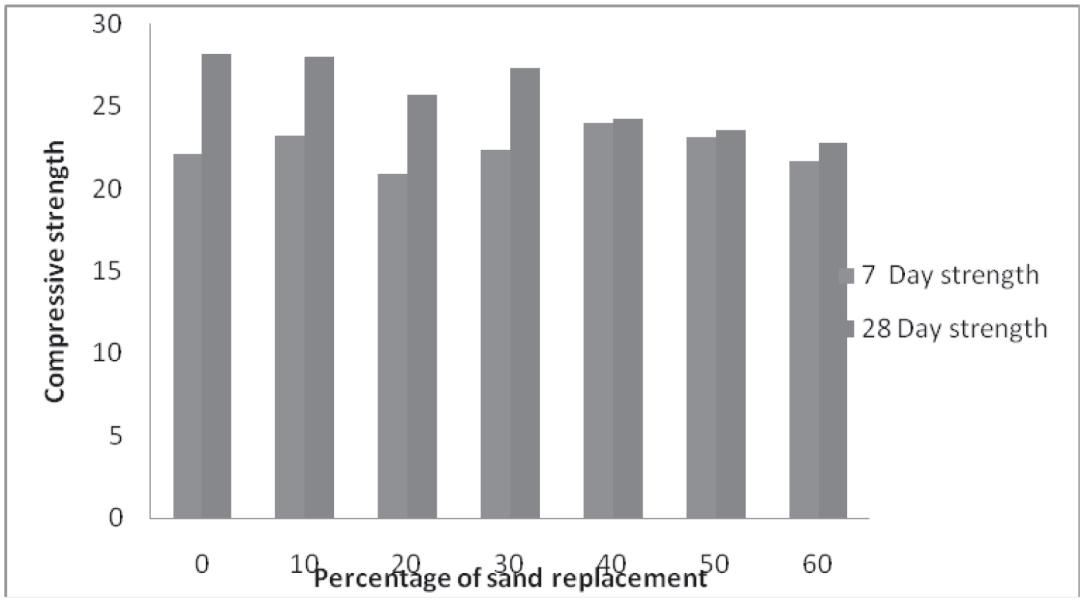

Fig 2.Histogram showing the variation of compressive strength with percentage of fly ash

Conclusion:

- The characterisation of all material s used in this study was done,
- workability for fly ash concrete decreases when compared with sand concrete.
- The compressive strength increase with increase in flyash percentage in the concrete mix upto 30% and decreases beyond 30%. replacement
- The replacement of sand with fly ash upto 30% is beneficial for the concrete works.
- This study could enlighten the local people to use fly ash to replace sand for concrete works.
- The fly ash utilisation will save natural resources by partial replacement of sand with fly ash, as sand is scarce.

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RISING CONCERNS OF URBAN AIR POLLUTION

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Air pollution is causing an alarming rise in concern as it is detrimental to both the well-being of organisms' health as well as the environment. Pollution can be defined as the introduction of contaminants in high concentrations that exceeds natural levels in the environment by either natural processes or anthropogenic influences. The United Nations Environmental Programme (UNEP) has roughly estimated that more than 1 billion people are exposed to outdoor air pollution annually. Consequently, this has caused an alarming 1 million premature deaths and 1 million prenatal deaths each year. This unfortunately is a direct result of rapid urbanisation of major cities, especially that of developing countries. Air quality issues are becoming a major problem and indeed require immediate attention.

Pollution has an adverse effect on the environment as it causes instability or disorder to the physical system or living organisms. Air pollutants (elements of pollution) fall into two categories, primary and secondary air pollutants. Primary air pollutants are harmful substances that are directly emitted into the atmosphere which consist of oxides of nitrogen, sulphur and carbon and particulate matter. Particulate matter is further broken down into solid particulate matter consisting of dust whereas, mists constitutes the liquid suspensions. Particulate matter tends to reduce visibility by scattering and absorbing sunlight. It is also corrosive as it erodes metals, buildings and sculptures and soils clothes when the air is humid. Microscopic particulate matter pose a greater threat as it is inhaled deeper in the lungs thus causing severe medical problems.

Secondary air pollutants, on the other hand, are harmful substances formed by the reaction of primary air pollutants with substances normally found in the atmosphere or with other air pollutants. An infamous example would be sulphuric

acid and sulphate salts that causes acid deposition, corrode metals, damage stones and plants and irritates the respiratory system in organisms. Troposheric Ozone, a secondary man-made air pollutant, is a pale blue gas formed when sunlight catalyzes the reaction between nitrogen oxides and volatile hydrocarbons. Ozone is the harmful component of photochemical smog as it reduces visibility and causes health problems and plant stresses. It is therefore a major environmental concern as chronic exposure to ozone reduces the yield and causes forest decline.

Urban areas are experiencing increased levels of localised air pollution otherwise known as photochemical or industrial smog. Photochemical smog is brownish orange in appearance and significantly reduces visibility. This is as a result from the irradiation (by sunlight) of hydrocarbons caused primarily by unburned gasoline emitted by automobiles and other combustion sources. An example being power and industrial plants burning coal and heavy oil that contains sulphur impurities. The smog consists mostly of a mixture of sulphur dioxide and fog. Sulphur dioxide along with nitrogen oxides are key components in the lethal corrosive cocktail of acid deposition. This deposition tends to have devastating effects on the environment that it is deposited into, especially if wet deposition occurs (acid rain). What makes the formation and the deposition of acids even more deadly is that it is very mobile and may be deposited far away from its area of origin. This in essence, can affect areas that were virtually untainted and relatively free of air pollution.

The formation of photochemical or industrial smog tends to be common during the winter in cities such as London, Pittsburgh and Chicago to name a few. In 1952, London was victim to the devastating effects of photochemical smog which ultimately led to the death of 4,000 people. Although educated as to the repercussions of their actions, some countries such as China, Poland and some other eastern European countries to this date, still burn large quantities of coal without using adequate controls. There is an obvious trend in which the pattern of economic growth that countries are adopting is becoming increasingly associated

with environmental pollution. A study conducted in India (based on the period 1975-1995 done by UNEP) was done to make a comparison between the rates of economic growth and the rates of growth of vehicular and industrial pollution. Results showed an alarming rise in vehicular and industrial pollution when compared to the level of increased economic growth. The Indian economy had grown by 2.5 times, whereas, the industrial pollution discharge increased by 3.47 times. Vehicular emission load had an outstanding 7.5 times increase. Although these cities are experiencing improved economies, there is a trade-off whereby air quality has been significantly compromised.

Mexico City has one of the world's most serious air pollution problems. Its general topography greatly influences the retention and proliferation of air pollutants within the area. Located atop elevations of 2200 meters, the city is bounded on three sides by mountains and snow-capped volcanoes. Photochemical smog is produced much of the year within this area as there is little variation in incident solar radiation with season at tropical latitudes. As thermal inversions tend to occur during winter periods, air quality can worsen as most of the polluted air masses are trapped near the surface. Major sources of air pollutants within the basin enclosing the city's urban area are derivatives of mineral dusts, thousands of industrial activities and vehicular emissions.

The effects of air pollution as one can clearly see are very detrimental to organisms' health. Some effects that air pollution pose to organisms, humans in particular, are respiratory disorders and it also worsens medical conditions such as chronic lung disease, pneumonia and cardiovascular problems. Severe irritation of the eyes is also a serious problem. Not only is it harmful to organisms, but as stated earlier it is destroys the physical environment and ecosystems. Damages are seen as acid deposition corrodes materials such as metals plastics, rubber and fabrics. Based on researches done, urban air pollution is estimated to cost approximately 2% of Gross Domestic Product in developed countries and 5% in

developing countries. This is a serious cause for concern and requires methods to be implemented to reduce emissions.

While most developed countries have put in place measures to reduce vehicular emissions in terms of fuel quality and vehicle emission reduction technologies, these measures are yet to be adopted in most cities in developing countries. UNEP through the Partnership for Clean Fuels and Vehicles has been coordinating programmes that aim at reducing vehicular emissions in developing countries to improve urban air quality. Technologies that are being employed are furnaces and engines that are highly modified that either destroy contaminants or remove them from the exhaust before they are ejected into the atmosphere. To do this, engines are designed to carry out combustion at a temperature lower than that required for the formation of nitrous oxides. This method effectively reduces levels of nitrous oxides emitted. Pollutants such as carbon monoxide and volatile hydrocarbons are controlled by the use of modified engines. These may employ the use of catalytic converters which allow for the degradation of toxic products, or systems which facilitate complete combustion of the fuels to less harmful compounds such as carbon dioxide and water.

In recent time in Africa coal and heavy oils are burned only in large boilers with pollutant control mechanism in place so that industrial smog is less of a problem. Air pollutants can be controlled by electrostatic precipitator, which is highly effective, and efficient filtration device that can remove fine particulate matter such as dust and smoke from the flowing gas, by using the force of an induced electrostatic charge. Another method is the use of Baghouses. These are dust collectors that are designed to withstand heavy loads. Particulate scrubbers are another group of devices the collect pollutants from gas streams such as a furnace flue gas. On contact with the wet scrubbing liquid by spraying for forcing through the liquid the pollutants are removed. With the improved technologies people on a whole can effectively reduce air pollutants.

BE ALERT BEFORE SEE A SWEET DREAM
A GROWING PROBLEM

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Inhuman life, some basic civic amenities like sleep, rest, food, bath, etc, are very essential. But unfortunately today a growing problem i.e, day-to-day increasing the pollution at our atmosphere presenting us an unpleasant life. Air pollution, Water pollution, Soil pollution, Sound pollution, etc., are coming forward towards the human life like a virus for a bad disease. We suddenly awake in the mid night to see an abysmal dream. Air pollution has been a steadily growing problem for all industrial societies since the 19th century. Carbon monoxide, chlorofluorocarbons, and sulfur oxide are all byproducts of automobiles and manufacturing plants, and have been increasingly permeating the earth's atmosphere over the last century, causing severe health problems and damage to the environment.

Air Pollution Control Detrimental to Health

A steady rise in cases of bronchitis, emphysema, and aggravated asthmatic attacks has been linked to such emissions, as have ecological dangers such as ozone depletion and acid rain. In the worst cases, air pollution has been directly responsible for deaths, as in numerous industrial accidents in which toxic fumes were improperly contained. The business of mining is no more immune to change than any other aspect of life. Indeed, one thing is certain: change is a constant. But change is not always welcomed. Tried and true methods aren't easily abandoned and often time's ne methodology is greeted with scorn and disdain An old dog isn't easily taught new tricks, and sometimes it's a bit difficult to introduce the latest technology to veteran miners.

Air Pollution Control Laws

Attempts to control air pollution have taken a two-pronged attack, using legal reform and technological advances in the legislative field. The United States Congress has enacted a number of Clean Air Acts since the first was passed in 1963, each designed to force manufacturers to control and reduce toxic a remissions. Though some have criticized these laws on the grounds that they are damaging to the economy, they have overall met with a positive response, and similar laws have been passed a state and local levels to impose similar controls The attempt to curb air pollution through legislative means has recently stumbled however, with the unwillingness of the United States to ratify the Kyoto Accord, a worldwide effort to force nations to comply with a mutual policy of reducing air contaminants.

Air Pollution Control Equipment

Fortunately, there exists a wide variety of specialized equipment for the purpose Of controlling air pollution - all of which function by either destroying pollutants or intercepting them before they can escape into the air. Equipment control air pollution includes:

Scrubbers, emitting chemicals that utilize or absorb various pollutants

Electrostatic precipitators, using electrical charges to attract particles found in pollutants thereby remove them from exhaust

Bag filters, operating as sieves to catch large articles and the like

Carbon absorbers, similar to electrostatic precipitators, these are often found in water filters **Cyc1one separators**, creating an artificial cyclone to separate heavier pollutants from lighter oncs.

Process of Air Pollution

Air pollution is not purely limited to industrial particles found in the atmosphere. Air supplies of other areas can also be contaminated, most commonly by certain toxic substances used in construction, such as lead paint or asbestos. Radon gas can occasionally be absorbed from atmosphere into a home, where it will may and cause health problems. Second hand tobacco smoke is also well established as pollutant, and may cause a risk of lung cancer if used excessively into an enclosed space.

In general, most of the dangers of interior air ion can be averted with an effective ventilation system.

There are some important Environmental laws in the country to prevent the pollution:

1. Water (Prevention and Control of Pollution) Act, 1974;
2. Air (Prevention and Control of Pollution) Act, 1981, .Cess Act, 1977, - Environment (Protection) Act, 1986 and Rules there under
3. Public Liability Insurance Act, 1981,
4. National Environmental Tribunal Act, 1995
5. National Environment Appellate Authority Act, 1997

There are different programme/activities implemented through State Pollution Control Board.

1. Pollution control in 17 categories of highly polluting industries
2. Pollution control from industries discharging waste water into rivers and lakes
3. Inventorization of pollution industries in the State and ensuring their compliance to the Pollution control norms
4. Restoration of environmental quality in critically polluted areas

5. Monitoring of water and ambient air quality in the States
6. Hazardous waste
7. Bio-medical and Management of Municipal Solid Wastes

Sources of water pollution and wastewater generation scenario

It is estimated that 75% to 80% of water pollution by volume is caused by domestic sewage. The major industries causing water pollution include: distilleries, sugar, textile, electroplating, pesticides, pharmaceuticals, pulp & paper mills, tanneries, dyes and dye intermediates, petro-chemicals, steel plants etc. Non-point sources such as fertilizer and pesticide run-offs in rural areas also cause pollution, only 60% of chemical fertilizers are utilized in soil and the balance is leached into soil polluting the ground water. Excess phosphate run-off leads to eutrophication in lakes and water bodies.

Various steps to control vehicular pollution

1. Establishment of Ambient Air Quality Monitoring throughout India
2. Notification of Ambient Air Quality Standards under Environment (Protection) Act.
3. Notification of vehicular emission norms for year 1990-91, 1996, 1998, 2000, 2001
4. Improving fuel quality by phasing out leafrom gasoline, reducing diesel sulphur reducing gasoline benzene, and etc.
5. Introduction of alternate fuelled vehicles like CNG/LPG.
6. Improvement of public transport system.
7. Phasing out of grossly polluting commercial vehicles.
8. Public awareness & campaigns.

The actions have been taken on the 17 categories of the industries which have come into operation after 1991 i.e. the post-91 industries

The Inventorization of the Post-91 large and medium industries of 17 categories has been completed. A total of 587 such industries have been indentified and out of these, 561 units are presently operating. Although, It was mandatory for these units to have been allowed only if they had the requisite pollution control facilities, there latest compliance status is being verified. A programme for pollution control through concerted efforts in polluted areas was started in 1989. The programme involves identification of the polluting sources, preparation of action plans for control of these polluting sources, and implementation of the action points by the concerned responsible agencies/industries.

Technology & environmental balance is crucial along with nation's progress. So, we make it a point that our work does not disturb the nature's balance. We may take up massive afforestation and other environmental development programme to balance the loss.

INTEGRATED BIODIVERSITY MANAGEMENT SYSTEM (IBMS)

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Checklist for implementing an Integrated Biodiversity Management System (IBMS)

This checklist provides an overview of the key elements that need to be considered when implementing an IBMS and where additional guidance can be found within this guide.

- Establish a corporate biodiversity policy, company commitments and targets
  - Recognize the global importance of biodiversity resources and the company's dependence on, and impact upon, these resources
  - Commit to the responsible management of company landholdings to promote the conservation and sustainable use of biodiversity
  - Commit to practice responsible stewardship of company land and to work with partners, customers, relevant constituencies and other stakeholders to support their activities aimed at the same goals
  - Pledge to reflect due consideration of biodiversity risks and opportunities associated with its business, and recognize that such an approach will create long term added value both for the company's business and for society as a whole
  - Aspire to long-term goals such as no net loss of biodiversity or net positive impact, as well as defined targets for biodiversity management
- Report on biodiversity at the company level
  - Reporting on assets – make summary information about the biodiversity values of landholdings available

- Reporting on management performance – provide an overview of processes in place to safeguard biodiversity, e.g. number of Biodiversity Action Plans in place
- Reporting on outcomes – make available summary information related to results of biodiversity monitoring procedures

❖ Assess biodiversity risks and opportunities of extraction operations

- Establish the biodiversity importance category of existing and new sites Determine the expected impact of resource extraction on biodiversity based on:
  (i) the likelihood that a certain activity will have an impact on ecosystems and/ or species, and
  (ii) the degree to which this impact could be mitigated through targeted measures Plot biodiversity importance against impact to determine risk both to biodiversity from the project and to the project from biodiversity
- Determine mitigation options for the different risks based on the mitigation hierarchy as well as opportunities for biodiversity

❖ Ensure that the level of management is commensurate with the level of risk

- For new sites:
  - Base the decision to proceed with the project on identified risks
  - Reduce risks using the mitigation hierarchy
  - Identify opportunities for positive impacts on biodiversity
  - Develop biodiversity management measures in line with biodiversity importance and risk, where the higher the biodiversity risk, the higher the level of management required
- For existing sites:
  - Retrofit assessment of biodiversity risks using rapid biodiversity

surveys to determine biodiversity importance and impact categories

- Put in place biodiversity management measures in accordance with biodiversity risk assessment, where the higher the biodiversity risk, the higher the level of management required

❖ Monitor changes to biodiversity at the operational level

➢ Determine objective(s) for monitoring biodiversity:

- Monitor relative changes in biodiversity (status, distribution and composition of species, quality and distribution of habitats and ecosystems)
- Assess the effect of mineral resource extraction on biodiversity
- Evaluate the effectiveness of biodiversity management measures on performance and outcome levels (against chosen indicators or targets)
- Provide information for reporting on biodiversity management performance and outcomes

➢ Identify outcomes related to specific targets for conserving biodiversity assets, generally associated with a specific site

❖ Put in place institutional arrangements for rolling out the biodiversity policy and targets

➢ Create fit-for-purpose management structures and processes

➢ Develop company-specific operational handbooks (i.e. toolkit for implementation)

➢ Build internal skills through awareness-raising and training

➢ Secure early buy-in from operational staff

➢ Seek external expertise and foster partnerships

➢ Allocate financial resources

Purpose, goal and structure

By adopting an integrated approach to biodiversity management, companies in the cement and aggregates sector can create a strategy for biodiversity management that includes company-level targets integrated into existing business processes.

This approach, the Integrated Biodiversity Management System (IBMS), can also ensure that biodiversity risks and opportunities are assessed and managed at the site level and that biodiversity management efforts are prioritized and reported at the company level. The general purpose of an IBMS is to make biodiversity conservation considerations an integral part of a company's environmental management strategy, to ensure that the company is following high standards of responsible environmental stewardship. The overall goal of such a system is the integrated, prioritized management of biodiversity at extraction sites and in all activities, aimed at delivering better outcomes for the conservation and sustainable use of biodiversity.

To maximize efficiency and effectiveness, adopting an IBMS involves integrating appropriate biodiversity measures and considerations into existing strategic and operational processes, rather than creating new planning and management steps. This document provides guidance for addressing and managing biodiversity issues in all parts of the business, from strategic policy development and target setting to site-level implementation, and at every stage of the project life cycle, from initial scoping to operation, rehabilitation and site closure (see Figure 1). In terms of policy, an IBMS should define the overall policy principles that govern biodiversity-related activities for the company. At the strategic planning and management level, the system sets out key biodiversity risks and opportunities for each of the principal planning and operational stages, offers general guidance

on strategic responses to these risks and opportunities, and provides guidance on how to measure progress, achievement and impact. In order to implement the guidance provided, operational handbooks could be developed internally by a company, ideally in consultation with relevant experts.

Applicability

There are many different kinds of cement and aggregate extraction sites, including properties of different sizes, legal status and management regimes, with a broad range of mineral resources.

An IBMS can, in principle, be applied to any such site. Biodiversity management should be carried out at all active extraction sites, regardless of size, that are owned by the company or under the company's control, whether extraction has begun or not.

An IBMS should also be applied at any other sites owned or leased by the company, including closed and/or exhausted quarries, sites reserved for future resource use or temporarily dormant quarry sites. Figure 2 gives an overview of site biodiversity management boundaries.

The level of biodiversity management will vary based on the risk posed by the operations to biodiversity. Whilst an IBMS can be used at any point in the life cycle of a resource extraction site, the most common challenge for companies will be to apply the approach to sites that have already been running for many years and might still be operating well into the future. This will frequently involve retro-fitting the process of integrated biodiversity management in places where this issue has not been properly dealt with so far. For this reason, the IBMS approach has been designed so that it can easily be introduced at any stage of a mineral extraction operation; it can also be implemented progressively, if full and immediate implementation exceeds a company's capacity and resources. Provisions for emergency response through adaptive management if unforeseen biodiversity-

related events occur should be captured in environmental management or other processes used by the site.

Figure 1 – Biodiversity considerations in the lifecycle of an extraction site

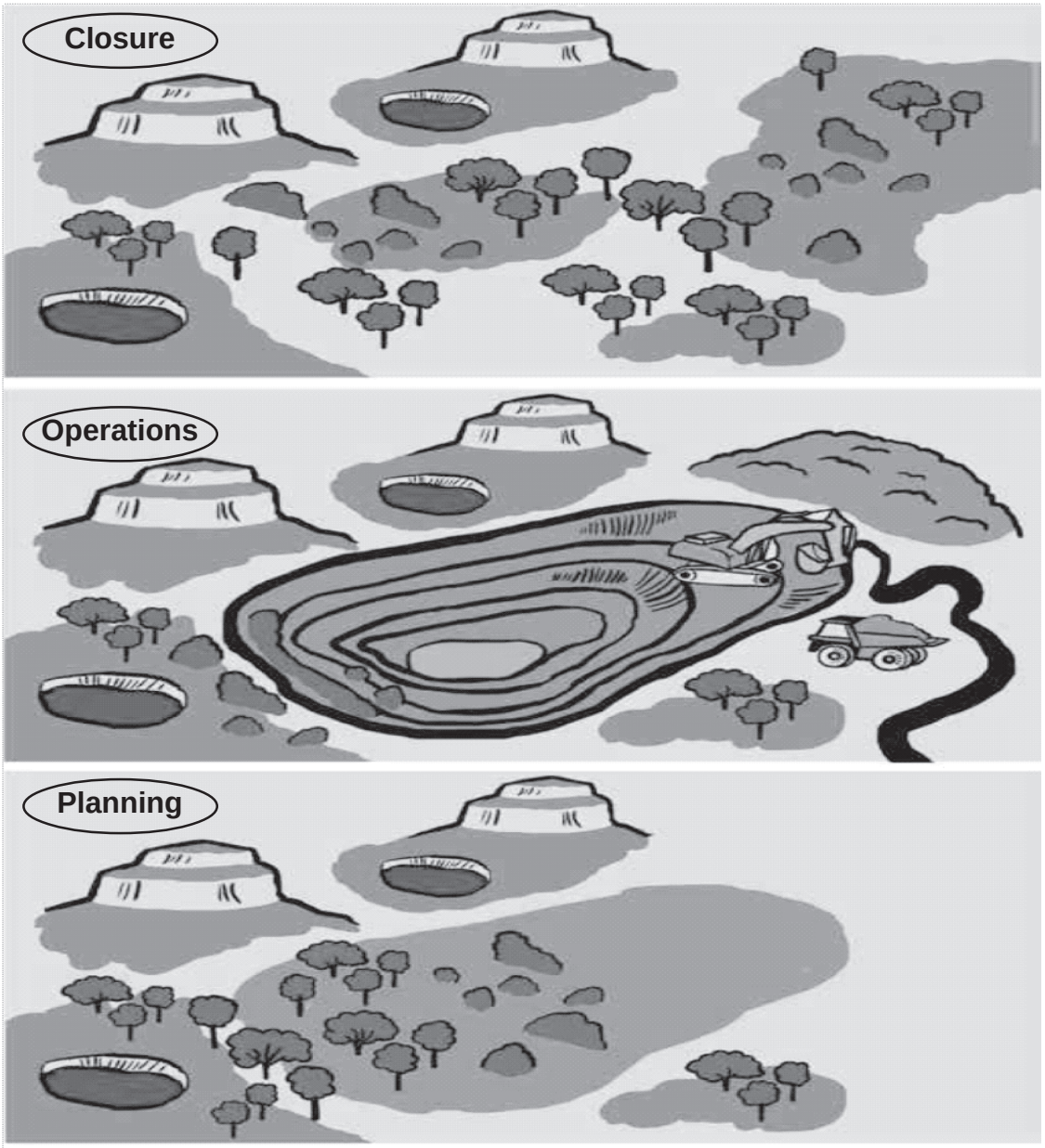

Figure-2

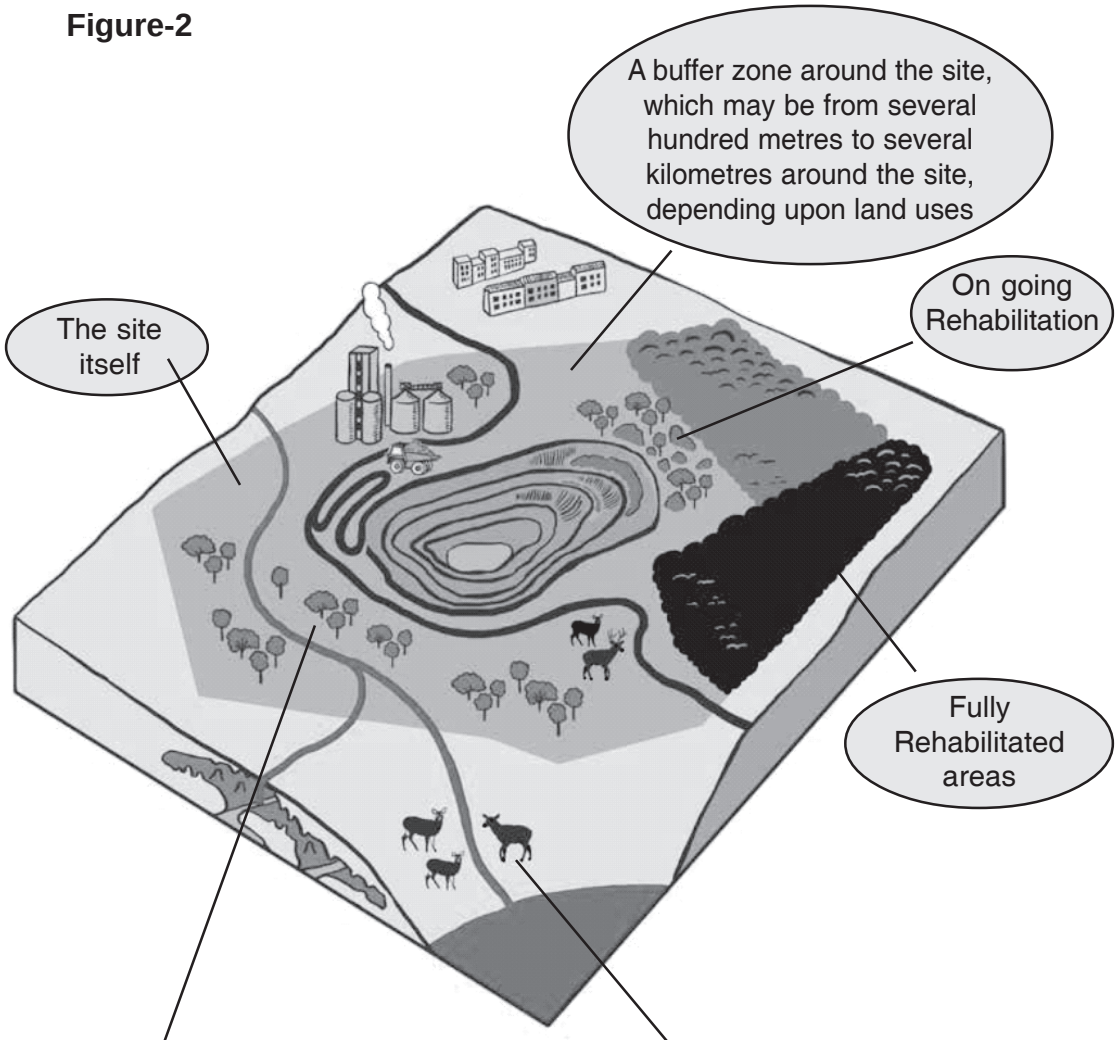
A buffer zone around the site, which may be from several hundred metres to several kilometres around the site, depending upon land uses
On going Rehabilitation
The site itself
Fully Rehabilitated areas
Areas connected ecologically to the site, for example, rivers and streams downstream of the site that may be affected by hydrological changes or pollution resulting from quarrying. In the case of a karst ecosystem, such connections might be numerous and widespread and may only be fully understood through a special investigation of the karst hydrology and the underground watershed
Wider areas linked to the site by particular species, for example, migratory species that use the site or surrounding area for resting or breeding

Table 1 – Overview of biodiversity management activities throughout the lifecycle of operations

Tools	Objective	Main outcomes/activities

Initial scoping/investigations	To identify at an early stage biodiversity hazards and risks that could have a significant impact on the viability of the project and to provide the biodiversity information needed for the investment decision	• Identify biodiversity importance of the site by:
		  ◦ getting an overview of biodiversity elements that have the highest level of importance (e.g. proximity to protected areas, IUCN Red List of Threatened Species, etc.)
		  ◦ listing the major ecosystems present on the sites and their approximate distribution, as well as major plants and animals native to the ecosystems in question
		  ◦ listing vertebrates and higher plant species on international or national red lists
		• Identify critical/unmanageable biodiversity risks
		• Make a detailed assessment of risks to biodiversity from the project and of risks to the project arising from biodiversity issues
		• Identify and apply strategies for risk reduction, interacting with project concepts and options
		• Identify opportunities for possible biodiversity gains, including offsets
		• Develop ToR and identify required skills for ESIA
		• Identify biodiversity dimension of socio-economic issues
		• Assess costs and benefits of biodiversity management

Environmental and Social Impact Assessment (ESIA)	To make a full assessment of all impacts on biodiversity and provide mitigation measures that will be accepted by the permitting authority and that will provide the company with an effective Environmental Management Plan (EMP)	• Collate baseline biodiversity information and conduct targeted biodiversity inventories where such information is missing, including:
		  ◦ maps of ecosystems and habitats of site and immediate surroundings
		  ◦ as complete a list as possible of higher plant and vertebrate species occurring on site
		  ◦ information on seasonal use of site by species that will be impacted by the proposed development and/or are likely to be a target of mitigation measures
		  ◦ information on local community/stakeholder use and importance of biodiversity and natural resources on and around the site
		• Establish compliance with relevant environmental regulations
		• Predict impacts on biodiversity over different phases of the project
		• Develop mitigation measures and biodiversity offsets if required (including social aspects)
		• Develop biodiversity elements of EMP (with recommendations on a possible BAP)
		• Identify possible biodiversity indicators and monitoring
		• Assess costs of implementation of the EMP and monitoring programme

IUCN : International Union for Conservation of Nature

Tools	Objective	Main outcomes/activities
Rehabilitation Plan	To make the site safe and stable for future use and to return land to a beneficial post-quarrying use, balancing environmental, social and economic factors	• Identify regulatory requirements • Establish appropriate and desired post-closure land use and management based on stakeholder consultation • Set biodiversity- or community-led rehabilitation targets • Include minimum levels of biodiversity input (where a BAP is not applicable) • Identify opportunities for biodiversity gains (linked to BAP where in existence or planned) • Identify and implement progressive rehabilitation • Ensure long-term sustainability of the rehabilitation actions in terms of the desired management outcomes
Biodiversity Action Plan (BAP)	To enable the site management to maintain or enhance the biodiversity values during the operational and closure phases of the project	• Collect detailed qualitative and quantitative information on all ecosystems and/or species to be targeted by biodiversity management • Establish priority for and scope of BAP in relation to biodiversity importance of site • Set biodiversity targets, if possible in relation to national or other level Biodiversity Action Plans • Define actions required to attain each of the targets • Monitor the outcome of these actions • Adapt management measures based on monitoring results • Ensure the long-term sustainability of the biodiversity management through appropriate partnerships and resourcing • Ensure the integration of the BAP with the EMS through review and updating mechanisms
Biodiversity Inventory	To know what biodiversity assets the company controls on its land and is responsible for (stewardship)	For all sites: • Establish Biodiversity Importance Category For most extraction sites: • Carry out standard ecosystem inventory (rapid biodiversity survey of ecosystems/habitats and key plant communities of site and surrounding areas) For sites with full ESIA: • Complete qualitative inventory of higher plants, vertebrates and invertebrates especially characteristic of the local ecosystems, including, if relevant, information on abundance and/or seasonal use
Biodiversity Monitoring	To understand and monitor the impacts of the company's activities on biodiversity and to assess the effectiveness of biodiversity management measures	For all sites with biodiversity management: • Monitor selected, site-specific biodiversity indicators For selected sites: • Carry out qualitative biodiversity monitoring (e.g. species list) at regular intervals • Carry out quantitative biodiversity monitoring (e.g. status of key species and habitats)

BAP : Bio diversity Action Plan

Article written from the below source websites :

WEBSITES

International Association for Impact Assessment (IAIA): www.iaia.org

Business and Biodiversity Offsets Programme (BBOP): bbop.forest-trends.org

Global Reporting Initiative: www.globalreporting. org

The Economics of Ecosystems and Biodiversity (TEEB): www.teebweb.org

World Business Council for Sustainable Development (WBCSD): www.wbcsd.org

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COMMON IMPACTS FROM ANY ENGINEERING ACTIVITIES

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An environmental impact on a construction site is an adverse affect from these activities, on the environment. A large construction site can be seen as construction of a dam or reservoir as hydroelectric plants, erection of industrial buildings or a transport projects such as building of bridges and highways. This essay focuses on three common environmental impacts from any civil engineering activities on these large construction sites; pollution and altering the “job” water and soil, which are grouped because they are interlinked; air pollution and noise pollution. The mitigation measures to reduce these impacts are also focused on.

The affect on water and soil differs from dam construction to other large construction works but in both, the soil and water is either polluted or indirectly contributes to negatively impacting the environment. When damming a river, sediment cannot flow downstream for deposition. Hence downstream of a dam or reservoir, erosion continues with no deposition. This reduces the water level hence affecting the rich biodiversity surrounding the river and also affects river animals depending on deeper water levels to survive. Damming also eliminates seasonal flooding which the ecosystem depends on. The ecosystem is altered with endemic species sometimes not surviving and new species arising due to changes in the environment. Water temperatures change in a dam, with cooler temperatures in summer and warmer temperatures in winter. This also affects the wildlife surrounding this area.

Water and soil pollution is a major environmental impact due to construction if preventions are not taken. Diesel and other toxins from heavy equipment and

construction vehicles, as well as construction waste, can leak out or spill onto the ground. This can soak into the groundwater and poison the water, which can then affect any living organism relying on that water. Surface water is polluted when the site is cleared, causing soil to erode and run-off into waterways. The water turns murky and most water animals die . Diesel and other toxins can also flow into surface water, poisoning it and killing wildlife relying on that water. Water pollution and soil erosion can be minimised by sealing all toxic products and storing them far from any waterways or drainage areas . The wastewater created by any construction works should be collected and disposed of in an environmental friendly way. In order to minimise toxins from seeping into any groundwater, non-toxic materials should be used.

The construction of a dam or reservoir has a great impact on pollutants emitted into the air, however, there are some new proposed mitigation measures introduced to help reduce this high pollution rate. Damming a river creates flooding of the surrounding environment which leads to the death and decomposition of carbon rich plant matter. This releases carbon dioxide into the atmosphere, a greenhouse gas which is the most important contributor to global warming. The decaying plant settles to the non-oxygenated bottom of the dam or reservoir. Decomposition here produces and releases methane, also a greenhouse gas contributing to global warming. In hot climates, the emission of methane is the greatest and hydroelectric plants “can have a much greater impact on global warming than fossil fuel plants” of the same scale. There are proposed new mitigation measures to capture methane emitted and use it to generate electricity. This will lessen the need for more dams and hence less carbon dioxide emissions due to decaying plant matter.

Land clearing, heavy equipment and vehicle operations and the use of concrete, silica, cement and other toxic materials, all result in pollutants being released into the air in large amounts due to large construction works. The

construction dust is particulate matter less than ten microns in size and invisible to the naked eye. Due to its size, it can travel far distances and if inhaled, affects respiratory function, causes asthma, bronchitis and other health problems. The heavy equipment and construction vehicles used on site operate on the combustion of diesel to release energy. This results in the emission of carbon dioxide and other by-products such as; carbon monoxide, volatile organic compounds, silicates, nitrogen oxides and other toxins. Carbon dioxide does not affect human health, however, it is the most important greenhouse gas and the principal gas responsible for trapping solar energy on earth and increasing global warming. Hence, large emissions from construction, will negatively impact on global warming. The by-products are toxic and hazardous to human health, causing respiratory problems, cardiovascular disease, affecting development of children, etc.

To reduce air pollution from construction, several measures can be taken. The construction dust should be controlled by spraying a fine mist of water on the materials to keep it dampened, hence minimising the dust released into the air . The construction site should also be screened off to stop any dust from spreading to surrounding areas . To reduce the amount of pollutants emitted from construction vehicles and heavy equipment, low sulphur diesel should be used and particulate filters and catalytic converters should be frequently updated .

Construction sites consist of many workers, loud radios, heavy equipment operated and construction vehicles moving; all of which creates high levels of noise on and around the site. High levels of noise negatively impact on humans residing near the site, causing; hearing loss, stress, sleeping problems and high blood pressure. Research has shown that it also upsets the “natural cycle of animals” .

Noise pollution can be minimised by enforcing some simple and practical measures. Wall structures can be used as sound shields . Investments should be

made in newer, silent machinery and equipments . When operating or performing any noisy work, it should be done during working hours so as to avoid disturbing surrounding residences sleep.

In conclusion, negative impacts on water and soil, air pollution and noise pollution are thought to be the three most common environmental impacts due to civil engineering on large construction sites. If no mitigation measures are taken to prevent these, wildlife, human health and ecosystems all deteriorate with some problems being irreversible. Large construction sites contribute greatly to these problems and hence, mitigation measures should be enforced so as to lessen these environmental impacts.

THE IMPORTANCE OF ENVIRONMENTAL PROTECTION

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In recent decades, many environmental problems have increased as the result of human activities and unplanned management of the technological development those interference ecosystems. Therefore, a dispute between the importance of conservation and preservation of ecosystems to protect environment and the necessity to satisfy human desire by sacrifice the environment has been arise across the world. According to Glossary of Environment Statistics the term "environmental protection" can be defined as the prevention to conserve and preserve the standard healthy level of environmental media by reducing the production of pollutants or polluting substances in environmental media (1997, internet).Various human activities have induce many undesirable effects to the environment which can be threatening human health, economic, natural resources and gene pool of ecosystems such as pollutions, greenhouse effect, global warming and soil erosion. In this essay, it is arguable that the environmental protection is worth for fight due to the several reasons. Firstly, the environmental pollution is one of the main reasons why we should fight to protect environment. Besides, global warming is also another reason caused by the deforestation. Furthermore, warm climate change and flood also increase the opportunity of spread out pests and vector diseases.

Pollution can be divided into four types; water pollution, air pollution, thermal pollution and sound pollution. Fossils fuels used in most factories, petroleum and gas usage for vehicle is the major cause of air pollution. Environment pollution can also be an addition harmful substance that could affect human health and

human life. environmentalists should fight for a better environment because pollutions caused by burning of fossil fuels will results in severe environmental problems such as the occurrence of acid rain due to the production of sulphur dioxide (SO2) and nitrogen monoxide (NO). combustion process not only increases the concentration of carbon dioxide(CO2) in the atmosphere but it is also the main source in producing high level of nitrogen monoxide(NO) and sulphur dioxide (SO2). These are the two major reactants that cause the formation of acid rain. Acidity of acid rain changes the pH of the river water and lakes which then disrupt the nature habitat of aquatic organisms and reduce the chance of survival of aquatic organisms, for example fishes cannot survive due to lack of oxygen. In addition, the insoluble aluminum ions added to the water can causes water to become poisonous which can also be known as water pollution. For example, Norway has blamed that the sea and lakes are poisoned by the formation of acid rain for many years due to the unclean air pollution that comes from Britian's power stations

Since the global concentration of carbon dioxides have increased given the reasons of combustion of fossil fuels and also human activities such as deforestation. The reasons for deforestation are usually resulted from cutting down the forests for lumber logging and also for building a new farming for animal. Forest can also be known as "carbon sink" because trees can be used as an absorber of carbon dioxide in the environment and in returns release some oxygen to the atmosphere. However, unplanned deforestation activities have significantly reduced the concentration of oxygen (O2) and caused the rise in temperature of the Earth. Every doubling the concentration of carbon dioxide in the atmosphere is sufficient to rise the global surface temperature by 3.26 Â°C. Rise in global temperature will significantly caused ice melting, the Arctic sea ice is continuously melting and the amount of melted ice can fill up to as large as two Britain country . Meanwhile, the consequence of ice melting at Arctic has increased the sea water levels. According to the evidence gathered , the sea water level has increased by

2.6% which has the same volume with 49 microns per year spread across the oceans from over the world due to the distinct value between the density and temperature of ice and sea water . In addition, the polar bear will also face extinction in the future due to global warming. Based on the report from National Geographic News, several studies that have been conducted by the U.S. government has show that melting of Arctic's ice that caused by the global warming will endangered two-thirds of the world's polar bears and cause them to face extinction by 2050. Given the above fact, environmentalists should fight for a better environment and save our earth.

Furthermore, environmental protection should be implemented due to warm climate changes and flood which heighten the risks of spread out pests and vector diseases. Some infectious diseases such as malaria, dengue, cholera and encephalitis can also spread out rapidly throughout the whole area by mosquitoes, flies and other insects those usually adapt to live in warm weather region. As World Health Organization notes that contamination of water resources due to the occurrence of flood enlarge the chances of getting water-borne diseases and also for mosquitoes to carry disease around the environment . Malaria and dengue fever have threaten the Southeast Asia and South Pacific island due to the climate change as increases the population of mosquitoes and migration of refugees. Hence, it can be concluded that flood and climate change will destroy our safety health environment. Moreover, high temperature in the river will encourage the growth of algal broom and causes the water pollution index to increases and decrease the amount of oxygen supplied for the aquatic organisms. Since the river water pollution increases dramatically, the level of biochemical oxygen demand which known as BOD level also will increases. The higher the biochemical oxygen demand level will result in the higher of the pollution level. For instance, large amount of blue-green algae devastate the nature of the universal solvent and threaten the public health by releasing toxins into the water. Diseases and infection

that can cause by the algae's toxin are sore throats, gastro-enteritis and skin or eye-infections.

In conclusion, there are several factors described above that strongly supported the argument to fight for environmental protection and create a better environment. Some of the reasons include environmental air pollution which increases the concentration of carbon dioxide that caused the formation of acid rain. Another reason is one of the side effects like global warming caused by the deforestation which increases the global temperature caused the occurrence of ice melting. Moreover, the global warming change the climate become warmer and flood encouraged the growth of the pests and vectors like malaria and dengue fever to spread the disease out to the environment which increases the level of biochemical oxygen demand. Therefore, the environment should be protected for a better life in future.

REDUCTION OF GLOBAL WARMING AND MAINTAINING SUSTAINABILITY

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Global warming is defined as an increase in the earths atmosphere. It is really harmful for environment. Pollution is also one of the big cause of global warming. Pollutions such as air pollution, water pollution, soil pollution and greenhouse gases contribute to the global warming. Greenhouse gases particularly human produced carbon dioxide are responsible in increase in global warming. Global warming could result various deadliest effects such as spread of diseases, warmer water and more occurrence of hurricanes, natural disasters, migrations, conflicts and wars and so on. In order to avoid such effects, global warming cannot be totally eradicated but it can be reduced drastically. Global warming needs serious attention about its effect and measures need to be taken to reduce global warming in order to maintain a proper sustainable environment.

Global warming apparently is an increase in the global temperature but the change of temperature will not be uniform everywhere. The change in temperature is also called greenhouse effect. Troposphere which is known as the lowermost layer of the atmosphere traps heat by natural process due to the presence of greenhouse gases resulting into the change in temperature of the earth. The more the concentration of the greenhouse gases, the more is the amount of heat being trapped. The temperature of earth would be very low but in the presence of greenhouse gases the temperature of earth is comparatively very high which we called global warming.

Researchers estimated that the earths mean temperature will rise between 1.5 to 5.5 degree Celsius by 2050, if the input of greenhouse gases continues to

rise at the present rate . Another effect of global warming is the rise in sea level. It also changes in pattern of rainfall which affects the distribution of vector borne diseases such as malaria, elephantiasis, and so on. Global warming has also big negative impact on agriculture. Soil moisture and vapor transition will increase which may drastically affect agricultural production. The increase in temperature and humidity will increase pest growth like the growth of vectors for various diseases.

Several measures were taken in the past to control global warming. There are more measures constantly being taken every now and then. The main idea is to cut down the rate of use of Chlorofluorocarbon and fossil fuel. Agriculture also helps in reducing global warming. Now a day's most of the farmers use chemicals in their crop to grow them faster and make them more attractive .This has bad effect on our environment which is also indirectly increasing global warming. This cause pollution as well as make most of the people sick. So, chemicals shouldn't be used in agriculture. Farmers should think about environment rather than money. Natural pesticides does not harm environment. So, natural pesticides should be used to make crops healthy. Small things which are unnoticeable also have big effect on environment. So, all of us should be more careful and think about its positive as well as negative aspects.

Specially recycled, less using, and re using is a very important method to not only less using the waste products but also to help maintain the budget which keeps the economy flowing. Products such as papers, plastics, aluminum cans, and glasses can be recycled for re utilizes purposes. We should reduce using waste which cannot be recycled. Also we should not throw papers everywhere. Instead we can start from our home by collecting papers and later on give it to recycle. Reusing or recycling programs have to be maintained in every place from house to school as well as businesses and streets. In fact, by recycling half of the waste product 2400 pounds of carbon di oxide can be saved annually. For example: In my college we have two trash cans nearby in one its written waste only and in

another its reuse. So, those students are throwing papers, plastics in reuse and other unnecessary trash on waste only. It will be easy for them to re-use the papers and save from pollution.

Now technology is stepping forward day by day. They are making new ideas, new programs and new inventions. They are making different electrical production from which we can reduce using fuels and things which harm environments. For example: I am from Nepal and when I was small my mother used to cook food by burning woods but as I get older I saw many changes coming, then my mother started cooking food from fuel. Now we are here and my mother cooks food from microwave or oval which is electrical. Not only in the case of making food .Cars, computers and other many things has changed due to the progress on technology. Few years ago cars used to smoke emission which made air pollution and the sound from that made noise pollution but now here is car with no pollution. Slowly we are saving our environment. New techniques are making our environment as well as our life better. Also not only environment but its reducing global warming.

On the other hand, usage of energy efficient products could help in reducing global warming. For example, if we buy a car that offers good mileage doesn't not only save fuel but also produce less carbon dioxide which helps to protect the environment. In fact, any vehicle that runs by battery would be better than any other vehicle that runs by fuel. Also drive less and drive smart is another technique that can be used practically in our daily life. Less driving means fewer emissions and fewer emissions means less chances of global warming. I have hybrid car and I am saving lots of fuel. I think cars like hybrid should be made more which will help in reducing global warming.

Apart from that, we could also plant a tree which is another method to reduce greenhouse gases. Plants and its photosynthesis process are really very important for environment. Photosynthesis is a Natural process in which plants absorbs carbon dioxide and gives out oxygen which indicate safe environment. According to a report by environmentalists, a single tree absorbs one ton of carbon dioxide

during its life time. Cutting tree will affect everyone. When plants are removed, the soils they observe also come out which cause heavy rainfall and destroy everything. With that removal of forest or tree there will be more carbon dioxide and less oxygen which totally harm environment. Deforestation is very dangerous for our environment which causes global warming. We should reduce cutting tree but if we really need to cut tree then we should plant another tree which will help in reducing global warming as well as balance the environment.

Everyone is thinking about reducing global warming. Besides following all the possible methods and techniques to reduce the production of carbon dioxide and greenhouse gases, it is very important to be aware from personal level to help reduce the global warming. Population is increasing day by day. And growing population has biggest effect on global warming. The way they live, the food they eat and everything affect environment. So, less population will surely help to reduce global warming. Education also plays one of the biggest roles in reducing global warming. Many people don't even know what is mean by global warming. So, every individual should be made aware of the effects of the global warming which would help reduce the increasing temperature of the earth due to global warming. It's a tough task to reduce global warming and every individual should contribute as much as possible in order to reduce the global warming and maintain the sustainability.

Since there is little doubt that global warming is influence by human actions, it can also be stopped by our own actions. Something should be done to stop it before it turned out to be very bad. We can act towards things that produce little greenhouse gases as much as possible. Our own approach can makes a difference in protecting our environment and making it sustainable as much as possible for the generations to come.

4-RE TO PROTECT ENVIRONMENT

Maneti Thirupathi Reddy,
Tummalapenta Limestone Mine,
UltraTech Cement Ltd.,

"The world has enough for everyone's need,
but not enough for everyone's greed."

Mahatma Gandhi

God has given sufficient resources for food, air, water and energy to fulfill our requirement if we use those resources in limited quantity otherwise we may be in trouble. We cannot produce the resources but definitely we can preserve those precious resources for our own lifetime and for the next generation also, by means of 4Re's

Reduce, Reuse, Recycle, And Renew.

★ **Basics of 4Re's:**

The most effective way to reduce waste is to not create it in the first place. Making a new product requires a lot of materials and energy: raw materials must be extracted from the earth, and the product must be fabricated and then transported to wherever it will be sold. As a result, reduction and reuse are the most effective ways you can save natural resources, protect the environment, and save money.

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit your community and the environment.

Renew the used resources as well as use the renewable resources, the most important are renewable energy sources.

★ **How to Reduce and Reuse:**

Look for products that use less packaging. When manufacturers make their products with less packaging, they use less raw material. This reduces waste and costs. These extra savings can be passed along to the consumer. Buying in bulk, for example, can reduce packaging and save money. Always carry a bag while purchasing, it will reduce the use and waste of plastic hand bags.

Buy used. You can find everything from clothes to building materials at specialized reuse centers and consignment shops. Often, used items are less expensive and just as good as new.

Buy reusable over disposable items. Look for items that can be reused; the little things can add up. For example, you can bring your own silverware and cup to work, rather than using disposable items.

Maintain and repair products, like clothing, tires, and appliances, so that they won't have to be thrown out and replaced as frequently.

Borrow, rent, or share items that are used infrequently, like party decorations, tools, or furniture.

One person's trash is another person's treasure. Instead of discarding unwanted appliances, tools, or clothes, try selling or donating them. Not only will you be reducing waste, you'll be helping others. Local trusts, community centers, thrift stores, schools, and nonprofit organizations may accept a variety of donated items, including used books, working electronics, and unneeded furniture, medicine etc.

★ **How to Recycle and Renew:**

Recycling includes the three steps below, which create a continuous loop, represented by the familiar recycling symbol.

There are several methods for collecting recyclables, including curbside collection, drop-off centers, and deposit or refund programs. Visit How do I recycle... Common RecyclablesAfter collection, recyclables are sent to a recovery facility to be sorted, cleaned, and processed into materials that can be used in manufacturing. Recyclables are bought and sold just like raw materials would be, and prices go up and down depending on supply and demand in the United States and the world.

- This way we can recycle many things around us like tyre, paper, lubricants, batteries, glass and the most common is plastic.
- Use renewable energy sources like Solar Energy, Wind Energy, Geothermal, Animal/Human power, Biomass, Hydropower, and Tidal Energy at coast line.

Benefits of 4Re's

- Prevents pollution caused by reducing the need to harvest new raw materials;
- Saves energy;
- Reduces greenhouse gas emissions that contribute to global climate change;
- Helps sustain the environment for future generations;
- Saves money;
- Reduces the amount of waste that will need to be recycled or sent to landfills and incinerators;
- Allows products to be used to their fullest extent.
- Prevents usable goods from going into landfills
- Helps your community and those in need
- Tax benefits may be available

There are many more ways to protect environment- revise your thinking, refresh your mind, rebuilt your infrastructure, review your action, regulate your need, return what you take, recover losses, because the resources are available to retain environment if we remember, otherwise environment will remind us after time to time…

REDUCE, REUSE, RECYCLE, AND RENEW FACTS

ALUMINIUM

It takes 95% less energy to recycle an aluminum can then it does to manufacture a new one. Over 80,000,000,000 aluminum soda cans are used every year. A used aluminum can is recycled and back on the grocery shelf as a new can, in as little as 60 days. Every minute an average of 113,204 aluminum cans are recycled.

Over 50 percent of the aluminum cans produced are recycled.

Two-thirds of the aluminum ever produced is in use today.

STEEL

American made steel cans contain about 25% recycled steel, Recycling one ton of steel saves mining 1.1 MT of iron ore, 0.45 MT of coal and 0.08 MT of limestone.

PAPER

Recycling one ton of paper saves 15 trees. Making one ton of paper using recycled paper uses only about 60% of the energy and water needed to make a ton of paper using virgin materials. Every ton of paper recycled saves landfill space. Recycled paper produces 25% less air pollution than paper made from raw materials

GLASS

States with bottle deposit laws have 30-40% less litter by volume. Recycling 1 ton of glass saves 1 ton of natural resources. Glass containers save 9 gallons of fuel (oil) for every ton of glass recycled.

Most bottles and jars contain at least 25% recycled glass. It only takes one ounce of ceramic to contaminate one ton of recycled glass resulting.

PLASTIC

Recycled soda bottles can be made into fleece clothing, sleeping bags, carpeting, and Other textiles, other items made out of recycled plastic include decking, outdoor furniture, Planter's boxes, kitchen utensils, office supplies and more, Enough plastic bottles are thrown away in the United States each year to circle the

Earth 4 times, approximately 88 percent of the energy is saved when plastic is made from plastic, rather than from the raw materials of natural gas and oil. It takes 36 2-litre PET bottles to make one square yard of polyester carpet.

"MINING ENVIRONMENT AND MINERAL CONSERVATION"

AKHILA

Jaggayyapeta Limestone Mine

Minerals are one of the most important Resources is our life. They provide sound base for the "Economic Industrial Growth". inerals are indispensable part of our life. The thing which we use from a tiny pin to long tall Building everthing was made up of mineral Resources.

Our country is blessed with ample of mineral resources but the disbibution of these Resources is uneven and they lack some (or) the other facilities to access to those mineral resources.

Mining is the extraction of the valuable mineral resources from the Earth. All the valuable mineral Resources like cool, petroleum etc.. are taken from the Earth by this process.

We can see mining process in our surrounding ex vspnines this make our life producing row material for Industries this will improve the Economic government. Environment also needed to be saved in all hand in hand.

The advantage of the mining :-

* Well structural mining engages with the local joles, raising the living standard of the people of the community as for mining Industries are needed to set up which provides hand gull of work for the people such as there will be requirement of labourer, transport facilities.

* Revenues generated by the mining industries helps in the development of the locality and it can play a role in Economic and country's development.

* Mining is a source of extraction of the minerals resources important for maintaing and upgrading of living standards and it's an extraction of valuable and non renewable resoures which plays (or) made our life style this much luxories and satisfactory to all.

Now, if we look forward about the demerits causing by the activities such as minning. We can come to know that

"There is Enough for everybody's need but not for anybody's Greed"

By Gandhigi

This well known adage gives us a brief explaination that God has created resources equally for all the members of manking but the greedy of the few members making it an accesible for all.

The disadvantages of the Mining Process :

* The mining means extraction process is including Blasts which will disturb the surrounding environment.

* The industries will be dispose their waster into the near by ponds which will pollutes the water and all the acquatic floro and fauna gets disturbed due to minning.

"When the last pond was polluted, lass tree was cut, last fish was die then the people will come to know that they canol money"

* For this establishment they need a large place where the minerals are available so that they will clear forest area and establish factries this is leading to deforestation.

* The minning process will spoil the water, land and also even the air they breath is purely poluted and labourer are becoming total this tolls us that

"Money is a Good servant But A Bad Master"

all the states are in the alarming condition so we need to become consious about situation.

"Why do we need to conserve minerals" :-

* In the recent years the rate of consumption of minerals was becoming (or) increasing at a rapid fast which may in future can lead to "**Energy crisis".**

* **As there was only 1% usable minerab on eath.**

* Some of the resources are non - renewable and it may take million of years to be renewed which we are using that may extinet for future generation.

"Steps to conserve the mineral & our environment" :-

* Technology should be improved so that they can creat alternative resources for the future development.

* People need to be get aworeness about proticting Environment and judicious use so that they can sustain for long time.

* **Sustainable Minning :-** Without disturbing

Environment streps needed to be takes by government for the reducing mining spots.

* People needed to use CNG as there cooking fuel.

* People should take active participation in the vanmahotsava programes

* The minning industries are needed to take more important role in the protecting environment.

Being an responsible citizen we need to take a active role in the protecting our environment and we need to take the inspiration from **"Japan example : this country is not Blessed like our country writh natural resources but than also it was developed but we are still at developing stage as they are improved in the technology so they are talented in the exports and imports"**

* Our country is the countres having highest young population.

"To days citizens are Tomorrows Ruless of the nation"

* it says us that the development was in the hands of the youth.

So they need to take active participation.

So, I conclude by telling that such activies need to be organised by government for creating awareness in people.

"I am not jealous of mines because its mine"

SAVE ENVIRONMENT - SAVE EARTH

MINING ENVIRONMENT AND MINERAL CONSERVATION

G. Durga Prasad
Jaggayyapeta Limestone Mine

As the day to day activities going on in the environment, one of the main activities in MINING. This is done for the development of the country. As the raw materials for factories from the mines the mean outcome is the minerals. Minerals are the homogenous substances uniform in structure and composition. The things which we use from a tiny pin to a towering building all are made of minerals.

As we are the citizens of the world we need to protect the minerals. Minerals are now being used more and more. So that the quality of minerals is reducing and accordingly the cost of them increasing. So we need to improve quality of minerals which is possible only by following sustainable development. It means development taking place without damaging the environment and we should also keep a sympathic dialogue that not only we should use minerals. But also the comming generation to use them so that we are in a stage to achieve our Goal. Many mines are taking place in the world. The compesition from one country to another country makes the resources less quality and more cost. This leads to the lack of resources in future. The main thing which makes these variations is due to the differece between the developed and developing countries.

So we should conserve the minerals so that we can be saved for an country.

India is one of the most populated country but it lacks something. So that from my grand father's grand father and fill now it is known as developing country. We should use the resources in a limited way we should make people aware of there activities like mining and picking ones more and more from the earths crust. This will make our country Not only our country but also whole world to live on to maks life easier.

MINING ENVIRONMENT AND MINERAL CONSERVATION

SK. BASHEER
Jaggayyapeta Limestone Mine

Mineals are natural chemical compounds uniform in structure and composition. Minerals are chemical compounds and have defenable internal structure. Minerals are very important sources of our country.

Properties of Minerals :-

1) Minerals are in wide range of colours, textured, crystal found, dencity etc.....

2) Menerals are available in solid, liquid and gaseous state.

3) Minerals provide strong base for economic and industrial development.

Minerals are an indespensible part of our life. Every thing from a tines tin through a towering building all are made up of minerals. The railway tracks, roads, buses, cars are manufactured by minerals and run on power resources derived from the earth. Minerals are in many forms. Mica, coal, iron ore, manganese are the examples of some of the minerals. Orissa is the largest producer of bauscite in India. Kudermurk mienes in karnataka is the largest producer of from ore in India kurnool district in A.P. is the largest producer of meca in the country. There are many resources available in large quantity. There are many coal mines in our country. Many of the political leaders are supporting the mining of coal and occupying huge quantities indiscriminately.

Importance of Conservation of Minerals :-

There is a need to conserve minerals as they are getting reduced.

1) The volume of workable menerals is only 1% of the earth's crust.

2) The rate of consumption of the minerals is very fast.

3) Many of the resources take millions of years to form thus ther is a need to conserve menerals.

4) Some of the resources are non-renewable resourced and are shortly leved.

There are various resources in our country Galghat mines in madhy a pradesh is the largest producer of copper. Orissa is also the state that have more production of manganese and Irone ore. Leme stone is one of the most important rock meneral in India. It is produced from calcium corbonates (or) magnesium carbonates. It is used as a raw material in cement factories and used as a raw material in smelting of Iron in blast flornaced. Now a days menerald are being depleneshed due to the human's greed. Due to meaning, there are many problems getting arrived in our environment. Due to mining, the chemicals & dust are released in to air rest and causing pollution. There are also resulting in acid rain and global warming. The human life is getting disturbed. Thus there is a need to converse mines.

Measured to conserve resourses :-

1. People should be made aware to use resources in a planned way.
2. Minerals should be recycled, so that minerals can be conserved.
3. Government should take necessary steps so that minerals are conserved.
4. Minerals should be conserved so that they are useful for the future generation.

Minerals are an indespinsible part of our life. So we should conserve minerals and keep our environment clean and purify. So, we should converse minerals to sustain our minerals. Conservation means utilizing minerals in a sustainable way. So it is our duty to conserve minerals. Government should take necessary steps so that excessive mining should be banned and they should be conservated. Conserve minerals and make life easier.

ENVIRNOMENT

S.V. LEELA SAGAR REDDY

An environment includes all the natural resources which surround us to help in number of ways. It provides us better medium to grow and develop. It gives us all things which we need to alive our life on this planet. However, our environment also nedd some help from all of us to get maintained as usual, to nourish our lives forever and to never rain our lives. The elements of our environment are declining day by day because of the man made technological disaster.

We need to maintain the originality of our environment to continue the life on the earth, the only place where life is possible till now in the whole universe. World Environment day is a campaign being celebrated for years every year on the 5th of june in order to spread the public awareness all over the world towards the environment safety and cleanliness. We must participate in the campaign celebration to know the theme of celebration, to know ways of saving our environment and to get aware about all the bad habits which declining the environment day by day.

We can save our environment in very easy manner with the little step taken by every person on the earth. We should reduce the amount of waste, throwing wastes properly to its place, stop using poly bags, reuse some old things in new ways, repair and use broken things instead of throwing it way, see how much it would take to repair them, use rechargeable batteries or renewable alkaline batteries, make use of fluorescent light, rain water conservation, reduce water wastage, energy conservation, minimum use of electricity, etc.

ENVIRONMENT ASPECTS

Y. SPANDANA

Introduction :

A clean and healthy environment is part and parcel of the wealth and quality of life that we parcel of the wealth and quality of life that we desire for ourselves now and for our children in the future. People demand that the air they breathe, the water they drink, and the food they eat is free of pollution and contaminants; they want to live undisturbed by noise, and they want to enjoy the beauty of the country side, unspoliled coastlines and mountain areas. They also want a world that is not threatened by climate change.

Healhty and balanced natural natural systems are essential for supporting life on this planet. Society relies on nature to provide us with the resources for our survial; air, water, food, fibers, mediciens and building materials.

The scientific researches, conducted over centuries, show that the pollution of the atmosphere reached its top.

Sources of Environmental Pollution :

The atmosphere contains a lot of dust, which travels from the surface of the earth and partially, from space, as strong winds pick up water particles from seas and oceans.

There are some basic sources of pollution of the atmosphere: Industries, transportation devices and others. industrial production and its waste products are the strongest pollution of the air. Their sources of pollution are thermal power stations, which together with smoke, throw out sulphurous and carbonic gas in the air. The metallargical enterprises, especially nonferrous metallurgies, fil the air with nitrogen compounds of phosphours, particles and compounds of mercury and arsentic, chemical and cement work.

Environment Safety Precautions :

Indirect emissions from burning fossill fules to heat the can be reduced by switching to alternative fules, including natural gas, biomass and waste-derived fules such as fires sewage sludge and mumicipal solid wastes. These less carbon-

intensive fules could reduce overall cement emissions by 18-24% from 2006 levels by 2050.

Alternatively efficiency measures can reduce the demand for fuel by addressing he production process itself or through technical and mechanical improvements. While some esimate that energy efficiency improvements could achieve emission reduction of up to 40%, some industry analyses suggest that producers may have already exhaused this potential without additional financial incentives further break throughs could be difficult.

BIOLOGICAL HAZARDS :

These include the existence of viruses, bacteria, fungus, parasities or any living organism that can cause disease to human beings.

Accident Prevention :

Accident Prevention refers to the plans, preparations and actions taken to avoid or stop an accident before it happens. “Prevention is better thatn a cure” is an old and popular proverb, which means it is betler to stop bad things from happening than to fix them after they have already happened. Accidents are prevantable, but steps must be taken to prevent them. Many accidents occur due to human factors. These factors include unsafe acts un-mindfulness, negligence, lack of knowledge and training.

Safety Plan :

A safly plan is a formal procedure to be followed in case of emergency in a work place. A safety plan is a formal documented procedure that is to be followed by all the members of the work place in case of an emergency. For example, a construction company will have a construction safety site plan, while oil & gas companies will have a different site plan as compared to the construction safety site plan while oil & gas companies will have a different site plan as compared to the construction safety site plan.

SLAM PRINCIPLE :

Personal risk assessments management is a step - by step process used to eliminate or mitigate risks before preorance a specific task.

CHALLENGES TO ENVERONMENTS MANAGEMENT PRACTICES IN MINES

T. MURALIDHAR, India Cements

Minins has been and continues to be a major contributor to the economic growtes of the most of the developed and developing countries. A high environmental cost which has been associated with years of unvesulated mining and mineral - processing activities made it realised to strike balance between mineral development on one hand and the greening of the environment on the other.

Introduction : Environmetal problems associated with waste and emissions produced from various mining activities have forced organisations, facing competitive, resulatory and community pressures, to move towards greening the mines most of the adopted green solutions especially in India following traditional methods of approach does not eleminite the pollutants, best moreles fronsforus from one medicen to another.

Mining Industry perform various activities such as extraction of minerals, processing of minerals and transportation of these minerals to market place years of unresulated mining and mineved Processing activities like drilling, blasting, crushing and other associated activities have not coure without high environmental costs. The potential social and environmental issues associated with mining and mineral processing operations are both significant and complex to manage. As business is associated with low investment capacity and poor working conditions, which autovces use of traditional technologies and unskilled man power, which ultimately negative affets productivity and maintenence equpment. This results in consuption of move energy and generation of more waste making it most pollwtant seetor. The negative impact of mining on healthy, land, mater, air, plant and animals and other aspects of society can be reduced by careful planning and implementation of mining activities. minerals are the basic raw materials which contribute to the growth of boter industrialised and industrializing countries, trdicious utilizations of mineval resources promotes the economic development to natwn and its people.

The growter in indueas mining industries duto to sultable policy and investment climate supported by davourable market demands has intensitied the adverse impacts on environment.

Import of Environment by mining :

A lack of appropriate technology, primitive extraction techniques, a retultance to plan and disregard towards environment issues of mining inductries have led to wasteful mining, poor mineral recovery, the generater of mass mine waste, seasonal scorcity of ground water, drastic damage to land scapes, alteratous to drainage patlerns and a number of environmental threats including.

Air : Dust produced from various operations in mines and movements of heavy vehicle on hard roads also contribute to are pollution.

Water qualities : The major impacts are water pollution deerto evosion, oil and grease, countamination of water bodies due to discharge of mine water, pollution from domestic and sewage effects, sedementation of river and other water bodies, leached from wash - off from dumps solid waste disposal sites, broken rocks, toxic waste, salinity from mine fine and acid mine drainage.

Noise and vibrations :

A cum, lative effect of the mining activitees like, drilling, blasting, crushing and material trasporatation produces huge noise and vibrations in the mining area leading which results in heaving loss, other health related problems and loss of performance.

Impact of mining on Ecology :

Asa result of mining, significant areas of land are degnadeed and existing ecosystem are preplaced by undesvable wastes. The mineral extraction process drastically alters the physical and biological nature of mixed area.

Challenges to Green Management practices

Optimization of the environmental performance throgh good housekeeping and total quality management necyling of waste and non - renewable produts, substitution of, or a ban on the use of environmentally unfriendly products.

Size of fi :

Small scale mine owners of Industrializing countries like India lack of technical or financial capabilites her proper exploitation, mining development mineral extraction or process. They often lack sufficient mechanical equpment and adequate maintanance facilities which reduce output per unit and increase waste production small scale mines are not subjected to regulaltion under mines act and much of small scale mining activities are carried illegally thus difficult to monitor.

Society Pressure : Local people object to proposals for increased mechanisation, contending that it would reduce employment opportunities of resident mines. Because of operations are therefore highly redimentary, unhealthy and unsafe practices, and negligene towards environmental degradation.

Poor Legislation : A frequently chang regulatory climate of India. Obstructs long environmental plans, and discourages a mine from implementing greener management practices corruption and lack of political will also play its role in non - performance of these related pollution control measured. Enforcement is a key drawback with resulatory arrangements in the sector.

Lack of Divert Incentives :-

In the mineral industy resulatory costs cannot be passed on to consumers because international metal prices are determined in terminal auction markets and cannot be controlled by the producers. The policy of the requiring firms to reduce pollution at source, which necessary involves changing their production technology and organisation overlooks the possibilities that firms might already so serching for new ways to improve metal recovery, reagent use, energy efficiency, water conservation.

Financial constructs :- Environmental management practices need high levels of founding. Specially some companies spend money in adopting environmental measures employee environmental taining and appropriate equipment changes to conventions technologies could make workers and managers obsolute, and would require investment by courpaules in training programmes, an added difficaults for firus with a limited budget.

Technical barriers :- Many mines in India not awave of the curent version of technologies or fast to identify the areas where these advanced technology could be used. Solved mines shortage of expertise is experienced.

Lack of management commitment :-

Top management most of the mining companies is less concerned over environmental issues and reluctant to allocate adequate financial, technological and human resources to implement the green management practices.

Lack of Employee commitment :-

Mining companies do not have proper performance evalution system, they also do not have proper rewavding scheme for employees to motivate them to be held responsible for protecting environment.

Lack of awareness :-

Poor awareness regarding environment among the politicians, citizens and bureaucracy is compounded by the low levels of literacy and poor mass media concern. Regulations at all levels are severely limited by lack of adequiate and usuable information also clarity and defination on several aspects pertaining to mining operations.

Inappropriate Approach to Implementation :-

Many enterprises mistakes begin implementation immedeatly following an initial environmental diagnosis without criticalls reviewing objectives adn policies. Indian mining sectors have effective monitering system, whose primary purpose is to assers the mines actual environmental performance against the started environmental policies, objectives and targets short term focus is another contributing facter in failing to achieve the desired environmental culture.

Conclusion :- Idetification of potential barriers can help the manager develop stratagies to minimize the impact of those barrier. All the barriers may not be equally appicable to each and every organization. Managers may also riview the barrier that may be appropriate to their organization so that they can pay more attention to this or conpared to others on the list regional governments has also an important role to play in proding training opportunities and in ensuring that safety and heaalth regulations are appropriate and obberved.

ENVIRONMENT AND ITS PROTECTION

B. DEVI PRIYA, Srichakra Cements Ltd.

First let us read the nature praye :

I humbly bow, the flocks of birds whose twitterings make melodius morning and songs and streams of tree whose greenary swa the mother early and fill the air with glorius gases.

Oh! my mother earth, I take the message of dignity of hard work through never resting one's ants of strength of unity through a flock of crows. I realize that twinkling squirells and tangling leapords also have a right to live like me. I promise that i shall not disturb their, habitat. I shall not misuse the natural resources and polute the nature with pestisides and plastic wastes. I shall behave wisely and strive for the eradiation of superstitions. I promise to conserve the biodiversity and behave with asthestic scientific altitude to protect nature.

"Amen".

In the above prayer we promised about the flora and fauna and its destruction and protection also. I also observed our environment being destroyed all the world. All are not destroying it indirect or direct but are being destroyed. We all strive for the nature and its conservation also.

Indirectly :

Take a paper for the example. I know that it is being prepared by wood pulp and this wood pulp is being brought from trees of forests.

So, I know thing and I will not make a lot usage of paper now.

But, what all about the remaining literates or illiterates they may not know the value of a paper.

So, as per my opinion there must be some other nature destroying things.

Directly :

As we are seeing television and reading newspaper about the smugiling of the red sandal wood. We know they are also a part of future. If such trees are

being transfered for the usage; In our, next generation we can only see such plants in museum.

So, as our responsibility to strive for the nature we should stop such smugglings.

ENVIRONMENT :-

The natural vegetation being in all our sourroundings.

Eorests, a part of environment :

Many people get adoubt that are forests a part of environment. In this type of issue I say that forests are also a part of environment.

So, forests are also our responsibility to be saved.

In these forests only the wild life and also all the flora and fauna also lives. They are also our responsibility.

These are also used by the tribals. They use these forests in a direct way. They take honey from forests, they build their houses by the branches etc..... and soon. Not only these they even cultivate in these forests.

FLORA AND FAUNA'S SORVIVAL :

Flora means for the flowers and plants and fauna means for the animals.

This flora and fauna also depends on these forests only. They eat in forests, sleeps in forests, walks in forests and all other are also at forests itself.

This is also a part of environment.

* Environment means not only forests and trees but also all the vegetation around us.

ENDANGERED SPIECES :

The spieces which are in danger of extintion.

Treatened Spieces :- The spieces are likely to become extint in future.

Extint Spieces :- The Spieces which have become wiped off the earth.

Q. Is their our role in making treathened spieces to not be extint ?

A. Yes as a part of this environment, we should follow the things given below :-

1) For the each birthday or once in a year plant a tree.

2) Do not harm any of spieces.

3) Do not tolerate to any of disobediance to any animal or plant.

MINE (Harm to environment) :- A mine is a place. Where we dig minerals.

Q. Mines is safe or harm

A. Mine can always become harm because there we do many blastings clean off the mountains also.

So its always a harm place.

* Plant as much as possible trees in the mine to prevent pollution.

MINERALS :-

A solid naturally occuring inorganic substance.

MINERAL CONSERVATION :-

Use of minerals. Minerals are always non - renewable resources. They cannot be replenished and their reserves created onece are depleted.

MEATHODS :-

Use of minerals in a planned manner Recycling of metals

Use of alternative renewable substitutes.

BE ALERT BEFORE SEE A SWEET DREAM

PARTHA SARADHI MAJI, Jaypee Balaji

A Growing problem :-

Inhuman life, some basic civic amenities like sleep, rest, food, bath, etc, are very essential. But unfortunately today a growing problem i.e, day-to-day increasing the pollution at our atmosphere presenting us an unpleasant life. Air pollution, Water pollution, Soil pollution, Sound pollution, etc., are coming forward towards the human life like a virus for a bad disease. We suddenly awake in the mid night to see an abysmal dream. Air pollution has been a steadily growing problem for all industrial societies since the 19th century. Carbon monoxide, chlorofluorocarbons, and sulfur oxide are all byproducts of automobiles and manufacturing plants, and have been increasingly permeating the earth's atmosphere over the last century, causing severe health problems and damage to the environment.

Air Pollution Control Detrimental to Health :-

A steady rise in cases of bronchitis, emphysema, and aggravated asthmatic attacks has been linked to such emissions, as have ecological dangers such as ozone depletion and acid rain. In the worst cases, aid pollution has been directly responsible for deaths, as in numerous industrial accidents in which toxic fumes were improperly contained. The business of mining is no more immune to change than any other aspect of life. Indeed, one thing is certain: change is a constant. But chamisnotailvmmlcomeci. Tried and true methods aren't easily abandoned and often time's ne methodology is greeted with scorn and disdain An old dog isn't easily taught new tricks, and sometimes it's a bit difficult to introduce the latest, technology to veteran miners.

Air Pollution Control Laws :-

Attempts to control air pollution have taken a two-pronged attack, using legal reform and technological advances in the legislative field. The United States Congress has enacted a number of Clean Air Acts since the first was passed in 1963, each designed to force manufacturers to control and reduce toxic a

remissions. Though some have criticized these laws on the grounds that they are damaging to the economy, they have overall met with a positive response, and similar laws have been passed a state and local levels to impose similar controls The attempt to curb air pollution through legislative means has recently stumbled however, with the unwillingness of the United States to ratify the Kyoto Accord, a worldwide effort to force nations to comply with a mutual policy of reducing air contaminants.

Air Pollution Control Equipment :-

Fortunately, there exists a wide variety of specialized equipment for the purpose Of controlling air pollution - all of which function by either destroying pollutants or intercepting them before they can escape into the air. Equipment control air pollution includes:

Scrubbers, emitting chemicals that utilize or absorb various pollutants

Electrostatic precipitators, using electrical charges to attract particles found in pollutants there by remove them from exhaust

Bag filters, operating as sieves ,to catch large articles and the like

Carbon absorbers, similar to electrostatic precipitators, these are often found in water filters

Cyclone separators, creating an artificial cyclone to separate heavier pollutants from lighter oncs.

Process of Air Pollution :-

Air pollution is not purely limited to industrial particles found in the atmosphere. Air supplies of other areas tan also be contaminated, most commonly by certain toxic substances used in construction, such as lead paint or asbestos. Radon gas can occasionally be absorbed from atmosphere into a home, where it will may and cause health problems. Second hand tobacco smoke is also well established as pollutant, and may cause a risk of lung cancer if used excessively into an enclosed space. In general, most of the dangers of interior air ion can be averted with an effective ventilation system.

There are some important Environmental laws in the country to prevent the pollution:

1. Water (Prevention and Control of Pollution) Act, 1974;

2. Air (Prevention and Control of Pollution) Act, 1981, .Cess Act, 1977, - Environment (Protection) Act, 1986 and Rules there under

3. Public Liability Insurance Act, 1981,

4. National Environmental Tribunal Act, 1995

5. National Environment Appellate Authority Act, 1997

There are different programme/activities implemented through State Pollution Control Board.

1. Pollution control in 17 categories of highly polluting industries

2. Pollution control from industries discharging waste water into rivers and lakes

3. Inventorization of pollution industries in the State and ensuring their compliance to the Pollution control norms

4. Restoration of environmental quality in critically polluted areas

5. Monitoring of water and ambient air quality in the States

6. Hazardous waste

7. Bio-medical and Management of Municipal Solid Wastes

Sources of water pollution and wastewater generation scenario

It is estimated that 75% to 80% of water pollution by volume is caused by domestic sewage. The major industries causing water pollution include: distilleries, sugar, textile, electroplating, pesticides, pharmaceuticals, pulp & paper mills, tanneries, dyes and dye intermediates, petro-chemicals, steel plants etc. Non-point sources such as fertilizer and pesticide run-offs in rural areas also catise pollution, only 60% of chemical fertilizers are utilized in soil and the balance is

leached into soil polluting the ground water. Excess phosphate run-off leads to eutrophication in lakes and water bodies.

Various steps to control vehicular pollution

1. Establishment of Ambient Air Quality Monitoring throughout India
2. Notification of Ambient Air Quality Standards under Environment (Protection) Act.
3. Notification of vehicular emission norms for year 1990-91, 1996, 1998, 2000, 2001
4. Improving fuel quality by phasing out leafrom gasoline, reducing diesel sulphur reducing gasoline benzene, and etc.
5. Introduction of alternate fuelled vehicles like CNG/LPG.
6. Improvement of public transport system.
7. Phasing out of grossly polluting commercial vehicles.
8. Public awareness & campaigns.

The actions have been taken on the 17 categories of the industries which have come into operation after 1991 i.e. the post-91 industries

The Inventorization of the Post-91 large and medium industries of 17 categories has been completed. A total of 587 such industries have been indentified and out of these, 561 units are presently operating. Although, It was mandatory for these units to have been allowed only if they had the requisite pollution control facilities, there latest compliance status is being verified. A programme for pollution control through concerted efforts in polluted areas was started in 1989. The programme involves identification of the polluting sources, preparation of action plans for control of these polluting sources, and implementation of the action points by the concerned responsible agencies/industries.

Technology & environmental balance is crucial along with nation's progress. So, we make it a point that our work does not disturb the nature's balance. We may take up massive afforestation and other environmental development programme to balance the loss.

CONSERVATION OF WATER RESOURCES

B. MAYUKHA, Rain Cements Ltd.

Conservation means protection. We usually use this word for conservation of trees, animals which are going to be extinct but it is also important to protect water and its resources as well.

Water resources means the sources of water (or) water bodies. These include rivers, lakes, ponds, tanks, ditches etc. These are mayor water bodies for our ancestors but today we are unable to drink water from these water bodies we want every thing purified. These purified water has o useful minerals also. What we are thinking is we are improving by modren methods of technology. But we are gaining nothing from it except diseases.

We have to conserve water for a specific reason - today some villages dont have tanks or any water resources. They wanted to water and drink. Once there will be a large tank but where is it gone. All the rich people combine it with their agricultural lands or plots and build houses in their area.

In the childhood of our parents they drink water from wells and tanks. In those days every house has a well as a result of this they stayed healthy when the situation came to us it is quite opposite. We need to try water. But think when it come to our future generations. What will be there. No water.... they wanted to fight for water. But even in that water we have many chemicals destroy soon.

Why to conserve water resources

We have to conserve water resources because today in endangered spicies list we can join lakes, tanks, ponds also. Our situation became worst. We have show only their pictures to our children conservation is not only one day work, but we have to implement it day by day. Not only once a year on water day, safety day. Many people. eg. I write such a essay as above but I am implementing it honestly No but I can help by joining my hands. Not only me each and every person join their hands and take a forward step.

We have to create awareness among people. We have to save resources. Once in our society people used to pray even water. But today use are polluting water on 12 years once we take a holy dip saying pushkara. By saying it in some or other way we are polluting water. We put turmeric powder, kumkum in water are putting camphor pills. Isn't it poisonius think. What situation we are facing today is terrible.

How to conserve water resources ?

1. We all hanour that, recently our telangana govt focused on tanks and brought out a programme namely "Mission kakatiya". We can save the water resources by joining in this programme.
2. We can also take ditches in the backyard of the house. So that the rain water stores of the house. So that rain water stores and it slowly moves into ground. So, ground water level will be increased.
3. We can stop digging bore wells too deep in the ground.
4. We can even plants trees, by this we will get rains and the rain water moves intolour lying areas and hence, the water store there.

   By taking these above steps we can save them to some extent. So I request you to do all the above things and help our future generations.

CONSERVATION OF WATER RESOURCES

K. AAKASH, Rain Cements Ltd.

Conservation of water resources means, how ot preserve the water resources such as lakes, tanks, ponds, rivers, wells etc. Now adays there is a lot of water pollution. Water pollution is taking place due to the excess use of chemical fertilisers and perticides in fields. Now a days factories are releasing the wastage and the chemicals in the near by water resources. Due to this pollution of water. The water is contaminated and the aquatic animals are dieing due to the chemicals. The whole water resources are polluted. So, we have to conserve the water resources

Importance of Conserving water resources :-

If we conserve the water resources then the aquatic animals will not die.

If we take the water which is contaminated can also cause death.

The formers who use the water from that resources get less yielding and sometimes the whole field is damaged.

Many domastic and wild animals which drinks that water will die due to the pollutants which are present in that water.

How to conserve water resources :-

I advise the farmers not to use excessive chemicals and pesticides.

I advice the people not to wash their cloths and cows or buffaloes in the tanks or rives.

I advise the owner of the factory not to dump the wates in near by water resources.

I advise the government to construct a proper drianage in each and every village.

I advise the people to participate in water shed development programmes to increase the level of water in under ground.

I advise the people not to use the ganesha's which were prepared with chemical colurs.

I advise the people who are working in drilling for oil, should not let the drops of oil fall in the water etc.

How to treat the wter resources :-

We have to use the water in a proper way. We have to feel that the water is not a liquid it is a fluid which saves our life. Once the Red Indian named chief seattle gave a speech on the nature. In his speech be said we have to treat the water as the blood of our ansectors and we have to preserve it. We should not waste it. Water plays a major role in our life. We have to treat as a diamond. Since it is available in little quantity. We have to feel that saving the water is nothing but saving our life. Water is also omportant to our body. So we should make a proper use of the water.

Quotes on saving water resources :-

Water is precious

Save each drop of water

Say “Hello” to pure “H_2O”

Save water, save our life and save our future saving our future.

Don’t waste water.

Treat the water as blood of our ansestors.

ENVIRONMENTAL IMPACT ASSESSMENT IN MINING

A. VENKATESH, Parashakti Cement Industries Ltd.

Environmental impact assessment is a process of evaluating the environmental impacts of a proposed mining or development related to socio - economic, cultural & human - health. To make environmental impact assessment on any mining industry we have to involve the following stages.

A. Screeming

B. Scoping

C. Evaluation & alternatives

D. Reporting

E. Review

F. Decision - makeing

G. Monitoring & conclusion

During the process of mining verious aspects are involved like land acquistion, top soil removing & storage, drilling & blasting, mineral extraction, transport, disposal, mine water pumping which are impacted for the following list :

1. Landuse
2. Socio-economic
3. Water qualites
4. Noise & vibrations
5. Risk / Hazards
6. Landscape
7. Water resouces / hydrology
8. Air & dust
9. Ecology
10. Public health and safety

1. **Landuse :-** The impacts on existing land use during the miming is removal of vegetation and resett lement of displaced population. This changes agriculture, fisheries, recreation sites, housing, forestry areas etc.

2. **Land scape :-** soil - crosion, loss of top soil, change in geology, disposal of wastes, deforestation are the impacts of landscape.

3. **Socio - Economic :-** The impacts of mining are change in employement, infrastructure, community development, communicateion, transport, education & medical facilities etc.

4. **Water Resources / Hydrology :-** The major impacts are changes in ground water flow patterns, lowering of water table, changes in hydrodynamic conditions of river, cotamination of water bodies.

5. **Water quality :-** The impacts are water pollution due to erosion, oil & grease, contamination of water bodies due to discharge of mine water pollution from domestic usage, solid waste disposals, acid mine drainage.

6. **Air quality :-** The major activies of dust emissions are drilling & blasting, overburden removal, haul roads, transportation and also erosion from dumps. Others are gaseous, enhoust from HEMM.

7. **Noise & vibrations :-** The major impacts during mining are generation of noise & vibrations which spread in neighbouring houses.

8. **Ecology :-** Loss of bio-diversity, flora & fauna, fisheries, migration of wild life are the major impacts of ecology system.

9. **Risks / Hazards :-** Blasting may effect the mine workers. There also exists risks & hazards of mine accidents (roof fall, explosions, etc).

10. **Health & sofety :-** Water borne, respiratory and some chamical diseases are cause of nearing for public health & sofety in mining areas due to blasting, all dust and water pollution.

The scoping of impacts on environment to take an alternatives are which are effected by mining. To control the all environmental impacts are following.

Plant materials selection for reclamation

Compensation to be paid for house and land acquired from public.

To provide facilities like colony, water supply, power, roads, etc.

Overburden run - off collection & treatment.

Oil & grease separators.

Treatment of mine water discharges.

Dust extraction facilities are to be provided with HEMM, crushing.

Mineral handling

Transportation

Provision of ear plags and ear miffs to reduce noise level.

To control ground vibraction.

Providing recreation sites for public.

Sufficient procautions to be taken to mine workers and as well as surrounding people.

After all taking mitigation measures of environmental impacts, to report an invironmental management plan and also take a review of the environmental impact statement from the public as well as government authorities. Final submission of the environmental impact assessment to the central Govt. (i.e. MOEF) they will exercise the report and take a decision making while the project is approval or rejection.

Conclusion :-

However, the importance of the required control of the environmental impacts due to land use, socio - economic, ecology, pollution of air, water & noise, vibrations caused by mining can not be ignored. The requirements of environmental impact assessment has helped the development of technologies for effective design of integrated mining.

ENVIRONMENT

A. VYSHNAVI
Parashakti Cement Industries Ltd.

Environment means surrondings. Land, water, air, plants, animals, solid wastes and other things that are surroundings us constitute our environment man and environment are closely intertained with cach other, to maintain a balance or equiibrium is nature.

Different groups of people working in different areas expres it in various ways when physical scientists talk environment by they generally refer to the physicol environment that comprises the three interlocking sustems the atmosphere, the hydrosphere and the lithosphere.

Bioogists often refer to biological environment consisting of all living organisms of the Biosphere similarly social scientists refer to the school, cultural, economic and organizational environment.

Hence environment may be defined as “the sum of all Nocial, cultural, economical, biological, physical and chemical factors surrounding the ‘man’ to give necessary protection.

Two types of environment we may come across one is the natural environment of the air, water, solid wastes and etc. The second one is the man - made environment like housing, technology, trasportation and etc.

These environmental components are considere as the resources and are mostly exploited & utilized by the men to fulfill their basic physical needs they can be considered as the fellow members of the globol eco-system with which men establish emotional, intectuall or physical relationships and these provide the basis for a sense of purpose of life to them.

Thus man is firmly placd as an important part of the global ecosystem. Which depends on him much as he depends on it hence, there is a close relationship between humanbeing & environment.

So, as we are humans we have to protect our environment.

MINES ENVIRONMENT AND MINERAL CONSERVATION

CH. POOJITHA, Madharam Dolomite Mine

In the present world scenerio as the culture and civilization surge a head with rapid strides, pollution, global warning and environmental degradation and destruction are a few terms coined, discussed and debated upon. It is a traged that today the human being is standing at the cross roads, more desperately and helplesly than ever. He enjoys the boons and blessing, the science has bestowed, equally and emphatically he contemplates and reflects upon the issues mentioned above. In a pensive mood he thinks whtat would he bequath and delegate to the posterity? Who can answer this hundred dollar question?? How can the mother earth be a safer place for a new offspring ???

As a humansit is our responsibility to protct our environment if not, in turn, it effects our future. However, owing to a numberof locunas, industrilisation explosion of population and a number of other factos pollution has streched its tentacles in every sphere of environment. Thus, we witness and experience sound pollution, water pollution, air pollution and soil pollution over and above this, the modern psychologists and intellegesia have coined a newterm known as mind pollution.

Environment i.e., the surroundings around us, the flora and fauna, the atmosphere plays a pivotal vole in elevating our spirits and extending life expectancey. “Survival of the fittest” the theory which is inextricably interworen since the times immerioal among the intellecutals and the scientists will be well respected if we get a healthy environment. Mental growth, physical well being, emotional integrity are essential for a person to thrive and prosper.

Pollution is a global phenomenon. In India too, it has raised its ugly head controlling and culbing of pollution though seems unrealistic, its magnitude can be controlled. The effects of pollution are so vast and varies that a human being is trapped every where to breathe clean air, to drink pure water and to lead a normal life.

In the present scenerio, environment also includes work colture stress free work and amicable relationships in the work place. Against this back drop, protection, preservation and promotion of the environment undoubtedly is an essential feature for a healthy life and living.

Deforestation, releaseing tonic materials into the rivers, ocean and seas, wide spread industrilization. Innormerable vehicles on the roads infact the list is endless to hightlight the factors that cause pollution in the modern world.

Over the years, though we have achieved a little, the monstrious evil is escalating. Public awarness programmes **"SWACH BHARAT CAMPAING"**, cleanliness drive **"HARITHA HARAM"**, programmes definitely go a long way to control this evil. Now - a - days local NGO's governments and others come forward to fight this evil. As a result, remarkable strides have been taken in this regard every where.

Across the caffe table, in the households works sops and seminars, conferences at local, national and international level pollution has become a key ward. Heads of the countries runfrom pillar to post to settle the issues a rising out of pollution.

A house wife's seriousness to dispose the vegetable peels into a garbage to an industrilial giant's attitude to recycle the waste material - every where pollution is being treated. Such awarness drives if attract huge support a momentum can be reached where the globe can joyous place for lining organism.

From the fore going discussions, it is evident that the globe is not a safe place to live in seasons keep varying, temperature keep changing trees and plants have dwarf growth. Rivers keep changing their courses and soothing breeze is a day dream. This and a host of factors deplete the ozone layer and give rise to "Global Warming". A relevant term in this regard is "Green House Effect". Innumerable conferences are held at National and international level to reduce the effect, but in vain. Our prime minister sri. Narendra Modi's participation onclimate change is an instance in this regard. Co-operation from various sections are required to trap the undersirable effect.

Hence, concerted efforts are desirable at all levels to combat global warming, pollution or environmental degradation. "Each one plant one". "Greenary is the scenary", "Pollution have more solutions". Cleanliness is next to Godliness" such quotations if vibrated and pursued religiously, a greener world is possible. Then and then only the mother earth will stop crying.

"***अंयनाय नान्याः पन्या विद्यते***" No alternative exists without this.

MINES ENVIRONMENT AND MINERAL CONSERVATION

P. SRIJA SAHITI, Madharam Dolomite Mine

Now - a - days climate change is the gratest humantarian crisis of our time. It is responsible for the rising seas, raging storms, searing heat, fowcious firs, sever drought and submerging floods. It thratens our health communities economy and mational security. World wide mations have began taking steps to combat this growing threat, working towards an international agreement in which every country on earth plays its part.

Environment a broadern term includes the surroundings around us the flora and fauna, atmosphere plays a pivatal role in elevating our spirits and extending life expectancy. Darwins famous quotation “Servival of the fittest” will find its testimony in a cleaner and greener environment”. In the present scenerio, environment also includes work cultures, stress free work and micable relationships in the work place.

Health hazards are conspicuous by its nature through out length and bradth of the countr. Deforestertion, releasing toxic material into rivers, dceans and seas widespprcod industrialization, innumarable vehicles on the roads, infect the list is endless to highlight the factors that cause pollution in the modern world.

Over the years, across the globe a number of committies, commissions have been set up to combat this man made disaster. Centris swatchha Bharat programme, Telangana states Haritha Haram campaign, clean and green city etc. profuses the idea undrubtedly. It seems by pollution, man digs his own gram.

Pollution effects are indual many and wide ranging there is no doubt that exassive levels of pollution are causeing a lot of damage to human and animal health, tropical rain forests, as well as the crider environment.

All types of pollutions - air, water and soil pollution have an impact on the living environment.

Air pollution effects

Asthama attack

Reduced energy levels

Cancer

Premature deathis

Water pollution effects

Typhoid

A mocbiasis

Hook worm

Ascariosis

Soil pollution effects

lauses cancer including leukamia

Also causes head aches, mauswm fatiguem lye irrtation and skin rash.

Global warming is the increase of the larths average surface temperature due to effect of green house gases, such as carbon diride emmissions from burning fossil fuels or from deforestration, which trap heat that would other wise escape carth. This is a type of “green house effect “.

From the foregoing discussions it is evident that the Globe is not a safe place to live in seasons keep varying, temperature keep changing, trees and plants have dwarf growth. Rivers keep changing their cours and sothe freezing is a day dream. Our prim minister Sri. Narendra Modi participation on climate change is an instance in this regard. A relevant tern in this regard is “green house effect”.

Pollution, like corruption has spread every where. It is quite difficult to cradicate it attogether. How ever, through dialogues, debates, discussions and awareness programmes, its growth can be contained. people can have a sigh of relief if they succerded in getting clean water to drink, fresh air to breath, fertile soil to grow crops and slow sound which sooth their ears, many countries and continents have to rise to the occasion, then only we can bestow a healthy environment to the posterity. Hence to put it in the words of warmi vivekananda, “Arise, awake and stop not till the goal is reached”.

ENVIRONMENT

T. SNEHA DEEP, India Cements Ltd.

An environment is gifted by the nature to nourish the life on the earth. Everything which we use to continue lives comes under the environment such as water, air, sunlight, land, plants, animals forests and other natural things. Our environment plays a very significant role in making possible the existence of healthy life on the eath. However, our environment is getting worse day by day because of the manmate technological advancement in the modren era. This, environment pollution has become the biggest problem we are facing today. Environment pollution is affecting our daily Lives negatively in various aspects of life such as socially, physically economically. Contamination of the environment brings lot of diseases which human being may suffer whole life. It is world wide problem which car not be solved by the effort of one each and every common citizen should invole in the environment safety programme launched by the government. We should correct our mistakes and selfishness towards our environment to make healthy and safe from pollution. It is hard to belive but true that only a little postive movements by every one may bring a huge charge in the deeling environment. Air and water pollution is leading our healthy on danger by causing various diseases and disorders. No thing can be said healthy now a day, as what weeat is already affected by the bad effects of artificial pertilizers which reduces and bediseased any time even after being healthy and happy so. It is a majar world wide issue which should be solved by the continuous efforts of everyone.

IMPACTS OF GLOBAL WARMING

R.V.L. VAGDEVI, Trimex Sand Pvt. Ltd.

Impacts of Global worming :-

Global warming is melting glaciers in every part of the world, putting the people in risk from floods, droughts and shortages of water.

Global warming will be directly impact on human beigs and their lively hood.

Drought, heat waves, sea level rise, stroms and floods will damage to agriculture, imfrastructure and tourism.

Climate change will increase the cost of living and compromise human health.

The Greedy uses of human are the main causes of the global warming.

Global warming is also a cause of environmental pollution.

VOLUNTARY ENVIRONMENT AGREEMENT :-

In industries voluntary environment argreement / in industrial countries voluntary environment agrement often provide a plateform for companiss to be recognised for moving beyond the minimum regulatory standards.

An ecosystems approch to resource management and environmental protection aims to consider the complex interrelation ship of an entire ecosystem.

CAUSES OF ENVIRONMENTAL POLLUTION :-

(i) Air pollution

(ii) Water pollution

AIR POLLUTION :-

Air pollution is the main cause of environmental pollution. Air pollution is common in these days. When we go out of the house into the traffic, we feel irritation by the sound, and use feel irritate in throught by the smoke which is released by the vehicles in the traffic. This is the main cause of pollution in air.

Factories relese the smoke which is mixed with chemicals, elements and some dangerous gases which causes domage to ozone layer and our health (human health).

When ozone layer is damazed the sun rays will directly enter into the earth. By this the people get skindeseases and it can damage their body parts.

Government should avoide the air pollution by reducing the smoke from the factories.

WATER POLLUTION :-

It is also a cause of environmental pollution. Factories realese some dust and waste material into the water. By drinking the water in the rivers we get so many deseases. Rivers are only source of drinking water. So if we only spoils the river's then we only suffer.

WHAT SHOULD THE GOVERNMENT DO ?

Discussion converning environmental protection often focuses on the role of governement, legislation, and law enforcement. How ever, in its broadest sense, environmental protection may be seen to be the responsibility of all the people and not simple that of government. Deslicious that impact the environment will ideally involve a broad range of stakeholders including industry.

GLOBLE WARMING

K. CHARAN SAI, Trimex Sand Pvt. Ltd.

Defination :- Globle warming is reaed and continious heating temchere of the earth.

Case :- Earth surface is becoming hotter day by day due to corbon diox levels cause by derfacting and corntrybution of luzzy freles like coal and oil.

Impacts or effects :-

(1) melting of icebeds incres realevels cause costal foodings.

(2) wilde animals are in great danger.

(3) No fresh water will available.

Reanides :- There are two main remides to keep away the Globle warning.

Using less fossile fueles like coal and orl.

Avoid defforsting and help to plant more trees.

RESPONSIBILITY OF ENVIRONMENT & PROTECTION

K.SURYA BHASKAR RAO, Dalmia Cements

1) We should protect the environment by planting more trees.

2) **Protection of water :-**

   (i) Some people store water which comes from rain by digging the land and making bore wells.

   (ii) We can collect the water by filling the buckets with rain - water.

   (iii) Some people throws the waste released by industries & factories we should not do like that we should take a empty place & dig the land & store the waste material.

3) **Protection of Air :-**

   (i) We should protect the air by using the gases like L.P.G (liquitied petroleum Gas) & C.N.G (compressed natural gas) for reducing the air pollution.

   (ii) Factories will release a large amount of harmful gases which mix with the air we should try to reduce it.

4) Humans are belong to environment but, environment does not belong to humans.

5) Environment is nothing but our surroundings.

6) It consists of air, water and other useful for human - beings.

7) Our responsibility for environment is to plant more trees.

8) We should take the responsibility of water is to do not waste the water.

9) If any large amount of water is left pour it for the development of flowers.

10) It we cut the trees oxygen won't be available for humans.

11) For protecting the water & air Dr. Narendra Modi have started the movement swachh Bharatt.

12) Not only he 50 many film stars have started swachh Bhrat for protecting the environment.

13) Use the automibile (vahicles) like petroleum, diesel etc less for the air - pollution.

14) If the earth has the problem of asthma then we should compelsarly reduce the air pollutions.

15) Environment is a part of our lite & a family member.

16) Then we should take care of the environment.

17) Mines environment & mineral conservation is celebrated on 4-1-2016 to 10-1-2016.

18) Government has declared this day as mines environment & mineral conservation for protection the environment.

19) On this day same industries (or) factories are conducting some essay competations & drawing competations.

20) Finally we should say “Clean India & green india like modi & some film stars.

21) Environment is important than human life.

बि. नागप्रसन्न
भारती सिमेन्ट्स लि.

पर्यावरण का रखे ध्यान तभी बनेगा देश

वै. अंकि रेड्डी
भारती सिमेन्ट्स लि.

पेड लगाओ देश बचाओ,
पेड लगाओ जीवन बचाओ जीवन खुश हाल बनाओ,

सि.एच. साईतेज
भारती सिमेन्ट्स लि.

आओ सब मिलकर वातावरण को बचाये
रोके वह संकट जो हमारी विशसतो निगत जाये
चिड्डिया मुझे हसाये रे, बरखा मुझको भाथे रे
जग हरा-भय हो जाये रे, आओ कुदरतको बचाये रे

सि.एच. प्रसन्न
भारती सिमेन्ट्स लि.

ओ बरखा रानी आ जा
उदास खेत तशि शहदेखे
आ इन्हें हरा भरा बना जा

ऐ. चैतन्य वर्मा
भारती सिमेन्ट्स लि.

सुरक्षा
सुरक्षा है जीवन की आशा
सुरक्षा है मेहनत की परिभाषा
सुरक्षा का है रुप अनोखा
बाकी सब चीजे चीजे देती धोखआ
सुरक्षा दिन भर का फल है
सुरक्षा है तो जनम सफल हे,
सुरक्षा की अद भुत माया
सुरक्षा बिन ढल जाय काया

पेड लगा ओ देश बचा ओ,
पेड लगा ओ जीवन बचा ओ,
जीवन खुश हाल बना ओ.

जि.वि. नागेन्दर रेड्डी
भारती सिमेन्ट्स लि.

पेड लगाओ देश बचाओ,
पेड लगाओ जीवन बचाओ जीवन खुश हाल बनाओ

यस. लिंगा रेड्डी
भारती सिमेन्ट्स लि.

ग्लोबल वार्मिंग की दुष्परिणाम है दुनिया के सामने पर्यावरण की रक्षा सूत्र होंगे सबको अपावाने

यस. साईचेतन रेड्डी
भारती सिमेन्ट्स लि.

पर्यावरण की रक्षा नें दीजिये योगदान प्राणी
जगत की सुरक्षा में करिये महादान

यम. विजयलक्ष्मी
भारती सिमेन्ट्स लि.

चिडिया मुझे हँसाये रे, बरखा मुझको बायेरे ।
जग हरा-भरा हो जाये रे, आओं प्रकृति को बचायें रे ।

आर. उदयराज
भारती सिमेन्ट्स लि.

पर्यावरण का रखे ध्यान तभी बनेगा देश महान

आर. विजया
भारती सिमेन्ट्स लि.

प्रकृति का न करे हरण आओ बचाये पर्यावरण

वि. साई मिथिलेश
भारती सिमेन्ट्स लि.

पेड लगाओ देश बचाओ, पेड लगाओ जीवन बचाओ,
जीवन खुश हाल बनाओ.

वि. वनज
भारती सिमेन्ट्स लि.

पर्यावरण की सुरक्षा

हमारे जीवन की सुरक्षा

वि. विजय भास्कर
भारती सिमेन्ट्स लि.

पर्यावरण की स्वच्छ बनाएँ पेड-पौधों को मन हटाएँ

यस. अनुराधा
इंडिया सिमेन्ट्स लि.

1. पर्यावरण का रखे ध्यान तभी बनेगा देश महान
2. पेड लगाओ देश बचाओ
3. प्रकृति क न करे हरण
4. आ ओ बचाओ पर्यावरण
5. एक घर एक पेड संतुलन का यही है खेल
6. पेड पौधे मत करो नष्ट साँस लेने मे होगा कष्ट
7. जल है - तो कल है.
8. पानी बचने से जीवन बचाना
9. पानी बिना जीवन नही

यस.भाषा
इंडिया सिमेन्ट्स लि.

आओ मिलकर कसम ये खाएँ
प्रद्ष' को हम दूर भगाएँ
प्रकृति का न करे हरण
आओ बचाये पर्यावरण

पर्यावरण का रखे ध्यान - तभी बनेगा देश महान

पर्यावरण की करो सबजन रक्षा - जीवन की होगी तबी सुरक्षा

सारी धरती कि है यह पुकार - पर्यावरण का करो सुदार

प्राणी जगत कि चाहती हो सुरक्षा - पर्यावरण कि करनी होगी रक्षा

यू.वि. कृष्णुडु
इंडिया सिमेन्ट्स लि.

1. पर्यावरण की स्क्षा मे करो अपना योगदान
   मान जीवन की सुरक्षा का दे महादान

2. तरक्की के सपने अधूरे
   प्रकृति की रक्षा से होगे पूरे

3. पूर्ण सुरक्षा होगी तब
   पर्यावरण की रक्षा होगी जब

4. धरती माँ का करे श्रृंगार
   वृक्ष लगाओ कई हजार

बि. जयनरसिंहा रेड्डी
इंडिया सिमेन्ट्स लि.

1. खनिज एवं पर्यावरण संरक्षण की
   सह भागिता ही हमारी महान योगदान
2. धरती की है यही पुकार
   वृक्ष लगाकर करो श्रृंगार
3. जब दी में जुडता है वन,
   तब होता सचमुच जीवन ।
4. पर्यावरण का रखे ध्यान,
   तभी बनेगा देश महान
5. पेड-पौधे मत करो नष्ट,
   साँस लेने में होगा कष्ट
6. पेड लगाओ देश बचाओ, पेड लगाओ जीवन बचाओ,
   जीवन खुश हाल बनाओ
7. पर्यावरण की हो सुरक्षा, बच्चों, की पहले ये शिक्षा
8. पर्यावरण में सुधार तो खुशियान अपार
9. जीवन की होगी तभी सुरक्षा
   पर्यावरण की करो सब जान रक्षा
10. प्रकृत का न करे हरण,
    आओ बचाये पर्यावरण

यस.डि. दर्शीणी
इंडिया सिमेन्ट्स लि.

1. प्रकृति का न करे हरण, आ ओ बचाये पर्यावरण
2. पर्यावरण का रखे ध्यान, तभी बनेगा देश महान
3. पर्यावरण के लिऐ पेड लगा ओ, देरा बचाओ, दुनिया बचाओ
4. पर्यावरण की हो सुरक्षा, जिससे बढकर नही तपस्या
5. पर्यावरण की करो रक्षा, बच्चो को पहले ये रक्षा
6. स्कूल - स्कूल ये पाठ पढाये पर्यावरण की रक्षा कराये

"प्रकृति का न करे हरण
आ ओ बचाये पर्यावरण
पर्यावरण का रखे
ध्यान, तभी बनेगा
देरा महान"

पर्यावरण के नियम

वै.श्रीप्रणति
इंडिया सिमेन्ट्स लि.

1. सारी धरती करे पुकार, पर्यावरण में करो सुधार ।
2. प्राणी जगत की चाहते हो सुरक्षा, पर्यावरण की करनी होगी रक्षा ।
3. तरक्की के सपने अधूरे, प्रकृति की रक्षा से होंगे पूरे ।
4. पर्यावरण में सुधार मानव जगत को होगा उपहार ।
5. धरती हो रही खतम, सबका भरण को है आमंत्रण ।
6. पर्यावरण की रक्षा में दीजिये योगदान,
   प्राणी जगत की सुरक्षा में करिये महादैन ।
7. पर्यावरण सुरक्षा में करो करम, यही है आज का सच्चा धर्म ।
8. पर्यावरण से मत करो छेद छाद, वर्ण बचने को नहीं मिलेगी आद ।

जि. कोटेश्वर राव
श्रि चक्रा सिमेन्ट्स लि.

1. प्रकृति का ना करे हरण, अ ओ बचाये पर्यावरण
2. पर्यावरण का रखे ध्यान, तभी बनेगा देश महान
3. पर्यावरण के लिए पेड लगाओ, देश बचाओ, दुनिया बचाओ
4. पर्यावरण की हो सुरक्षा, जिससे बढकर नही तपस्या
5. पर्यावरण की करो रक्षा, बच्चो को पहले ये शिक्षा
6. स्कुल - स्कुल से पाठ पढाये, पर्यावरण की रक्षा कराये
7. प्रगति विकास के सपने अधूरे पर्यावरण की रक्षा के बिना नही होगे पूरे
8. पर्यावरण की रक्षा मे दीजिये योगदान प्राणी जगत की सुरक्षा में करिये महादान
9. प्राणी जगत की चाहते हो सुरक्षा, पर्यावरण की करनी होगी रक्षा
10. प्रकृति से मत करो छेड छेड वरना बचने को नही मिलेंगी आड
11. जीवन की होगी तभी सुरक्षा पर्यावरण की करो सब जन रक्षा
12 पर्यावरण सुरक्षा में करों करम यही है आज का सच्चा धर्म
13. पर्यावरण में सुधार तों खुशिया अपार
14. पर्यावरण की यही प्रकार हरा भरा रहे यह संसार
15. पर्यावरण में सुधार तो खुशियां आपार

जिन्दगी का भरोसा नही

बिभास अहलयायन
बुडवाडा लैमस्टोन मैन

जिन्दगी का भरोसा नही है
भरोसा नही है किसी का
एक्सीडेंट का भरोसा नही है
तू कर ले अपनी सुरक्षा
एक्सीडेंट का भरोसा नही है ।

डस्ट से तुम खुद का बचाओ
नोज मास्क जरूर तुम लगाओ
सिलकोशिश का भरोसा नही है
तुम कर लो अपनी सुरक्षा
पेनी कोशिश का भरोसा नही
धूल भर जाती है धीरे-धीरे
रोग हो जाती है धीरे-धीरे
तू कर ले डस्ट से सुरक्षा
तू कर ले सुरक्षा का पालन
एक्सीडेंट का भरोसा नही है ।

सिर हेलमेट से कर ले सुरक्षा
पग में जूता करे यार रक्षा
ईयर मफ से करो खुद की रक्षा
हियरिंग लॉस का भरोसा नही है
जिन्दगी का भरोसा नही है ।

तुम कर लो अपना फर्ज पूरा
जिन्दगी का भरोसा नही है
जब माईन्स में डम्पर चलाओ
सीट बेल्ट जरूर तुम लगाओ
एक्सीडेंट का भरोसा नही है
भरोसा नही है किसी का
जिन्दगी का भरोसा नही है ।

वि. इशिता
रेण सिमेन्ट्स लि.

★ खनिजों का निरंतर इस्तेमाल
होगा पर्यावरण का हाल बेहाल
मुश्किल में होंगे सब जीव - जंजाल ।

★ पेड पैधे हैं हमारा आधार
इनकी कटाई से जीवन होगा दुश्वार ।

ऐ. वैष्णवि
पराशक्ति सिमेन्ट्स इंडस्ट्रीस लि.

1. **पेड पौधों का संरक्षण ही**
जीव जातियों की रक्षा है

पि. योशन
रेण सिमेन्ट्स लि.

2. **काम काना सबका धरम**
पर्यावरण परिरक्षण करना सबका करम

बि. अनुषा
पराशक्ति सिमेन्ट्स इंडस्ट्रीस लि.

3. **वृक्ष देते स्वच्छ वायु**
सखी जीवन लम्बी आयु

ए.डि. इनायुतुल्ला
इंडिया सिमेन्ट्स लि.

1. **मिल झुल कर वृक्ष बढाओ**
   वातावरण को स्वच्छ बनाओ
2. **पर्यावरण की सुरक्षा**
   हमारि जीवन की रक्षा
3. **हमसब करोंगे साफसुत्रा परिसर पर नियंत**
   जरुर होगा स्वच्छ भारत
4. **पेट लगाओ जान बचाओ**
5. **कागज के फूलो से खुषबू नही आती है ।**
   हरा पेट जान बचाती है ।

वि. श्रिनिवासुलु
इंडिया सिमेन्ट्स लि.

1. प्रकृति से पर्यावरण से सहजीवन करो हमेशआ प्रगति करो ।
2. प्रकृति से स्नेह स्वर्ग है, प्रकृचि से विरोध नरक है ।
3. पेड-पौधों का संरक्षण ही, जीव जातियों की रक्षा है ।
4. जंगल माता की आराधन करो, जीव कोटी को रक्षा करो,
5. पेड-काटना अभि शाप है । पर्यावरण परिरक्षण माई-बाप है ।
6. पेड-पौधों को देने से आयु, शरीर को देती हे प्राण वायु ।

पर्यावरण नारे

जि.बि.सतीष कुमार
दाल्मिया सिमेन्ट्स लि.

1. **सारी धरती कर पुकार, पर्यावरण में करो सुधर**
2. **प्रगलि विकास के सपने अधूर पर्यावरण की रक्षा के बिना नहीं होंगे पूरे**
3. **पर्यावरण की रक्षा में दीजिये योगदान, प्राणी जगत की सुरक्षा में करिये महादान**
4. **प्रकृति से मत करो छेड छाड, वरना बचने को नहीं मिलेगी आड**
5. **पर्यावरण सुरक्षा में करो करम, यही है आज का सच्चा धर्म**

यू. उत्तय्या
इंडिया सिमेन्ट्स लि.

1. पर्यावरण प्रदूषण भगाना है, जगह-जगह पर पेड लगाना है ।
2. धरती की है यही पुकार, वृक्ष लगाकर करो श्रृंगार ।
3. बात कहते है ऋषि मुनि और ज्ञानी, पेड काटो, तो गिरता नही पानी ।
4. बंजर धरती करे पुकार, वृक्ष लगाकर करो उपकार ।
5. वृक्ष धरती का आभूषण, करता है दूर जो प्रदूषण ।

वै. अंकि रेड्डी
भारती सिमेन्ट्स लि.

आओ मिलकर पेड लगाएं ।
आओ मिलकर पेड लगायें ।।
हरा भरा ये देश बनाए ।
वातावरण को स्वच्छ बनाकर ।
इस जीवन को स्वस्थ बनाएं ।।

पेड न कोई कटने पायें ।
जंगल अब न घटने पायें ।।
मिलकर हम सब कसम ये खाएं ।
आओ मिलकर पेड लगाएं ।।

पेड हैं देते प्राणवायु ।
जीवन इनसे हो दीर्घायु ।
खुद समझे औरों को बतायें ।
आओ मिलकर पेड लगाएं ।।

हर इक का ये फर्ज हैं बनता ।
कम से कम इक पेड लगाये ।।
पल पल बडते पदूषण पर ।
आओ मिलकर एक लगाएं ।

आओ मिलकर पेड लगाएं ।
हरा भरा ये देश बनाएं ।।

वि.वनजा
भारती सिमेन्ट्स लि.

पर्यावरण बचाओ
आज समय की मांग यही है
पर्यावरण बचाओ
ध्वनि, मिट्टी, जल वायु आदि सव,
पर्यावरण बचाओ
जीव जगत के मित्र सभी ये
जीवन देते सारे
इनसे अपना नाता जोडो
इनको मित्र बनाओ
पर्यावरण बचाओ
तब तक जीव है जगत में,
जब तक जग में पानी,
जब तक वायु शुध्द रहती है ।
सोधी मिट्टी रानी
तब तक मानव का जीवन है,
यह सबको समझाओ

यम. विजयलक्ष्मी
भारती सिमेन्ट्स लि.

देख तेरे प्रकृति कि हालत
क्या हो गयी इन्सान
कितनी बदल गयी हरियाली
सूरज बदल गया, चाँद बदल गयी
बदल गयी सारी दुनिया की प्रकृति
देख तेरे प्रकृति की हालत ।।२।।

आया समय बडा बेघंगा
आज आदमी बना लफंगा
उसके निज अवसर की पूरी के लिए
कहीं पे पानी, कहीं पे वायू कर रहा कलुषितंग
टेकनालजी के नाम पर
कर रहा प्रकृति को नंगा
कितनी बदल गयी हरियाली
देख तेरे प्रकृति की हालत ।।२।।

जो हम पर्यावरण को समझकर मसले,
तो बनी बनायी जगत क्यों बिगडे
काहें सबकी साँसे ये रोकते
क्यों हम बच्चे, प्रकृति मां से बिछडे फूट फूट कर रोते सारा ये जगत
हरियाली के चाह पर
खुद के करतूतों से हुआ
ये जगत विनाश पर
देख तेरे प्रकृति की हालत
क्या हो गयी इन्सान
कितनी बदल गयी हरियाली
सूरज बदल गया, चाँद बदल गयी
बदल गयी सारी दुनिया की प्रकृति
हे इन्सान जागो जागो
इसकी रक्षा करों, खुद को बचाओं

वि. साई मिथिलेश
भारती सिमेन्ट्स लि.

हरियाली की महिमा समझो,
वृक्षो को पहचानो
ये मानव के जीवन दाता,
इनको अपना मानो
एक वृक्ष यहिं कट जाये तो,
ग्यारह वृक्ष लगाओ.
पर्यावरण.....
जीव जगत की रक्षा करना,
अब कर्तव्य हमारा,
शोर और मिट्टी का संकट,
दूर करेंगे सारा
एक वृक्ष हम नित रोपेंगे,
आज शपथ ये खाओ.
पर्यावरण.....
आजज्ड समय की मांग यह है
पर्यावरण बचाओ ।

प्रकृती की हम संतान

वि. विजयभास्कर
भारती सिमेन्ट्स लि.

प्रकृती की संतान
हम से ही है देश की आन शान
प्रकृती मे हमें सब है दिया
पर हमने लालच में किया प्रकृती की लुकसान
हम हैं प्रकृती की संतान
मानव को लालच ने किया है लुकसान
मानव ने किया है प्रकृती का अपमान
प्रकृती से ये सब सहा न जाए
वह भी अपना क्रोध दिखाए
बाद, लाए सुखा लाए मानव कों कोधा दिखाए
प्रकृती बोले मुझो चाहिए थोडा स मुनव्य का
आदार सम्मान
हम है प्रकृती की संतान
पेड लगाएँ जीवन बचाएँ
प्रकृती की शोभा बढाए आदार सम्मान
हम है प्रक-तकती की संतान

के. अन्नपूर्णा
रेण सिमेन्ट्स लि.

पर्यवरण की सुरक्षा पेड बचावा ।।
अपना जीवन की रक्षा और दूनीया की रक्षा ।।
हम सब लोग मिलकर वृक्षलगाना है ।
वातावरण को स्वच्छ बनाओ
इस दिवस पर हर अदमी एक पेट लगाकर
धरती को बचाना है ।।
पेड पौधों को नही काटना वन्य प्राणि का रक्षा करना
जंगल को बचाना
अपना अनेवाला जमाना को देने इनाम है ।।
पर्यवरण की सुरक्षा रकना सब लोग का
जिमेदारी और प्रदम कर्त्व्य है ।।
पादूषाण से बचाना और वातावरण को स्वच्छ
बनाना हरियाली से होता है ।।
हम सब लोग प्रेरण लेकर इस खान पर्यवरण
सप्ताह अवसर पर शपथ करेंगे पेड के नई काडना,
जींदगी पर पेडों को रक्षा करना अपना लक्ष है ।।

वि. मनिमाला
रेण सिमेन्ट्स लि.

खान है धरती का अभूषण
इनकी संपदा से बढता देश का आकर्षण
किन्तु खनिजों की अपार खुदाई और
खआन का असंतुलित निखहण,
है कई समस्याओं का कारण ।
जीव जन्तुओं का निरँत र शोषण
पेड पौधों की कटाई परन न रहा नियंत्रण
वाहनों औरकारखानों का प्रदूषण
हो बडते तापमान का कारण
कलुषित हो रहा है पर्यवरण
समुचित कदम न उठायें तो होगा
बरबादी को आमंत्रण ।
इसका एक मात्र निवारण
है पर्यवरण का संरक्षण ।
अरे इन्सान जाग अन और ले प्रण
पर्यवरण दृष्टि साधेंगे हर क्षण ।

पर्यवरण पर निबध

टि.साईश्रि
इंडिया सिमेन्ट्स लि.

एक स्वच्छ वातावरण एक शांतिपूर्ण और स्वस्थ जीवन जीने के लिए बहुत आवश्यक है। लेकिन मनूष्य के लापरवाही से हमारा पर्यवरण दिन व दिन गन्दा होता जा रहा है । यह एक सुदा है जिसके बारे में हर किसी की पता होना चाहि खासकर के बच्छो को हम कुछ निम्नलिखित विबंध प्रदा कर रहे है जो की पर्यवरण पर लिखा है जो आपके बच्चो व धात्रों को स्कूल प्रोजेक्टर और निबंध प्रतियोगिता मे भाग लेने मे मदद करेंगी ।

वातावरण ए कप्रकृतिक परिवेश है जो पृथ्वी नामक इस ग्रह पर दीवन को विकसित, पोषितस और नष्ट होने में मद्द करता है । प्राकृतिक वातावरण पृथ्वी पर जीन के अस्तित्व में एक बडी भूमिका निभाते हे और यह मनुष्यों, पशुओं और अन्य जीवनित चीजो को बडने और स्वाभाविक रुप से विकटित होने में मदद करता है । लोकिन मनुष्य के कुध बुरे और स्वार्थी गतिनिधियों के कारण हमारा पर्यवरण प्रभानित हो रहा है । यह एक महत्वपूर्ण विषय हैं और हर किसी की हमारि पर्यवरण को कैसे बचाया जाये और इसे सुरक्षित रखने के बारे में जाना चाहिए ताकि इस सह पर जीवन के आस्तित्व को जारि रखने के लिए प्रकृति का संतुलन सुनिश्चित हो सके ।

ऐ.मधुलता
इंडिया सिमेन्ट्स लि.

दुनिया के किसी भी मनुष्य या जानवर को स्वस्थ जीवन के लिए एक शुध्द और शातिपूर्ण पर्यवरण आवश्यक होता है । पर्यवरण वब है जो प्राकृतिक रूप से हमारे चारो तरफ है और पृथ्वी पर हमारे दैनिक जीवन को प्रभावित करता है ।

जो हवा हम हर पल सांस लेते है, पानी जो हम अपनी दिनचर्या में इस्तमाल करते है, पौधें, जानवर और अन्य जीवित चीजे यह सब पर्यवरण के तहत आता है । अगर प्रकृति के संतुलन में किसी प्रकार की रूकावट आती है तो इसका असर हमारे पर्यवरण पे पडता है । जिसका असर हमारे जीवन पर पडता है ।

आज के युग मे हर इंसान अपने निजी स्वार्थके लिए पर्यवरण के साथ खेल रहा है इसका दुरुपयोग कर रहा है । जल प्रदूषण, ध्वनि प्रदूषण, पेडों को काटना, वायु प्रदषण और कई तरह के प्रादूषणो से हम अपने वातावरण को दिन पर दिन खाराब करते जा रहे है । जिसका असर हमारी आने वाली पीढी को ज्यादा भुक्तना पढेगा ।

विश्व पर्यवरण दिवस :

विश पर्यवरण दिवस एक अभियान है जो कई वर्षो से हर साल ५ जून को पूरे विश्व में पर्यवरण सुरत्रा और सफाई के लिए जनता में जागरुकता का प्रसार करने के लिए मनाथा जाता है भारत सरकार पर्यवरण को सुधारने केलिए काफी अभियान चलती है हाल ही में स्वच्छ भारत अभियान

शुरु किया गया है । सरकार के साथ-साथ आम आदमी को भी प्रण लेना चाहिए की वो अपनी छोटी छोटी हरकतों से अपने वातावरण को साफ रखो जैसे कूडा कूडेदान में ही फैंके, प्लास्टिक का इस्तेमाल कम करे आदि हमारी छोटी सी पहल से हम अपने और अपने आस पास के वातावरण को साफ रख सकते है ।

यस.टि अफ्रिद
इंडिया सिमेन्ट्स लि.

पर्यवरण का प्रत्यक्ष अथवा रपोक्षरूप से प्रदूषित करने वाला प्रक्राम जिसके द्वारा पर्यवरण (स्थल, जल अथवा वायुमंडल) का कोई भाग इतना अधिक प्रभावित होता है कि वह उसमें रहने वाली जीवों (या पादपों) के लिए अस्वास्थ्यकर, अशुध्द, असुरक्षित तथा संकटपूर्ण हो जाता है अथवा होने की संभवना होती है । पर्यवरण प्रद्षण सामान्यत मनुष्य के इच्छित अथवा अनिच्छित कार्यों द्वारा परिवर्तनों के परिणामखरुप उत्पन्न होता है जिससे पर्यवरण की गुणवत्ता में हास होता है और वह मनुष्यों, जीवों तथा पादपों के लिए अवांक्षित तथा अहितकर हो जाता है । पर्यवरण प्रदुषण को दै प्रधान वर्गों में रख जा सकता हैं -

१. भौतिक प्रदूषण जैसे स्थल प्रद्षण, जल प्रदूषण, वायु प्रदूषण, ध्वनि प्रदूषण आदि ।

२. मानवीय प्रदूषण जैसे सामाजिक प्रदूषण राजनीतिक प्रदूषण, जातीय प्रदूषण, धार्मिक प्रदूषण, आर्थिक प्रदूषण, आर्थिक प्रदूषण आदि । सामान्य अर्थों में पर्यवरण प्रदूषण का भौतिक प्रयोग प्रदूषण के संदर्भ में किया जाता है ।

राणि सुप्रजापात्रा
इंडिया सिमेन्ट्स लि.

पर्यवरण की सुरक्षा
प्रदूषण के प्रभाव
भू ताप (वैखिक उष्णता)

रुपरेखा
प्रस्तावना
पर्यवरण का अर्थ और सुरक्षा
प्रदूषण का अर्थ और सुरक्षा
पर्यवरण, प्रदूषण, भूताप में संबंध
भू ताप (वैखिक उष्णता)
बचने का उपाय
उपसंहार

प्रस्तावना - आज कल पर्यावरण में प्रदूषण बढने से जीवन संकट में पड गया है इसलिए ये हमारा कर्त्तव्य है कि धरती को हम प्रदूषण से बचाये ।

पर्यावरण को प्रदूषण से मुक्त करने के लिए आजकल कई कार्यक्रम आयोजित किए जा रहे है । जनता को जागरुक बनाया जा रहा है । हमारा कर्तव्य है कि इन सन में भाग ले और अपनी भागीदारी दें ।

पर्यावरण का अर्थ ओर सुक्षा - पर्यावरण का अर्थ आस-पास का वातावरण और धरती और आकाश के बीच की मौसम, को पर्यावरण कहते हैं । सूरज की किरणें सीधे धरती पर पडने से पृथ्वी को हानि हो सकती हैं ओजोन लेयर इन कीरणों को हम तक पहुंचने से रोकते है । पर्यावरण की बिगडने से ओजन लेयर में छेद हो रही है इसलिए हमे पर्यावरण को बचाना है ।

प्रदूषण के अर्थ और प्रभाव - वातावरण में फैलने गंदगी को प्रदूषण कहते है । प्रदूषण के अनेक दुष्प्रभाव होते हैं । भूमी कलुशित प्रदूषित हो जाती है । प्रदूषण के कारण सेहत भी खराब होती है । इन प्रदूषणों के फैलने का सबसे बडी मुख्य कारण है - अनेक प्रकार के व्यर्त पदार्थ, कूडा-कर्कट आदि हमारे घरों के आस- पास भूमि पर जहाँ-तहां फेकेंगे तो भूमि कलुशित हो जाती हैं । इससे भूमि प्रदूषण बड जाती है ।

जह चाप प्रकार के होते है ।

१.ध्वनी प्रदूषण

२.जल प्रदूषण

३.वायु प्रदूषण

४.भू प्रदूषण

१.ध्वनी प्रदूषण - वाहनों के हानी, शादी में बजने वाले बाजे - गाजे और पटाखों आदि से ध्वनी प्रदूषण होता है ।

२. जल प्रदूषणों - नदी के आस - पास नहाने धोने से गंदा पानी नदी में जाता है इससे जल प्रदूषित होता है । इस प्रदूषित जल को पीने से हमें रोग होता है । जल प्रदूषण से हमें कई हानि होते हैं ।

३. वायु प्रदूषण से हमे स्वच्छ हवा नही मिल सकती है । प्रदूषित हवा के कारण हमें फेफडें से संबधित बीमारियाँ होती है । वाहनों और कारखानों को चिमनी से निकलने वाली विपत्ती गैस से वातावरण दूषित होता है ।

४. भू प्रदूषण - पर्यावरण में फैलने वाले कूडा - कर्कट से भू प्रदूषण जादा होती है ।

इसी प्रकार अनेक जहरीले रसाय' विष्यलय पदार्थ अनेक व्यर्थ पदार्थ अनेक व्यर्थ पदार्थ आदि तालाबों, नालों जलशयों में फेंकने या बहाने से जल प्रदूषण बढ जाता है ।

प्रदूषण के अनेक दुश प्रभाव होतो हैं । भूमि कलुशित हो जाती हैं । धर के आस-पास कूडा कर्कट के जमा होने से बदबू आती है । मख्खियाँ, मच्छर, कीडे-मकोडें आदि किटानु जमा होते हैं । इस कारण अनेक बिमार फैल सकती है ।

पर्यावरण, प्रदूषण,भू ताप में संबंध - पर्यावरण पर प्रदूषण और भू ताप का प्रभाव पडता है । प्रदूषण के अधिक होने से भू ताप अधिक हो जाता है । भू ताप अधिक होने से धरती पर रहने वाले जीवजंतुओं और मनुष्य को बहुत हानि होती है ब्रम्हांड में केवल धरती पर ही जीवन संभभ हो इस जीवन को बनाये रखने के लिए धरती को प्रदूषण से बचाना होगा । हरे भरे पेडों को बढा कर और नये पौधों को लगाकार पृथ्वी को प्रदूषण और भू ताप से बचा सकते हैं ।

भू ताप का अर्थ और प्रभाव - पेड पौधो के कटने से वातावरण में इक्सिजन की कमी हो गयी है । इससे धरती का ताप बढता जा रहा है जैसे की भूकंप, तूफान आदि । पर्यावरण में प्रईषणों के कारण मुक्य रूप से पेडों को काटने का कारण धरती पर गरमी बढ रही है जिसे हम भू ताप कहते हैं ।

बचने का उपाय :- धरती को भू ताप से बचाने के लिए हमें अधिक से अधिक पेड लगाना ताहिए । पेड लगाने से हमे आक्सिजन मिलेगा, वातावरण शुद्ध होगा और मानव जीवन स्वस्थ होगा ।

उपसंहार :- पेड पौधों, पशु पक्षियों को बचायें । इनको बचाने से मानव जीवन सुरधित रहेगा । पेड पौधों को बचाने से समय-समय पर वर्षा होगी । वर्षा होने से खेती - बाडी अच्छी होगी । धरती हरी भरी होगी । पृथ्वी को भू ताप से बचाने के लिए पेड लगाना सबसे जरूरी कार्य हे । पेड-पौधो, पशु-पक्षियों को बचाने से मनुष्य जीवन सुरक्षित रहेगा । पेड लगाने से सही समय पर वर्षा होगी । पर्षा होने से खेती-बाडी अच्छी होगी । पर्यापरण स्वच्छ रखने के लिए घर और कार्यालयों के आस-पास सफाई रखना जरुरी है । पेट्रोल से चलने वाले वाहनों का उपयोग कम से कम करें । अनावश्यक रूप से वाहनों के हानी का प्रयोग ना करे । शादी जैसे समारोह में धूम-धडाका और पटाखों का प्रयोग सीमित रखें । पर्यावरण को स्वच्छ रखने में एक दूसरे की सहायता करे और धरती को सुंदर बनाएँ ।

निभाएँ अपने जिम्मेदारी,
हरी भरी हो धरा हमारी ।

बि. सुशीता
इंडिया सिमेन्ट्स लि.

पर्यवरण की सुरक्षा
प्रदूषण के प्रभाव
भू ताप (वैखिक उष्णता)

रुपरेखा ।
प्रस्तावना
पर्यवरण
प्रदूषण
भू ताप (वैखिक उष्णता)
पर्यवरण, प्रदूषण, वैश्विक उष्णता में सह संबंध
रोकथाम के उपाय
उपसंहार

प्रस्तावना - आज विज्ञान का जुग है । विज्ञान ने इस दुनिया में कई आविश्कार किये हैं । जिससे मनुष्य के जीवन में कई सुविधायें उपलब्द हुए हैं । आज एसा कोई विषय नहीं है जो विज्ञान के व्दारा असंभव नहीं हो । सुबह से लेकर रात सोने तक जो भी काम हम करते हैं उन सारे कार्यो में विज्ञान का डाथ जरुर होगा । लेकिन अफसोस की बात ये है कि जैसे-जैसे विज्ञान प्रगति हुयी वैसे-वैसे अनेक प्रकार की समस्यायें बढ रही हैं । उन में प्रमुख समस्या है । वर्तमान युग पर्यावरण प्रदूषण से मानव जीवन खतरे में पड गया हैं। इन बिगडने हालात को देखकर जगह-जगह जन-जागरण कार्यक्रम आयोजित किये जा रहे हैं । जिससे जनता वातावरण को प्रदूषण रहित बनाने में अपना योगदान दे सकें ।

पर्यावरण :

पर्यावरण का अर्थ हे आस-पास का वातावरण और धरती की ऊपरी सतह को पर्यावरण कहते हैं । यदि हमारा वातावरण स्वच्छ रहता है तो प्राणियों का जीवन सुखमय हो जाता है । घातक पराबैंगनी किरणों को रोकने में ओजोन लेयर हमारी मदद करता है । पर्यावरण के बिगडने से ओजोन लेयर फट रही है । पर्यावरण के बिगजने से कई प्रकार के बीमारियाँ फौलती है । ओजोन लेयर फटने से सूरज के किरणें सीधे हम तक पहुँच रही है । इसे रोकने में हमें एक-दूसरें का साथ देना हैं।

प्रदूषण - प्रदूषण चार प्रकार के होते हैं । वातावरण में फैली गंदगी को प्रदूषण कहते है

। कारखानों कि चिमनी और वाहनों के धूये से वायु प्रदूषण होता है ।

१.भूमि प्रदूषण
२.जल प्रदूषण
३.वायु प्रदूषण
४.ध्वनी प्रदूषण

इन प्रदूषणों के फैलने के लिए मुख्य कारण है, अनेक प्रकार के व्यर्त पदार्यस, कूडा कार्कट आदि डमारे धरों के आस-पास निवास स्थलों के आस-पास जलाशेयों के आस-पास भूमि पर जहाँ-वहाँ फेलेंगे तो भूमि कलुशित हो जाती है । इससे भूमि प्रदूषण बड जाती है ।

भू प्रदूषण - प्रदूषण के अनेक दुश प्रभाव होते हैं । भूमि प्रदूषण से भूमि कलुषित हो जाती हैं । घरों के आस-पास, कूडा-कर्कट के जमा होने से बदबू आती है । मक्खियाँ, मच्छर,कीडे-मकोडे आदि किटानों जमा होते हैं । इस कारम अनेक बीमार फैल सकती है । पर्यावरण में फैलने वाले कूडा-कर्कट से भू प्रदूषण होता है ।

जल प्रदूषण - जल प्रदूषण से हमें कई नष्ट होते हैं । जैसे प्रदूषित जल के पीने से हमें अनेक प्रकार की बीमारियाँ हो सकती है । इसी प्रकार अनेक जहरीले रसायन विषैले पदार्थ अनेक व्यर्थ पदार्थ आदि तालाबों, नालों, जलाशयों में फेकने या बहाने से जल प्रदूषण बड जाता है नदी के आस पार नहाने, धोने से गंदा पानी नदी में जाता है इससे जल प्रदूषित होता है । इस प्रदूषित जल को पीने से हमें रोग होता है ।

वायु प्रदूषण - कई प्रकार के वाहनों, कारखानों से निकल ने वाले धुआँ तथा रसायनिक वायु, धूल आदि से वायु प्रदूषण बढ जाता है । स्वच्छ वायु अस्वच्छ हो जाती है । वायु प्रदूषण से हमें स्वच्छ हवा नहीं मिल सकती । प्रदूषण हवा के कारण हमें फेफेड से संबंधित बीमारियाँ होती है ।

४.ध्वनी प्रदूषण - ध्वनी प्रदूषण से हमारे कान खराब हो जाते हैं । हम बीमार पड जाते हैं । कारखानों के सयरेन विभिन्न प्रकार के वाहनों की आने-जाने का शोर, मैक, लौड स्पीकर आदि के भीषण से ध्वनि प्रदूषण बढ जाते हैं। इन प्रदूषणों के कारण मानव जीवन दुख हो जाता है ।वाहनों के हार्न, शादी में बजने वाले, बाजे-गाजे और पटाखें आदि से व्दनि प्रदूषण होता है ।

भूताप (वैश्विक उष्णता)

वनो की कटौती से वातावरण में आक्सिजन की कमी हो गयी है । पर्यावरण में प्रदूषणों के कारण मुख्य रूप से पेडों को काटने के कारण धरती पर गर्मी बड रही है जिसे हम भताप कहते हैं। प्रकृति में आवष्यक पदार्थ आक्सिजन कि कमी से तथा अनावष्यक पदार्थ जैसे कारबनडयाक्सैड आदि के बढ ने से सारा विश्व जलते हुए ग्रह बन गया है । इसी गर्मी केकारण सूर्य कि गर्मी से पृथ्वी की रक्षा करने वाले ओजोन का परत पत्ली हो रही है । उसमें कई छेद पड गयी है । यदि यह हालत एसे ही आगे बढेगी तो कुछ ही सालों में सारी धरती जल जाती हैं । सारे वृक्ष का अंत हो जाता है । कई प्रकार के तूफान भूकंप आदि का अत्पन्न होता है । कारबनडयाक्सैड ज्यादा होने से हमें सास लेना बहुत मुश्किल हो जाती है । सूरज की गर्मी से हिमालया पिघलता जा रहा है । ध्रुवीय भालू मजे जा रहे हैं । हस उन पेड-पौधों को खोने की कगार पर हैं, जो तुप्त होते जा रहे हैं । प्रशांत महासागर के पानी का स्तर बढता ही जा रहा है ।

पर्यावरण, प्रदूषण और वैश्विक उष्णता में सह संबंध –

पर्यावरण, प्रदूषण और वैश्विक उष्णता में गहरा संबंध हैं । वैश्विक उष्णता और प्रदूषण का पर्यावरण पर सीधा प्रभाव पडता है । प्रदूषण बढने से पर्यावरण पर दुष्प्रभाव पडता है । प्रदूषण के कारण वैश्विक उष्णता तेजी से बड रही है । पेड-पौधो के कट ने से वायु प्रदूषित हो रही है । इस प्रदूषित वातावरण में सास लेने के कारण मानव जीवन भी प्रभावित हो रहा है । प्रदूषण को समाप्त कर वृक्षरेपण करने से वैश्विक उष्णता में कमी ला सकते हैं । प्रदूषण को रोक कर वातावरण को स्वच्छ बना सकते हैं । अधिकाधिक वृक्षारोपण से जहाँ वैश्विक उष्णता कम होगी ।वही धरती भी हरी – भरी और सुन्दर हो जायेगी । सिर्फ वृक्षारोपण करके ही हम पर्यावरण का प्रदूषण और वैश्विक उष्णता से बचा सकते हैं । पर्यावरण पर प्रदूषण और भू ताप का प्रभाव पडता है । प्रदूषण के अधिक होने से पर्यावरण बिगडता है । पर्यावरण के बिगडने से भूताप अधिक हो जाता है ।

रोकधाम के उपाय –

धरती के वैश्विक उष्णता से बचाने के लिए हमें अधिकाधिक वृक्षारोपण करना होगा । वृक्षारोपण से समय पर वर्षा होगी । मिट्टी की उर्वरता बढेगी । हमें अच्छी फसल मिलेगी । देश समृध होगा । धरती की हरियाली बढेगी । धरती संपन्न होगी और पर्यावरण स्वच्छ बनेगा । स्वच्छ वायु मिलेगा । पेड – पौधे ले जंगल का स्वर बढजायेगा । वनों को काटना नहीं चाहिए । गंदगी को नहीं फैलाना चाहिए । कतरा को कुडेदान में ही फेकना चाहिए ।

उपसंहार -

वृक्षारोपण करें । वातावरण को संरक्षित रखें । पेड-पौधे को लगाने से समय पर बारिश होगा । मिट्टी का उर्वरता बढेगी । धरती को प्रदूषण और वैश्विक उष्णता से बचाने के लिए हमें अपना योग दान देना होगा । हम अधिक से अधिक वृक्षारोपण करें । हरे-भरे पेडों को कटने से बचाये । वाहन और कारखानों से होने वाले प्रदूषण को कम करने का प्रयास करें । कम व्दरियों के लिए वाहनों का प्रयोग न करे । चलकर या सा?इकिल पर जाये । इससे ऊर्जा की बचत होगी और व्ययाम भी होता रहेगा । वातावरण को संरक्षित व सुरक्षित रखने के लिए घरेलू स्तर पर अपन प्रयास जारी रकें । घरों से निकलने वाले कचरे को बगीचों में डालकर खाद के रूप में प्रयोग करें ।वृक्षारोपण से समय पर वर्षा होगी । भूमि का कटाव रुकेगा । धरती हरी-भरी हो जाती है ।

स्वच्छ धरा, हमारा सपना ।
सभी दें, योगदान अपना-अपना ।।

यम. श्रीकांत
पराशक्ति सिमेन्ट्स लि.

हमारा पर्यावरण

व्यक्ति अपने पर्यावरण में निवास करता है । वह अपने पर्यावरण का एक हिस्सा होता है । पर्यावरण में होने वाली विभिन्न प्रकार की गतिविधियों से वह बहुत प्रभाक्ति होता है । इसलिए जरुरी है कि हमारा पर्यावरण साफ सुथरा रहे । पर्यावरणमें किसी प्रकार का असंतुलन न उत्पन्न हो जाए । दुर्भाग्यवरा कई कारणों से वर्तमान समय में हमारे पर्यावरण में असंतुलन आ गया है । जल, वायु, मिट्टी, वन जैसे प्राकृतिक तत्व प्रदूषित हो रहे हैं । इसका परिणाम है -जलवायु में परिवर्तन, जैव विविधता के लिए संकट, बाढ, सूखा और स्वास्थ्य संबंधी अनेकानेक समस्याएँ छ अत हमे अपनी गातविधयों को नियंत्रित करना होगा जो पर्यावरण का तरह-तरह से बिगाड रहे हैं । हमे अपने चारों ओर की आवोहवा का शुद्ध रखना होगा । हमे जल और बायु की शुद्धता बनाए रखने के प्रयास करने होंगे । वनों को नष्ट होने से रोकना होग तथा वन्य जीवन के संरक्षण के प्रयास करने होंगे । अपने पर्यावरण की सही दशा में बनाए, रखने प्रत्येक नागरिक का परम कर्तव्य है ।

यन. हैमावति
पराशक्ति सिमेन्ट्स लि.

वातावरण एक प्रकृतिक परिवेश है जो पृथ्वी नामक जूस ग्रह पर जीवन को विकसित, पोषित और नष्ट होने मे मद्द् करता है । प्रकृतिक वातावरण पृथ्वी पर जीवन के अस्तित्व मे एक बडी भूमिका निभाता है और यह मनुष्यों पशुओं अन्य जीवित चीजो को बढने और स्वाभाविक स्प से विकसित होने मे मद्द् करता है । लेकिन मनुष्य के कृथ बृरे ओर स्वर्थी गतिविधियो के कारण हमारा पर्यावरण प्रभावित हो रहा है । यह एक महत्वपूर्ण विषय है और हर किसी को हमारे पर्यावरण को कैसे बचाया जाये और इसे सुरक्षित रखने के बारेमे जानाना चाहिए ताकि इस ग्रह पर जीवन के अस्तित्व को जारी रखने के लिए प्रकृति का संतुलन सुनिश्चित हो ।

पर्यावरण पृथ्वी पर जीवन के पोषण के लिए प्रकृति द्वारा भेंद दी गयी है । वह हर चीज जो हम अपने जीवन जीने के लिए इस्तेमाल करते है वो पर्यावरण के अतंर्गत आता है जेसे की पानी, हवा, सुरज की रोशनी, भूमि, पौंधे जानवर, जंगल और अन्य प्रकृतिक चीजे

हमे हमारे पर्यावरण को स्वस्थ्य और प्रदुषण से दूर रखने के लिए अपने स्वार्थ और गलतियो को सुधआरना होगा । पर्यावरण प्रदूषण हमारे जीवन के विभिन्न पहलु ओ जैसे की सामाजिक, रुप से प्रभावित कर रहा है । पर्यावरण का दुषितकरण नई रोगों के लाता है जिससे इंसान पूरी जिंदगी पीडिच हो सकता है । यहा किसी समुदाय या शहर की समस्या नही हो बलिलक ये पुरे दुनिया की समस्या है जो कि किसी एक के प्रयास से खत्म नही हो सकता । अगर इसका टीक से निवारण नही हुआ तो ये एक दिन जीवन का अस्तित्व खत्म कर सकता है । हर आम नागरिक को सरकार दवारा शुरु की गयी पर्यावरण सुरक्षा कार्यक्रम मे भाग लेना चाहिए ।

स्त्रनन पर्यावरण एवं सुरक्षा

ए. कार्तिक
पराशक्ति सिमेन्ट्स लि.

पिछले तीन वर्षो में भौतिक विज्ञान और प्रत्यक्षवादी ज्ञान का असाधरण विकास हुआ है, यदि उपलीव्ययों का सदुपयोग न बन पडे तो वह एक बडे दुर्भाग्य का कारण बन जाता है । यही इन शताब्दियों में होता आ रहा है ।

पर्यावरण से संबधित वायुप्रदूषण स्त्रनन से उत्पन्न विभिन्न आने वाले संकट, बदता तापमान, पृथ्वी की रक्षा कवच ओजीन के बढते जाने वाले छेद, पृथ्वी पर घातक ब्रहाण्डीय किरणें बरसायी और जो कुछ यहाँ सुंदर दिख रहा है, वह सभी भुनकार खाक ही जाय ऐसी परिस्तितियाँ उत्पन्न करने वाले विज्ञान विकास की कैसे सशहा जाय । भले ही उसने भीडे सुविधा - साधन बढाये हीं ।

मानवीय सक्रियता का आधार नेतिकता में है, एसी सक्रियता के स्वाथी मनुष्य की गतिविधियों के उददेश्य होने है, दिन्हे प्राप्त करने मे अन्याय और शीषण का सहारा नही लेना पडता है, प्रक्रुती का विनाश नही करना पडता है, ऐसी सकिथता से भुक्ति समाज सहयोग और आपसी समज्ञा पर आधारित होती है और मनुष्य की गतिविधियों के प्रेरना सीत के रुप में ऐसे दर्शनों की जन्म देने है, जिन में सुरक्षा न्याय, कर्तव्य आधिकार आदि की व्याख्या होनी है ।

पेड, पौधे, पशुण्क्ष आदि अपनि सुरक्षा के लिए विभिन्न उपाय करते है ।

खुदाई, पर्यावरण और खनिज की सुरक्षा

जय कुमार पॉल
जग्गय्यपेट लैमस्टोन मैन

खनिज ऐसा पदार्थ है जो धरती के अंदर पाया जाता है । यह पर्यावरण से प्राप्त होता है । खनिज एक एसयनिक पदार्थ होता है जिसका एक स्थित रूप और उपयोग होता है । हमारे आसपास के वातावरण में छोटे - छोटे सुई से लेकर बडे से बडे मकान सब कुछ खनिज से उत्पन्न और खनिज से ही बना होता है ।

खनिजो के गुण :

खनिज कई तरह के रंगो, कई तरह के आकारो ऐर विशेषताओं के साथ पायें जाते हैं।

खनिज अलग-अलग तरह के होते है जैसे द्रव्य, ठोस या तो गैस ।

खनिजो से कई उद्योगो और कारखानो के लिए इस्तेमाल किये जाने वाले प्राप्त होने है । जिससे बहुत ज्यादा उत्पादन होता है ।

खुदाई :

अब ईन खनिजो को निकालने हमारे दिनचर्या के लिए इस्तेमाल करने के लिए इनको धरती से निकालना जरुरी होता है । और इनके निकालने के लिए खुदाई करना जरुरी है । खुदाई करने के आधुनिक उपकरणो की जरुरत देती है । एक बार खुदाई करके खनिज निकालने के बाद इसे उपयोग करने योग्य बनाकर धरती का विकाम किया जाता है ।

पाये जाने वाले राज्य :

ओजिसा में पीतल, लोहे की बडी खाने है जिसमें खनिजो को निकाला जाता है । यह भारत की सबसे बडी खदनो में से एक ही ।

कर्नाटका दुनिया का सबसे बडा लोहा नामक खनिज पाये जाने वाला क्षेत्र है ।

आध्रप्रदेश के करनुल क्षेत्र में माइका नामक खनिज भारी मात्रा में उपलब्द है ।

गलगट खजान जो कि मध्यप्रदेश में है यहाँ मैंगनीस बहुत ज्यादा मात्रा मे पाया जाता है ।

यह तै या कि कैसे खनिज को निकाला जाता है, क्या-क्या खनिज होते है और कैसे

इस्तेमाल होते है । हम आगे बढते है और देखते है कि कैसे खनिज खदाई का प्रभाव पर्यावरण में पडता है :

खनिज धरती से प्राप्त होता है । खुदाई करके निकाला जाता है लेकिन खुदाई करने से पर्यावरण का पूरा संतुलन खराब हो जाता है । जिसके कारण सैलाब, जलजले, भूकम्प, बाढ, सूखा आदि सब की समस्या बाहर आती है । और आज कल लोग इतने स्तार्थी है कि लगातार खुदाई कर करके धरती को खाली करना चाहते है । वह सिर्फ अपने स्वार्थ को देखते है। उनको यह फर्क नही पडता कि इसका अमर दूसरे जीवो-जंतुओ पर कैसे पडेगा ।

खुदाई और खनिज की सुरक्षा न करने के कारण लगातार वार्तावरण मे परिवर्तन होता जा रहे है । जानवर, पक्षी, मनुष्य विलुप्त होते जा रहे । पेड पौधे गिर रहे है । तापमान बडता जा रहा है गर्मी में और अधिक गर्मी आ रही है । वातावरण में गंदगी फैलती है, वातावरण प्रदुषित होता है ।

खनिजो की सुरक्षा :

हम खनियो की सुरक्षा कैसे करे ? इसका जवाब है कि सबसे पहले हमें स्वार्थी नही होना चाहिए । खनिजो को जितना जरुरत है इतना ही निकालना चाहिए । इसको व्यर्थ नही करना चाहिए । खनिज बार-बार इस्तेमाल नही किये जा सकते । इसलिए इसे यह ध्यान में रखकर इस्तेमाल किया जाना चाहिए कि भविष्य में इसनी कितनी जरुरत है । अगर भविश्य के लिए खनिज नही बचेगा तब सभी मनुष्यो को तडपना पडेगा । हमें यह नही भूलना चाहिए कि खनिजो से ही हमारा देश आने बढ रहा है । यह हर एक देश और देश-वासियोके लिए यह जरुरी है कि वह सरकार की और न देखते रहे कि कब वह इनकी सुरक्षा करेंगे उनको खुद सुरक्षा के लिए आगे आना चाहिए ।

खुश, खशहाल जीवन की अगर करते दो इच्छा । तो जरुर करो खनिजो की सुरक्षा ।।
अगर जीवन में कभी किये हो खुदाई । तब तुमने भारत माता पर पाग लगाई ।।
अगर तुम खोदोगे धरती को दर्द भारत गाता को होगा ।
बंद करो यह सब जीवन सुखो से तुम्हारा भरा होगा ।।

खनिज का सुरक्षा

जानवीर मिश्रा

जग्गय्यपेट लैमस्टोन मैन

आज हम उस धरती पर रह रहे है जहाँ हमें खनिज संपद बहुत मिलती है । हम पर्यावरण को इतना प्रदूशित कर रहे है कि हमें जहाँ भी देखे बस रोग से युक्त लोग ही दिखाई दे रहे है, हमे नेचर से बहुत कुछ मिलते है । पर हम उसका उपयोग कम अंक में कर रहे है और उसका दुर उपयोग ज्यादा कर रहे है ।

आज-कल पर्यावरण हवा से नही बल्की बहुत धूल से भरा है । यह धूल, के कारण हम ही है । हम पर्यावरण की प्रदूषित कर रहे है । पर्यावरण में वायु प्रदूषण, जल प्रदूषण आदि प्रदूष्ण फैली है । हम अगर इस तरह पर्यावरण को प्रदूषित करेंगे तो कुद को ही नुक्सान पहूँचेगा पर इस बात को हम सब भूल रहे है ।

हम पर्यावरण को स्वच्छ और प्रदूष्य से मुक्त करने के लिए हम पेड-पौधो की सुरक्षा करनी चाहिए, निट्टी को दूषित नही करनी चाहिए, हम पेडो को लगानी चाहिए बल्की हम उन्हें काट रहे है और पर्यावरण को बहुत प्रदूषित कर रहे है । हमें यह सूक्ति को नही भूलना चाहिए पेड-पौधों की रक्षा है जीवन की सुरक्षा ।

हमें खनिज संपद धरती के अंदर मिलती है। हमें इस खनिज को निकालने केलिए बहुत मशीन का उपयोग कर रहे है, इस तरह खुदाई करने से पर्यावरण पर बहुत प्रभाव पडता है । जहाँ भी देखे मिट्टी (खनिज के लिए) में खुदाई ही खुदाई दिखाई दे रही है ।

और इन खुदाईयों के लिए रैतों का जमीन लेकर तह बडे-बडे फ्यक्ट्रिया और बिल्डर को रख रहै है । जिससे रैतो और मिट्टी की बहुत लुक्सान हो रही है । हमें खनिज ठोस ग्यास, तरल में मिलते है । इनसे हमें बहुत ही उपयोग है । पर इन्हें हम ज्यादा उपयोग करके उन्हें व्यर्थ नही करनी चाहिए । हमें पर्यावरण, खनिज और खुद का सुरक्षा करनी चाहिए और हमें यह बहुत याद रखनी चाहिए कि धरती हमारी नहीं बल्की हम धरती के है । हम धरती से ज्यादा खुदाई करने से हमारे बच्चों को कुछ भी नही बचेगा और हमारी पर्यावरण भी प्रदूषित हो जाता है, खनिज को व्यर्थ करने से खुद को ही नुक्सान होगा, हम सब खनिज की सुरक्षा करनी चाहिए और पेड-पौधो की रक्षा भी करनी चाहिए ।

यन. सदालक्ष्मी
जग्गय्यपेट लैमस्टोन मैन

हम इस प्रकृती को हम रक्षा करना चाहिएँ । क्योंकी प्रकृती हम को सारा देता है । प्रकृती हमे पल, हवा और कुछ नहीं ।प्रकृती के करण ही हम अबी जीवन है । प्रकृती मे वृक्ष है । वृक्ष हवास फल, फूल देता है । वृक्ष से हम भवान पूस्तक और क्या कुथ नहीं । प्रकृती मे बहुत सारे नदियाँ है । गंगा, यमुना, कृष्णा, कावेरी और बहुत सारा है । नदियाँ हमको पीने के लिए पानी देती है । हम उसको तीधे ना नही जाने देते हम वृक्ष को काटेंगे हम की वो सारे देकने ना पाती की पानी, पल वो सब नहीं हे तो हम मल जाएँगे । कई प्रंत के लोगों के पास पानी भी नहीं । वो और कई प्रांत मे वो पानी पीता है की उस में सारा गावा होगे पीता है जिससे उसका सारा गंदा पानी लोग पीता और बिमार हो जाए । हम इधार पानी को हम की उपायोग भी नहीं हो तो खारचाकर रहा है । वो सही नहीं है हम को उपयोग देता है हम को खारचा कखा है तो नही । वही तरह पेड भी हम को सारा देता है उस को अन्याय करन बहुत गलत है । पेड नही तो ती हम नही है । पेजो के हवा से हम सास लेते है । जिससे हम अब जीवन है । हमारे तरह ही हमारे बच्चो की बहुत दुख सेहान ना होगा । तो हम बहुत निम्न से उपयोग करना चाहिए । हम को निम्न से उपयाग करना चाहिए क्यो की जीवन मे हम थोडा उपयोगीत करेगा वो है पानी के पर्यायवायी जल, नीर पानी उपयोगीत मे लना हमकी बरद तरह की बात है । सिमें हम का जीवन आधार है । पानी मे बहुत जलज, रहते है । वो फूल भी होता है और पौधा सी होता है । पानी और पेड से बहुत जीवन रहे है । वो जीव सीरफ और सिरफ पेड और सरीवर । ....अर्थात पेड स्वयँ से फल नही खाता क्योंकी वो हम कह देतेहै । और सरोवर स्वयँ पानी नही पीता वो दुसरों के प्यास, बुझाता है । पेड हमारा भूख मिटाता है । वो पीड से बहुत सारा वस्तुएँ होते है । व वस्तु हमारे घर मे होता हा । बहुत सारे जंगले मे पेड को कटाने लगा उस जंगलो जगह कानकरोंका निरमान, भवनों उस जगह को एक गाँव और एक प्रांत अवतरन हुआ जिसमें सारे लाग आवतरान हुआ जिसमे जीवन हो । खुदाई के निकलने वाली ह.....वायु वहाँ के वातवरण को कालुर...वना देगा । खुदाई के समय निकलने वाले ध्वनियों से ध्वनि प्रद्वरान हो सकता है । पानी को बचाओ हमारी जीवन को बचाओ । पेड और पेड को बचाओ धरती को बचाओ । हम को पेड और पानी को निम्न उपायोगित करना चाहिए ।

పర్యావరణము

పి. అపర్ణ
ఇండియా సిమెంట్స్ లిమిటెడ్

పర్యావరణములో హానికర పదార్థాలు ఎక్కువ పరిమాణములో ఉండి, జీవులకు హాని కల్గిస్తుంటే దాన్ని కాలుష్యము అని పేర్కొనవచ్చును. అడవుల్లో రగిలే కార్చిచ్చు, అగ్నిపర్వతాలు బద్దలు కావడం వంటివి సహజ కాలుష్య కారణాలు. శిలాజ ఇంధనాలను, కట్టెలను మండించడము, పారిశ్రామిక వ్యర్థపదార్థాలు వంటివి మానవ చర్యల వల్ల కలిగే కాలుష్య కారణాలు కాలుష్యాన్ని కలిగించే వాటిని కారణాలు అంటారు. ఇవి రకాలు

1. విచ్ఛిన్నము చెందే కారనలు - పేపరు, కూరగాయలు, వృక్ష, జంతు ఉత్పత్తులు.
2. విచ్ఛిన్నము చెందని కారనలు - ప్లాస్టిక్, అల్యూమినియం, సీసము, లోహము, డి.డి.టి (వంటి పురుగుల మందులు).

కాలుష్యాన్ని వివిధ రకాలుగా విభజించవచ్చు. అవి -

1. వాయు కాలుష్యము
2. నీటి కాలుష్యము
3. భూమి కాలుష్యము
4. ధ్వని కాలుష్యము
5. రేడియో ధార్మిక కాలుష్యము

1. వాయు కాలుష్యము

వాహనాల నుంచి, పరిశ్రమల నుంచి వెలువడే వాయువులు దీనికి ముఖ్య కారణము. ఉదా. కార్బన్ డై యాక్సైడ్, కార్బన్ మొనాక్సైడ్, సల్ఫర్ డై ఆక్సైడ్, నైట్రోజన్ ఆక్సైడ్ దూళి రేణువుల వంటివి వాయుకాలుష్యానికి కారకాలు. ఇంధనాలు మండటం వల్ల కార్బన్ డై ఆక్సైడ్ వెలువడుతుంది.....కార్బన్ డై ఆక్సైడ్ వల్ల గ్రీంహౌస్ ఎఫెక్ట్ లేదా గ్లోబల్ వార్మింగ్ కలుగుతుంది. భూమి చుట్టూ ఉష్ణోగ్రతలు పెరగడాన్ని గ్లోబల్ వార్మింగ్ అంటాము. దీనివల్ల సముద్రమట్టాలు పెరగడము, తీరప్రాంతాలు మునిగిపోవడము, అతివృష్టి, అనావృష్టి, ఎల్‌నినో, లానినో....సంభవించడము, వాధ్యులు ప్రబలడము, వంటి అనేక ప్రభావాలు కలుగుతాయి. కార్బన్ డై ఆక్సైడ్‌తో పాటు మీథేన్, నైట్రోజన్

ఆక్సైడ్, క్లోరోఫ్లోరో కార్బన్‌లు, ఓజోన్ వంటివి కూడా గ్రీన్‌హౌస్ ఎఫెక్ట్‌కు కారణమవుతాయి. వీటిలో మీథేన్ చిత్తడి నేలల నుంచి, వరిపొలాల నుంచి జీవులు కుళ్ళిపోతున్నప్పుడు వెలువడుతుంది. అత్యధిక గాఢత ఉన్న కార్బన్ మోనాక్సైడ్ మరణాన్ని కలుగజేస్తుంది. సల్ఫర్ డై ఆక్సైడ్ వల్ల శ్వాసనాళంలో మంట, కళ్ళ మంట కలుగజేస్తుంది.

2. **నీటి కాలుష్యము**

అనేది నీటి మరియు నీటి వనరులు కలుషితమైన ప్రక్రియ లేదా పరిస్థితి. ఈ వనరులు అనగా సరస్సులు, నదులు, సముద్రాలు ఇంకా భూగర్భ జలాలు మనుషులు చర్యల వల్ల కలుషితమవుతాయి. ఈ నీటి వనరుల మీద ఆధారపడి బ్రతికే ప్రాణులు మరియు మొక్కలకి ఇది హానికరమైనది. నీటిని శుద్ధి చేయకుండా కలుషితాలను నేరుగా నీటి వనరులలోకి వదిలి వేయడం వలన ఇది ఏర్పడుతుంది.

3. **భూమి కాలుష్యము**

పారిశ్రామిక ప్రాంతాలలోని పరిశ్రమలు వదులుతున్న కాలుష్యంతో భూగర్భ జలాలు కాలుష్యమవుతున్నాయి. వ్యవసాయ ఎరువులు వాడకం ద్వారా, పురుగు మందులు చల్లడం వల్లను మట్టితో సహాపండ్లు, కూరగాయలు కలుషితమవుతున్నాయి. ఇవి తిని అనారోగ్యము బారిన పడుతున్నారు. రోడ్ల పైన చెత్త చెదారము కుళ్ళి సూక్ష్మక్రిముల ఉత్పత్తికి దోహదపడతాయి. జంతు కళేబరాలను జాగ్రత్తగా డిస్పోజ్ చేయని యెడల దుర్గంధముతో పారు అంటు వ్యాధులు ప్రబలే అవకాశాలు ఎక్కువ కావచ్చును. తగు జాగ్రత్తలు తీసుకోవడము మానవాళి మనుగడకు మంచిది.

4. **ధ్వని కాలుష్యము**

శబ్ద కాలుష్యం కోపానికి ఒక కారణం. 2005లో స్పానిష్ పరిశోధకులు చేసిన పరిశీలనలో నగరంలో నివసించే వారు శబ్ద కాలుష్యము తగ్గించటానికి ఒక డేసిబెల్‌కు నాలుగు యూరోలు చెల్లించటానికి తయారుగా ఉన్నారని తెలిపారు.

5. **రేడియోధార్మి కాలుష్యము**

కాలుష్యంతో కూడిన పొగ నల్లగా ఉంటుంది. రసాయనాలను కూడా వాసన, రంగు ద్వారా గ్రహించవచ్చు. కాని స్లోపాయిజన్‌గా మనలో ప్రవేశించే అత్యంత ప్రమాదకరమైన రేడియేషన్‌ను మాత్రం మనం చూడలేము. ప్రతీ చోట ఇదే పరిస్థితీ!

వాతావరణము

యం. నవదీప్

1. భూమి, గాలి, నీరు, ఆకాశము, చెట్లు, సమస్త జల-జీవారాశులు మెదలైనవి అన్నియు వాతావరణములో ఒక భాగము.

2. ఈ వాతావరణములో అనేక రకాలుగా మానవచర్యల ఫలితంగా మార్పులు-చేర్పులు చోటు చేసుకుంటున్నాయి.

3. ఈ వాతావరణములో చెట్లు చాలా ప్రాముఖ్యత వహిస్తాయి. చెట్లను, అడవులను నరికి వేయడం వలన వాతావరణములో అనేక మార్పులు జరిగి మనకు సరైన కాలంలో, సరైన సమయంలో వర్షాలు కురవకపోవడం జరుగుతుంది. దాని వలన పంటలకు విపరీతమైన నష్టము వాటిల్లుతున్నది. అప్పుడు సమస్త ప్రాణకోటికి ఆహారపదార్థాలు సరైన సమయంలో అందకపోవచ్చు. అప్పుడు జీవనాధారము జరగడం కష్టమవుతుంది.

4. చెట్లను నరికి వేయడం వలన వాతావరణములో అతివృష్టి - అనావృష్టి ఏర్పడున్నాయి.

5. వృక్షో రక్షతి రక్షిత అన్నారు. అందుకే ప్రతి ఒక్కరు ఒక్క చెట్టును నాటాలి. అనగా పెంచవలెను.

ఈ చెట్ల వలన మనకు స్వచ్ఛమైన గాలి లభించును. అంతేగాక మానవకోటి జావించడానికి అవసరమైన అక్సిజన్ (ప్రాణవాయువు) ఈ చెట్ల నుండియే లభించును. అంతేగాకుండా చెట్ల నుండి అనేక రకాలుగా పువ్వులు, పండ్లు, కూరాగాయాలు మెదలగునవి లభించును. మరియు వుడ్ కూడా లభించును. దీనిని బట్టి చూస్తే వాతావరణములో ఈ చెట్లు చాలా ప్రాముఖ్యతను సంతరించుకుంటున్నాయి అని చెప్పటలో అతిశయోక్తి లేదు.

6. అంతేకాకుండా ఈ వాతావరణము అనేక రకాలుగా కాలుష్యానికి గురి అవుతున్నదని చెప్పవచ్చును అనగా ఈ పర్యావరణంలో హానికర పదార్థాలు ఎక్కువ పరిమాణంలో ఉండి, జీవులకు హాని కలిగిస్తుంటే దాన్ని కాలుష్యం అని పేర్కొనవచ్చు.

7. ఈ కాలుష్యం అనేది మానవ చర్యల వలనే జరుగుతుందని చేప్పవచ్చును.

ఉదా ప్లాస్టిక్, వృక్ష, జంతు కళేబరాలు, పేపర్, లోహం, సీసం మెదలగునవి.

ఈ కాలుష్యాన్ని వివిధ రకాలుగా చెప్పవచ్చు.

వాయు కాలుష్యము

వాహనాలా నుండి, పరిశ్రమల నుండి వెలువడే పొగ అనగా వాయువులను దీనికి ముఖ్య కారణం. దీని వలన జీవరాశులకు వ్యాధులు ప్రబలడం జరుగుతుంది. అంతేగాక ఈ

వాతావరణములో ముఖ్యమైనది ఓజోన్‌పొర. ఈ వాయు కాలుష్యం వలన ఈ ఓజోన్ పొరకు ఎఫెక్ట్ జురుగుతుంది. దీని వలన అతినీలలోహిత కిరణాలు వెరుగా భుమిపైకి చేరి మానవులకు చర్మ క్యాన్సర్ ను కలిగిస్తున్నాయి.

నీటి కాలుష్యము

నీరు అనేది కూడ వాతావరణములో ఒక భాగము ఇది మానవులకు చాలా అవసరము నీరు లేకుండా జీవించడం కష్టము అయినప్పటికి మానవచర్యల వలన వాతావరణములో మార్పులు సంభవించి సరస్సులు, నదులు, సముద్రాలు, చెరువులు, భగర్భజలాలు కలుషితం అవుతున్నాయి.

ఉదాహరణకు కొన్ని ప్రాంతాలలో సరస్సులు, చెరువులలో ఒకే చోట బట్టలు ఉతకడం, అదే చోట స్నానం చేయడం మరియు పెంపుడు జంతువులను శుభ్రపరచడం, ఈత కొట్టడం లాంటివి. చేయడం వలన నీరు కలుషతమవుతున్నది.

ఈ విధంగా కలుషితమైన నీటిని శుద్ధి చేయకుండా వేరుగా నీటి వనరులలోకి వదిలివేయడం కూడా జరుగుతున్నది. వీటిని త్రాగడం వలన డయేగియా లాంటి వ్యాధులు సంభవిస్తాయి. ఈ విధంగా నీరు అనేక రకాలుగా మానవ చర్యల వలన వాతావరణంలో కలుషితమవుతుంది.

కాబట్టి నీటిని కలుషితం కాకండా చూసుకోవలసిన బాధ్యత మనందరిది అంతేగాక ఈ నీటిని వృధాగా వాడరాదు.

భూమికాలుష్యము

ఈ భూమిని కూడ మానవులు, పారిశ్రామిక ప్రాంతాలలో పరిశ్రమలు వదులుతున్న కాలుష్యంతో భూగర్భ జలాలు కాలుష్యమవుతున్నాయి. వ్యవసాయ ఎరువులు వాడకం ద్వారా, పురుగుమందులు చల్లడం వలన మట్టితో సహా పండ్లు, కూరగాయలు, చిరుధాన్యాలు మెదలైనవి కలుషితమవుతున్నాయి. వీటిని తిని మనము అనారోగ్యానికి గురి అవుతున్నాము. రోడ్లపై చెత్తా చెదారములు కుళ్ళి సూక్ష్మక్రిముల ఉత్పత్తికి దోహదపడుతున్నాయి. అంతేగాకుండా జనాభా పెరుగుదల దాని వలన భూమికి భారం పెరుగుతున్నది మరియు వాతావరణంలో సమతుల్యం లేకపోవడం వలన ఎక్కువగా ఈ మధ్య భూమి కంపించడం, భూకంపాలు రావడం తరచూ జరుగుతున్నది. దీని వలన నష్టపోయేది సమస్త ప్రాణకోటి జీవరాశులు కాబట్టి భూమికి కాలుష్యం చేయకుండా కాపాడుకోవలసిన మనకు ఎంతైనా ఉన్నది.

అంతేగాకుండా వాతావరణంలో ధ్వని కాలుష్యం కూడా ఏర్పడున్నది. అనగా అక్కరలేని

ధ్వనులకు అనగా విపరీతమైన ధ్వనుల వలన దేహంలో అధిక రక్తపోటు, అధిక ఒత్తిళ్ళకు గురువుతున్నాము. అంతేకాకుండా నిద్రాభంగం జరుగుతున్నది. అధిక ధ్వని వలన చెవుడు వచ్చే ప్రమాదం ఉంది. ఈ విధంగా వాతావరణంలో ఏర్పడే శబ్దాల వలన కూడా చాలా ప్రమాదాలు ఏర్పడతాయి.

ఏది ఏమైనా సరే వాతావరణం కాలుష్యం చెందితే నష్టపోయేది మనమే. కాబట్టి వాతావరణాన్ని కాపాడుకోవలసిన బాధ్యత మనమీదే ఉన్నది. అనగా గాలిని, నీటిని కాలుష్యానికి గురిగాకుండా చూడవలెను అదే విధంగా వృక్ష సంపదను కూడా కాపాడుకోవల్సిన భాద్యత మన మీదే వృక్ష సంపదను కూడా కాపాడుకోవల్సిన భాద్యత మన మీదే ఉన్నది. ఈ విధంగా మార్పులు చేసుకోగలిగితే వాతావరణము చాలా చాలా బాగుంటుందని చెప్పడంలో అతిసయోక్తి లేదు.

కె.వి. ప్రసాద్ రెడ్డి
భారతి సిమెంట్స్ లిమిటెడ్

★ **మన నివాసము నేలపైననే అందలి పరిసరములు పరిశుభ్రముగా నుండవలెను. లేనిచో ఆరోగ్యము చెడును. గుంటలలోని మురుగు నీరు బురద, రొచ్చు పెంట ప్రోగులు, కళ్ళ కంప్ర, క్రిమికీటకములను పెంప్రుచేసి రకరకాల రోగములను ప్రుటించును. గాలి కలుషితమై దుర్గంధ భూయిష్టమైన భరింపలేము, క్రిములు పెరుగుటచే మలేరియా టైపాయిడు, కలరా మశూచి బోదకాలు వంట భయంకర వ్యాధులు సంక్రమించును.**

యస్. ప్రభాకర్ రెడ్డి
భారతి సిమెంట్స్ లిమిటెడ్

పర్యావరణాన్ని కాపాడుకుందాం
ప్రాణాంతకమైన జబ్బుల నుండి కాపాడుకుందా.

కె. సౌదామిణి
భారతి సిమెంట్స్ లిమిటెడ్

★ విద్యుచ్ఛక్తి, అణుశక్తి కర్మాగాలములు నిరంతరము పని చేసినందు వలన చాలా లాభములున్నను వాని నుండి , దూళి చాలా దూరము వ్యాపించు చున్నది. సిమెంట్ కర్మాగారములనుండి వెలువడు దుమ్ము కొన్ని మైళ్ళ దూరముదాక ఎగిరిపోయి జననివాసములపైన, పంట పొలాలపైన పడే కాలుష్య మేర్పడుచున్నది. దీనిచే క్షయ, రక్తహీనత, దృష్టమంధ్యము, అగ్ని మాంద్యము వంటి జబ్బు లేర్పడుచున్నవి. అగ్ని ప్రమాదము వలన గృహములు పరుశరామ ప్రీతియై వాతావరణము పొగతో, బూడిదతో నిండి పోవుచున్నది. ఆకాశములోని స్వచ్ఛ వాతావరణము మారిపోయి అనావృష్టి పరిస్థితులేర్పడుచున్నవి. నీటి కొరత, పంటల నష్టం సంభవించుచున్నవి.

ఐ. రవి బాబు
భారతి సిమెంట్స్ లిమిటెడ్

నీజనిచ్చు చెట్టు నేల తల్లిని గాచు
వాయుకాలుష్యమణిచి వానలిచ్చు
సకల జీవ్యలను కాచేను తల్లిలా
విశ్వదాభి వినుర వృక్ష మిత్రము

యస్. విజయ
భారతి సిమెంట్స్ లిమిటెడ్

1. జననం, మరణం, జీవితకాలం
   నీతోడుగ నిలచే ఆవరణం పర్యావరణం
2. అందిస్తుంది మనకు ఎన్నో వనరులను
   తెస్తుంది నేలపైకి వర్షపు చినుకులను

జి.వి. నాగేందర్ రెడ్డి
భారతి సిమెంట్స్ లిమిటెడ్

చెట్లు లేకపోతే...
ప్రాణవాయువుకు ఏర్పడుతుంది లోటు,
చెట్లు ఎక్కువ నరకడం వలన...
వాతావరణానికి ఏర్పడుతుంది చేటు...
ప్రకృతి సమతుల్యతను కాపాడటంలో చెట్ల పాత్ర ఏమిటి అని
తెలుసుకుని చెట్ల ప్రాధాన్యత చెప్పుదాం చాటి
కాపాడుకుందాం పర్యావరణాన్ని ప్రతి ఒక్కరం చెట్లను నాటి.

వి. విజయ్ భాస్కర్
భారతి సిమెంట్స్ లిమిటెడ్

"కాలుష్యాన్ని కలుగ చేయుట ఎంత నేరమో
దాన్ని చూస్తూ నియంత్రించక పోవటం అంతే నేరం
మార్పు మన నుంచే మొదలవ్వాలి."

వి. వనజ
భారతి సిమెంట్స్ లిమిటెడ్

"గని ఆవరణలో మనం పెంచే వృక్ష సంపద
గని కార్మికులకు ఆరోగ్యాన్ని ప్రసాదించే వన దేవత"

సి. రమాదేవి
భారతి సిమెంట్స్ లిమిటెడ్

❀ పది చెట్లను నాటండి అది పదికాలాలు పాటు మిమ్మల్ని పోషించి, పచ్చని జీవితాన్ని అందిస్తుంది.

సి. హనుమంత రెడ్డి
భారతి సిమెంట్స్ లిమిటెడ్

❀ ప్రకృతి తల్లి వంటి తల్లిని అవమానించడం అమానుషం, తల్లి పట్ల ప్రేమ దయ కలిగి పర్యావరణ పరిరక్షణకు తోడ్పడుదాం.

యస్. డి. హర్షిని

''అడుగుకొక చెట్టు
అభివృద్ధికి అదొకమెట్టు
చక్కగా పెరిగే చెట్లు
స్వర్గానికి ఎక్కించే మెట్లు
మన జీవితాలకు ఆయువు మెట్లు
వన్య మృగాలకు ఉనికిపట్లు చెట్లే
ఆహారం, ఆరోగ్యం, ఆనందం
వీటన్నింటికి అరణ్యాలే కారణం
మనమనుగడకు అరణ్యాలే శరణ్యాలు
అవి లేకుంటే మన జీవితాలే ఒక రణం''

''నీటిని సంరక్షిద్దాం
కరవును తరిమి కొడదాం''

బి. పృథ్వినాథ్ రెడ్డి
ఇండియా సిమెంట్స్ లిమిటెడ్

ఈ ఊరు మనదిరా, ఈ నేల మనదిరా,
ఈ గాలి మనదిరా, ఈ చెట్టు మనదిరా

ప్రకృతి పచ్చల హారంలా ఉన్న అడువులన్నీ తరిగెరా
పుడమితల్లి ఒడిలోన ప్రవహించే నదులన్నీ ఇంకి పోయి ఈసురోమంటుంటే
ఈ ఊరు మనదిరా, ఈ నేల మనదిరా, ఈ గాలి మనదిరా,
ఈ చెట్టు మనదిరా
ప్రకృతితో కలిమి చెలిమి పెంచుకున్న జనాలను
పట్టణాల పేరుతో పరుగు తీయించావట
అందులోని జన జీవాలకు మృత్యుఘోష వినిపించావట
ప్రగతి పేర ప్రకృతిపై పగబట్టి పర్యావరణానికి పాగబెట్టినావంట
జీవరాశులన్ని ప్రాణవాయువు కొరకు హాహాకారాలు చేస్తుంటే,
వాహనాలు ఫ్యాక్టరీలు వ్యర్థాలను వదిలిపెట్టి, వ్యంగ్యంగా చూస్తున్నవి
గాలేమి, నీరేమి, పెరుగేమి, పాలేమి, నేలేమి, నింగేమి ప్రతీదీ కలుషితమే
చేయి చేయి కలిపి మనం, ముందుకు సాగుదాం పరిసరాల
రక్షణకై ప్రతిజ్ఞబూని నడుస్తాం.

యు.వి. కృష్ణుడు
ఇండియా సిమెంట్స్ లిమిటెడ్

1. ఖనిజ సంపదతో దేశానికి ప్రగతి
   పచ్చని చెట్లతో కాలుష్యానికి నిష్కృతి
2. నేటి బాలలే రేపటి పౌరులు,
   నేటి మొక్కలే రేపటి వృక్షాలు
3. చెట్లు పెంచడం ప్రకృతికి పునాధి,
   చెట్లు నరకడం మానవ జాతికి సమాధి
4. పరిసరాల పరిశుభ్రత కల్గిన ఇల్లు,
   సుఖసంతోషాలతో వర్ధిల్లు
5. ప్రకృతే మనకు చక్కని రక్షణ వ్యవస్థ
   అది పాడైతే తప్పదు రోగాలతో అవస్థ

పి. వరుణ్ కుమార్
ఇండియా సిమెంట్స్ లిమిటెడ

1. అపాయానికి వుండదు కనికరం
   అవధులు లేనిచో హానికరం
   వృక్ష సంరక్షణా మనకు అవసరం
2. కాలుష్యాన్ని అరికట్టు చెట్లు నాటుటపై మనస్సు పెట్టు.
3. కాలుష్య మిళిత్ వాతావరణము మనకు వద్దు
   పర్యావరణ పరిరక్షణ దానకి ముద్దు (హద్దు)
4. ప్రకృతి... దేవుడి ప్రతి రూపం
   దానిని కాపాడుదాం
5. చెట్లను పెంచు ఆరోగ్యాన్ని పంచు

ఎ. వెంకటేష్
ఇండియా సిమెంట్స్ లిమిటెడ్

వృక్షో రక్షతి రక్షిత:

చెట్లను కాపాడండి అవి మిమ్మల్ని కాపాడతాయి

పచ్చని చెట్లు దేశ ప్రగతికి మెట్లు

తల్లి ఒడి బిడ్డకు రక్షణ

పర్యావరణమునకు పచ్చని చెట్లు రక్షణ

చెట్లను పెంటండి కాలుష్యాన్ని నివారించండి.

విద్యుత్‌ని పొదుపుగా వాడండి.

భావితరానికి బాసటగా నిలవండండి.

సెల్‌ఫోన్‌ను పొదుపుగా వాడండి

రేడియేషన్‌ని అరికట్టండి.

యస్. కుమారి
సాగర్ సిమెంట్స్ లిమిటెడ్

Water is precious
don't waste it careless
save the water always
make your future happiness

చెట్లలో ఉంటుంది వాయువ్య
అవి పెంచుతాయి మన ఆయువ్య
వాటిని నీరికి చేయకు అల్పాయువ్య
భూమిని కానివ్వకు విషవాయువ్య
చెట్లను పెంచితే కలుగు చిరాయువ్య.

కాలుష్యం అనేది మానవ్యని పాపం
ఇది మనుగడకి ఒక శాపం
దీనిని నివారిఞ్చే ఏకైక మార్గం
పచ్చని చెట్లు అనే ఆయుధం
వాటిని పెంచి కలిగిద్దాం, ఈ పాపానికి విమోచనం.

నీటిని చేయకు వృధా
పొదుపుగా వాడు సదా
అవి లేనిచో జీవనం వ్యధ
చేయి జారనివ్వకు నీరు అనే సంపద.

యం. దుర్గాభవాణి
సాగర్ సిమెంట్స్ లిమిటెడ్

1. మొక్క ఒక్కటున్న మేలు చేయు,
చెట్టు చెంత ఉన్న చింత తీరు,
చిగురుటాకు లాగ ఆశచిగురించు,
భావితరాలకు భాగ్యమొసగు

2. మొక్క లేకున్న వాన చుక్కైన ఉండదు,
తరువులేని చోట కరువు వచ్చు,
తరువులే మన బ్రతుకు తెరువులు
జాతి మనుగడకు తొలి, మలి మెట్టు

3. ప్రకృతి సంపద లేని మనిషవ్రతాడు బికారి,
రక్షించిన నాడవ్రతాడు ఆదర్శవాది
నియంత్రించిన వాడవ్రతాడు నిత్యసంతోషి

వై. శ్రీనివాస్ రెడ్డి
సాగర్ సిమెంట్స్ లిమిటెడ్

1. ఒక మొక్కను నాటి పెంచుకో నీ పేరు పెట్టుకో 1000 సంవత్సరాలు చరిత్రలో నిలిచిపో.
2. ఒక మొక్కను నాటి వృక్షంగా పెంచితే తరతరాలకు గురుగా మిగిలి పోతాం.
3. టన్ను బంగారం కన్న ఒకచెట్టు మిన్న ఎందుకంటే చెట్టు మన ఆకలి తిరుస్తుంది.
4. వేప వేయి రోగాలకు మందు విరివిగా వేప చెట్లను పెంచు, ఆరోగ్యానికి అందిరకీ పంచు.
5. చెట్లను నరికి అనారోగ్యానికి పెంచకండి పచ్చని చెట్లను పెంచి ఆరోగ్యాన్ని పంచండి.
6. జీవితాన్ని ఫణంగా పెట్టి మన జవాను భారత మాతను రక్షిస్తుంటే కాసినింత నీళ్ళు పోసి ఒక మొక్కను మనం రక్షించలేమా ?
7. పర్యావరణాన్ని కాపాడండి ప్రపంచాన్ని రక్షించండి ! పర్యావరం దినోత్సవం జూన్ 15 ను పాటిస్తాము.
8. ప్రకృతి రక్షతి రక్షిత
9. జీవ కోటిని కాపాడుదాం పర్యాపరణాన్ని పరిరక్షిద్దాం.

వి. యుగెందర్ రెడ్డి
సాగర్ సిమెంట్స్ లిమిటెడ్

1. మనం చెట్లని రక్షిస్తే అవి మనని తిరగి రక్షిస్తాయి.
చెట్ల ప్రగతికి మెట్లు
వృక్షో రక్షతి రక్షిత
చెట్లను రక్షించు గౌరవంగా జీవించు.

2. అడుగుకు ఒక చెట్టు
అభివృద్ధికి అధిక మెట్టు
చక్కగా పెరిగే చెట్లు
స్వర్గానికి ఎక్కించె మెట్లు
మన జీవితాలకు ఆయువుపట్లు
వన్య మృగాలకు ఉనికి పట్లు చెట్లే
ఆహారం, ఆరోగ్యం, ఆనందం
వాటన్నింటికి, అరణ్యాలే కారణం
మన మనుగడ అరణ్యాలే శరణ్యాలు
అవిలేకుంటే మన జీవితమే ఒక రుణం

3. ప్రకృతి వనరులను కాపాడుకుందాం
భావితరాల భవిష్యత్‌కు బాటలు వేద్దాం
పచ్చదనం కొరకు పాటుపడదాం కాలుష్యరహిత ప్రపంచాన్ని నిర్మిద్దాం.

4. ప్రకృతి మన అవసరాలకు కావలసింది ఇస్తుంది.
అత్యవసరాలకు దానిని వాడుకోకుండా
భావితరాలకు స్వచ్ఛమైన గాలి, నీరు
అందించేందుకు ఈ రోజు నుండె అందరం పాటుపడడం
నవభారతాన్ని నిర్మిద్దాం, దేశసంపదను పెంచుదాం.

యం. అగిత్
శ్రీ చక్రా సిమెంట్స్ లిమిటెడ్

1. శుభ్రతకు విలువ కట్టలేం, అయిపోయిన గనిని తీసుకు రాలేము.
2. మనిషికి రెండు కళ్ళు ఎంచ అవసరమో, గనిలో శుభ్రత, భద్రత అంత అవసరం
3. దేశానికి అందం తాజ్ మహల్ అయితే, గనికి అందం చెట్లు, శుభ్రత
4. మనిషికి పద్దతి ఎంత అవతసరమే, గనిలో శుభ్రత అంత అవసరం
5. శుభ్రమైన గని అత్యంత భద్రమైన ప్రదేశం.
6. పర్యావరణాన్ని కాపాడు పరిశుభ్రమైన జీవితాన్ని జీవించు.
7. చెట్లకు నీరు ఎంచ అవసరమో గనిలో శుభ్రత అంత ఆవసరణ
8. ఎంతైనా ఉపయోగించు కానీ వ్యవర్థపరచుకు ఎందుకనగా అది మళ్ళీ నీకు దొరకదు.
9. పనిలో ఉండు ముందర, పరిశుభ్రతలో ఉండు దాని కన్నా ముందర
10. పరిశుభ్రమైన ప్రదేశం ఓ బంగారం గని
11. శుభ్రతలో అశ్రద్ద చేస్తే నీ ప్రాణాలకు లేదు భద్రత
12. సంప్రదాయం అంటే భారతదేశం, మన పనిలో పరిశుభ్రత మన సంస్కారం.
13. చెట్లు ఇచ్చేది నీడ మాత్రమే కాదు, అది ఇచ్చేది మన శ్వాసకు ప్రాణం
14. ప్రకృతి అందమైనది, ఆ అందాన్ని చెట్లతో అలంకరిద్దాం
15. గనిలో ఒక్క రాయి కూడా దుర్వినియోగం చేయకు, ఎందుకంటే ఆ రాయి మరల పుట్టదు.
16. పరిశుభ్రమైన గని పవిత్రమైన దేవాలయం లాంటిది.
17. నీవు ఒక పండు కోయి తిరిగి కాస్తుంది. కానీ ఒక చెట్టు నరకకు తిరిగి రాదు.
18. పరిసరాలను పరిశుభ్రంగా ఉంచు అవి నీ భద్రతను చూసుకుంటాయి.
19. ప్రాణం ఇచ్చేది అమ్మ అయితే ప్రాణం నిలబెట్టెది చెట్లు.
20. రామ బాణానికి తిరగు లేదు, పరిశుభ్రతకు ఏది సాటి రాదు.

జి. యశోద
రేన్ సిమెంట్స్ లిమిటెడ్

1. చెట్లను నరకడం నేరం, పర్యావరణాన్ని పరిరక్షించు.
2. కాలుష్యం కబళిస్తుంది జీవితం వృక్షాలే రక్షణ కవచం.
3. దేవుని నిత్యం పూజించు చెట్లను నిత్యం పెంచు, పోషించు.
4. విరివిగా మొక్కలను పెంచు తరతరాలకు ప్రాణవాయువు పంచు.
5. వృక్ష సంపదను కాపాడుదాం బంగారు భవితకు బాట వేద్దాం.

బి.యస్. దీపిక
రేన్ సిమెంట్స్ లిమిటెడ్

★ సహజ వనరులను సంరక్షించు
భావి తరాలను రక్షించు

★ ఇంటికి వెలుగు తరుణి
భువికి వెలుగు తరువు
భవితకు వెలుగు ప్రకృతి

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1. వృక్ష సంపదను రక్షిద్దాం
ప్రకృతి బడిలో జీవిద్దాం

యం. రామకృష్ణా నాయుడు
పరాశక్తి సిమెంట్స్ లిమిటెడ్

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2. చెట్లను పెంచడానికి అలవాటు పడదాం
పర్యావరణ కాలుష్యానికి నివారిద్దాం

పి. నరేందర్ బాబు
పరాశక్తి సిమెంట్స్ లిమిటెడ్

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3. చిన్న చెట్టుకు నీవు రక్ష
పెద్ద చెట్టు నీకు రక్ష

యం. లక్ష్మీ
పరాశక్తి సిమెంట్స్ లిమిటెడ్

యం. అనుపమ
ఇండియా సిమెంట్స్ లిమిటెడ్

1. తల్లి ప్రేమ అమృతం - చెట్టు గాలి స్వర్గం
   తల్లి ప్రేమకు లేదు స్వార్థం - చెట్లను పెంచుతే పరమార్థం
2. మా ఊరి గ్రామ వైద్యుడు వేపచెట్టు - మా ఊరి గ్రామ దేవత రావి చెట్టు
   చెట్లను పూజించుట సనా తన ధర్మం - చెట్లను పెంచుట మానవ ధర్మం
3. ఆస్తులు పెంచగలం, పంచగలం
   ఇది భద్రత పాస్తే - ఆయుష్షును పెంచగలం, పంచగలం
   ఇది పర్యావరణాన్ని రక్షిస్తే
4. నేచర్ని నాశనం చేయకు - ప్లాస్టిక్‌కి ప్రాణం పోయకు
   పర్యావరణాన్ని పరిరక్షించు - ప్రాణకోటిని రక్షించు.

వి. సుజాత
ఇండియా సిమెంట్స్ లిమిటెడ్

1. ఖనిజాల సంరక్షణ దేశ ప్రగతికి ఆధారం, పర్యావరణ పరిరక్షణ ఆరోగ్యానికి శ్రీకారం
2. కాలుష్యం కబళిస్తుంది జీవితం - వృక్షాలే రక్షణ కవచం
3. చెట్లు, పక్షులు, జంతువులు దేవుడు మనకు ఇచ్చిన వరం,
   వీటిని నాశనం చేసి భావితరానికి మిగిల్చవద్దు శాపం.
4. విచ్చల విధిగా ఖనిజాల త్రవ్వకం సృష్టికి విరుద్ధం,
   విధిగా ఖనిజ భూమిని వనభూమిగా నింపటం మన కర్తవ్యం.
5. చెట్లను పెంచటం వలన ప్రాణ వాయువు వస్తుంది,
   చెట్లను నరకటం వలన నీ ఆయువు తగ్గి పోతుంది.
6. భద్రతను నమ్ముకున్న దరిచేర్చును సురక్షిత గమ్యానికి,
   పర్యావరణాన్ని నమ్ముకున్న దరిచేర్చును సురక్షిత జీవితానికి.
7. చెట్లు నాటి గుడ్ మార్నింగ్ పలుకుతాము - గ్లోబల్ వార్నింగ్‌ను మన ఆపుతాము.
8. జలం మనకున్న మహాభాగ్యం, కలుషితం చేస్తే అనారోగ్యం,
   నివారిస్తే జీవన సౌభాగ్యం.

కె. సాయి మనీష్

1. ప్లాస్టిక్, పేపర్ వాడకాన్ని తగ్గించండి - పర్యావరణాన్ని రక్షించండి.
2. వృక్ష సంపదను రక్షిద్దాం - ప్రకృతి ఒడిలో జీవిద్దాం
3. పచ్చని చెట్లను పెంచుదాం - ప్రకృతి ఒడిలో హాయిగా జీవిద్దాం.
4. గని ఆవరణలో మన్ పెంచే వృక్ష సంపద
   గని కార్మికులకు ఆరోగ్యాన్ని ప్రసాదించే మన దేవత
5. అమ్మ ప్రేమ మధురమైనది - ప్రకృతి ప్రేమ మరువరానిది.

కెవిబి.
ట్రైమాక్స్ స్యాండ్స్

పచ్చదనాన్ని పెంపొందిద్దాము
జీవన మనగడ అభివృద్ధికి తోడ్పడదాం

సి.హెచ్. రమణ మూర్తి
ట్రైమాక్స్ స్యాండ్స్

1. నీటిని రక్షించు, ప్రకృతిని ప్రేమించు - భవితకు భరోసా కల్పించు
2. జలము మన బలం, జీవన్మూలం
   అది లేకుంటో జీవకోటి మనుగడ ప్రశ్నార్థకం
3. పచ్చని చెట్టు - ప్రగతికి మెట్టు
4. నీరు జీవితం - దాని పరిరక్షణే భవిష్యత్తు
5. నీరే సకల ప్రాణులకు ప్రాణాధారం కలుషితమైతే హాలాహలం.
6. ప్లాస్టిక్ వద్దు - పేపరు ముద్దు

యస్. దివాకర్ రెడ్డి
దాల్మియ సిమెంట్స్ లిమిటెడ్

1. చెట్లు పెంచండి ఆరోగ్యాన్ని పంచండి పర్యావరణాన్ని కాపాడండి.
2. పచ్చని గుర్తు మన జెండా ఆపచ్చని జెండా మనకు అండ
3. ప్రతి మనుష్యుల మంచి చెడు లాగే ప్రతి మొక్కలో మంచి చెడు ఉంటాయి.
4. దుమ్ము అరికట్టు చెట్లను నాటుటపై మనస్సు పెట్టు
5. నేల రాలే నిటి బొట్టు రేపటి కోసం దాచిపెట్టు.
6. గాలిలో దుమ్ముని నివారించి అందరికి ఆరోగ్యం ప్రసాదించు
7. దేవుడు అనే పదంలో శక్తి ఉంది పర్యావరణ అనే పదంలో భవిషతే ఉంది.
8. పచ్చని చెట్లు ప్రగతికి వరాలు
9. చెట్లకు జీవం పోస్తే నీ జీవిత కాలం పెంపొందిస్తుంది.
10. కృత్రిమ ఎరువులు వద్దు సహజ ఎరువులు ముద్దు నేటి మొక్కే రేపటి వృక్షం

బి. జయనర్సింహ్మా రెడ్డి
ఇండియా సిమెంట్స్ లిమిటెడ్

1. చెట్లు నాటుట ప్రకృతికి పునాది, చెట్లను నరకడం, మానవజాతికి సమాధి
2. రహదారి వెంట మొక్కనాటి పెంచరా !!
   ఉన్నవాడు లేని వాడు నిన్ను తలచురా !
   తీరతీరాల నీదు పేరు మిగులురా !
   పని చేయు వాడె ఫలము నారగించురా !
3. చెట్లుంటే క్షేమం లేకుంటే క్షామం
4. పచ్చదనం వల్ల బ్రతుకు పావనం, అందుకే కలసి పెంచుదాం మనం వనం
   ఇందుకు కావాలి సహనం, లేకుంటే బ్రతుకు దహనం
5. రాత మారితే గీత మారదు, చెట్లు నరికితే కరువు తప్పదు
6. పెరుగే ప్రతి చెట్టు, మానవుని ధీర్ఘాయుష్షుకి మెట్టు
7. నిలకడ నేర్చిన నీరు, మనం పెంచే చెట్లకు పన్నీరు.
8. పచ్చని గుర్తు మన జెండా, పచ్చని చెట్లే మనకండ

యం. అర్షిని రెడ్డి
ఇండియా సిమెంట్స్ లిమిటెడ్

1. నీటిని రక్షించు, ప్రకృతిని ప్రేమించు
   భవితకు భరోసా కల్పించు
2. ఒకటేరా నీరు, ధనం, విచ్చలవిడి వీడదాం మనం
3. ఆవిరవుతోంది జలం, ఉధ్యమించాలి మనం
4. నీరు ఉంటే ఏదైనా సజీవం, లేకుంటే సమస్త ప్రపంచం నిర్జీవం
5 పర్యావరణ పరిరక్షణ మానాలి శ్రేయస్సుకు దర్పణం
   గనుల ప్రగతి కార్మికుల పురోగతికి నిదర్శనం !
6 గనిలో కాలుష్య రహిత పర్యావరణం
   అవనిలో ప్రమాదరహిత జీవనానికి సోపానం !
7 నేడు గనిలో వనరులు వృధా చేయకు
   రేపటి పనిలో వ్యధ చెందకు

యం. జస్వంత్ రెడ్డి
ఇండియా సిమెంట్స్ లిమిటెడ్

1. సర్వజీవరాసులకు ప్రాణ వాయువు అందించేవి చెట్లు
   అందుకే మనమంతా కలిసి చెట్లు పెంచుదాం
2. పర్యావరణం రక్షిస్తుంది, కన్న తల్లిలా
   ఆరోగ్యం కాపాడుతుంది, కంటి రెప్పలా
3. వృక్షో రక్షణ యజ్ఞం అను నిత్యం జగత్ అవశ్యం
   వృక్షో కర్షతి మేఘం హర్షాం వర్షతి మేఘం
4. పచ్చని గుర్తు మన జెండా
   పచ్చని చెట్లే మనకు అండా దండా
5. చెట్లు చేమలు పెంచు గాలి నీడల కోసం
   వనాలు పెంచు జంతు జాలం కోసం
   కాపాడు వనాలు వన్య ప్రాణుల కోసం
   జీవించు నూరేళ్ళ జీవ కోటంతా
6. పచ్చదనం వల్ల బ్రతుకు పావనం
   అందుకే కలసి పెంచుదాం మనం వనం
   ఇందుకు కావాలి సహనం
   లేకుంటే బ్రతుకు దహనం

పి.రాజశేఖర్
ఇండియా సిమెంట్స్ లిమిటెడ్

1) ఆనాటి ప్రకృతి మానవునికి ఒక వరం
ఈనాటి ప్రకృతి మానవునికి ఒక శాపం

2) సృష్టికి ప్రతి సృష్టి సృష్టించాడు ఆనాటి విశ్వామిత్రుడు
చెట్టుకి ప్రతి చెట్టు నాటాలి ఈనాటి మానవుడు

3) దుమ్ముని అరికట్టు చెట్టు నాటుట పై మనసు పెట్టు

4) పచ్చదనాన్ని పెంచు పర్యావరణమును రక్షించు

జలబిందువు బడిసి పడితే
దాహం తీర్చే బంధువు

జలపాదులలో చైతన్యం
ఆదిభావితరాలకు భవిత్యం

Terala Limestone Mine

S.NO.	Parameters	Particulars of work done	Expenditure incurred 2014-15 (**Rsin.Lakh**)	Total Expenditure as on 01-4-15(**Rs in Lakhs**)	No. of beneficiaries
1	Housing/ School		10	34.55	500
2	Water supply		2	22.4	6000
3	Sanitation				
4	Health, safety and Medical facilities		1.5	7.5	2500
5	Education & Training		---	---	---
6	Employment of the local inhabitants		---	----	---
7	Public Transportation & communication		---		---
8	Recreation		0.4	8.2	1000
9	Roads		10	60.25	6000
10	Electricity		0.2	2.7	500
11	Others (Temple, Church &Maseed)		0.5	36.85	7000

Mandadi Limestone Mine

S.NO.	Parameters	Particulars of work done	Expenditure incurred 2014-15 (**Rsin.Lakh**)	Total Expenditure as on 01-4-15(**Rs in Lakhs**)	No. of beneficiaries
1	Housing/ School		10	34.55	500
2	Water supply		2	22.4	6000
3	Sanitation				
4	Health, safety and Medical facilities		1.5	7.5	2500
5	Education & Training		---	---	---
6	Employment of the local inhabitants		---	----	---
7	Public Transportation & communication		---		---
8	Recreation		0.4	8.2	1000
9	Roads		10	60.25	6000
10	Electricity		0.2	2.7	500
11	Others (Temple, Church &Maseed)		0.5	36.85	7000

Parasakti Limestone Mine

Sl.No	Parameters	Particulars of work done	Expenditure incurred Rs. 2014-15	Total Expenditure Rs. As on 01.04.15	No. of beneficiaries
1	Housing		--NIL--	5,06,29,825	600
2	Water Supply	Water tank pipe lines, drinking water	113,550	1,785,220	6,500
3	Sanitation	Sanitory works	203,000	737,189	9,500
4	Health, Safety and Medical facilities	Medical camps	1,453,200	2,420,253	3,800
5	Education & Training	Funds donated to education institution	924,978	2,167,889	950
6	Employment of the local inhabnitants	Local employees	20,520,000	132,348,600	1736
7	Public transporation & communication	Road Development to near by village	1,108,850	5,362,400	6,900
8	Recreation	Funds donated to functions & sports	1,015,604	1,708,894	2,800
9	Others (Please Specify)	Helpage, Sports, Religious & Weaker Sections	1,528,350	25,099,696	11,000
		Total	**26,867,532**	**222,259,966**	**43,186**

KRISHNAPURAM LIMESTONE MINE

Sl. No	Parameters	Particulars of work done	Expenditure incurred 2014 - 15 (In Rs. Lakhs)	Total Expenditure as on 01.04.2015 (In Rs. Lakhs)	No. of beneficiaries
1	Housing	Construction of houses to poor, providing construction material to poor etc.,	Nil	1.25	100 families
2	Water Supply	Laying of water pipe lines, Repairs of motors, Construction of OH tanks/GL tanks etc.,	1.1	20.43	3500 persons
3	Sanitation	Construction of Toilets etc.,	0	0.303	Pondugala Villagers
4	Health, safety & Medical facilities	20 Bed hospital with medical officers & nursing staff provided and one Ambulance van also arranged for speedy removal of the patients from village to Miriyalguda	14.78	432.92	20,000 families (Colony and surrounding villages of cement plant & mines)
5	Education & Training	School building room construction providing furniture's to school etc.,	0.707	6.86	School children of surrounding villages
6	Employment of the local inhabitants				45% of the Employment
7	Public transportation & communication	Laying of CC roads.	Nil	19.39	Villagers of Surrounding Villages
8	Recreation	Construction of Library etc & Sports.,	0.227	0.528	Pondugala Village
9	Others (Please specify)	Environmental management, Sweets distribution, Temple, Kalyana Mandapam, Blankets to old people, Old age pensions	5.329	62.772	Villagers of Surrounding Villages & Senior citizens

NAWABPETA-TALAMANCHIPATNAM LIMESTONE MINE

Sl.No	Parameters	Particulars of work done	Expenditure Incurred 2014-15 (in lakhs)	Total expendure as on 01.04.15	No of beneficiaries
1	**Housing**	Nil			
2	**Water supply**	Constructed ground water tank at Nawabpet village	8	26.5	2850
		Constructed Over head water tank at Chinnakomelra	40	40.5	3256
		Form pounds	4.3	5.2	1563
		Cause way	12	12	142
		Donated 10 lacks to the NTR Sujalasravanthi scheme	10	10	10000
		Aluguvank drain development	11	11	2410
3	**Drip irrigataoion**	32 Drip irrigation equipment leveraged from Agri. Dept (100% subsidy)	12	18	1250
4	**Health, safety and Medical facilities**	Organised Health camps	5.6	12.5	4756
		Constructed Biotoilets	1	1.8	65
		Veterinary Health camps	0.5	1.14	1500
5	**Education& Training**	Provided School Desks for ZP High School	4.25	5.25	254
		Training given to produce Bio gas	2.3	4.7	169
		Teaching Learning Meterial provided to nawabpet students	1.5	10.5	520
6	**Recreation**	Volley ball torunament conducted	0.75	0.75	240
		Community games conducted	2	2	1350
7	**Others**	Provided Two "Travises" (Animal cage- for Veterinary clinic Cost Rs 25000) at Hanumantharayanipet village keeping in view the livestock population	0.5	0.5	3500
		Green fodder Development	1.5	2.25	189
		Solar Lantern provided for poor students	4.8	6.2	860
		Solar Study Lamps provided	3	3	250
		Solar Streetlight provided	2.5	3.2	2685

HEMADRI LIMESTONE MINE, VEDADRI

Sl.No	Parameters	Expenditure Incurred 2014-2015	Total Expenditure as on 1.4.2015	No. of beneficiaries
1	Housing	3,00,000/-		
2	Water Supply	8,00,000/-		500
3	Sanitation	300,000		200
4	Health, Safety and Medical facilities	175,000		600
5	Education & Training	1,50,000/-		2
6	Employment of the local inhabitants	--		3
7	Public transportation & communication	120,000		
8	Recreation	200,000		
9	Others(Please specify)	Nil		

Kakatiya Limestone Mine

SL.No	Parameters	Particulars of work done	Expenditure incurred 2014-15	Total Expenditure as on 01.4.2015	No. of beneficiaries
1	Housing		-	1,500,000	220-230
2	Water Supply		435,000	1,596,000	250
3	Sanitation		108,000	828,000	100
4	Health, safety and Medical facilities		664,411	7,285,411	500
5	Education & Training		544,100	3,088,100	300
6	Employment of the local inhabitants		4,320,000	11,420,000	150
7	Public transportation & communication		340,800	8,226,800	250
8	Recreation		205,040	770,040	250
9	Others (Please specify)		225,000	3,119,000	100

HEMADRI LIMESTONE MINE, VEDADRI

Sl.No	Parameters	Expenditure Incurred 2014-2015	Total Expenditure as on 1.4.2015	No. of beneficiaries
1	Housing	3,00,000/-		
2	Water Supply	8,00,000/-		500
3	Sanitation	300,000		200
4	Health, Safety and Medical facilities	175,000		600
5	Education & Training	1,50,000/-		2
6	Employment of the local inhabitants	--		3
7	Public transportation & communication	120,000		
8	Recreation	200,000		
9	Others(Please specify)	Nil		

Muktyala Limestone Mine

Sl. No	Parameters	Particulars of work done	Expenditure Incurred 2014 - 2015	o. of beneficiaries
1	Housing	NIL	0	-----
2	Water Supply	Construction of Mineral Water Plant & Maintenance	645,000	Annavaram&Magollu Villagers
		RO Plant Maintenance	14,000	Muktyala Villagers
3	Sanitation	NIL	0	-----
4	Health, Safety and Medical facilities	Medical Camps Expenditure	53,043	Muktyala, Dondapadu, Bugga Madavaram, Vajinepalli, Srinivasa Nagar,
		Medical Officer & Assistant at Muktyala Dispensary for providing Medical facility to villagers	942,164	Agraharam, Madipadu&Jaggayyapet
		Arranged Ambulance at Muktyala Dispensary.	60,000	Villagers
5	Education & Training	Women's Skill Development programmes	30,000	Muktyala Villagers
6	Employment of the local inhabitants	Technical - 04 (Year 2014-15)	40,000	Gouravaram, Penuganchiprolu&Jaggayyapet Villagers
7	Public transportation& communication	Arranged School Bus from Muktyala to Jaggayyapet & Maintenance	379,000	Muktyala Villagers
8	Recreation	NIL		
9	Others (Please specify)	Rice Donated to Sri Thirupathamma Ammavari Temple Vuthsavam	20,000	Dondapadu village
		Sri Parvathi Sahitha Ohmkareshwara Swami Temple Vuthsavam	25,000	K Agraharam village
		Painting work at Peerlachavidi	13,000	Muktyala
		Construction of Muktyalamma Temple	78,500	Villagers

Budawada Limestone Mine

Sl.No	Parameters	Particulars of work done	Expenditure Incurred 2014-2015	Total Expenditure as on 1.4.2014	No. of beneficiaries
1	Housing				
2	Water Supply		1492000	2000000	
3	Sanitation		22000		
4	Health, Safety and Medical facilities		500000	17971173	
5	Education & Training		2880000	41009900	
6	Employment of the local inhabitants			32900000	
7	Public transportation & communication			1500000	
8	Recreation		40000	70000	
9	Others		33000	1189927	
	Community Development		1247000	18351000	
	Environment		1247000	18351000	
	Animal Husbandry			14000000	

LAKSHMIPURAM LIMESTONE MINE

Sl. No.	Parameters	Particulars of work done	Expenditure incurred 2014 - 2015 (In Rs. Lakhs)	Total Expenditure as on 01.04.2015 (In Rs. Lakhs)	No. of beneficiaries
1	Housing	Construction of houses to poor, providing construction material to poor etc.,	Nil	21	275 families
2	Water Supply	Laying of water pipe lines, Repairs of motors, Construction of OH tanks/GL tanks etc.,	1.29	40.68	5500 persons
3	Sanitation	Construction of Toilets etc.,	Nil	0.028	Irikigudem Villagers
4	Health, safety & Medical facilities	20 Bed hospital with medical officers & nursing staff provided and one Ambulance van also arranged for speedy removal of the patients from village to Miryalaguda	14.78	432.92	20,000 families (Colony and surrounding villages of cement plant & mines)
5	Education & Training	School building room construction Providing furnitures to school etc.,	0.707	11.421	School children of surrounding villages
6	Employment of the local inhabitants				45% of the Employment
7	Public transportation & communication	Laying of CC roads.	Nil	32.48	Villagers of Surrounding Villages
8	Recreation	Construction of Library etc & Sports.,	0.227	3.623	School children
9	Others (Please specify)	Environmental Management, Sweets distribution, Temple, Kalyana Mandapamm, Blankets to old, Old age pensions	5.273	84.513	Villagers of Surrounding Villages & Senior citizens

Sagar Cements

Sl.No	Parameters	Particulars of work done	Expenditure Incurred 2014-2015	Cumulative Expenditure as on 1.4.2015	beneficiaries
1	Housing	Constructed houses to weaker section peoples	51,360.00	3,853,611.00	Mattampally and Pedaveedu Villagers
2	Water Supply	Provided RO plants to purify and supply drinking water &	470,258.00	1,107,644.00	Pedaveedu,Mattampally and near by Thandas
3	Sanitation	Helped to construct drainage nallas	0	1,735,000.00	Mattampally & Pedaveedu Villagers
4	Health, Safety and Medical facilities	Supply of medicines and free medical camps conducted provided ambulance facilities in emergency	250,000.00	2,355,900.00	Mattampally and Pedaveedu Villagers
5	Education & Training	Free supply of computers and accessories to college	1,413,950.00	1,674,950.00	Mattampally and Huzurnagar Govt school/college students
6	Employment of the local inhabitants	Neighbor village people	0	1,296,650.00	Neighbor village people
7	Public transportation & communication	Neighbor villagers	0	2,757,450.00	Neighbor villagers
8	Recreation	Neighboring village people	194,000.00	9,793,000.00	Neighboring village people
9	Others(Please specify) Temples	Constructed & renewed temples, churches and mosques etc.	1,044,410.00	5,265,450.00	Mattampally & Pedaveedu Villages
10	Roads	Constructed roads in Pedaveedu and mattampally colonies	6,112,914.00	1,791,896.00	Mattampally & Pedaveedu Villages
11	Electricity	Provided street lights and accessories Mattampally & Pedaveedu Villages	126,000.00	6,112,914.00	Mattampally &Pedaveedu Villages
13	Sports Activities.	Mandal level sports.	1,400,000.00	7,962,000.00	
Total			**11,062,892**	**45,706,465.00**	

VISHNUPURAM LIMESTONE MINE

Sl. No.	Parameters	Particulars of work done	Expenditure incurred 2014 - 15 (In Rs. Lakhs)	Total Expenditure as on 01.04.2015 (In Rs. Lakhs)	No. of beneficiaries
1	Housing	Construction of houses to poor, providing construction material to poor etc.,	Nil	55.845	800 families
2	Water Supply	Laying of water pipe lines, Repairs of motors, Construction of OH tanks/GL tanks etc.,	4.145	81.845	8200 persons
3	Sanitation	Construction of Toilets etc.,	Nil	0.553	Wadapally Villagers
4	Health, safety & Medical facilities	20 Bed hospital with medical officers & nursing staff provided and one Ambulance van also arranged for speedy removal of the patients from village to Miriyalguda	14.78	432.92	20,000 families (Colony and surrounding villages of cement plant & mines)
5	Education & Training	School building room construction Providing furnitures to school etc.,	0.954	18.679	School children of surrounding villages
6	Employment of the local inhabitants				45% of the Employment
7	Public transportation & communication	Laying of CC roads.	0.295	104.495	Villagers of Surrounding Villages
8	Recreation	Construction of Library etc & Sports.,	0.227	1.987	8437 persons
9	Others (Please specify)	Environmental Management, Sweets distribution, Temple, Kalyana Mandapamm, Blankets to old, Old age pensions	8.301	110.791	Villagers of Surrounding Villages & Senior citizens

RAIN LIMESTONE MINE

Sl.No.	Parameters	Particulars of work done	Expenditure in Rs. Incurred 2014-15	No. of beneficiaries
1	Housing			
2	Water supply	Supply of water packets for pilgrimages who ever is going to have a darshanam of lord SIVA on the occasion of Maha Sivaratri celebrations.		
		Supply of Drinking water for Ramapuram villagers during summer season	155,000	5,000 villagers
3	Sanitation			
4	Health, Safety & Medical facilities	Running Priya Cement Free Primary Hospital for surrounding villagers.	2,469,726	
		Ambulance for surrounding villages	198,729	
		Conducted Medical camp for surrounding villagers	100,000	
		Conducted Eye camp for surrounding villagers	20,000	20,000 villagers
		Ambulance purchased	1,900,000	
5	Education & Training	For running school from LKG to X class (English Medium) for employees children and children from surrounding villages.	3,791,471	
		Ramapuram School Teachers Salaries	25,000	507 students
6	Employment of the local inhabitants.			
7	Public transportation and communication.	Roads, culverts		Ramapuram, Revoor, KK Thanda & surrounding villages.
8	Recreation	Sports meets, cultural programmes		Nearby villages
9	others	Plantation & Donation for construction of temple, church and mazid, etc.,	906,000	Surrounding villages
		Total:	**95, 65, 926**	

GUNDLAPALLI LIMESTONE MINE

Sl. No.	Parameters	Particulars of Work done	Expenditure incurred 2014-2015 (in Lakhs)	Total Expenditure as on 01-04-2015 (in Lakhs)	No. of Beneficiaries
1	Housing		6	22.5	
2	Water Supply	Water Piper line maintenance	8	15	300 families
3	Sanitation	Drainage line maintenance	8	15	300 families
	Health	Health Campus arranged with free medicines supply	42	87	
	Safety	Safety equipments purchased (Shoe, helmet, belts, goggles, net etc.,)	6	12	
4	Medical Facilities	Dispensary maintained	2	4	11000 Nos
	Education	Free education with techno school arrangements, fully computerized digital classes	50	60	
5	Training	Personality Development, safety, management skills, cost analysis etc.,	2	4	250 Nos
6	Employment of the local inhabitants	Local Employment	10	20	350 No's
	Public transportation & Roads	Ambulance for all surrounding villages and Thandas			
7	Communication & Electicity	A telephone arranged at Time office and displays no's of emergency	10	22	10,000 No's
8	Recreation	Club, sports kits, Indoor games, News paper, Gym maintenance	2	6.5	300 families
9	Others	1. Sports activities 2. Environment Management.	10	19	11,000 No's

Sagar Cements Limestone

Sl.No	Parameters	Particulars of work done	Expenditure Incurred 2014-2015	Cumulative Expenditure as on 1.4.2015	No. of beneficiaries
1	Housing	Constructed houses to weaker section peoples	51,360.00	3,853,611.00	Mattampally and Pedaveedu Villagers
2	Water Supply	Provided RO plants to purify and supply drinking water &	470,258.00	1,107,644.00	Pedaveedu,Mattampally and near by Thandas
3	Sanitation	Helped to construct drainage nallas	0	1,735,000.00	Mattampally & Pedaveedu Villagers
4	Health, Safety and Medical facilities	Supply of medicines and free medical camps conducted provided ambulance facilities in emergency	250,000.00	2,355,900.00	Mattampally and Pedaveedu Villagers
5	Education & Training	Free supply of computers and accessories to college	1,413,950.00	1,674,950.00	Mattampally and Huzurnagar Govt school/college students
6	Employment of the local inhabitants	Neighbor village people	0	1,296,650.00	Neighbor village people
7	Public transportation & communication	Neighbor villagers	0	2,757,450.00	Neighbor villagers
8	Recreation	Neighboring village people	194,000.00	9,793,000.00	Neighboring village people
9	Others(Please specify) Temples	Constructed & renewed temples, churches and mosques etc.	1,044,410.00	5,265,450.00	Mattampally & Pedaveedu Villages
10	Roads	Constructed roads in Pedaveedu and mattampally colonies	6,112,914.00	1,791,896.00	Mattampally & Pedaveedu Villages
11	Electricity	Provided street lights and accessories Mattampally & Pedaveedu Villages	126,000.00	6,112,914.00	Mattampally & Pedaveedu Villages
13	Sports Activities.	Mandal level sports.	1,400,000.00	7,962,000.00	
Total			**11,062,892**	**45,706,465.00**	

My Home Limestone Mine

Sl. No.	Parameters	Particulars of work done	Expenditure incurred 2014-2015 (in Rs.)	Total Expenditure as on 01.04.2015 (in Rs.)
1	Housing	For RO plant construction in Mellacheruvu&Yepalamadhavaram villages	1,800,000	5,870,000
2	Water supply	Contribution for the purpose of Water Supply	85,600	498,100
3	Sanitation	For Drainage	-	25,000
4	Health, Safety and Medical facilities	Medical Camps and Veterinary Camps at Mellacheruvu, Choutapalli & Yepalamadhavaram	1,038,304	2,531,278
5	Environment	Contribution for Plants & Tree Guards for Villages	18,000	142,500
6	Sports Activity	Donation for Sports Committee	25,000	55,000
7	Education & Training	Meritorious cash awards & Honorarium for Students & Volunteers	306,500	1,234,500
8	Employment of the local inhabitants	Regular - 148 Nos.	-	5,210,332
9	Public transportation & communication	**01.** Village development fund to Mellacheruvu **02.** Village development fund to Yepalamadhavaram **03.** Village development fund to Choutapalli	4,200,000	25,537,085
10	Recreation	**01.**Seetha-Rama SwamyKalyanam **02.**Annadhaanam at Gangamma Temple **03.** LaximiThirupathammaKalyanostavam **04.** Donation for Maha Siva Ratri Annual Celebrations, Mellacheruvu **06.** Donation for Chennakesava swami kalyonostavam in Kandibanda village	440,000	3,957,972
11	**Others** 1. Contribution for Temples, churches etc.	**01.**Donated 50 bags of cement for Fire station, Huzurnagar. **02.** Donated 210 trucks of BC soilfor MakkaMaszid **03.** Fire safety celebrations **04.** District collector programme "Telangana Samburaalu" **01.**Donation for Cement (300 No Bags) for temple &Maszid in Kistapuram Village.& 100 bags for Gangamma temple construction at Mellacheruvu village.	249,900	7,658,280
TOTAL			**8,163,304**	**52,720,047**

Yepalamadhavaram Limestone Mine

Sl. No.	Parameters	Particulars of work done	Expenditure incurred 2014-2015 (in Rs.)	Total Expenditure as on 01.04.2015 (in Rs.)
1	Housing	For RO plant construction in Mellacheruvu&Yepalamadhavaram villages	1,800,000	5,870,000
2	Water supply	Contribution for the purpose of Water Supply	85,600	498,100
3	Sanitation	For Drainage	-	25,000
4	Health, Safety and Medical facilities	Medical Camps and Veterinary Camps at Mellacheruvu, Choutapalli & Yepalamadhavaram	1,038,304	2,531,278
5	Environment	Contribution for Plants & Tree Guards for Villages	18,000	142,500
6	Sports Activity	Donation for Sports Committee	25,000	55,000
7	Education & Training	Meritorious cash awards & Honorarium for Students & Volunteers	306,500	1,234,500
8	Employment of the local inhabitants	Regular - 148 Nos.	-	5,210,332
9	Public transportation & communication	**01.** Village development fund to Mellacheruvu **02.** Village development fund to Yepalamadhavaram **03.** Village development fund to Choutapalli	4,200,000	25,537,085
10	Recreation	**01.**Seetha-Rama SwamyKalyanam **02.**Annadhaanam at Gangamma Temple **03.** LaximiThirupathammaKalyanostavam **04.** Donation for Maha Siva Ratri Annual Celebrations, Mellacheruvu **06.** Donation for Chennakesava swami kalyonostavam in Kandibanda village	440,000	3,957,972
11	**Others** 1. Contribution for Temples, churches etc.	**01.**Donated 50 bags of cement for Fire station, Huzurnagar. **02.** Donated 210 trucks of BC soilfor MakkaMaszid **03.** Fire safety celebrations **04.** District collector programme "Telangana Samburaalu" **01.**Donation for Cement (300 No Bags) for temple &Maszid in Kistapuram Village.& 100 bags for Gangamma temple construction at Mellacheruvu village.	249,900	7,658,280
TOTAL			**8,163,304**	**52,720,047**

Choutapalli Limestone Mine

Sl. No.	Parameters	Particulars of work done	Expenditure incurred 2014-2015 (in Rs.)	Total Expenditure as on 01.04.2015 (in Rs.)
1	Housing	For RO plant construction in Mellacheruvu&Yepalamadhavaram villages	1,800,000	5,870,000
2	Water supply	Contribution for the purpose of Water Supply	85,600	498,100
3	Sanitation	For Drainage	-	25,000
4	Health, Safety and Medical facilities	Medical Camps and Veterinary Camps at Mellacheruvu, Choutapalli & Yepalamadhavaram	1,038,304	2,531,278
5	Environment	Contribution for Plants & Tree Guards for Villages	18,000	142,500
6	Sports Activity	Donation for Sports Committee	25,000	55,000
7	Education & Training	Meritorious cash awards & Honorarium for Students & Volunteers	306,500	1,234,500
8	Employment of the local inhabitants	Regular - 148 Nos.	-	5,210,332
9	Public transportation & communication	**01.** Village development fund to Mellacheruvu **02.** Village development fund to Yepalamadhavaram **03.** Village development fund to Choutapalli	4,200,000	25,537,085
10	Recreation	**01.**Seetha-Rama SwamyKalyanam **02.**Annadhaanam at Gangamma Temple **03.** LaximiThirupathammaKalyanostavam **04.** Donation for Maha Siva Ratri Annual Celebrations, Mellacheruvu **06.** Donation for Chennakesava swami kalyonostavam in Kandibanda village	440,000	3,957,972
11	1. Contribution for Temples, churches etc. **Others**	**01.**Donated 50 bags of cement for Fire station, Huzurnagar. **02.** Donated 210 trucks of BC soilfor MakkaMaszid **03.** Fire safety celebrations **04.** District collector programme "Telangana Samburaalu" **01.**Donation for Cement (300 No Bags) for temple &Maszid in Kistapuram Village.& 100 bags for Gangamma temple construction at Mellacheruvu village.	249,900	7,658,280
TOTAL			**8,163,304**	**52,720,047**

SANGAMKALAN LIMESTONE MINES

S.No.	Description	Particulars of work done	Expenditure incurred 2014-15 (Rs. In lakhs)
1	Housing	Surrounding villages	4.95
2	Water Supply	Surrounding villages	0.36
3	Sanitation	Surrounding villages	---
4	Health , Safety and Medical	Surrounding villages	7.24
5	Education & Training	Surrounding villages	4.75
6	Employment of the local inhabitants	Surrounding villages	---
7	Public Transportation & Communication	Surrounding villages	0.01
8	Recreation & Sports	Surrounding villages	0.04
9	Environment	Surrounding villages	18.37
10	Others	Surrounding villages	10.62
	TOTAL		46.34

Oglipur Limestone Mine

Sl. No	Parameters	Particulars of Work Done	Expenditure Incurred During 2009-10 (in lakhs)	Total Expenditure as on 1.4.2010 (In lakhs)	No. of Beneficiaries
1	Housing	Providing construction material to poor people Construction ofhouses to poor	0	0	0
2	Water Supply	Laying of water pipelines, irrigation canal repairs, repairs to motors, construction of tanks.	4	4	Village people
3	Sanitation	Construction of toilets, etc.	0	0	0
4	Health, Safety and Medical facilities	20 bed hospital with medical officers & nursing staff provided with one ambulance to pick up patients from Miryalaguda.	1	1	35 families
5	Education & Training	School building	3	3	150 members from ICL & C.C.I Mines
6	Employment of the local inhabitants	-	5	5	Village local people
7	Public transportation & communication	Laying of CC roads, etc.	0	0	0
8	Recreation	Construction of library, etc.	0.75	0.75	local people
9	Others(Please specify)	Environment Management, sweets distribution, blankets to old, oldage pensions.	0	0	0

AREA RECLAIMED (ha)

Sl. No.	Name of the Mine and name of the Lessee.	By Backfilling (ha)	By Afforestation (ha)	By Water Reservoir (ha)
1	Bharathi Cement Limestone Mine	2	Nil	Nil
2	Devapur Limestone Mine	26.36	43.162	Nil
3	Mandadi Limestone Mine	0.5	14.8	Nil
4	Terala Limestone Mine	Nil	0.30 hect	Nil
	Vishnupuram Limestone Mine of M/s India Cements Limited	Nil	6.05	Nil
	Rain Limestone Mine of M/s Rain Cements Limited	2.41	Nil	Nil
	Bhavanipuram Limestone Mine of M/s Deccan Cements	Nil	11	8.9
5	Jayanthipuram Limestone Mine(Northband)	10.17	2	Nil
6	Terala Limestone of M/s KCP	0.4	Nil	Nil
7	Ravirala Limestone Mine	0.45 Ha	Nil	Nil
8	LAKSHMIPURAM LIMESTONE MINE	Nil	0.5	Nil

AFFORESTATION

Sl. No.	Name of the Mine		DURING THE YEAR (2014-15)		UPTO 2015		CUMULATIVE TILL DATE		
			No. of Saplings Planted	Area Covered (in ha.)	No. of Saplings Planted	Area covered (in ha.)	No. of Saplings Planted	Area Covered (in ha.)	Overall Survival Rate(%)
1	Bharathi Cement Limestone Mine	Within ML	2500	1.5			236791	86	90.00%
		Outside ML	3500	2.5			57105	54.5	90.00%
2	Devapur Limestone Mine	Within ML	38313	48.260Ha	6680	5.34 Ha	41822	50.91Ha	95.07%
		Outside ML	73650	106.3Ha	10525	7.5 Ha	74210	113.29Ha	93.50%
3	Gudipadu Limestone Mine	Within ML	1115	1.45Ha		4450	7.04 Ha		96.70%
		Outside ML	8505	11.06 Ha		44055	57.30 Ha		96.35%
4	Niduzuvvi Limestone Mine	Within ML	1100	1.3			6000		75.00%
		Outside ML	3900	5			6000		35.00%
5	Zuari Limestone Mine	Within ML	4000 nos	4 Ha	16.27				95.00%
		Outside ML	Nil	37 Ha	37.5				90.00%
6	Nawabpet - Talamanchipatnam Limestone Mine	Within ML	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Outside ML	19,535	7.16Hect	660	2.47 Hect	20195	17.63 Hect	80%
7	D.C.W. Limestone Mine	Within ML	74,400	37 Hect	1400	3.5 Hect	75,800	40.5 Hect.	85.00%
		Outside ML	400	3.5	11.57 Hectors				70.60%
8	Pettasinnigadla Limestone Mine	Within ML	200	2.5			1400	4.9 Hectors	65.50%
		Outside ML							
9	Krishnapuram Limestone Mine	Within ML	16,604	19.25 Ha	3,000	Nil	19,604	19.25 Ha	90%
		Outside ML	5,380	7.39 Ha	1300	1.20 Ha	6,680	8.59 Ha	85.00%
10	Parasakthi Limestone Mine	Within ML	28,059	73.60 Ha	850	1 Ha	28,059	73.60 Ha	90%
		Outside ML	5,710	24.44 Ha	1,500	1 Ha	5,710	24.44 Ha	90.00%
11	Mandadi Limestone Mine	Within ML	1100	0.51			10175	11.99	95%
		Outside ML	250	0.3			15500	20	90.00%
12	Terala Limestone Mine	Within ML	300 Nos	0.30 Ha			1500 Nos.	1.50 Ha	96%
		Outside ML	150 Nos	0.15 Ha			600 Nos	0.65 Ha	91.00%
13	Bhavya Limestone Mine	Within ML	1000	1.5 ha	1000	2.5 ha	6800	6.5 ha	85.00%
		Outside ML	-	-	4000	1.0 ha	44390	41.0 ha	80.00%
14	Tumulapenta Limestone Mine	Within ML	6000	0.75	113426	45.2			90.00%
		Outside ML			128750	52.23			90.00%
15	Racherla Limestone Mine	Within ML	2059	2.09 Hectors			52987	44.10 Hectors	81.50%
		Outside ML	-	-	-	-	-	-	-
16	M/s Prism Cements Limited	Within ML	1000	1			7500	7.5	98.00%
		Outside ML					1000	0.9	98.00%
17	Korumanipalli Limestone Mine (205.212Ha.)	Within ML	1528	1 ha		33.07	400	0.3 ha	85.00%
		Outside ML							
18	JSW cements Limestone Mine	Within ML	17,194	6.87 Ha			85,781	34.34 Ha	75%
		Outside ML	-	0	-	-	-	-	-
19	Yanakandla Limestone Mine	Within ML	1000	1.4			1010	11.8	90.00%
		Outside ML					5475	11.8	85.00%
20	HEMADRI LIMESTONE MINE	Within ML	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Outside ML	1820	12.50 ha	1000	5.0ha	39125	89.75 ha	75.00%
21	Jayanthipuram Limestone Mine(Southband)	Within ML	17176	8.68	546	1.06	18121	9.28 Ha.	90%
		Outside ML	2726	2.4	Nil	Nil	2726	2.4	84%
22	Ramco Budawada Limestone Mine	Within ML	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Outside ML							
23	Jayanthipuram Limestone Mine(Northband)	Within ML	128462	41.65	1098	3.3	130402	45.69 Ha.	90%$
		Outside ML	60233	126.24	850	2.24	60893	127.84 Ha.	84.00%
24	Ravirala Limestone Mine	Within ML	7362	4.06Ha	516	0.3Ha	7882	4.56 Ha.	90.00%
		Outside ML	1565	0.5 ha	Nil	Nil	1565	0.5 ha	90.00%

25	HEMADRI LIMESTONE MINE, VEDADRI	Within ML	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Outside ML	1820	12.50 acres	1000	5.00 acre	39125	89.75 Acres	70%
26	**Muktyala Limestone Mine**	Within ML	3150 No's	3.25 Ha	250 No's	0.25 Ha	3450 No's	3.75 Ha	80%
		Outside ML	6250 No's	6.75 Ha	750 No's	0.75 Ha	6250 No's	6.75 Ha	85%
27	Budawada Limestone Mine	Within ML	20000	6.66 Ha	2000	0.8 Ha	20200	7.81 Ha	80%
		Outside ML	1, 18,105	63.63 Ha	16891	13.43 Ha	1, 29,105	73.73 Ha	85.00%
28	Jaggayyapeta Limestone Mine	Within ML							
		Outside ML							
29	LAKSHMIPURAM LIMESTONE MINE	Within ML	18,857	18.38 Ha	3,500	1.70 Ha	20,457	19.38 Ha	90.00%
		Outside ML	3,275	10.77 Ha	Nil	Nil	3,275	10.77 Ha	85.00%
30	**Sagar Cements Limestone Mine - 1**	Within ML	**198259**	**82.17**	**4489**	**1.817**	**202491**	**85.68**	**86.00%**
		Outside ML	**201539**	**70.202**	**10605**	**7.418**	**205064**	**73.257**	**83.00%**
31	**SITAPURAM LIMESTONE MINE**	**Within ML**	**108315**	**35.00 Hects**	**3700**	**3.00 Hects**	**116,115**	**39.00 Hects**	**80.00%**
		Outside ML	**31563**	**26.25 Hects**	**400**	**0.25**	**31,963**	**26.50 Hects**	**785.00%**
32	RAIN LIMESTONE MINE	**Within ML**	**109443**	**26.26**	**2037**	**0**	**111878**	**26.26**	**90.00%**
		Outside ML	**151427**	**46**	**847**	**0**	**155587**	**47.62**	**93.00%**
33	GUNDLAPALLI LIMESTONE MINE	**Within ML**	**1950**	**3.55**	**400**	**0.4**	**2350**	**3.95**	**60%**
		Outside ML	-	-	-	-	-	-	-
34	Sagar Cements Limestone	**Within ML**	**3797**	**Ha 2.98**	**615**	**0.62**	**4562**	**3.9**	**78.4**
		Outside ML	**5600**	**5**	**720**	**0.558**	**5600**	**5.558**	**81.47**
35	MATTAPALLI LIMESTONE MINE	**Within ML**	**7150**	**7.15**	**800**	**0.8**	**7950**	**7.95**	**60%**
		Outside ML	**52000**	**51.4**	**1000**	**1**	**53000**	**52,40**	**60%**
36	My Home Limestone Mine	**Within ML**	**13,341 No's**	**12.91 Ha.**	**1,398 No's**	**1.62 Ha.**	**15,691 No's**	**14.61 Ha.**	
		Outside ML	**1,000 No's**	**1.22 Ha.**	**Nil**	**Nil**	**1,000 No's**	**1.22**	
37	Bhavanipuram Limestone Mine-III	**Within ML**	**100**	**0.1 Ha**	**100**	**0.1 ha**	**3475**	**1.39 Ha**	**80.00%**
		Outside ML	**100**	**0.1 Ha**	**100**	**0.1 ha**	**250**	**0.2 Ha**	**75.00%**
38	Chaanakya Cements Limestone Mine	**Within ML**							
		Outside ML							
39	Yepalamadhavaram Limestone Mine	**Within ML**	**3,460 No's**	**4.50 Ha.**	**1,402 No's**	**1.69 Ha.**	**4,988 No's**	**6.21 Ha.**	
		Outside ML	**2,358 No's**	**2.17 Ha.**	**Nil**	**Nil**	**2,358 No's**	**2.17 Ha.**	
40	Choutapalli Limestone Mine	**Within ML**	**2,448 No's**	**2.79 Ha**	**1,148 No's**	**1.19Ha.**	**3,837 No's**	**4.06 Ha.**	
		Outside ML	**11,753 No's**	**12.97 Ha.**	**1,773 No's**	**1.60 Ha.**	**14,932 No's**	**15.84 Ha.**	
41	Anjani Limestone Mine-I	**Within ML**	**2000**	**3 acres**	**15,000**	**22 acres**			**80.00%**
		Outside ML	**5000**	**7.5 acres**	**50,000**	**75 acres**			**75.00%**
42	SANGAMKALAN LIMESTONE MINES	**Within ML**	**3400**	**1.67 Hect.**	**70%**	**107568**	**2.95**	**Nil**	**85%**
		Outside ML	**Nil**	**Nil**	**nIL**	**Nil**	**40510**	**Nil**	**70.00%**
43	Karankote Limestone Mine	**Within ML**							
		Outside ML							
44	Ogipur Limestone Mine	**Within ML**	**221.92**	**21 Ha**			**3750**	**4 Ha**	**90%**
		Outside ML							
45	SRI KURMAM HEAVY MINERAL SAND MINE	**Within ML**	**168188**	**141**	**76000 Nos**	**19Ha**	**258301**	**149Ha**	**80%**
		Outside ML	**11493**	**5.06Ha**	**859**	**0.5Ha**	**16133**	**5.86Ha**	**85%**
46	Thippalur Limestone Mine	**Within ML**	**480 Nos.**	**1**	**800 Nos.**	**1**	**1280 Nos**	**2**	**40.00%**
		Outside ML	**34,400 Nos**	**30 acres**	**2,000 Nos.**	**2.5 acres**	**36,400 Nos**	**32.5 acres**	**80%**

MANAGEMENT OF SUBGRADE MINERAL

S.No.	Name of the Mines	DURING THE YEAR 2014-15			UPTO 2015			CUMULATIVE TILL DATE		
		Quantity produced (in tonnes)	Quantity Stacked (in tonnes)	Quantity used/con-sumed (in tonnes)	Quantity produced (in tonnes)	Quantity Stacked (in tonnes)	Quantity used/con-sumed (in tonnes)	Quantity produced (in tonnes)	Quantity Stacked (in tonnes)	Quantity used/con-sumed (in tonnes)
1	Devapur Limestone Mine	**9.99Million Tons**	**3.31 Million Tons**	**6.68 Million Tons**	**735000 MT**	**550000 MT**	**185000MT**	**10.86Million Tons**	**3.82 Million T**	**7.04 Million T**
2	**KRISHNAPURAM LIMESTONE MINE**	0.06 Million tonnes	Nil	0.06 Million tonnes	Nil	Nil	Nil	0.06 Million tonnes	Nil	0.06 Million tonnes
3	Bhavya Limestone Mine	Nil	Nil	Nil	Nil	Nil	Nil	5, 70,340 MT	5, 70,340 MT	-
4	Racherla Limestone Mine	250971 M^3	242624 M^3	8347 M^3				1613117 M^3	1564895 M^3	48222 M^3
5	JSW cements Limestone Mine	1, 82,119	1, 82,119	1, 32,814				10, 81,330	10, 81,330	2, 24,230
6	**Yanakandla Limestone Mine**	0.743 Million Tonnes	Nil	Nil				2.214 Million Tonnes	Nil	2.214 Million Tonnes
7	Jayanthipuram Limestone Mine(Southband)	1195217	Nil	1195217	174802	Nil	174802	1270317	Nil	1270317
8	Jayanthipuram Limestone Mine(Northband)	2418451	Nil	2418451	218128	Nil	218128	2459976	Nil	2459976
9	Budawada Limestone Mine	71104 TONS	71104 TONS	Nil	42384 TONS	42385 TONS	Nil	101079 TONS	101079 TONS	Nil
10	**LAKSHMIPURAM LIMESTONE MINE**	14.160 Million Tonnes	Nil	14.160 Million Tonnes	0.475 Million Tonnes	Nil	0.475 Million Tonnes	14.160 Million Tonnes	Nil	14.160 Million Tonnes
11	Sagar Cements Limestone Mine - 1	**485637**	**210400**	**275237**	**91438**	**44737**	**46701**	**489321**	**416096**	**73225**
12	**Yepalamadhavaram Limestone Mine**	40,25,599 MT.	Nil	40,25,599 MT.	Nil	6,12,326 MT	Nil	6,12,326 MT	Nil	44,01,508 MT.
13	**SRI KURMAM HEAVY MINERAL SAND MINE**	30,57,139MT	2,32,788MT	28,24,351MT	7,46,165MT	1,14,688MT	6,31,477MT	34,23,072MT	2,69,204MT	31,53,868MT

TOP SOIL MANAGEMENT

S.No.	Name of the Mine	DURING THE YEAR 2014-15 (Quantity in)			UPTO 2015			CUMULATIVE TILL DATE		
		Generated (in m3)	Stacked (in m3)	Used (in m3)	Generated (in m3)	Stacked (in m3)	Used (in m3)	Generated (in m3)	Stacked (in m3)	Used (in m3)
1	2	3	4	5	6	7	8	9	10	11
1	Bharathi Cement Limestone Mine	**283915 MT**	**Nil**	**283915 MT**				**4158235 MT**	**3674320 MT**	**483915 MT**
2	Devapur Limestone Mine	**161729**	12000	**149729**				**76000**	12000	64000
3	Gudipadu Limestone Mine	Nil	Nil	Nil	Nil	Nil	Nil	2,33,770 M^3	Nil	2,33,770 M^3
4	Niduzuvvi Limestone Mine.	86220	61220	25000				86220	61220	25000
5	ZUARI LIME STONE MINE	1,10,000 MT	20,000 MT	90,000 MT				5,44,324 MT	4,05,644 MT	1,38,650 MT
6	**PETASANNIGANDLA LIMESTONE MINE**	6,800	6,800	6,800				30,600	23,800	6,800
7	**KRISHNAPURAM LIMESTONE MINE**	1,01,017 Cu.m	Nil	1,00,237 Cu.m	780 Cu.m	Nil	780 Cu.m	1,01,017 Cu.m	Nil	1,01,017 Cu.m
8	Parasakti Limestone Mine	2,78,650 m^3	2,78,650 m^3	2,78,650 m^3	21,000m^3	21,000m^3	21,000m^3	2,92,080 m^3	2,92,080 m^3	2,92,080 m^3
9	Bhavya Limestone Mine	Nil	Nil	Nil	Nil	Nil	Nil	6066 M^3	-	6066 M^3
10	Tummalapenta Limestone Mine	2,49,990 MT	2,24,991 MT	24.999				53,76,060 MT	48,72,880 MT	5,03,180 MT

11	Racherla Limestone Mine	11918 M^3	Nil	11918 M^3				198885 M^3	Nil	198885 M^3
12	M/s Prism Cement Limited	Nil	Nil	Nil	Nil	Nil	Nil	84000	84000	150
13	Korumanipalli Limestone Mine (205.212Ha.)	**13,500 cu.m**		13,500 cu.m				**40,100 cu.m**		**40,100 cu.m**
14	HEMADRI LIMESTONE MINE	5500 Ton	Nil	Nil	1,40.000 Ton	Nil	Nil	194636.000 Ton	Nil	Nil
15	Jayanthipuram Limestone Mine(Southband)	323048 m3	Nil	323048 m3	323048 m3	Nil	323048 m3	323048 m3	Nil	323048 m3
16	Jayanthipuram Limestone Mine(Northband)	185614	Nil	185614	0	0	0	185614	Niol	185614
17	HEMADRI LIMESTONE MINE, VEDADRI	5500 Ton	Nil	Nil	1,40.000 Ton	Nil	Nil	194636.000 Ton	Nil	Nil
18	**LAKSHMIPURAM LIMESTONE MINE**	61,637 Cu.m	Nil	30,501 Cu.m	31,136 Cu.m	Nil	31,136 Cu.m	61,637 Cu.m	Nil	61,637 Cu.m
19	Sagar Cements Limestone Mine - 1	**315348**	Nil	**315348**	**66897**	Nil	**66897**	**354288**	Nil	**354288**
20	SITAPURAM LIMESTONE MINE	364899 m^3	200060 m^3	164839 m^3	5660 m^3	Nil	5660 m^3	364899 m^3	200060 m^3	164839 m^3
21	RAIN LIMESTONE MINE	81840 M^3	-	81840 M^3	100 M^3	Nil	100 M^3	81940 M^3	Nil	81940 M^3
22	**My Home Limestone Mine**	5,201.69 M^3	Nil	5,201.69 M^3	5,201.69 M^3	Nil	5,201.69 M^3	5,201.69 M^3	Nil	5,201.69 M^3
23	Bhavanipuram Limestone Mine-III	750 Cu. Mtrs	Nil	750 Cu. Mtrs	150 Cu. Mtrs.	Nil	150 Cu. Mtrs.	850 Cu. Mtrs	Nil	850 Cu. Mtrs
24	**Yepalamadhavaram Limestone Mine**	81,071.28 M^3	Nil	81,071.28 M^3	Nil	Nil	Nil	Nil	Nil	Nil
25	**Choutapalli Limestone Mine**	7,98,262.00 M^3	Nil	7,98,262.00 M^3	1,40,007.89 M^3	Nil	1,40,007.89 M^3	8,83,494.30 M^3	Nil	8,83,494.30 M^3

Waste Dump Management

Sl. No.	Name of the Mines	DURING THE YEAR 2014-15			UPTO 2015			CUMULATIVE TILL DATE		
		Quantity dumped (in tonnes)	Plan area covered by waste dumps (not surface area) (in ha.)	Plan area established (not surface area) (in ha)	Quantity dumped (in tonnes)	Plan area covered by waste dumps (not surface area) (in ha.)	Plan area established (not surface area) (in ha)	Quantity dumped (in tonnes)	Plan area covered by waste dumps (not surface area) (in ha.)	Plan area established (not surface area) (in ha)
1	2	3	4	5	6	7	8	9	10	11
1	Devapur Limestone Mine	**5.05 Million Tons**	**23.67 Ha**	**23.67 Ha(100%)**	**1.08 Million Tons**	**3.96 Ha**	**3.96 (100%)**	**5.503 Million Tons**	**26.22 Ha**	**26.22 Ha(100%)**
2	**PETASANNIGANDLA LIMESTONE MINE**	21,793 M Tonns	Nil	Nil	Nil	Nil	Nil	97,295	Nil	Nil
3	Parasakti Limestone Mine	1,55,924 MT			32,800 MT			1,61,600 MT	1.5 Ha	-
4	Mandadi Limestone Mine	26,31,516 MT	Nil	Nil	Nil	Nil	Nil	26,31,516 MT	Nil	Nil
5	Terala Limestone Mine	26,31,516 MT			Nil			26,31,516 MT		
6	Racherla Limestone Mine		8958 M^3	Nil	Nil	Nil	Nil	Nil	2301829 M^3	Nil
7	JSW cements Limestone Mine	1, 82,876	Nil	Nil	Nil	nIL	Nil	6, 01,830	Nil	nIL
8	HEMADRI LIMESTONE MINE	244418.00tons	Nil	Nil	5.721 Ha	Nil	Nil	86971.00 tons	Nil	Nil
9	Jayanthipuram Limestone Mine(Southband)	1982128 MT	18.70 Ha	2	99472 MT	Nil	Nil	2002513 MT	18.70 Ha.	2.0 ha
10	Jayanthipuram Limestone Mine(Northband)	12718918 MT	42.75 Ha.	7.52 Ha	Nil	Nil	Nil	12718918 MT	42.75 Ha	7.52 Ha
11	Ravirala Limestone Mine	2008406 MT	8.37 Ha.	8.06 Ha	258327 MT	0.31 Ha	Nil	2008406 MT	8.37 Ha.	8.06 ha
12	HEMADRI LIMESTONE MINE, VEDADRI	244418.00tons	5.721 Ha	Nil	86971.00 tons	Nil	Nil	1,32,217.950 Tons	Nil	Nil
13	**LAKSHMIPURAM LIMESTONE MINE**	11,18,540 Tonnes	5.922 ha	2.313 ha	Nil	nIL	Nil	11,18,540 Tonnes	5.922 ha	2.313 ha
14	Sagar Cements Limestone Mine - 1	**296562 M.T**	**1.96 Hect.**	-	**199162 M.T**	-	-	**296562. M.T**	**1.96 Hect.**	-
15	**SRI KURMAM HEAVY MINERAL SAND MINE**	8277704MT	144 Ha	141Ha	1472829MT	18Ha	19Ha	10610029MT	144Ha	141Ha.
16	Thippalur Limestone Mine	50,641MT	Nil	Nil	6,500MT	Nil	Nil	57,141MT	Nil	Nil

रजिस्ट्री सं॰ डी॰ एल॰—(एन)04/0007/2003—15 REGISTERED NO. DL—(N)04/0007/2003—15

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सं॰ 13] नई दिल्ली, शुक्रवार, मार्च 27, 2015/ चैत्र 6, 1937 (शक)
No. 13] NEW DELHI, FRIDAY, MARCH 27, 2015/CHAITRA 6, 1937 (SAKA)

इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।
Separate paging is given to this Part in order that it may be filed as a separate compilation.

MINISTRY OF LAW AND JUSTICE
(Legislative Department)

New Delhi, the 27*th March,* 2015/*Chaitra* 6, 1937 (*Saka*)

The following Act of Parliament received the assent of the President on the 26th March, 2015, and is hereby published for general information:—

THE MINES AND MINERALS (DEVELOPMENT AND REGULATION) AMENDMENT ACT, 2015

No. 10 OF 2015

[26*th March*, 2015.]

An Act further to amend the Mines and Minerals (Development and Regulation) Act, 1957.

BE it enacted by Parliament in the Sixty-sixth Year of the Republic of India as follows:—

Short title and commencement.

1. (*1*) This Act may be called the Mines and Minerals (Development and Regulation) Amendment Act, 2015.

(*2*) It shall be deemed to have come into force on the 12th day of January, 2015.

Amendment of section 3.

2. In the Mines and Minerals (Development and Regulation) Act, 1957 (hereinafter referred to as the principal Act), in section 3,— 67 of 1957.

(*i*) after clause (*e*), the following clause shall be inserted, namely:—

'(*ea*) "notified minerals" means any mineral specified in the Fourth Schedule;';

(*ii*) after clause (*g*), the following clause shall be inserted, namely:—

'(*ga*) "prospecting licence-cum-mining lease" means a two stage concession granted for the purpose of undertaking prospecting operations followed by mining operations;';

(*iii*) in clause (*hb*), the word "and", occurring at the end, shall be omitted;

(*iv*) after clause (*hb*), the following clause shall be inserted, namely:—

'(*hc*) "Special Court" means a Court of Session designated as Special Court under sub-section (*1*) of section 30B; and'.

Amendment of section 4.

3. In section 4 of the principal Act, in the second proviso to sub-section (*1*), for the words and figures "section 617 of the Companies Act, 1956", the words, brackets and figures "clause (*45*) of section 2 of the Companies Act, 2013, and any such entity that may be notified for this purpose by the Central Government" shall be substituted. 1 of 1956. 18 of 2013.

Amendment of section 4A.

4. In section 4A of the principal Act, in sub-section (*4*), for the provisos, the following provisos shall be substituted, namely:—

"Provided that the State Government may, on an application made by the holder of such lease before it lapses and on being satisfied that it will not be possible for the holder of the lease to undertake mining operations or to continue such operations for reasons beyond his control, make an order, within a period of three months from the date of receiving of such application, subject to such conditions as may be prescribed, to the effect that such lease shall not lapse:

Provided further that such lease shall lapse on failure to undertake mining operations or inability to continue the same before the end of a period of six months from the date of the order of the State Government:

Provided also that the State Government may, on an application made by the holder of a lease submitted within a period of six months from the date of its lapse and on being satisfied that such non-commencement or discontinuance was due to reasons beyond the control of the holder of the lease, revive the lease within a period of three months from the date of receiving the application from such prospective or retrospective date as it thinks fit but not earlier than the date of lapse of the lease:

Provided also that no lease shall be revived under the third proviso for more than twice during the entire period of the lease.".

Amendment of section 5.

5. In section 5 of the principal Act,—

(*A*) in sub-section (*1*),—

(*i*) in clause (*a*), for the words, brackets and figures "sub-section (*1*) of section 3 of the Companies Act, 1956", the words, brackets and figures "clause (*20*) of section 2 of the Companies Act, 2013" shall be substituted; 1 of 1956. 18 of 2013.

(*ii*) for the proviso, the following proviso shall be substituted, namely:—

"Provided that in respect of any mineral specified in Part A and Part B of the First Schedule, no reconnaissance permit, prospecting licence or mining lease shall be granted except with the previous approval of the Central Government.";

(*B*) in sub-section (*2*),—

(*i*) for clause (*a*), the following clause shall be substituted, namely:—

"(*a*) there is evidence to show the existence of mineral contents in the area for which the application for a mining lease has been made in accordance with such parameters as may be prescribed for this purpose by the Central Government;";

(*ii*) after clause (*b*), the following proviso shall be inserted, namely:—

"Provided that a mining lease may be granted upon the filing of a mining plan in accordance with a system established by the State Government for preparation, certification, and monitoring of such plan, with the approval of the Central Government.".

Amendment of section 6.

6. In section 6 of the principal Act, in sub-section (*1*), in clause (*b*), for the proviso, the following proviso shall be substituted, namely:—

"Provided that if the Central Government is of the opinion that in the interest of the development of any mineral or industry, it is necessary so to do, it may, for reasons to be recorded in writing, increase the aforesaid area limits in respect of prospecting licence or mining lease, in so far as it pertains to any particular mineral, or to any specified category of deposits of such mineral, or to any particular mineral located in any particular area.".

Substitution of new section for section 8.

7. For section 8 of the principal Act, the following section shall be substituted, namely:—

Periods for which mining leases may be granted or renewed.

"8. (*1*) The provisions of this section shall apply to minerals specified in Part A of the First Schedule.

(*2*) The maximum period for which a mining lease may be granted shall not exceed thirty years:

Provided that the minimum period for which any such mining lease may be granted shall not be less than twenty years.

(*3*) A mining lease may be renewed for a period not exceeding twenty years with the previous approval of the Central Government.".

Insertion of new section 8A.

8. After section 8 of the principal Act, the following section shall be inserted, namely:—

Period of grant of a mining lease for minerals other than coal, lignite and atomic minerals.

"8A. (*1*) The provisions of this section shall apply to minerals other than those specified in Part A and Part B of the First Schedule.

(*2*) On and from the date of the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, all mining leases shall be granted for the period of fifty years.

(*3*) All mining leases granted before the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015 shall be deemed to have been granted for a period of fifty years.

(*4*) On the expiry of the lease period, the lease shall be put up for auction as per the procedure specified in this Act.

(*5*) Notwithstanding anything contained in sub-sections (*2*), (*3*) and sub-section (*4*), the period of lease granted before the date of commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, where mineral is used for captive purpose, shall be extended and be deemed to have been extended up to a period ending on the 31st March, 2030 with effect from the date of expiry of the period of renewal last made or till the completion of renewal period, if any, or a period of

(*B*) in sub-section (*2*),—

(*i*) for clause (*a*), the following clause shall be substituted, namely:—

"(*a*) there is evidence to show the existence of mineral contents in the area for which the application for a mining lease has been made in accordance with such parameters as may be prescribed for this purpose by the Central Government;";

(*ii*) after clause (*b*), the following proviso shall be inserted, namely:—

"Provided that a mining lease may be granted upon the filing of a mining plan in accordance with a system established by the State Government for preparation, certification, and monitoring of such plan, with the approval of the Central Government.".

Amendment of section 6.

6. In section 6 of the principal Act, in sub-section (*1*), in clause (*b*), for the proviso, the following proviso shall be substituted, namely:—

"Provided that if the Central Government is of the opinion that in the interest of the development of any mineral or industry, it is necessary so to do, it may, for reasons to be recorded in writing, increase the aforesaid area limits in respect of prospecting licence or mining lease, in so far as it pertains to any particular mineral, or to any specified category of deposits of such mineral, or to any particular mineral located in any particular area.".

Substitution of new section for section 8.

7. For section 8 of the principal Act, the following section shall be substituted, namely:—

Periods for which mining leases may be granted or renewed.

"8. (*1*) The provisions of this section shall apply to minerals specified in Part A of the First Schedule.

(*2*) The maximum period for which a mining lease may be granted shall not exceed thirty years:

Provided that the minimum period for which any such mining lease may be granted shall not be less than twenty years.

(*3*) A mining lease may be renewed for a period not exceeding twenty years with the previous approval of the Central Government.".

Insertion of new section 8A.

8. After section 8 of the principal Act, the following section shall be inserted, namely:—

Period of grant of a mining lease for minerals other than coal, lignite and atomic minerals.

"8A. (*1*) The provisions of this section shall apply to minerals other than those specified in Part A and Part B of the First Schedule.

(*2*) On and from the date of the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, all mining leases shall be granted for the period of fifty years.

(*3*) All mining leases granted before the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015 shall be deemed to have been granted for a period of fifty years.

(*4*) On the expiry of the lease period, the lease shall be put up for auction as per the procedure specified in this Act.

(*5*) Notwithstanding anything contained in sub-sections (*2*), (*3*) and sub-section (*4*), the period of lease granted before the date of commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, where mineral is used for captive purpose, shall be extended and be deemed to have been extended up to a period ending on the 31st March, 2030 with effect from the date of expiry of the period of renewal last made or till the completion of renewal period, if any, or a period of

National Mineral Exploration Trust.

9C. (*1*) The Central Government shall, by notification, establish a Trust, as a non-profit body, to be called the National Mineral Exploration Trust.

(*2*) The object of the Trust shall be to use the funds accrued to the Trust for the purposes of regional and detailed exploration in such manner as may be prescribed by the Central Government.

(*3*) The composition and functions of the Trust shall be such as may be prescribed by the Central Government.

(*4*) The holder of a mining lease or a prospecting licence-cum-mining lease shall pay to the Trust, a sum equivalent to two per cent. of the royalty paid in terms of the Second Schedule, in such manner as may be prescribed by the Central Government.".

Insertion of new sections 10A, 10B, and 10C.

10. After section 10 of the principal Act, the following sections shall be inserted, namely:—

Rights of existing concession holders and applicants.

"10A. (*1*) All applications received prior to the date of commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, shall become ineligible.

(*2*) Without prejudice to sub-section (*1*), the following shall remain eligible on and from the date of commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015:—

(*a*) applications received under section 11A of this Act;

(*b*) where before the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015 a reconnaissance permit or prospecting licence has been granted in respect of any land for any mineral, the permit holder or the licensee shall have a right for obtaining a prospecting licence followed by a mining lease, or a mining lease, as the case may be, in respect of that mineral in that land, if the State Government is satisfied that the permit holder or the licensee, as the case may be,—

(*i*) has undertaken reconnaissance operations or prospecting operations, as the case may be, to establish the existence of mineral contents in such land in accordance with such parameters as may be prescribed by the Central Government;

(*ii*) has not committed any breach of the terms and conditions of the reconnaissance permit or the prospecting licence;

(*iii*) has not become ineligible under the provisions of this Act; and

(*iv*) has not failed to apply for grant of prospecting licence or mining lease, as the case may be, within a period of three months after the expiry of reconnaissance permit or prospecting licence, as the case may be, or within such further period not exceeding six months as may be extended by the State Government;

(*c*) where the Central Government has communicated previous approval as required under sub-section (*1*) of section 5 for grant of a mining lease, or if a letter of intent (by whatever name called) has been issued by the State Government to grant a mining lease, before the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, the mining lease shall be granted subject to fulfilment of the conditions of the previous approval or of the letter of intent within a period of two years from the date of commencement of the said Act:

Provided that in respect of any mineral specified in the First Schedule, no prospecting licence or mining lease shall be granted under clause (*b*) of this sub-section except with the previous approval of the Central Government.

Grant of mining lease in respect of notified minerals through auction.

10B. (*1*) The provisions of this section shall not be applicable to cases covered by section 10A or section 17A or to minerals specified in Part A or Part B of the First Schedule or to land in respect of which the minerals do not vest in the Government.

(*2*) Where there is inadequate evidence to show the existence of mineral contents of any notified mineral in respect of any area, a State Government may, after obtaining the previous approval of the Central Government, grant a prospecting licence-cum-mining lease for the said notified mineral in such area in accordance with the procedure laid down in section 11.

(*3*) In areas where the existence of mineral contents of any notified mineral is established in the manner prescribed by the Central Government, the State Government shall notify such areas for grant of mining leases for such notified mineral, the terms and conditions subject to which such mining leases shall be granted, and any other relevant conditions, in such manner as may be prescribed by the Central Government.

(*4*) For the purpose of granting a mining lease in respect of any notified mineral in such notified area, the State Government shall select, through auction by a method of competitive bidding, including e-auction, an applicant who fulfils the eligibility conditions as specified in this Act.

(*5*) The Central Government shall prescribe the terms and conditions, and procedure, subject to which the auction shall be conducted, including the bidding parameters for the selection, which may include a share in the production of the mineral, or any payment linked to the royalty payable, or any other relevant parameter, or any combination or modification of them.

(*6*) Without prejudice to the generality of sub-section (*5*), the Central Government shall, if it is of the opinion that it is necessary and expedient to do so, prescribe terms and conditions, procedure and bidding parameters in respect of categories of minerals, size and area of mineral deposits and a State or States, subject to which the auction shall be conducted:

Provided that the terms and conditions may include the reservation of any particular mine or mines for a particular end-use and subject to such condition which allow only such eligible end users to participate in the auction.

(*7*) The State Government shall grant a mining lease to an applicant selected in accordance with the procedure laid down in this section in respect of such notified mineral in any notified area.

Grant of non-exclusive reconnaissance permits.

10C. (*1*) Non-exclusive reconnaissance permits may be granted in respect of any notified mineral or non-notified mineral or a group of specified minerals, other than minerals specified in Part A or Part B of the First Schedule, subject to such terms and conditions as may be prescribed by the Central Government.

(*2*) The holder of such non-exclusive reconnaissance permit shall not be entitled to make any claim for the grant of any prospecting licence-cum-mining lease or a mining lease.".

Substitution of new section for section 11.

11. For section 11 of the principal Act, the following section shall be substituted, namely:—

Grant of prospecting licence-cum-mining lease through auction in respect of minerals other than notified minerals.

"11. (*1*) The provisions of this section shall not be applicable to cases covered by section 10A or section 17A or to minerals specified in Part A or Part B of the First Schedule or to land in respect of which minerals do not vest in the Government.

(*2*) In areas where there is evidence to show the existence of mineral contents as required by clause (*a*) of sub-section (*2*) of section 5, the State Government shall grant a mining lease for minerals other than notified minerals following the procedure laid down in section 10B.

(*3*) In areas where there is inadequate evidence to show the existence of mineral contents as required under clause (*a*) of sub-section (*2*) of section 5, the State Government shall grant a prospecting licence-cum-mining lease for minerals other than notified minerals in accordance with the procedure laid down in this section.

(*4*) The State Government shall notify the areas in which prospecting licence-cum-mining leases shall be granted for any minerals other than notified minerals, the terms and conditions subject to which such prospecting licence-cum-mining leases shall be granted, and any other relevant conditions, in such manner as may be prescribed by the Central Government.

(*5*) For the purpose of granting prospecting licence-cum-mining leases, the State Government shall select, through auction by method of competitive bidding, including e-auction, an applicant who fulfils the eligibility conditions as specified in this Act.

(*6*) The Central Government shall prescribe the terms and conditions, and procedure, subject to which the auction shall be conducted, including the bidding parameters for the selection, which may include a share in the production of the mineral, or any payment linked to the royalty payable, or any other relevant parameter, or any combination or modification of them.

(*7*) Without prejudice to the generality of sub-section (*6*), the Central Government shall, if it is of the opinion that it is necessary and expedient to do so, prescribe terms and conditions, procedure and bidding parameters in respect of categories of minerals, size and area of mineral deposits and a State or States, subject to which the auction shall be conducted.

(*8*) The State Government shall grant a prospecting licence-cum-mining lease to an applicant selected in accordance with the procedure laid down in this section.

(*9*) The holder of a prospecting licence-cum-mining lease shall be required to complete, within the period laid down in section 7, the prospecting operations satisfactorily as specified in the notice inviting applications.

(*10*) A holder of a prospecting licence-cum-mining lease, who completes the prospecting operation as laid down in sub-section (*9*) and establishes the existence of mineral contents in the area in conformity with such parameters as may be prescribed for this purpose by the Central Government, shall be required to apply for a mining lease for such area and shall have the right to get the mining lease and thereafter undertake mining operations in accordance with the provisions of this Act.".

Insertion of new sections 11B and 11C.

12. After section 11A of the principal Act, the following sections shall be inserted, namely:—

Power of Central Government to make rules for regulating atomic minerals specified under Part B of First Schedule.

"11B. The Central Government may, by notification in the Official Gazette, make rules for regulating the grant of mining leases or other mineral concessions in respect of minerals specified in Part B of the First Schedule and for purposes connected therewith, and the State Government shall grant a reconnaissance permit, prospecting licence or mining lease in respect of any such mineral in accordance with such rules.

Power of Central Government to amend First Schedule and Fourth Schedule.

11C. The Central Government may, by notification in the Official Gazette, amend the First Schedule and the Fourth Schedule so as to add or delete any mineral as may be specified in the notification.".

Insertion of new section 12A.

13. After section 12 of the principal Act, the following section shall be inserted, namely:—

Transfer of mineral concessions.

"12A. (*1*) The provisions of this section shall not apply to minerals specified in Part A or Part B of the First Schedule.

(*2*) A holder of a mining lease or a prospecting licence-cum-mining lease granted in accordance with the procedure laid down in section 10B or section 11 may, with the previous approval of the State Government, transfer his mining lease or prospecting licence-cum-mining lease, as the case may be, in such manner as may be prescribed by the Central Government, to any person eligible to hold such mining lease or prospecting licence-cum- mining lease in accordance with the provisions of this Act and the rules made thereunder.

(*3*) If the State Government does not convey its previous approval for transfer of such mining lease or prospecting licence-cum-mining lease, as the case may be, within a period of ninety days from the date of receiving such notice, it shall be construed that the State Government has no objection to such transfer:

Provided that the holder of the original mining lease or prospecting licence-cum-mining lease shall intimate to the State Government the consideration payable by the successor-in-interest for the transfer, including the consideration in respect of the prospecting operations already undertaken and the reports and data generated during the operations.

(*4*) No such transfer of a mining lease or prospecting licence-cum-mining lease, referred to in sub-section (*2*), shall take place if the State Government, within the notice period and for reasons to be communicated in writing, disapproves the transfer on the ground that the transferee is not eligible as per the provisions of this Act:

Provided that no such transfer of a mining lease or of a prospecting licence-cum-mining lease, shall be made in contravention of any condition subject to which the mining lease or the prospecting licence-cum-mining lease was granted.

(*5*) All transfers effected under this section shall be subject to the condition that the transferee has accepted all the conditions and liabilities under any law for the time being in force which the transferor was subject to in respect of such a mining lease or prospecting licence-cum-mining lease, as the case may be.

(*6*) The transfer of mineral concessions shall be allowed only for concessions which are granted through auction.".

Amendment of section 13.

14. In section 13 of the principal Act, in sub-section (*2*),—

(*i*) after clause (*j*), the following clause shall be inserted, namely:—

"(*jj*) parameters of existence of mineral contents under clause (*a*) of sub-section (*2*) of section 5;";

(*ii*) in clause (*qq*), the word "and" occurring at the end shall be omitted;

(*iii*) after clause (*qq*), the following clauses shall be inserted, namely:—

"(*qqa*) the amount of payment to be made to the District Mineral Foundation under sub-sections (*5*) and (*6*) of section 9B;

(*qqb*) the manner of usage of funds accrued to the National Mineral Exploration Trust under sub-section (*2*) of section 9C;

(*qqc*) the composition and functions of the National Mineral Exploration Trust under sub-section (*3*) of section 9C;

(*qqd*) the manner of payment of amount to the National Mineral Exploration Trust under sub-section (*4*) of section 9C;

(*qqe*) the terms and conditions subject to which mining leases shall be granted under sub-section (*3*) of section 10B;

(*qqf*) the terms and conditions, and procedure, subject to which the auction shall be conducted including the bidding parameters for the selection under sub-section (*5*) of section 10B;

(*qqg*) the time limits for various stages in processing applications for grant of mining lease or prospecting licence-cum-mining lease under sections 10B, 11, 11A, 11B, and section 17A, and their renewals;

(*qqh*) the terms and conditions for grant of non-exclusive reconnaissance permits under sub-section (*1*) of section 10C;

(*qqi*) the terms and conditions for grant of prospecting licence-cum-mining leases under sub-section (*4*) of section 11;

(*qqj*) the terms and conditions, and procedure, including the bidding parameters for the selection under sub-section (*6*) of section 11;

(*qqk*) the amount to be payable by a Government company or corporation, or a joint venture for grant of mining lease under sub-section (*2C*) of section 17A; and".

Amendment of section 15.

15. In section 15 of the principal Act, after sub-section (*3*), the following sub-section shall be inserted, namely:—

"(*4*) Without prejudice to sub-sections (*1*), (*2*) and sub-section (*3*), the State Government may, by notification, make rules for regulating the provisions of this Act for the following, namely:—

(*a*) the manner in which the District Mineral Foundation shall work for the interest and benefit of persons and areas affected by mining under sub-section (*2*) of section 9B;

(*b*) the composition and functions of the District Mineral Foundation under sub-section (*3*) of section 9B; and

(*c*) the amount of payment to be made to the District Mineral Foundation by concession holders of minor minerals under section 15A.".

Insertion of new section 15A.

16. After section 15 of the principal Act, the following section shall be inserted, namely:—

Power of State Government to collect funds for District Mineral Foundation in case of minor minerals.

"15A. The State Government may prescribe the payment by all holders of concessions related to minor minerals of amounts to the District Mineral Foundation of the district in which the mining operations are carried on.".

Amendment of section 17A.

17. In section 17A of the principal Act, after sub-section (*2*), the following sub-sections shall be inserted, namely:—

"(*2A*) Where in exercise of the powers conferred by sub-section (*1A*) or sub-section (*2*), the Central Government or the State Government, as the case may be, reserves any area for undertaking prospecting or mining operations, the State Government shall grant prospecting licence or mining lease, as the case may be, in respect of such area to such Government company or corporation:

Provided that in respect of any mineral specified in Part A and Part B of the First Schedule, the State Government shall grant the prospecting licence or mining lease, as the case may be, only after obtaining the previous approval of the Central Government.

(*2B*) Where the Government company or corporation is desirous of carrying out the prospecting operations or mining operations in a joint venture with other persons, the joint venture partner shall be selected through a competitive process, and such Government company or corporation shall hold more than seventy-four per cent. of the paid up share capital in such joint venture.

(*2C*) A mining lease granted to a Government company or corporation, or a joint venture, referred to in sub-sections (*2A*) and (*2B*), shall be granted on payment of such amount as may be prescribed by the Central Government.".

Insertion of new section 20A.

18. After section 20 of the principal Act, the following section shall be inserted, namely:—

Power of Central Government to issue directions.

"20A. (*1*) Notwithstanding anything contained in this Act, the Central Government may issue such directions to the State Governments, as may be required for the conservation of mineral resources, or on any policy matter in the national interest, and for the scientific and sustainable development and exploitation of mineral resources.

(*2*) In particular, and without prejudice to the generality of the foregoing powers, the Central Government may also issue directions in respect of the following matters, namely:—

(*i*) improvement in procedure for grant of mineral concessions and to ensure co-ordination among agencies entrusted with according statutory clearances;

(*ii*) maintenance of internet-based databases including development and operation of a mining tenement system;

(*iii*) implementation and evaluation of sustainable development frameworks;

(*iv*) reduction in waste generation and related waste management practices and promotion of recycling of materials;

(*v*) minimising and mitigating adverse environmental impacts particularly in respect of ground water, air, ambient noise and land;

(*vi*) ensuring minimal ecological disturbance, in terms of bio-diversity, flora, fauna and habitat;

(*vii*) promoting restoration and reclamation activities so as to make optimal use of mined out land for the benefit of the local communities; and

(*viii*) such other matters as may be necessary for the purposes of implementation of this Act.".

Amendment of section 21.

19. In section 21 of the principal Act, for sub-sections (*1*) and (*2*), the following sub-sections shall be substituted, namely:—

"(*1*) Whoever contravenes the provisions of sub-section (*1*) or sub-section (*1A*) of section 4 shall be punishable with imprisonment for a term which may extend to five years and with fine which may extend to five lakh rupees per hectare of the area.

(*2*) Any rule made under any provision of this Act may provide that any contravention thereof shall be punishable with imprisonment for a term which may extend to two years or with fine which may extend to five lakh rupees, or with both, and in the case of a continuing contravention, with additional fine which may extend to fifty thousand rupees for every day during which such contravention continues after conviction for the first such contravention.".

Substitution of new section for section 30.

20. For section 30 of the principal Act, the following section shall be substituted, namely:—

Power of revision by Central Government.

"30. The Central Government may, of its own motion or on an application made within the prescribed time by an aggrieved party, —

(*a*) revise any order made by a State Government or other authority in exercise of the powers conferred on it by or under this Act with respect to any mineral other than a minor mineral; or

(*b*) where no such order has been made by the State Government or other authority in exercise of the powers conferred on it by or under this Act with respect to any mineral other than a minor mineral within the time prescribed therefor, pass such order as it may think fit and appropriate in the circumstances:

Provided that in cases covered by clause (*b*) the Central Government shall, before passing any order under this clause, give an opportunity of being heard or to represent in the matter.".

Insertion of new sections 30B and 30C.

21. After section 30A of the principal Act, the following sections shall be inserted, namely:—

Constitution of Special Courts.

"30B. (*1*) The State Government may, for the purposes of providing speedy trial of offences for contravention of the provisions of sub-section (*1*) or sub-section (*1A*) of section 4, constitute, by notification, as many Special Courts as may be necessary for such area or areas, as may be specified in the notification.

(*2*) A Special Court shall consist of a Judge who shall be appointed by the State Government with the concurrence of the High Court.

(*3*) A person shall not be qualified for appointment as a judge of a Special Court unless he is or has been a District and Sessions Judge.

(*4*) Any person aggrieved by the order of the Special Court may prefer an appeal to the High Court within a period of sixty days from the date of such order.

Special Courts to have powers of Court of Session.

30C**.** Save as otherwise provided in this Act, the Code of Criminal Procedure, 1973, shall apply to the proceedings before the Special Court and for the purpose of the provisions of this Act, the Special Court shall be deemed to be a Court of Session and shall have all powers of a Court of Session and the person conducting a prosecution before the Special Court shall be deemed to be a public prosecutor.".

2 of 1974.

Amendment of First Schedule.

22. In the principal Act, in the First Schedule, for the figures and brackets "8(*2*)", the figures, brackets, letters and word "8(*1*), 8A(*1*), 10A, 10B(*1*), 10C(*1*), 11(*1*), 11B, 11C, 12A(*1*), and 17A(*2A*)" shall be substituted.

Insertion of a new Schedule.

23. In the principal Act, after the Third Schedule, the following Schedule shall be inserted, namely:—

"THE FOURTH SCHEDULE

[*See* clause (*ea*) of section 3]

Notified Minerals

1. Bauxite.

2. Iron ore.

3. Limestone.

4. Manganese ore.".

Power to remove difficulties.

24. (*1*) If any difficulty arises in giving effect to the provisions of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, the Central Government may, by order, published in the Official Gazette, make such provisions not inconsistent with the provisions of the said Act, as appear to it to be necessary or expedient for removing the difficulty:

Provided that no such order shall be made under this section after the expiry of a period of two years from the commencement of the said Act.

(*2*) Every order made under this section shall be laid, as soon as may be after it is made, before each House of Parliament.

Repeal and savings.

25. *(1)* The Mines and Minerals (Development and Regulation) Amendment Ordinance, 2015, is hereby repealed. Ord. 3 of 2015.

(*2*) Notwithstanding such repeal, anything done or any action taken under the principal Act, as amended by the said Ordinance, shall be deemed to have been done or taken under the corresponding provisions of the principal Act, as amended by this Act.

DR. SANJAY SINGH,
Secretary to the Govt. of India.

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खान मंत्रालय

अधिसूचना

नई दिल्ली, 17 अप्रैल, 2015

सा.का.नि. 304(अ).—केंद्रीय सरकार, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए निम्नलिखित बनाती है, अर्थात:—

1. संक्षिप्त नाम और प्रारंभ :

1.1 इन नियमों का संक्षिप्त नाम "खान (खनिज अंतर्वस्तु का साक्ष्य) नियम, 2015" है ।

1.2 ये राजपत्र में अपने प्रकाशन की तारीख को प्रवृत्त होंगे ।

2. लागू होना : ये नियम निम्नलिखित को छोडकर सभी खनिजों पर लागू होंगे :

(i) पेट्रोलियम और प्राकृतिक गैस;

(ii) कोयला, लिग्नाइट और भूगर्त रेत भरण;

(iii) खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की प्रथम अनुसूची के भाग 'ख' में सूचीबद्ध खनिज; और

(iv) गौण खनिज

3. परिभाषाएं और निर्वचन :

इन नियमों में जब तक संदर्भ में अन्यथा अपेक्षित न हों, -

(क) "**अधिनियम**" से खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) अभिप्रेत है;

(ख) **"संयुक्त अनुज्ञप्ति"** से अधिनियम की धारा 10ख की उप-धारा (2) या धारा 11 की उप-धारा (3) के अधीन जारी पूर्वेक्षण अनुज्ञप्ति-सह-खनन पट्टा अभिप्रेत है;

(ग) **"अनुरूप"** से प्रत्येक मामले के लिए अपेक्षित परिस्थिति के निकटतम रूप अभिप्रेत है;

(घ) **"खनिज अंतर्वस्तु का साक्ष्य"** से यथास्थिति नियम 4, नियम 5 अथवा नियम 7 के उपनियम (2) में यथाविनिर्दिष्ट खनिज उपस्थिति के साक्ष्य की पुष्टि अभिप्रेत है;

(ङ) **"खनिजों का ग्रेस होल्ड मूल्य"** से भारतीय खान ब्यूरों द्वारा किसी निर्धारित क्षेत्र और निर्धारित समय के लिए किसी खनिज की सज्जीकरणीयता और/अथवा विपणनता के आधार पर समय-समय पर निर्धारित सीमाएं; जिससे कम में खनन से प्राप्त पदार्थ को अपशिष्ट मानकर छोड़ा जा सकता है अभिप्रेत है ।

(च) 'अनुसूची' से इन नियमों के उपाबद्ध संलग्न अनुसूची अभिप्रेत है ।

(छ) इन नियमों में प्रयुक्त शब्द आवीक्षण सर्वेक्षण (जी4), आरंभिक गवेषण (जी3), साधारण गवेषण (जी2), विस्तृत गवेषण (जी1), आवीक्षण खनिज संसाधन (334), अनुमानित खनिज संसाधन (333), उपदर्शित खनिज संसाधन (332), परिमापित खनिज संसाधन (331), संभावित खनिज भंडार (121 और 122), सबूत खनिज भंडार (111), व्यवहार्यता खनिज संसाधन (211), व्यवहार्यतापूर्व खनिज संसाधन (221 और 222), उपांतरित कारक, भूवैज्ञानिक अध्ययन (एफ-3), व्यवहार्यतापूर्व अध्ययन (एफ 2), व्यवहार्यता अध्ययन (एफ 1), तात्विक रूप से आर्थिक (ई3), संभाव्य रूप से आर्थिक (ई2) और आर्थिक (ई1) के अर्थ इन नियमों की अनुसूची के भाग-1 में यथा परिभाषित अनुसार होंगे;

(ज) इन नियमों में प्रयुक्त सभी शब्दों और अभिव्यक्तियों जो परिभाषित नहीं किए गए हैं, का वहीं अर्थ होगा जो अधिनियम अथवा उसके अंतर्गत बनाए गए नियमों में यथा निर्धारित किया गया है ।

4. अधिनियम की धारा 10क की उपधारा (2) के खंड (ख) के उप-खंड (i) के अधीन खनिज विद्यमानता का अवधारण करना :

(1) जहां यथास्थित किसी आवीक्षण परमिट अथवा पूर्वेक्षण अनुज्ञप्ति के धारक द्वारा पूर्वेक्षण अनुज्ञप्ति अथवा खनन पट्टा स्वीकृति संबंधी आवेदन 12 जनवरी, 2015 से पूर्व प्रस्तुत नहीं किया गया हो, तो ऐसे परमिट अथवा अनुज्ञप्ति धारक द्वारा अधिनियम की धारा 10क की उप-धारा (2) के खंड (ख) के उप-खंड (i) के अंतर्गत खनिज विद्यमानता का निर्धारण किया गया समझा जाएगा, यदि धारक के पास –

(क) पूर्वेक्षण अनुज्ञप्ति प्रदान करने के मामले में

(i) बाद में गवेषण के योग्य जोन (क्षेत्रों) का पता लगाने के लिए आवीक्षण सर्वेक्षण (जी4) किया है; और

(II) अनुसूची के IV भाग के अनुरूप एक भूवैज्ञानिक अध्ययन रिपोर्ट तैयार किया है और यह भूवैज्ञानिक अध्ययन रिपोर्ट राज्य सरकार को प्रस्तुत की गई है;

(ख) खनन पट्टा प्रदान करने के मामले में :

(I) संसूचित खनिज संसाधन (332) का क्रियान्वयन के लिए क्षेत्र में कम से कम साधारण गवेषण (जी2 स्तर) किया है; और

(II) संभावित खनिज भंडार (121 और 122) का पता लगाने के लिए अनुसूची के भाग-V के पुष्टि में कम से कम एक पूर्व-व्यवहार्यता अध्ययन (एफ-2) तैयार किया ताकि खनन पट्टे के आरंभ की तारीख से पांच वर्षों की अवधि के लिए खनन प्रचालन की योजना बनाई जा सके और यह ये रिपोर्टें राज्य सरकार को प्रस्तुत की गई है ।

(2) जब यथास्थिति किसी आवीक्षण परमिट अथवा पूर्वेक्षण अनुज्ञप्ति के धारक द्वारा पूर्वेक्षण अनुज्ञप्ति अथवा खनन पट्टा स्वीकृति संबंधी आवेदन 12 जनवरी, 2015 से पूर्व प्रस्तुत किया गया हो, तो ऐसे परमिट अथवा अनुज्ञप्ति धारक द्वारा अधिनियम की धारा 10क की उप-धारा (2) के खंड (ख) के उप-खंड (i) के अधीन खनिज विद्यमानता का निर्धारण किया गया माना जाएगा, यदि धारक के पास -

(क) पूर्वेक्षण अनुज्ञप्ति प्रदान करने के मामले में

(i) खनिज संरक्षण और विकास नियम, 1988 के अधीन पूर्वेक्षण की स्कीम के अनुसार पूर्वेक्षण प्रचालन क्रियान्वत किए गए; तथा

(II) पूर्वेक्षण की ऐसी स्कीमों के अनुरूप और खान मंत्रालय द्वारा तारीख 24 जून, 2009 और 30 अक्तूबर, 2014 को जारी खनिज रियायत प्रस्तावों की प्रसंस्करण के लिए मार्गदर्शक सिद्धांतों में अधिकथित शर्तों को पूरा करके आवीक्षण प्रचालन पूरा करने के बाद रिपोर्ट राज्य सरकार को प्रस्तुत की ।

(ख) खनन पट्टा प्रदान करने के मामले में

(I) खनिज संरक्षण और विकास नियम, 1988 के अधीन पूर्वेक्षण की स्कीम के अनुसार पूर्वेक्षण प्रचालन किया; तथा

(II) पूर्वेक्षण की ऐसी स्कीमों के अनुरूप और खान मंत्रालय द्वारा तारीख 24 जून, 2009 और 30 अक्तूबर, 2014 को जारी खनिज रियायत प्रस्तावों की प्रसंस्करण के लिए मार्ग दर्शक सिद्धांतों में अधिकथित शर्तों को पूरा करके आवीक्षण प्रचालन पूरा करने के बाद रिपोर्ट राज्य सरकार को प्रस्तुत की ।

5. अधिनियम की धारा 10ख की उप-धारा (3) और धारा 11 की उप-धारा (2) के अधीन खनन पट्टे की नीलामी के लिए खनिज अंतर्वस्तु विद्यमानता

अधिनियम की धारा 10ख की उप-धारा (3) और धारा 11 की उप-धारा (2) के अधीन किसी क्षेत्र में खनिज विद्यमानता मानी जाएगी, यदि ऐसे क्षेत्र के लिए :

(क) कम से कम संसूचित खनिज संसाधन (332) का पता लगाने के लिए साधारण गवेषण (जी2) पूरा कर लिया गया है; तथा

(ख) अनुसूची के भाग-IV के अनुरूप एक भूवैज्ञानिक अध्ययन रिपोर्ट तैयार की गई है ।

6. खनन पट्टा अवधि की समाप्ति के बाद खनन पट्टों के लिए और छोड़े गए, अभ्यर्थित अथवा व्यपगत पट्टों के लिए नीलामी के ज़रिए खनन पट्टा प्रदान करना

नीलामी के माध्यम खनन पट्टा प्रदान करने के लिए किसी क्षेत्र को अधिसूचित करने से पूर्व निम्नलिखित संबंध में-

(क) पट्टा अवधि की समाप्ति के बाद खनन पट्टे; और

(ख) छोडे गए समाप्त किए गए अथवा व्यपगत खनन पट्टे,

नियम 5 के अनुसार नीलामी के लिए प्रस्तावित क्षेत्र में संसाधनों का विस्तृत पुनर्मूल्यांकन किया जाएगा ।

7. संयुक्त अनुज्ञप्ति प्रदान करने के लिए खनिज विद्यमानता

(1) अधिनियम की धारा 10ख की उप-धारा (2) अथवा धारा 11 की उप-धारा (3) के अधीन संयुक्त अनुज्ञप्ति प्रदान करने के लिए किसी क्षेत्र को नीलामी हेतु अधिसूचित किया जाए, यदि ऐसे क्षेत्र के लिए :

(क) प्रदत्त खनिज संसाधन (333) का पता लगाने के लिए आरंभिक गवेषण (जी3) पूरा किया गया है; तथा

(ख) अनुसूची के भाग-IVक और भाग-IVख के अनुरूप एक भूवैज्ञानिक अध्ययन रिपोर्ट तैयार की गई है ।

(2) किसी क्षेत्र को अधिनियम की धारा 11 की उप-धारा (10) के अधीन खनिज विद्यमानता वाला माना जाएगा, यदि ऐसे क्षेत्र में :

(क) कम से कम संसूचित खनिज संसाधन (332) का पता लगाने के लिए साधारण गवेषण (जी2) पूरा किया गया हो; तथा

(ख) खनन पट्टे के आरंभ होने की तारीख से पांच वर्षों की अवधि के लिए खनन प्रचालन की योजना बनाने के लिए अनुसूची के भाग-V के अनुरूप संभावित खनिज भंडार (121 और 122) का पता लगाने के लिए कम से कम एक व्यवहार्यता-पूर्व अध्ययन (एफ2) रिपोर्ट तैयार किया गया है और यह रिपोर्ट राज्य सरकार को प्रस्तुत की गई है ।

8. शिथिलता

स्थानीय भूवैज्ञानिक संरचना, खनिजन की विद्यमानता के स्वरूप और प्रकृति के आधार पर राज्य सरकार, केंद्रीय सरकार के पूर्व अनुमोदन से अनुसूची के भाग-3 में यथानिर्दिष्ट गवेषण मानदंडों को किसी खनिज अथवा किसी क्षेत्र के लिए पूर्णत: अथवा अंशत: शिथिल कर सकती है ।

अनुसूची

[नियम 2(iii), 3(च), 3(छ), 4(1)(क)(ii), 4(1)(ख)(ii), 5(ख), 7(1)(ख), 7(2)(ख)]

गवेषण स्तरों से संबंधित प्रयोग किए गए शब्दों और गवेषण के विभिन्न स्तरों के ज़रिए प्राप्त संसाधनों और भंडारों की श्रेणी अनुसूची के भाग-I में परिभाषित हैं । मात्रा और ग्रेड के संदर्भ में क्षेत्र में खनिज मात्रा की विद्यमानता की पुष्टि के लिए मानदंड अनुसूची के भाग-2, भाग-3, भाग-IVक, भाग-IVख और भाग-V में दिए गए हैं ।

भाग-I

परिभाषाएं

1. अनुसूची के भाग-I में प्रयुक्त परिभाषाएं और कोड मुख्यत: संयुक्त राष्ट्र विन्यास वर्गीकरण (यूएनएफसी) वर्जन-1997 और खनिज भंडारण अन्तरराष्ट्रीय सूचना मानक (सीआरआईआरएससीओ) टेमप्लेट समिति से लिए गए है । आवश्यक होने पर उसमें विस्तार करने के लिए यहां दी गई परिभाषाओं को यूएनएफसी या सीआरआईआरएससीओ के संदर्भ के द्वारा अनुपूरक बनाया जाए ।

2. किसी खनिज निक्षेप के लिए गवेषण के चार चरण यथा टोही सर्वेक्षण (जी4), प्रारंभिक गवेषण (जी3), सामान्य गवेषण (जी2) और विस्तृत गवेषण (जी1) होते हैं । गवेषण के ये चरण भूवैज्ञानिक आश्वासन के स्तर को प्रदर्शित करते हुए क्रमश: चार संसाधन श्रेणियों यथा पूर्वेक्षण खनिज संसाधन, अनुमानित खनिज संसाधन, इंगित खनिज संसाधन और मापित खनिज संसाधन को दृष्टिगत करते है ।

3. टोही सर्वेक्षण (जी4)- प्रादेशिक भूवैज्ञानिक अध्ययनों, क्षेत्रीय भूवैज्ञानिक मानचित्रण, हवाई तथा परोक्ष विधियां, प्रारंभिक क्षेत्र निरीक्षण व भूवैज्ञानिक हलचल और बहिर्वेशन के परिणामों पर प्रारंभिक रूप से आधारित संबंधित खनिज मात्रा वाले क्षेत्रों की संपुष्टि करता है । इसका उद्देश्य निक्षेप की संपुष्टि के लिए आगामी अन्वेषण के योग्य खनिजीकृत क्षेत्रों को पहचानना है । मात्राओं का प्राक्कलन केवल तभी किया जाना चाहिए यदि पर्याप्त डाटा उपलब्ध हो और जब वैसे ही भूवैज्ञानिक लक्षण के ज्ञात निक्षेपों का समय अनुमान संभव हो और तब केवल विस्तार की स्थिति के अंदर हो ।

4. प्रारंभिक गवेषण (जी3) संवर्धित खनिज मात्रा को प्रोत्साहित करने वाले संकीर्ण छोटे निचले क्षेत्रों में खनिज निक्षेप के लिए खोज करने की सुव्यवस्थित प्रक्रिया है । प्रयुक्त पद्धतियां दृश्यांश पहचान, भूवैज्ञानिक मानचित्रण और परोक्ष विधाए जैसे भूभौतिकीय और भूरासायनिक अध्ययन है । निक्षेप को पहचानने के लिए नमूना लेने हेतु सीमित चौड़ाई वाले स्थान पर पिटिंग/ट्रेंचिंग /ड्रिलिंग कार्य किया गया जो आगामी गवेषण के लिए लक्ष्य होगा । मात्राओं का प्राक्कलन भूवैज्ञानिक, भूभौतिकी, भूरासायनिक और तकनीकी अन्वेषण परिणामों के निर्वचन के आधार पर अनुमानित किया गया है ।

5. साधारण गवेषण (जी2) में एक अभिज्ञात निक्षेप का शुरूआती सीमांकन शामिल है । प्रयुक्त विधाओं में खनिज की मात्रा और उसकी गुणवत्ता के मूल्यांकन (प्रयोगशाला स्तर पर खनिज विज्ञान संबंधी परीक्षण सहित, यदि आवश्यक हो) के लिए नमूना लेने के लिए धरातलीय मानचित्र, पिटिंग/ट्रेंचिंग/ड्रिलिंग और अन्वेषण की परोक्ष विधियों पर आधारित सीमित अंतर्वेशन सम्मिलित है। इसका उद्देश्य निक्षेप मुख्य भूवैज्ञानिक संरचनाओं की खोज करना, देश को सही दिशा प्रदान करना और आकार, बनावट, संरचना तथा ग्रेड का शुरूआती प्राक्कलन उपलब्ध कराना है ।

6. विस्तृत गवेषण (जी1) में नमूने लेने के माध्यम से जैसे दृश्यांश, गडढ़ो, खाई, वेधन छिद्रों, शाफ्टों और सुरंगों आदि से प्राप्त ज्ञात निक्षेप के विस्तृत तीन विमीय सीमांकन शामिल है । नमूना लेने वाले ग्रिड स्थलों जैसे आकार, बनावट, संरचना, ग्रेड और निक्षेप के अन्य संबंधित लक्षणों के बहुत ही करीब है जिनसे उनकी शुद्धता की सही जानकारी ज्ञात हुई है । अधिकाधिक नमूने लेने के साथ-साथ प्रक्रम जांच करने की भी आवश्यकता हो सकती है ।

7. खनिज संसाधन ऐसे रूप, ग्रेड या गुण व मात्रा में भूपर्पटी पर या में आर्थिक महत्व की ठोस सामग्री का सांद्रण अथवा उपस्थिति है जो अक्समात आर्थिक निष्कर्ष के लिए उचित संभावनाएं है। नमूने सहित विशिष्ट भूवैज्ञानिक प्रमाण और जानकारी से खनिज संसाधन की अवस्थिति, मात्रा, ग्रेड या गुण, निरंतर उपस्थिति और अन्य भूवैज्ञानिक लक्षणों को ज्ञात किया गया है, उनका प्राक्कलन अथवा निर्वचन किया गया है । खनिज संसाधनों को बढ़ते भूवैज्ञानिक विश्वास के क्रम में पूर्वेक्षण, अनुमानित, इंगित और मापित संसाधन श्रेणियों में उपविभाजित किया गया है ।

8. पूर्वेक्षण खनिज संसाधन (334) परोक्ष प्रमाण पर प्रारंभिक रूप से आधारित प्राक्कलन है और टोही सर्वेक्षण के द्वारा सृजित डाटा और सूचना संग्रह है । उपलब्ध आकड़ों की मात्रा खनिज संसाधन के किसी उचित प्राक्कलन करने के लिए सामान्यत: पर्याप्त नहीं है ।

9. अनुमानित खनिज संसाधन (333) खनिज संसाधन का वह भाग है जिसके लिए सीमित भूवैज्ञानिक प्रमाण और प्रारंभिक गवेषण के चरण के माध्यम से प्राप्त नमूनों के आधार पर मात्रा और ग्रेड अथवा गुण का प्राक्कलन किया जाता है । इंगित खनिज संसाधन के प्रयोग की तुलना में अनुमानित संसाधन का विश्वास स्तर कम है और इसे खनिज भंडारण के लिए परिवर्तित नहीं किया जाएगा । अनुमानित खनिज संसाधन के बहुमत को गवेषण जारी रखकर इंगित खनिज संसाधनों से बढ़ाया जा सकेगा ।

10. इंगित खनिज संसाधन (332) खनिज संसाधन का वह भाग है जिसके लिए मात्रा, ग्रेड या गुण, घनत्व, आकार और भौतिक लक्षणों को निक्षेप के आर्थिक महत्व के मूल्यांकन और खान योजना की मदद के लिए पर्याप्त विवरण में संशोधित घटकों के अनुप्रयोग के लिए काफी विश्वास के साथ प्राक्कलन किया जाता है । भूवैज्ञानिक प्रमाण समुचित विवरण और विश्वसनीय गवेषण, नमूनों और परीक्षण से प्राप्त हुआ है और यह अवलोकन के बिन्दुओं के मध्य भूवैज्ञानिक और ग्रेड या गुण की निरन्तरता को जानने के लिए पर्याप्त है । मापित खनिज संसाधन के प्रयोग की तुलना में इंगित खनिज संसाधन का विश्वास स्तर कम है और इसे संभावित खनिज भंडारण के लिए परिवर्तित किया जा सकता है ।

11. मापित खनिज संसाधन (331) खनिज संसाधन का वह भाग है जिसके लिए मात्रा, ग्रेड या गुण, घनत्व, आकार और भौतिक लक्षणों को निक्षेप के आर्थिक महत्व के अंतिम मूल्यांकन और विस्तृत खान योजना की मदद के लिए संशोधित घटकों के अनुप्रयोग के लिए काफी विश्वास के साथ प्राक्कलन किया जाता है । भूवैज्ञानिक प्रमाण विस्तृत विवरण और विश्वसनीय गवेषण, नमूनों और परीक्षण से प्राप्त हुआ है यह अवलोकन के बिन्दुओं के मध्य भूवैज्ञानिक और ग्रेड या गुण की निरंतरता को जानने के लिए पर्याप्त है । इंगित खनिज संसाधन या अनुमानित खनिज संसाधन किसी एक के प्रयोग की तुलना में मापित खनिज संसाधन का विश्वास स्तर अधिक है । इसे सिद्ध खनिज/भंडारण या संभावित खनिज भंडारण के लिए परिवर्तित किया जा सकता है ।

12. खनिज भंडारण आर्थिक रूप से एक मापित और/या इंगित खनिज संसाधन का खननयुक्त भाग है । इसमें क्षति के लिए डाइल्यूटिंग मैटिरियल और एलाउंसेस शामिल हैं जो सामग्री को खनित या/निकालते समय घटित हो सकती है और

व्यवहार्यतापूर्व या व्यवहार्यता के स्तर पर यथा उचित अध्ययनों द्वारा परिभाषित किया गया है जिसमें संशोधित घटकों का अनुप्रयोग सम्मिलित है ।

संभाव्य खनिज भंडारण (121 व 122) आर्थिक दृष्टि से इंगित, और कुछ परिस्थितियों में मापित खनिज संसाधन का खननयुक्त भाग है ।

संभावित खनिज भंडारण के प्रयोग में संशोधित घटकों में विश्वास स्तर सिद्ध खनिज भंडारण के प्रयोग की तुलना में कम है ।

सिद्ध खनिज भंडारण (111) आर्थिक रूप से मापित खनिज संसाधन का खननयुक्त भाग है । सिद्ध खनिज भंडारण संशोधित घटकों में विश्वास के उच्च स्तर को दर्शाता है।

व्यवहार्यता खनिज संसाधन (211) एक "व्यवहार्यता खनिज संसाधन" मापित खनिज संसाधन का वह भाग है जो आर्थिक दृष्टि से व्यवहार्यता स्तर पर अध्ययनों द्वारा यथा परिभाषित खननयुक्त नहीं है। यह सामग्री प्रौद्योगिकीय, आर्थिक और पर्यावरणीय और/या अन्य संबंधित स्थितियों में परिवर्तनों की शर्त सहित संभवत: आर्थिक दृष्टि से महत्वपूर्ण होने के रूप में पहचानी गयी है ।

व्यवहार्यतापूर्व खनिज संसाधन (221 व 222) एक "व्यवहार्यतापूर्व खनिज संसाधन" एक इंगित और कुछ परिस्थितियों में मापित खनिज संसाधन का वह भाग है जो व्यवहार्यता पूर्व स्तर पर अध्ययनों से आर्थिक रूप से महत्वपूर्ण नहीं पाया गया है । यह सामग्री प्रौद्योगिकीय, आर्थिक, और पर्यावरणीय और/या अन्य संबंधित स्थितियों में परिवर्तनों की शर्त सहित संभवत: आर्थिक दृष्टि से महत्वपूर्ण होने के रूप में पहचानी गई है ।

13. **भूवैज्ञानिक अध्ययन (एफ3)** आर्थिक महत्व का एक आरंभिक मूल्यांकन है । यह ग्रेड, मोटाई, गहराई ओर तुलनात्मक खनन कार्यों से प्राक्कलित लागत के लिए महत्वपूर्ण कट आफ मूल्यों द्वारा प्राप्त होता है । भूवैज्ञानिक अध्ययन का प्रयोजन खनिजीकरण को पहचानना, खनिज निक्षेप की निरंतर उपस्थिति, मात्रा और गुण को ज्ञात करना तथा इसमें निवेश के अवसर को परिभाषित करना है ।

तथापि, आर्थिक महत्व की श्रेणियों को एक आर्थिक महत्व के मूल्यांकन के लिए आवश्यक विवरण के अभाव के कारण भूवैज्ञानिक अध्ययन से सामान्यतया परिभाषित नहीं किया जा सकता है । प्राक्कलित संसाधन मात्राओं से यह ज्ञात हो सकता है कि निक्षेप मूलभूत आर्थिक महत्व अर्थात आर्थिक से संभावित रूप से आर्थिक महत्व का है।

14. **उपांतरित कारक घटक** वे घटक हैं जो खनिज संसाधनों से खनिज भंडारणों में परिवर्तित करने के लिए व्यवहार्यतापूर्व या व्यवहार्यता अध्ययन करते समय विचार विमर्श में प्रयुक्त किए जाते है इनमें खनन प्रक्रिया, अंतिम उपयोग, कट आफ ग्रेड, श्रेश होल्ड मूल्य, धात्विक, अवसंरचना, आर्थिक, विपणन, विधिक, पर्यावरणीय, सामाजिक और शासकीय घटक शामिल है जो प्रतिबन्धित नहीं है ।

15. **व्यवहार्यतापूर्व अध्ययन (एफ2)** खनिज परियोजना के आर्थिक महत्व के लिए विकल्पों की श्रृंखला का एक अध्ययन है जो एक ऐसे चरण तक विकसित हो गया है जहां भूमिगत खनन या गडढा संरचना की स्थिति में, खुले गडढें की स्थिति में अधिमान्य खनन विधि ज्ञात की गई हैं और खनिज प्रक्रिया की एक प्रभावी विधि निर्धारित की गई है । इसमें परिवर्धन घटकों की उचित अवधारणाओं पर आधारित वित्तीय विश्लेषण तथा किसी अन्य संबंधित घटकों का मूल्यांकन शामिल है जो निर्धारित करने के लिए पर्याप्त है यदि खनिज संसाधन के सभी या भाग को सूचना के समय खनिज भंडारण के लिए परिवर्तित किया जाए । एक व्यवहार्यतापूर्व अध्ययन का विश्वास स्तर व्यवहार्यता अध्ययन की तुलना में कम है ।

16. **व्यवहार्यता अध्ययन (एफ1)** एक खनिज परियोजना के लिए चयनित विकास विकल्प का एक विस्तृत आर्थिक अध्ययन है जिसमें किसी अन्य संबंधित प्रचालनीय कारकों सहित लागू परिवर्धन कारकों का उचित विस्तृत आंकलन और विस्तृत वित्तीय विश्लेषण शामिल है जो सूचना के समय यह प्रदर्शित करना अनिवार्य है कि निष्कर्षण उचित रूप से न्यायोचित (आर्थिक रूप से खनन योग्य) है। अध्ययन का विश्वास स्तर व्यवहार्यतापूर्व अध्ययन के विश्वास स्तर की तुलना में अधिक होगा ।

17. **मूलभूत रूप से आर्थिक (ई3)** भूवैज्ञानिक अध्ययन के साधनों द्वारा आकलित और श्रेणी/गुण सहित टन/वोल्यूम में सूचित मात्रा मूलभूत रूप से आर्थिक महत्व की है । चूंकि भूवैज्ञानिक अध्ययन में केवल आर्थिक महत्व का आरंभिक मूल्यांकन शामिल है इसलिए आर्थिक और संभावित रूप से आर्थिक के मध्य कोई अंतर भेद नहीं किया जा सकता है । अत: इन संसाधन को आर्थिक से संभावित रूप से आर्थिक की श्रेणी में स्थित होना बताया गया है ।

18. संभावित रूप से आर्थिक (ई2) बढ़ती परिशुद्धता के क्रम में व्यवहार्यतापूर्व अध्ययन/व्यवहार्यता अध्ययन के साधनों द्वारा प्रदर्शित ग्रेड/गुण सहित टन/प्रवाह में सूचित मात्रा जो प्रौद्योगिकीय आर्थिक, पर्यावरणीय और अन्य संबंधित स्थितियों के तहत न्यायोचित निष्कर्षण नहीं है वास्तविक रूप से निर्धारण के समय मान ली गई है परंतु भविष्य में ऐसा शायद ही संभव हो।

19. आर्थिक (ई1) बढती परिशुद्धता के क्रम में व्यवहार्यतापूर्व अध्ययन/व्यवहार्यता अध्ययन के साधनों द्वारा प्रदर्शित ग्रेड/गुण सहित टन/प्रवाह में सूचित मात्रा जो प्रौद्योगिकीय आर्थिक, पर्यावरणीय और अन्य संबंधित स्थितियों के तहत न्यायोचित निष्कर्षण है, को अवधारण के समय वास्तविक रूप से मान लिया गया है।

भाग-2

गवेषण के लिए भूवैज्ञानिक पैरामीटर

1.	**हवाई आवीक्षण** : सैटेलाइट इमेजरी/दूर संवेदन/एयरबोर्न भूभौतिकी सर्वेक्षण आदि में उचित प्रौद्योगिकी का प्रयोग किया जा रहा है (मुख्यत: आवीक्षण गवेषण (जी4) स्तर के लिए प्रयोज्य)।
2.	**टोपोग्रफिक तथा भूवैज्ञानिक सर्वेक्षण (मानचित्रण)** : आवीक्षण (जी4) स्तर के लिए 1:50,000 अथवा लघु पैमाने पर; प्रारंभिक गवेषण (जी3) स्तर के लिए 1:25000 से 1:10,000 अथवा वृहत पैमाने पर; सामान्य गवेषण (जी2) के लिए 1:4000/1:5,000 अथवा वृहत पैमाने पर; विस्तृत गवेषण (जी1) स्तर के लिए 1:2000 अथवा वृहत पैमाने पर।
3.	**भूमि भूभौतिकी तथा भूरासायनिक सर्वेक्षण** : भूभौतिकी तथा भूरासायनिक सर्वेक्षण में आवश्यकतानुसार उचित तकनीक का प्रयोग किया जा रहा है।
4.	**प्रौद्योगिकी :** गवेषण तथा नमूने में दृश्यांश (आउट क्रोप), ट्रेंचेस, मुहाना, पुराने कार्यों तथा वेधन छिद्र जैसे स्थानों से उचित तकनीकी का प्रयोग किया जा रहा है। नूमूना प्रवस्थिति को अयस्क निकाय की मौजूदगी का पता लगाने के लिए तथा इसका बाद में तथा उर्ध्वाधर निरंतरता का पता लगाने के लिए उचित दूरी पर रखा गया है (जहां तक संभव हो ग्रिड पैटर्न में तथा अवसंरचात्मक जटिलता के आधार पर उपांतरित किया जाए)। अनुसूची के भाग-3 को आगामी विवरण हेतु संदर्भित किया जाए। गवेषण की साधारण (जी2) तथा विस्तृत (जी1) स्तर के लिए खनिजीकरण की गहराई निरंतरता पर उस सीमा तक विचार किया जाएगा जिसमें खनिजीकरण का प्रत्यक्ष साक्ष्य प्राप्त हुआ है। संसाधन का आकलन करने के लिए अमुख्य विस्तार पर विचार किया जाएगा जो मानचित्रण अथवा अन्य साधनों द्वारा भूवैज्ञानिक निरंतरता द्वारा किए गए भूवैज्ञानिक विचार-विमर्शों पर निर्भर होगा तथा किसी भी मामले पर जांच बिंदु की ग्रिड स्पेसिंग के 50 प्रतिशत से अधिक नहीं होगा। विलगित आमापन, विलगित वेधन छिद्र, पैंड सांद्रणों के आमापन आदि पर आधारित आकलन की सिफारिश नहीं की गई है।
5.	**सैम्पलिंग तथा उप-सैम्पलिंग :** आवीक्षण स्तर के लिए (क) यादृच्छिक पकड़ना/चिप/सतही अनावरण से चैनल सैम्पलिंग/कगार/नाला काटना/मुहाना/चैनल आदि। (ख) : मुहाना/ट्रेन्थेस/आउटक्रॉप/वर्किंग आदि से व्यवस्थित सैप्लिंग, इतना पास रखा जाए कि भूवैज्ञानिक आकलन के अन्य स्तरों के लिए भूवैज्ञानिक तथा ग्रेड निरंतरता सुनिश्चित हो। (ग) : नियमित अंतराल पर, विशेषकर खनिजीकृत मांग के लिए मीटर वार अथवा उससे कम, वेधन कोर/चिप सैम्पल की भूवैज्ञानिक संलेखन तथा सैंम्पलिंग। (घ) : नियोजित किए जाने वाली वेधन तकनीक, अधिकतम सैम्पल/कोर वसूली प्राप्त करने के उद्देश्य के साथ अंतर्वेधन किए जाने वाले चट्टानों पर निर्भर होगा। (ड.) : गवेषण सैम्पल तथा साथ ही सतही सैम्पल, वेधन कोर/चिप सैम्पलों का भविष्य में प्रयोग के लिए संरक्षित रखा जाएगा।
6.	**आमापन डाटा तथा प्रयोगशाला परीक्षण :** जांच किए जा रहे खनिज के लिए उचित; प्रमुख विलक्षणों के लिए सृजित सभी सैम्पलों का विश्लेषण। बॉक्साइट में जीए, क्रोमाइट में एनआई, पीजीई, लौह अयस्क में एयू, सीसा तथा जस्ता में एजी, कॉपर आदि में एयू जैसे उपोत्पाद तथा जहां भी आवश्यक हो अन्य हानिकारक तत्वों का विश्लेषण।

7.	**शैलवर्णना तथा मिनराग्राफिक अध्ययन** : चट्टानों के प्रकार तथा ग्रेन आकार, बनावट, नाप सहित खनिज संयोजन तथा यदि आवश्यक समझा जाए तो निस्तारण विशेषताएं आदि ।
8.	**प्रपुंज सघनता अध्ययन** : प्रपुंज सघनता को उस पद्धति से मापा जाएगा जो खनिज/अयस्क निकाय में प्रारंभिक शून्य रिक्त स्थानों (वग, संरघ्रता आदि) के लिए पर्यापत है ।
9.	**सज्जीकरण अध्ययनों के लिए प्रपुंज नमूना करना** : यदि प्रसंस्करण प्रौद्योगिकी परीक्षण के लिए आवश्यक हो तो प्रपुंज नमूना करना ।
10.	**पर्यावरणीय सेटिंग** : स्थानीय अवसंरचना, स्थानीय जनसंख्या, ऐतिहासिक स्थल, वन अभ्यारण्य, राष्ट्रीय पार्क संबंधी विवरण तथा क्षेत्र की पर्यावरणीय सेटिंग संबंधी सूचना एकत्र की जाए ।
11.	**अन्य संगत डाटा** : भूगत जल, भूतकनीकी तथा चट्टान की विशेषताएं आदि जो संगत हो सकती है ।

भाग-3

विभिन्न भंडारों के लिए गवेषण मानक

(नीचे दी गई ग्रिड स्पेसिंग परिचायक है । भंडार की भूवैज्ञानिक जटिलता के आधार पर निकटतम स्पेसिंग आवश्यक हो सकता है)

भंडार के प्रकार तथा प्रमुख खनिज	जी4 स्तर	जी3 स्तर	जी2 स्तर	जी1 सूतर	टिप्पणियां
I. **संस्तारित स्तरीय तथा नियमित और अनियमित व्यवहारों का सारणी बध निक्षेप :** लौह अयस्क, मैंगनीज अयस्क, बॉक्साइट, चूना पत्थर, क्रोमाइट/पोटाश तथा साल्ट बेड आदि	यदि आवश्यक हो तो स्काउट प्रवेधन (समय-समय पर केंद्रीय सरकार द्वारा निर्दिष्ट ग्रिड के परिप्रेक्ष्य में)	चूना-पत्थर, बॉक्साइट, पोटाश तथा नमक बेड के लिए ग्रिड का अंतर नियमित व्यवहार वाले भंडारों के लिए 800 मी. अथवा उसमें कम तथा अनियमित व्यवहार वाले भंडारों के लिए 400 मी. अथवा उससे कम; अन्य के लिए 400मी. अथवा उससे कम नियमित के लिए तथा 200मी. अथवा उससे कम अनियमित व्यवहार वालों के लिए ।	चूना-पत्थर, बॉक्साइट, पोटाश तथा साल्ट बेड के लिए ग्रिड का अंतर नियमित व्यवहार वाले भंडारों के लिए 400 मी. अथवा उसमें कम तथा अनियमित व्यवहार वाले भंडारों के लिए 200 मी. अथवा उससे कम; अन्य के लिए 200मी. अथवा उससे कम नियमित के लिए तथा 100मी. अथवा उससे कम अनियमित व्यवहार वालों के लिए ।	चूना-पत्थर, बॉक्साइट, पोटाश तथा साल्ट बेड के लिए ग्रिड का अंतर नियमित व्यवहार वाले भंडारों के लिए 200 मी. अथवा उसमें कम तथा अनियमित व्यवहार वाले भंडारों के लिए 100 मी. अथवा उससे कम; अन्य के लिए 100मी. अथवा उससे कम नियमित के लिए तथा 50मी. अथवा उससे कम अनियमित व्यवहार वालों के लिए ।	पूर्वेक्षण के विभिन्न स्तरों के लिए ग्रिड स्पेसिंग के अनुसार ग्रिड पैटर्न में सतही पिटिंग से 6 मी. तक की गहराई तक निरंतर तलछट सतही भंडारों के लिए पर्याप्त हो सकता है । आगे की गहराई में भंडारों की निरंतरता के लिए प्रबंधनकी सिफारिश की गई है ।
II. **एनएशलॉन वाले निकायों, समग्र शिरा की सिलिकीभूत रेखीय जोनों का भसूराकृतिक पिंड । लेंसेस, पॉकेट, स्टॉक कार्य, लघु आकार वाले निकायों तक अनियमित आकार मोडेस्ट**	यदि आवश्यक हो तो स्काउट प्रवेधन (समय-समय पर केंद्रीय सरकार द्वारा निर्दिष्ट ग्रिड के परिप्रेक्ष्य में)	बोर होल की स्पेसिंग, स्ट्राइक के साथ 200-100 मी. अथवा उससे कम दूरी के अंतराल पर रखा जाए ।	बोर होल की स्पेसिंग के साथ 100-50 मी. अथवा उससे कम दूरी पर रखा जाए। विशेष मामलों में आवश्यकता होने पर इसे विशेषकर कीमती धातुओं के लिए 25 मी.	बोर होल की स्पेसिंग, स्ट्राइक के साथ 50-25 मी. अथवा उससे कम दूरी के अंतराल रखा जाए ।	जी2 तथा जी1 स्तर पर जहां कहीं आवश्यक हो ग्रेडों की बल्क निर्धारण के साथ गवेषणात्मक खान ओपनिंग खुला मुहाना अथवा भूमिगत

लैटरीटायड में लौह तथा मैंगनीज अयस्क निकाय तथा निकेल कोबाल्ट लैटेराइट, सीयू-पीबी-जेडएन-एसबी-एचजी की आधार धातु सल्फाइट, पोडीफॉर्म क्रोमाइट, ऑरीफेरस क्वार्टज रीफज, पीजीएम, ग्रेफाइट लेंसों, मॉलीबेडनम टिन बाडी, पायराइट स्कार्न, शीलाइट निकाय, वोलास्टोनाइट) फलओराइट आदि वर्मीक्यूलाइट, मैंगनेसाइट, इंसटूसीलीमानी, तथा क्यानाइट लेंस ।			अथवा उससे कम रखा जा सकता है ।		
III. **माणिक्य तथा दुर्लभ धातु पैग्मेटाइट, रीफस तथा शिरा/पाइप** : टिन, टंगस्टन – टुंटालुम, निओवियम मॉलीबेडनम शिरा तथा पैग्मेटाइट, बेरिल, टोपाज, इमराल्ड निक्षेप, हीरा ।	यदि आवश्यक हो तो स्काउट प्रवेधन (समय-समय पर केंद्रीय सरकार द्वारा निर्दिष्ट ग्रिड के परिप्रेक्ष्य में)	8 से 10 पिटों/ ट्रेंचेस प्रति वर्ग कि.मी. । 200 मी. अथवा कम अंतराल पर देशज शैल की निरंतरता के परीक्षण के लिए बोर होल्स	ट्रेंचिंग प्रमुख्त: 5 मी. अंतराल पर 200 मी. अथवा कम अंतराल पर देशज शैल की निरंतरता के परीक्षण के लिए बोर होल्स	बोर होल की दूरी जी2 स्तर से कम रखा जाए ।	जी2 तथा जी1 स्तर पर जहां कहीं आवश्यक हो ग्रेडों और वसूली की प्रपुंज निर्धारण के साथ गवेषणात्मक खान ओपनिंग खुला मुहाना अथवा भूमिगत
IV. **फ्लोट/प्लेसर निक्षेप :** लौह, मैंगनीज अयस्क फ्लोट; प्लेसर टिन तथा गोल्ड निक्षेप; गारनेट, इलमेनाइट, रूटाइल, जिरकोन; हीरा, कोरन्डस, क्यानाइट, सिलिमेनाइट फ्लोटस ।	यदि आवश्यक हो तो स्काउट प्रवेधन (समय-समय पर केंद्रीय सरकार द्वारा निर्दिष्ट ग्रिड के परिप्रेक्ष्य में)	निक्षेप के ट्रेंड के साथ 400 मी. तथा 200 मी. से अधिक	निक्षेप के ट्रेंड के साथ 200 मी. तथा 100 मी. से अधिक	निक्षेप के ट्रेंड के साथ 100 मी. तथा 50 मी. से अधिक	ग्रिड में उथली निक्षेप पिटिंग के लिए उपयुक्त हो सकता है । सरित अवसाद अथवा प्लेसर अवसाद, प्रत्येक स्तर पर आवश्यकतानुसार । सांद्रण का प्रयोगशाला मापन पृथक्करण तथा परीक्षण तथा विश्लेषण ।

* यदि तटीय बालू, नदीय बालू आदि के साथ सहायक प्लेसर निक्षेप में पुन: प्राप्ति की सूचना मिलती है तो संसाधनों की आवधिक पुर्नमूल्यांकन करना आवश्यक होगा ।

भाग-IVक

खनिज संसाधन की रिपोर्टिंग करना

हवाई, भू-भौतिकी, भू-रासायनिक, भूवैज्ञानिक सर्वेक्षण एवं प्रौद्योगिकी अध्ययन के माध्यम से उत्पादित गवेषण नमूना संग्रह एवं जांच की सभी आंकड़ा को एकत्रित कर खनिज संसाधन के आकलन एवं रिपोर्टिंग के लिए भूवैज्ञानिक अध्ययन रिपोर्ट गवेषण के प्रत्येक चरण (जी1 से जी4 तक) के लिए किया जाए । अध्ययन में अन्य बातों के साथ-साथ निम्नलिखित विषय-वस्तु को शामिल किया जाना चाहिए ।

क्रं.सं.	विषय-वस्तु	स्पष्टीकरण
1.	स्वतनाम एवं स्वामित्व	- पूर्वेक्षक का ई-मेल आईडी, दूरभाष संख्या सहित नाम, पता । - पूर्वेक्षण की अवधि का पूर्ण विवरण/खनिज अधिकार, यदि कोई है । - गवेषण अभिकरण का पूर्ण विवरण, अर्हता, गवेषण से जुड़े हुए तकनीकी व्यक्तियों का अनुभव ।
2.	क्षेत्र के ब्यौरे	- गांव, जिला, राज्य - भारतीय टोपोशीट संख्या का सर्वेक्षण, सभी कोना विंदुओं के क्षेत्र का भू-जियो समन्वय । - भू-उपयोग, वन के प्रकार के साथ वन के अंतर्गत क्षेत्र सहित क्षेत्र का भूकर-मानचित्र का विस्तृत विवरण अन्वेषण के तहत खनिज ।
3.	अवसंरचना एवं पर्यावरण	- स्थानीय अवसंरचना, जनसंख्या, ऐतिहासिक स्थलों, वनों, प्रण्य-स्थान, राष्ट्रीय उद्यान एवं क्षेत्र की पर्यावरण स्थिति ।
4.	पूर्व में किए गए गवेषण	- अन्य अभिकरण/पक्षों द्वारा किए गए पूर्व गवेषण का पूर्ण ब्यौरे । - अगर क्षेत्र मामले में पूर्व गवेषण क्षेत्र के अंतर्गत आता है तब इसे उचित पैमाने पर नक्शा में दर्शाया जाना चाहिए ।
5.	भूविज्ञान	- विस्तृत भूविज्ञान संरचनात्मक ढ़ांचा की रूप-रेखा दर्शाते हुए क्षेत्र की संक्षिप्त क्षेत्रीय भूविज्ञान । - अध्ययन क्षेत्र की निक्षेप की प्रकार, भूवैज्ञानिक गठन, नति पूर्व कार्यों, पृष्ठीय प्रगटीकरण के साथ-साथ अध्ययन क्षेत्र के आस-पास के क्षेत्रों में भी उल्लिखित कार्यों को करना यदि अध्ययन क्षेत्र पर इसके प्रभाव की संभावना की सूचना मिलती है । - भू-समन्वय को दर्शाने वाला मुख्य आस्मिक ईकाईयां, संरचना एवं विवर्तनिक लक्षणों के साथ उचित पैमाने की भूवैज्ञानिक मानचित्र, पृष्ठीय खनिजन की सीमा, संरचना, वेधन छिद्रों का स्थान, गर्त, खंदक एवं पुराने कार्य आदि । - आस्मिक इकाईयों एवं खनिजन की उर्द्धव प्रक्षेपण को दर्शानेवाला उपयुक्त अंतराल पर अनुप्रस्थ काट । - लंबाई में दर्शाई गई (नतिलंब या अन्य प्रकार से) खनिजन की सीमा एवं विभिन्नता, चौड़ाई एवं पृष्ठ के नीचे से खनिज संसाधन के ऊपरी एवं निम्न सीमा तक गहराई ।
6.	हवाई/भौम/भूभौतकीय/ भू-रासायनिक आंकड़ा	हवाई, भू-भौतिकीय, भूरासायनिक परिणाम का विस्तृत विवरण यदि इस प्रकार के कोई कार्य किए गए हैं और उनके परिणाम ।
7.	प्रौद्योगिकी अन्वेषण	- प्रौद्योगिकी अन्वेषण (गर्त्तन, खंदन, वेधन आदि) का विस्तृत विवरण । - गवेषण परिणाम की रिपोर्टिंग के लिए डाटा स्पेसिंग : कि डाटा स्पेसिंग एवं बंटन अनुसूची के भाग-1 एवं भाग-2 पर आधारित हैं और क्या यह खनिज संसाधन आकलन प्रक्रिया एवं वर्गीकरण के लिए भूवैज्ञानिक अंश एवं श्रेणी निरंतरता स्थापित करने के लिए पर्याप्त हैं ।
8.	आंकड़ा बिंदु के स्थान	- वेधन छिद्रों अर्थात् (कॉलर एवं डाउन-होल सर्वे) खंदक, खान कार्यों एवं खनिज संसाधन आकलन में प्रयुक्त अन्य स्थानों का पता लगाने के लिए प्रयुक्त सर्वेक्षण की सटिकता एवं गुण । - स्थलाकृति नियंत्रण के गुण और पर्याप्तता ।
9.	नमूना प्राप्त करने की तकनीकी	- नमूना प्राप्त करने की प्रकृति एवं कोटि (उदाहरणार्थ- कट-चैनलस, रैंडम चिप्स) एवं निरूपक रूप में नमूना सुनिश्चित करने के लिए किए गए उपाय ।
10.	वेधन तकनीकी एवं	- वेधन के प्रकार (उहाहरणार्थ – कोर, रिवर्स, सर्कुलेसन, ओपन-होल हैमर, रोटरी, एअर-ब्लास्ट, आगर,

	वेधन नमूना	बंका, सोनिक इत्यादि) एवं विस्तृत विवरण (उहाहरणार्थ कोर डायमीटर, ट्रिपल या स्टैंडर्ड टयूब, कॉलर आरएल, एजिमुथ, इनक्लिनेसन, वेधन छिद्रों के कार्डिनेट इत्यादि) । - कोर एवं चिप नमूना को समुचित ढंग से अभिलेखित एवं परिणाम को मूल्यांकित किया गया है । - अधिकतम नमूना प्राप्त करने एवं निरूपक प्रकृति के नमूनों को सुनिश्चित करने के लिए उपाय किए गए हैं । - कि नमूना प्राप्ति एवं ग्रेड में एक संबंध बनता हैं एवं सूक्ष्म/स्थूल पदार्थ की क्षति/वृद्धि के कारण नमूना नति पाए गए हैं । संलेखन : कि कोर एवं चिप नमूनों को समुचित खनिज संसाधन आकलन, खनन अध्ययन और धातुकर्मीय अध्ययन के सहयोग के लिए विस्तृत स्तर पर संलेखित किया गया है ।
11.	अव-नमूना प्रविधि एवं नमूना की तैयारी	- कोर नमूना की स्थिति में काटा या चीरा गया है और एक चौथाई, आधा या पूरा कोर लिया गया है । - यदि कोर नहीं है तो राइफल्ड, टयूब सैम्पलड, रोटरी स्पलिट और नमूना आर्द्र है या सूखा । - प्रकृति, गुण एवं नमूना तैयार करने की प्रविधि की उपयुक्तता सभी प्रकार के नमूनों के लिए । - सभी अव-नमूना चरण से नमूना के अधिकतम निरूपकतता तक के लिए ग्रहित गुण नियंत्रण प्रक्रियाएं। - उपाय सुनिश्चित किए गए हैं कि नमूना एकत्रित एवं स्वस्थान पदार्थ के निरूपक हैं । - कि नमूना का आकार तैयार किए जा रहे नमूने, के कण के आकार के लिए उपयुक्त हैं ।
12.	आमापन आंकड़ा के क्वालिटी एवं प्रयोगशाला में जांच	- प्रयुक्त किए गए आमापन और प्रयोगशाला प्रक्रियाएं की प्रकृति, गुण एवं उपयुक्तता एवं प्रविधि को आंशिक या पूर्णरूपेण माना गया है । - ग्रहितगुण नियंत्रण प्रक्रिया की प्रकृति (उदाहरणार्थ – मानक, अपूर्ण, द्वितीयक, प्रयोगशाला से बाहर जांच) एवं सटीकता की स्वीकार्य स्तर (नति का न होना) तथा परिशुद्धता को स्थापित किया गया है । - सटीकता के स्वीकार्य स्तर तक मूल्यांकन के लिए विश्लेषित नमूनों के 10 प्रतिशत को एनएबीएल प्रत्याशित तृतीय पक्ष/या विज्ञान एवं प्रौद्यौगिकी विभाग (डीएसटी) बीआईएस से मान्यता प्राप्त प्रयोगशालाओं या सरकारी प्रयोगशालाओं में विश्लेषित किया जाए ।
13.	आर्द्रता	- कि टनेज को निर्जल आधार पर या प्राकृतिक आर्द्रता के साथ आकलित किया गया है एवं आर्द्रता की मात्रा के निर्धारण की विधि ।
14.	प्रपुंज घनत्व	कि माना या अवधारित है । यदि माना गया है तो पूर्वानुमान का आधार । यदि निर्धारित किया गया है तो उसके लिए प्रयुक्त विधि, नम या निर्जल, मापनकी आवृति, प्रकृति, आकार एवं नमूना की निरूपकतता ।
15.	संसाधना/प्राक्कलन तकनीकी	- खनिजन की निरंतरता के निर्धारण के लिए पर्याप्त आंकड़ा घनत्व पर विचार-विमर्श तथा प्रयुक्त आकलन प्रक्रिया के लिए पर्याप्त संश्लेषित आंकड़ा आधार । - लागू किए गए आकलन तकनीकी की प्रकृति एवं उपयुक्तता तथा अत्यंत ग्रेड मान, डोमेनिंग, इंटरपोलेसन पारामीटर एवं आंकड़ा बिंदु से एक्सट्रापोलेसन की अधिकतम दूरी । - खनिज संसाधनों को विभिन्न श्रेणियों में वर्गीकरण का आधार । - गौण उत्पाद की प्राप्ति के संबंध में किए गए पूर्वानुमान । - टनेज एवं ग्रेड के आकलन के लिए (सेक्सन, पॉलीगॉन, इनवर्स डिस्टेंस, जियोस्टैटिकल या अन्य विधि) प्रयुक्त विधि का विस्तृत विवरण और किए गए पूर्वानुमान । - संसाधन आकलन के नियंत्रण के लिए भूवैज्ञानिक निर्वचन का विस्तृत विवरण । - उपयोग या उपभोग में न लाए गए ग्रेड कटिंग या कैपिंग के लिए आधार पर विचार-विमर्श । - यदि संगणक विधि को चुना गया है तो कार्यक्रम एवं प्रयुक्त पैरामीटर का वर्णन । - जियो-स्टैटिकल पद्धति में अत्यंत बदलाव होता है इसलिए विस्तृत रूप से इसका विवरण दिया जाना चाहिए । चयनित विधि औचित्यपूर्ण होना चाहिए । वेरियोग्राम एवं भूवैज्ञानिक निर्वचन के साथ इसकी अनुकूलता सहित जियो-स्टैटिकल पारामीटर पर विचार-विमर्श किया जाना चाहिए । सदृश निक्षेप के लिए प्रयुक्त किए गए जियो-स्टैटिक्स में प्राप्त अनुभव ध्यान में लाया जाना चाहिए । - आंकड़ा सत्यापन और/या प्रयुक्त मान्य प्रक्रिया ।
16.	आगे का कार्य	- योजनाबद्ध अग्रतर कार्य की प्रकृति एवं पैमाना (उदाहरणार्थ – पार्श्व विस्तार या गहराई विस्तार या बड़े पैमाने पर वेधन के लिए जांच) ।
17.	रिपोर्ट के लिए परिशिष्ट/अनुलग्नक	रिपोर्ट में आकलन के समर्थन में नक्शों, काटों, संलेखों, विश्लेषित प्रतिवेदन, फोटोग्राफ सहित सभी संबंधित आंकड़ा शामिल होंगे ।
18.	कोई अन्य सूचना	कोई अन्य सूचना, जैसा उपलब्ध होगा या यथा विहित किसी प्राधिकारी द्वारा अपेक्षित हो सके ।

भाग IV ख

हीरे अथवा अन्य रत्न पत्थरों का प्रक्कलन और रिपोर्टिंग करना

भाग IV क में सूचीबद्ध मानदण्ड इस समूह के लिए भी लागू होते है; कनाडियन इन्सटीटयूट ऑफ माइनिंग, मैटरयुर्जी एंड पैट्रोलियम द्वारा स्थापित की गई हीरा गवेषण सर्वोच्च व्यवहार समिति द्वारा जारी "हीरा गवेषण परिणामों की रिपोर्टिंग करने के मार्गदर्शक सिद्धांत" में अतिरिक्त मार्गदर्शक सिद्धांत उपलब्ध है।

1	उपदर्शक खनिज	- रासायनिक/भौतिकी विशिष्ट गार्ने चूना पत्थर, क्रोम स्पाइनल और क्रोम डाइओसाइड जैसे सांकेतिक खनिजों की रिपोर्टे उचित योग्य प्रयोगशाला द्वारा तैयार की जानी चाहिए ।
2	हीरे के स्रोत	- हीरे के स्वरूप आकृति, आकार और रंग एवं हीरे के स्त्रोत की प्रकृति (प्राथमिक या गौण) का चट्टान के प्रकार और भूवैज्ञानिक पर्यावरण सहित ब्यौरे ।
3	नमूना संग्रहण	- नमूनों के प्रकार, चाहे दृश्यांश (ऑटक्रोप) गोलाश्म (बुल्डर्स), ड्रील कोर, संरक्षित परिसंचरण ड्रिल कटींग, ग्रेवल, स्ट्रीम तलछट या मिट्टी, और उद्देश्य जैसे- आयतन की प्रति यूनिट पत्थरों को स्थापित करने के लिए बड डायमीटर वेधन या पत्थर आकार वर्गीकरण को सुनिश्चित करने के लिए बल्क नमूने - नमूना आकार वर्गीकरण प्रतिनिधित्वता
4	नमूना व्यवहार	- सुविधाओं के प्रकार ट्रीटमेंट दरें और प्रत्यायन - आकार रूपांतरण के नमूने, तलीय स्क्रीन आकार शीर्ष स्क्रीन आकार और पुन: संदलित - प्रक्रियाएं (डेंस मीडिया पृथक्करण, ग्रीस एक्सरे, श्रेणीबद्ध करना आदि) - प्रक्रिया दक्षता टेलिंग ऑडिटिंग और ग्रेनुलोमेंटरी - प्रयोगशाला उपयोग, माइक्रो डायमंड और प्रत्यापन के लिए प्रक्रिया के प्रकार
5	कैरेट	एक ग्राम का पांचवा भाग (0.2) (यद्यपि मैट्रिक कैरेट या एमसी के रूप में परिभाषित ।
6	नमूना ग्रेड	- इस भाग में नमूना ग्रेड का व्यापक क्षेत्र, अथवा आयतन के प्रति यूनिटों कैरटों के संदर्भ में उपयोग किया जाता है । - विनिर्दिष्ट कम कट-ऑफ छलनी (सीव) आकार से अधिक नमूना ग्रेड के बारे में प्रति शुष्क (ड्राई) मीट्रिक टन कैरेटों के रूप में और/अथवा प्रति 100 ड्राई मीट्रिक टन कैरेटों के रूप में सूचित करना चाहिए । एलुवियल भंडारों के लिए, प्रति वर्ग मीटर कैरेटों में अथवा प्रति क्यूबिक मीटर कैरेटों में कोट किए (बताए) नमूना ग्रेड स्वीकार्य होते हैं, यदि उनके साथ गणना करने हेतु वजन करने का आयत संलग्न हो । - आयतन और सघनता का आकलन करने की सामान्य मांगों के अलावा नमूना ग्रेड (कैरेट प्रति टन) प्राप्त करने के लिए पत्थर की फ्रीक्वेंसी (पत्थर प्रति क्यूबिक मीटर अथवा टन) को पत्थर के आकार (कैरेट प्रति पत्थर) के साथ सम्बद्ध करने की जरूरत है ।
7	प्रपुंज गवेषण परिणामों की रिपोर्टिंग	- सीव आकार प्रति फेसिस के मानक श्रेणी का उपयोग करते हुए सीव डाटा के पूर्ण सेट । नमूना परिणाम, फेसीस प्रति ग्लोबल सेंपल ग्रेड । स्पेटियल स्ट्रकचर ऐनाल्युसिस और ग्रेड वर्गीकरण । पत्थर आकार और संख्या वर्गीकरण सैम्पल हैड फिड और टेलिंग पार्टिकल ग्रेनुलोमेटरी - नमूना सघनता का अवधारण - सांद्र प्रतिशत और प्रति छोटा नमूना - स्क्रीन आकृति तलछट वेधन में बदलाव के साथ नमूना ग्रेड - नमूना संयंत्र निष्पादन तथा वाणिज्यिक पैमाने पर निष्पादन के लिए आकार वर्गीकरण करने के लिए किए गए समायोजन - यदि उपयुक्त या नियोजित, भूसांख्यिक तकनीकों को पत्थर आकार प्रतिमान, वर्गीकरण या गवेषित हीरा नमूनों के आकार वर्गीकरण या गवेषित हीरा नमूनों के आकार वर्गीकरण की आवृति - हीरों का भार रिपोर्ट में छोड़ दिया जायेगा जब हीरों को व्यापार के प्रयोजन से बहुत छोटा माना जायेगा । इस न्यूनतम कट ऑफ साइज का उल्लेख किया जाना चाहिए ।
8	खनिज संसाधनों और अयस्क भंडारों की रिपोर्टिंग हेतु ग्रेड का अनुमान लगाना	- ग्रेड का अनुमान लगाने के लिए डिजाइन किए गए खनिजों की ड्रिलिंग और नमूना करने के नमूना प्रकार एवं स्थानीय व्यवस्था का विवरण - नमूना संदलन (क्रश) आकार और वाणिज्यिक ट्रीटमेंट संयंत्र में उस निष्पाद्य के साथ इसका संबंध । - विनिर्दिष्ट और सूचित किए गए कम कट-ऑफ सीव आकार से बड़े हीरों की कुल संख्या - विनिर्दिष्ट और सूचित किए गए कम कट-आफ सीव आकार से बड़े हीरों का कुल वजन - विनिर्दिष्ट कम कट-ऑफ सीव आकार से अधिक नमूना ग्रेड

9	मूल्य का अनुमान लगाना	- पूर्णत: विमुक्त (लिबरेशन) ऐसी पद्धति का उपयोग करते हुए संसाधित हीरों के नमूनों के मूल्यों के बारे में सूचित नहीं करना चाहिए, जिसका प्रसंस्करण गवेषण नमूनों के लिए आमतौर पर उपयोग किया जाता है। - जिस सीमा तक ऐसी सूचना को वाणिज्यिक दृष्टि से संवेदनशील नहीं माना जाता है, उस सीमा तक निम्नलिखित सूचना जनता को देनी चाहिए • उपयुक्त स्क्रीन आकार प्रति फेस अथवा गहरे हीरों की परिमाण। • कीमती पार्सल का ब्यौरा • कम आकारन कट-ऑफ प्रति फेस अथवा गहरे पत्थरों, करेटों की संख्या • चुनिन्दा निचले कट-ऑफ पर औसतन प्रति डालर कैरेट और डालर कैरेट मूल्य के बारे में अमरीकी डालर में सूचित करना चाहिए। प्रति कैरेट मूल्य का परियोजना मूल्य को दर्शाने में विवेचनात्मक महत्व होता है। • मूल्य का आधार (उदाहरण के लिए डीलर का क्रय मूल्य और डीलर का विक्रय मूल्य आदि)। • हीरे की टूट-फूट का आकलन करना।
10	वर्गीकरण	- आयतन और सघनता का आकलन करने की सामान्य मांगों के अलावा नमूना ग्रेड (कैरेट प्रति टन) प्राप्त करने के लिए पत्थर की फ्रीक्वेंसी (पत्थर प्रति क्यूबिक मीटर अथवा टन) को पत्थर के आकार (कैरेट प्रति पत्थर) के साथ सम्बद्ध करने की जरूरत है। इन अनुमानों में अनिश्चितता के घटक के बारे में विचार किया जाना चाहिए और वर्गीकरण तदनुसार किया जाना चाहिए।

भाग-5

साध्यता पूर्व रिपोर्ट की विषय-वस्तु

भाग-4 के अनुसार तैयार भूवैज्ञानिक रिपोर्ट पर आधारित खनिज भंडार के प्राक्कलन और रिपोर्टिंग के लिए साध्यता पूर्व रिपोर्ट की विषय-वस्तु।

भूवैज्ञानिक अध्ययन रिपोर्ट साध्यता पूर्व रिपोर्ट के भाग के रूप में भी होगी।

क्रं. सं.	विषय-वस्तु	स्पष्टीकरण
1.	खनिज भंडार में परिवर्तन के लिए खनिज संसाधन प्राक्कलन	- खनिज भंडार में बदलने के लिए खनिज संसाधन प्राक्कलन के विवरण का आधार के रूप में उपयोग। - स्पष्ट विवरण कि क्या संसूचित खनिज संसाधन, खनिज भंडार से अतिरिक्त अथवा उसके सहित है। - खनिज संसाधनों को खनिज भंडार में परिवर्तित करने के लिए किए गए अध्ययन का प्रकार और स्तर अर्थात् साध्यता पूर्व/साध्यता स्तर।
2.	कट-ऑफ मानदंड	- अपनाया गया कट-ऑफ ग्रेड (ग्रेडों) अथवा लागू किए गए गुणवत्ता मानदंड का आधार, जिसमें समतुल्य धातु सूत्र और निर्धारित ब्रैशोल्ड मूल्य का आधार, यदि उपयुक्त हो, शामिल है।
3.	खनन घटक अथवा अनुमान	- खनिज संसाधन को खनिज भंडार में बदलने के लिए उपयोग की गई विधि और अनुमान (अर्थात या तो इष्टतम द्वारा समुचित घटकों को लागू करके अथवा खनन के लिए संकल्पनात्मक योजना द्वारा समर्थित प्रारंभिक अथवा विस्तृत डिजाइन द्वारा)। - प्रत्याशित अयस्क का ओबी अनुपात, खान से प्राप्तियां, डाईल्यूशन आदि, खुली खान और भूमिगत कार्य प्रचालन दोनों के लिए। - चयनित खनन विधि (विधियां) की प्रकृति और उपयुक्तता का विकल्प, चयनित खनन ईकाई का आकार (लंबाई, चौडाई और ऊंचाई) और प्री-स्ट्रिप, एक्सेस आदि जैसे संबंधित डिजाईन मुद्दों सहित अन्य खनन मानदंड। - भू-तकनीकीय मानदंड (जैसे पिट स्लोप, स्टॉप साईज आदि), ग्रेड नियंत्रण और उत्पादन पूर्व वेधन के बारे में लगाए गए अनुमान। - लगाए गए मुख्य अनुमान और पिट-इष्टतमता के लिए उपयोग किया गया खनिज संसाधन मॉडल (यदि उपयुक्त हो)। - उपयोग किए गए खनन डाईल्यूशन घटक, खनन प्राप्ति घटक और न्यूनतम खनन चौडाई।

		- चयनित खनन विधियों के लिए अपेक्षित अवसंरचना, जहां उपलब्ध हो, निष्पादन मानदंडों की ऐतिहासिक विश्वसनीयता ।
4.	धातु कर्मीय घटक अथवा अनुमान	- प्रस्तावित धातु कर्मीय प्रक्रिया और उस प्रक्रिया की निक्षेप प्रकार की दृष्टि से उपयुक्तता । - किए गए धातु कर्मीय परीक्षण कार्य की प्रकृति, मात्रा और प्रतिनिधित्वता और लागू किए गए धातु कर्मीय प्राप्तियां । - क्षतिकर तत्वों के लिए लगाया गया कोई अनुमान अथवा अनुज्ञा । - किसी भी प्रपुंज नमूने की विद्यमानता अथवा प्रायोगिक पैमाने परीक्षण कार्य और ऐसे नमूने कितने डिग्री तक संपूर्ण अयस्क निकाय के प्रतिनिधित्व के रूप में है । - खनिज संसाधन के लिए संसूचित टनेज और ग्रेड में यह स्पष्ट उललेख होना चाहिए कि क्या यह संयंत्र की सामग्री के संबंध में है अथवा प्राप्ति के संबंध में । मौजूदा संयंत्र और उपकरण, प्रतिस्थापन और बचाव मूल्य के संकेत सहित, पर टिप्पणी ।
5.	लागत और राजस्व कारक	- परिलक्षित पूंजी और प्रचालन लागतों के बारे में इनका स्रोत, अथवा लगाया गया अनुमान । - हैडग्रेड, धातु अथवा वस्तु कीमत (कीमतें) विनिमय दरें, परिवहन और शोधन प्रभार, जुर्माना आदि सहित राजस्व के बारे में लगाए गए अनुमान । - देय रॉयल्टियों के लिए दी गई अनुमतियां, सरकार और प्राइवेट दोनों । - उल्लिखित अवधि के लिए बुनियादी नकदी प्रापण सूचना । - वार्षिक नियोजित उत्पादन, निक्षेप की एनपीवी और आईआरआर, वार्षिक परिलक्षित उत्पादन के आधार पर निक्षेप का तात्विक मूल्य ।
6.	बाज़ार आंकलन	- किसी विशिष्ट वस्तु के लिए मांग, आपूर्ति और स्टॉक स्थिति, खपत प्रवृति और भविष्य में आपूर्ति और मांग को प्रभावित करने वाले संभावित घटक । - ग्राहक और प्रतिस्पर्धी विश्लेषण, उत्पाद के लिए संभावित बाज़ार अवसरों के पहचान सहित । - कीमत और मात्रा का पूर्वानुमान और इन पूर्वानुमानों के लिए आधार । - औद्योगिक खनिजों के लिए ग्राहक विशिष्टीकरण, परीक्षण और आपूर्ति ठेके से पूर्व स्वीकृति अपेक्षाएं ।
7.	अन्य आशोधनकारी घटक	- परियोजना की संभावित व्यवहार्यता पर प्राकृतिक जोखिम, अवसंरचना, वैधानिक, विपणन, सामाजिक अथवा सरकारी घटकों, यदि कोई हो, और/अथवा खनिज भंडारों के आंकलन और वर्गीकरण पर प्रभाव । - परियोजना की व्यवहार्यता के लिए महत्वपूर्ण स्वामित्व की स्थिति और अनुमोदन, जैसे कि खनन पट्टा, निस्सरण परमिट, सरकारी और वैधानिक अनुमोदन । - प्रत्याशित दायित्वों का पर्यावरर्णीय विवरण, खनिज अधिकारों और स्वामित्वों की अवस्थिति योजनाएं ।
8.	वर्गीकरण	- खनिज भंडारों को अलग-अलग विश्वसनीय श्रेणियों में वर्गीकृत करने के लिए आधार । - प्रस्तावित प्रारंभिक खान डिजाईन/संकल्पनात्मक योजना में विचारित ग्रेड-वार खनन योग्य मात्राओं के अनुमान को इस शर्त के अधीन अंतिम रूप देना कि सभी आवश्यक अनुमोदनों/संविदाओं की पुष्टि कर ली गई है अथवा ऐसी यथोचित अपेक्षाएं है कि ऐसे सभी अनुमोदन/संविदाएं यथोचित समयावधि के भीतर और इस प्रमाणन के साथ की आर्थिक व्यवहार्यता अल्पकालिक प्रतिकूल बाज़ार दशाओं से प्रभावित नहीं होगी, और यह भी कि दीर्घावधि अनुमान अनुकूल होंगे, प्राप्त कर ली जाएगी ।

[फा. सं. 7/2/2015-एम. IV]

आर. श्रीधरन, अपर सचिव

MINISTRY OF MINES

NOTIFICATION

New Delhi, the 17th April, 2015

G.S.R. 304(E).—In exercise of the powers conferred by section 13 of the Mines and Minerals (Regulation and Development) Act, 1957 (67 of 1957), the Central Government hereby makes the following rules, namely:—

1. Short title and commencement:

(1) These rules may be called the Minerals (Evidence of Mineral Contents) Rules, 2015.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Application: These rules shall apply to all minerals except -

(i) petroleum and natural gas;

(ii) coal, lignite and sand for stowing;

(iii) minerals listed in Part B of the First Schedule to the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957); and

(iv) minor minerals.

3. Definitions and interpretation:

In these rules, unless the context otherwise requires, -

(a) "**Act**" means the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957);

(b) "**composite licence**" means a prospecting licence-cum-mining lease issued under sub-section (2) of section 10B or sub-section (3) of section 11of the Act;

(c) **'conforming'** means in a form as near thereto as circumstances of each case may require;

(d) "**evidence of mineral contents"** means the existence of mineral contents established as specified in rule 4, rule 5, or sub-rule (2) of rule 7, as the case may be;

(e) "**threshold value of minerals**" means the limits prescribed by the Indian Bureau of Mines from time to time based on the beneficiability and marketability of a mineral for a given region and given time, below which the material obtained after mining can be discarded as waste;

(f) "Schedule" means the Schedule annexed to these rules;

(g) the expressions Reconnaissance Survey (G4), Preliminary Exploration (G3), General Exploration (G2), Detailed Exploration (G1), Reconnaissance Mineral Resource (334), Inferred Mineral Resource (333), Indicated Mineral Resource (332), Measured Mineral Resource (331), Probable Mineral Reserve (121 and 122), Proved Mineral Reserve (111), Feasibility Mineral Resource (211), Pre-Feasibility Mineral Resource (221 and 222), Modifying Factors, Geological Study (F3), Pre-Feasibility Study (F2), Feasibility Study (F1), Intrinsically Economic (E3), Potentially Economic (E2) and Economic (E1) used in these rules shall have the meanings assigned to them in Part-I of the Schedule;

(h) all other words and expressions used in these rules, but not defined, shall have the same meaning as assigned to them in the Act or the rules made thereunder.

4. Determining existence of mineral contents under sub-clause (i) of clause (b) of sub-section (2) of section 10A of the Act:

(1) Where an application for grant of prospecting licence or mining lease to a holder of a reconnaissance permit or prospecting licence, as the case may be, has not been submitted before the 12th January, 2015, the holder of such permit or licence shall be deemed to have established the existence of mineral contents under sub-clause (i) of clause (b) of sub-section (2) of section 10A of the Act, if the holder has-

(a) In the case of grant of prospecting licence, -

(i) carried out Reconnaissance Survey (G4) to establish anomalous zones (areas) worthy of further exploration; and

(ii) prepared a geological study report conforming to Part IV of the Schedule and such geological study report has been submitted to the State Government;

(b) In the case of grant of mining lease, -

(i) carried out at least General Exploration (G2 level) over the area to establish Indicated Mineral Resource (332); and

(ii) prepared at least a Pre-Feasibility Study (F2) report to establish Probable Mineral Reserve (121 and 122) conforming to Part V of the Schedule, to plan mining operation for a period of five years from the date of commencement of the mining lease, and such report has been submitted to the State Government.

(2) Where an application for grant of prospecting licence or mining lease to a holder of a reconnaissance permit or prospecting licence, as the case may be, has been submitted before the 12th January, 2015, the holder of such permit or licence shall be deemed to have established the existence of mineral contents under sub-clause (i) of clause (b) of sub-section (2) of section 10A of the Act, if the holder has,—

(a) In the case of grant of prospecting licence,—

(i) carried out reconnaissance operations as per Scheme of Reconnaissance under Mineral Conservation and Development Rules, 1988; and

(ii) submitted report to the State Government, after completing reconnaissance operations, in conformity with such Scheme of Reconnaissance and satisfying the conditions laid down in the guidelines for processing Mineral Concession proposals issued by the Central Government in the Ministry of Mines dated 24th June, 2009 and 30th October, 2014;

(b) In the case of grant of mining lease, -

(i) carried out prospecting operations as per Scheme of Prospecting under Mineral Conservation and Development Rules, 1988; and

(ii) submitted report to the State Government, after completing prospecting operations, in conformity with such Scheme of Prospecting and satisfying the conditions laid down in the guidelines for processing Mineral Concession proposals issued by the Central Government in the Ministry of Mines dated 24th June, 2009 and 30th October, 2014.

5. Existence of mineral contents for auction of mining lease under sub-section (3) of section 10B and sub-section (2) of section 11 of the Act. -

An area shall be considered to be having existence of mineral contents under sub-section (3) of section 10B or sub-section (2) of section 11 of the Act, if, in respect of such area, -

(a) at least General Exploration (G2) has been completed to establish Indicated Mineral Resource (332); and

(b) a geological study report has been prepared conforming to Part IV of the Schedule.

6. Grant of a mining lease through auction in respect of mining leases after expiry of the mining lease period and of leases which have been surrendered, determined or lapsed. -

Before notifying any area for grant of mining lease through auction, in respect of –

(a) mining lease after expiry of the lease period; and

(b) mining lease which has been surrendered, determined or lapsed,

a detailed reassessment of resources, in the area proposed to be auctioned shall be carried out in accordance with rule 5.

7. Existence of mineral contents for grant of composite licence. -

(1) An area may be notified for auction to grant a composite licence under sub-section (2) of section 10B or sub-section (3) of section 11 of the Act, if, in respect of such area, -

(a) Preliminary Exploration (G3) has been completed to establish Inferred Mineral Resource (333); and

(b) a geological study report has been prepared conforming to Part-IVA and Part IV-B of the Schedule.

(2) An area shall be considered to be having existence of mineral contents under sub-section (10) of section 11 of the Act, if, in respect of such area, -

(a) at least General Exploration (G2) has been completed to establish Indicated Mineral Resource (332); and

(b) at least a Pre-Feasibility Study (F2) report has been prepared to establish Probable Mineral Reserve (121 and 122) conforming to Part V of the Schedule, to plan mining operation for a period of five years from the date of commencement of mining lease and such report has been submitted to the State Government.

8. Relaxation. -

Depending upon the local geological setup, mode of occurrence and nature of mineralisation, the State Government may, with the previous approval of the Central Government, relax the exploration norms as specified in Part III of the Schedule, in whole or in part for any mineral or any area.

SCHEDULE

[See rule 3(f), 3(g), 4(1)(a)(ii), 4(1)(b)(ii), 5(b), 7(1)(b), 7(2)(b)]

The terms used, pertaining to levels of exploration and the category of resources and reserves achieved through various levels of exploration have been defined in Part-I of the Schedule. The parameters for establishing the existence of mineral content in an area in terms of quantity and grade have been specified in Part-II, Part-III, Part-IVA, Part-IVB, and Part-V of the Schedule.

Part – I

Definitions

1. The definitions and codes used in Part I of the schedule are drawn mainly from the United Nations Framework Classification (UNFC) version-1997 and Committee for Mineral Reserves International Reporting Standards (CRIRSCO) Template. To the extent found necessary, the definitions given here may be supplemented by reference to UNFC or CRIRSCO.

2. The exploration for any mineral deposit involves four stages namely, Reconnaissance Survey (G4), Preliminary Exploration (G3), General Exploration (G2) and Detailed Exploration (G1). These stages of exploration lead to four resource categories namely Reconnaissance Mineral Resource, Inferred Mineral Resource, Indicated Mineral Resource and Measured Mineral Resource respectively reflecting the degree of geological assurance.

3. Reconnaissance Survey (G4) identifies areas of enhanced mineral potential based primarily on results of regional geological studies, regional geological mapping, airborne and indirect methods, preliminary field inspection, as well as geological inference and extrapolation. The objective is to identify mineralised areas worthy of further investigation towards deposit identification. Estimates of quantities should only be made if sufficient data are available and when an analogy with known deposits of similar geological character is possible, and then only within an order of magnitude.

4. Preliminary Exploration (G3) is the systematic process of searching for a mineral deposit by narrowing down areas of promising enhanced mineral potential. The methods utilised are outcrop identification, geological mapping, and indirect methods such as geophysical and geochemical studies. Limited wide spaced pitting/ trenching/drilling with sampling is made to identify a deposit which will be the target for further exploration. Estimates of quantities are inferred, based on interpretation of geological, geophysical, geochemical and geo-technical investigation results.

5. General Exploration (G2) involves the initial delineation of an identified deposit. Methods used include surface mapping, pitting/ trenching/drilling, followed by sampling for evaluation of mineral quantity and quality (including mineralogical tests on laboratory scale if required), and limited interpolation based on indirect methods of investigation. The objective is to establish the main geological features of a deposit, giving a reasonable indication of continuity and providing an initial estimate of size, shape, structure and grade.

6. Detailed Exploration (G1) involves the detailed three-dimensional delineation of a known deposit achieved through sampling, such as from outcrops, pits, trenches, boreholes, shafts and tunnels etc. Sampling grids are closely spaced such that size, shape, structure, grade, and other relevant characteristics of the deposit are established with a high degree of accuracy. Processing tests involving bulk sampling may be required.

7. Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are subdivided, in order of increasing geological confidence into Reconnaissance, Inferred, Indicated and Measured resource categories.

8. Reconnaissance Mineral Resource (334) are estimates based primarily on indirect evidence and includes data and information generated through a reconnaissance survey. The quantity of data available is generally not sufficient to allow any reasonable estimates of Mineral Resource.

9. **Inferred Mineral Resource (333)** is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling achieved through a stage of preliminary exploration. An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and shall not be converted to a Mineral Reserve. The majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

10. **Indicated Mineral Resource (332)** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

11. **Measured Mineral Resource (331)** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Mineral Reserve or to a Probable Mineral Reserve.

12. **Mineral Reserve** is the economically mineable part of a Measured and Indicated Mineral Resource.

It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors.

Probable Mineral Reserve (121 and 122) is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource.

The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.

Proved Mineral Reserve (111) is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the Modifying Factors.

Feasibility Mineral Resource (211) A 'Feasibility Mineral Resource' is that part of Measured Mineral Resource which is not economically mineable as , defined by studies at feasibility level. This material

is identified as being possibly economically viable subject to changes in technological, economic, and environmental and/or other relevant conditions.

Pre-Feasibility Mineral Resource (221 and 222) A 'Prefeasibility Mineral Resource' is that part of an Indicated, and in some circumstances, Measured Mineral Resource, that has been found, by studies at Pre-feasibility level, as not economically viable. This material is identified as being possibly economically viable subject to changes in technological, economic, and environmental and/or other relevant conditions**.**

13. **A Geological Study (F3)** is an initial evaluation of Economic Viability. This is obtained by applying meaningful cut off values for grade, thickness, depth, and costs estimated from comparable mining operations. The purpose of the Geological Study is to identify mineralization, to establish continuity, quantity, and quality of a mineral deposit, and thereby define an investment opportunity.

Economic viability categories, however, cannot in general be defined from the Geological Study because of the lack of details necessary for an Economic Viability evaluation. The resource quantities estimated may indicate that the deposit is of intrinsic economic interest, i.e. in the range of economic to potentially economic.

14. **Modifying Factors** are those factors which are taken into consideration while conducting a Pre-feasibility or feasibility study so as to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, end use, cut off grade, threshold value, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

15. **A Pre-Feasibility Study (F2)** is a study of a range of options for the economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.

16. **A Feasibility Study (F1)** is a detailed comprehensive economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The confidence level of the study will be higher than that of a Pre-Feasibility Study.

17. **Intrinsically Economic (E3)** Quantities, reported in tonnes or volume with grade/quality, estimated by means of a Geological Study to be of intrinsic economic interest. Since the Geological Study includes only a preliminary evaluation of Economic Viability, no distinction can be made between economic and potentially economic. These Resources are therefore said to lie in the range of economic to potentially economic.

18. **Potentially Economic (E2)** Quantities, reported in tonnes/volume with grade/quality, demonstrated by means of a Prefeasibility Study or Feasibility Study in order of increasing accuracy, not justifying extraction under the technological economic, environmental and other relevant conditions, realistically assumed at the time of the determination, but possibly so in the future.

19. **Economic (E1)** Quantities, reported in tonnes or volume with grade/quality, demonstrated by means of a Prefeasibility Study or Feasibility Study in order of increasing accuracy, that justify extraction under the technological, economic, environmental and other relevant conditions, realistically assumed at the time of the determination.

Part-II

Geological Parameters for exploration

1	**Aerial reconnaissance:** Satellite imagery/ remote sensing/ airborne geophysical survey etc. using appropriate technology (applicable mainly for reconnaissance exploration (G4) stage).
2	**Topographic & Geological survey (Mapping):** On 1 : 50,000 or smaller scale for reconnaissance (G4) stage; on 1:25000 to 1 : 10,000 or larger scale for preliminary exploration (G3) stage; 1:4000/1 : 5,000 or larger scale for general exploration(G2) stage; on 1 : 2,000 or larger scale for detailed exploration (G1) stage.

3	**Ground Geophysical and Geochemical survey:** Geophysical and geochemical survey using appropriate techniques as may be necessary.
4	**Technological :** Exploration and sampling using appropriate techniques from locations such as outcrops, trenches, pits, old workings and drill holes. The sampling locations are spaced suitably (in a grid pattern to the extent possible and may be modified depending on structural complexity) for establishing existence of ore body and its lateral and vertical continuity. Part III of the schedule may be referred for further details. For General (G2) and detailed (G1) stages of exploration the depth continuity of mineralisation may be considered limited to the depth upto which direct evidence of mineralization is established. The lateral extension to be considered for resource assessment shall depend on geological considerations supplemented by geological continuity by mapping or by other means and in any case shall not be more than 50% of the grid spacing of the probe points. Assessment based on selected information such as isolated assays, isolated drill holes, assays of panned concentrates etc. is not recommended.
5	**Sampling & sub sampling:** (a) Random grab/chip/channel sampling from surface exposure/escarpments/ nallah cuttings/ pit/channel etc. for reconnaissance stage. (b) Systematic sampling from pits/trenches/outcrops/workings etc. spaced closely enough to confirm geological and grade continuity for other stages of geological assessment. (c) Geological logging and sampling of drill core/chip samples at regular interval, preferably meter wise or less for the mineralized portions. (d) The drill technique to be deployed shall depend on the rock type to be penetrated and with an aim to achieve maximum sample/core recovery. (e) The exploration samples including surface samples, drill core/ chip samples shall be preserved, for future use.
6	**Assay data & Laboratory tests:** Analysis of all samples generated for major radicals appropriate to the mineral under investigation. Analysis of byproducts such as Ga in bauxite, Ni, PGE in chromite, Au in iron ore, Ag in lead and zinc, Au in copper ore etc. and other deleterious elements wherever necessary.
7	**Petrographic & Mineragraphic studies:** Petrographic analysis of mineralized portions to ascertain the rock types and mineral assemblages including grain size, texture, gaunge and its liberation characteristics etc. if considered necessary.
8	**Bulk density study**: The bulk density must be measured by methods that adequately account for incipient void spaces (vugs, porosity, etc.)in mineral /ore body
9	**Bulk Sampling for Beneficiation studies:** Bulk sampling if necessary for testing processing technology.
10	**Environmental setting:** Details about local infrastructure, host population, historical sites, forests, sanctuaries, national park and base line information on environmental setting of the area to be collected.
11	**Any other relevant data:** Groundwater, geotechnical and rock characteristics etc. that may be relevant.

Part -III

Exploration Norms for different types of deposits

(The grid spacing given below are indicative. A closer spacing may be necessary depending upon the geological complexity of the deposit)

Type of deposit & principal minerals	G4 stage	G3 stage	G2 stage	G1 stage	Remarks
I. Bedded Stratiform and tabular deposits of regular and irregular habit: Iron ore, manganese ore, bauxite, limestone, chromite/potash and salt beds etc.	Scout drilling, if necessary (In line with grid specified by the Central Government from time to time)	For limestone, bauxite, potash and salt beds the grid spacing of bore holes may be 800m or closer for deposits of regular habit and 400m or closer for irregular habit; for others	For limestone, bauxite, potash and salt beds the grid spacing of bore holes may be 400m or closer for regular habit and 200m or	For limestone, bauxite, potash and salt beds the grid spacing of bore holes may be 200m or closer for regular habit and 100m or closer for irregular habit; for others the	For shallow surficial deposits continuing to a depth of up to 6m from surface pitting in a grid pattern as per the grid spacing for

		the spacing may be 400m or closer for regular and 200m or closer for irregular habit.	closer for irregular habit; for others the spacing may be 200m or closer for regular habit and 100m or closer for irregular habit.	spacing may be 100m or closer for regular habit and 50m or closer for irregular habit.	various levels of prospecting may suffice. For deposits continuing further in depth drilling is recommended.
II. Lenticular bodies of all dimensions including bodies occurring en echelon, silicified linear zones of composite veins. Lenses, pockets, stock-works; irregular shaped modest to small sized bodies Iron and manganese ore bodies in lateritoid terrain, pockety bauxite and nickel-cobalt laterites, base metal sulphides of Cu-Pb-Zn-Sb-Hg, podiform chromite, auriferous quartz reefs, PGM, graphite lenses, molybdenum, tin bodies, pyrite, skarn bodies of scheelite, wollastonite, fluorite etc., vermiculite, magnesite, insitusilimanie and kyanite lenses etc.	Scout drilling, if necessary (In line with grid specified by the Central Government from time to time)	Bore-hole spacing along strike may be kept 200-100m or closer interval.	Bore-hole spacing along strike may be kept 100-50m or closer. In specific cases, depending on necessity, it may be brought down to 25m or closer, especially for precious metals.	Bore-hole spacing along strike may be kept 50-25m or closer interval	Exploratory mine openings- open pit or underground with bulk determination of grades wherever necessary at G2 and G1 stage.
III. Gem- stones and rare metal pegmatites, reefs and veins/pipes: Tin-tungsten-tantalum-niobium-molybdenum veins and pegmatites; Beryl, topaz, emerald deposits, diamond, wolframite deposits, pockets/lenses/veins of fluorite in carbonatites etc.	Scout drilling, if necessary (In line with grid specified by the Central Government from time to time.)	8 to 10 pits/trenches per sq.km. Bore-holes to test the continuity of host rock, at 200m or closer interval.	Trenching preferably at 50m. interval Bore-hole to test continuity of host rock at 100-50m or closer interval	Bore hole spacing may be kept closer to that of G2 stage	Exploratory mine openings- open pit or underground with bulk determination of grades & recovery wherever necessary at G2 and G1 stage.
IV. Float or Placer deposits: Iron, manganese ore float; Placer tin and gold deposit; garnet, ilmenite, rutile, zircon; diamond, corundum, kyanite, sillimanite floats .	Scout drilling, if necessary (In line with grid specified by the Central Government from time to time)	400m along trend of the deposit and 200m across	200m* along trend of the deposit and 100m across	100m* along the trend of the deposit and 50m across	For shallow deposits pitting in grid may suffice. Stream sediment or placer sediment sampling as

					may be required at each stage. Laboratory scale separation and testing and analysis of concentrates.

*In case replenishment is reported in placer deposit associated with beach sand, river sand etc., periodic reassessment of resources may be necessary.

Part IV-A

Reporting of Mineral Resources

A Geological Study Report for estimation and reporting of Mineral Resources integrating all data of exploration, sampling and testing generated through aerial, geophysical, geochemical, geological surveys and technological study may be undertaken for every stage of exploration i.e. from G4 to G1 for assessing the resources. The study should incorporate the following contents among other things.

Sl. No.	Contents	Explanation
1	Title & Ownership	-Name, address of the prospector including E-mail ID, telephone number. -Details of period of prospecting/mineral right if any. -Details of exploration agency, qualification, experience of associated technical persons engaged in exploration.
2	Details of the area	-Village, District, State - Survey of India Toposheet No., Geo-coordinates of the area of all corner points - cadaster details of the area with land use, area under forest with type of forest - mineral(s) under investigation
3	Infrastructure & Environment	-Local infrastructure, host population, historical sites, forests, sanctuaries, national park and environmental settings of the area.
4	Previous exploration	-Details of previous exploration carried out by other agencies/parties. - In case the area forms part of the area covered under earlier exploration then the same should be shown in a map with proper scale.
5	Geology	-Brief regional geology of the area outlining the broad geological, structural frame work. -Deposit type, geological setting and details of dip, strike, old workings, surface exposures etc. of the area under study also of adjoining nearby areas if the information is likely to have an impact on the area under study. -Reliable geological map of appropriate scale with geo-coordinates showing major lithological units, structural & tectonic features; extent of surface mineralisation, structure, location of boreholes, pits, trenches, old workings etc. - Cross sections at suitable intervals showing vertical projections of litho-units and mineralization. - The extent and variability of the mineralization expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.
6	Aerial/ground geophysical/ geochemical data	Details of aerial, geophysical & geochemical survey results taken up if any and their results.
7	Technological investigation	-Details of technological investigation (pitting/trenching/drilling etc.) -Data spacing for reporting of Exploration Results: Whether the data spacing and distribution is based on part I and II of the schedule and is sufficient to establish the

		degree of geological and grade continuity appropriate for the Mineral Resource estimation procedure(s) and classifications applied.
8	Location of data points.	-Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. - Quality and adequacy of topographic control.
9	Sampling Technique	Nature and quality of sampling (e.g. cut channels, random chips etc.) and measures taken to ensure sample representivity.
10	Drilling technique& drill sampling employed	- Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic etc.) and details (e.g. core diameter, triple or standard tube, collar R.L, azimuth, inclination, coordinates of bore holes etc.). -Whether core and chip sample recoveries have been properly recorded and results assessed. -Measures taken to maximise sample recovery and ensure representative nature of the samples. - Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. Logging: -Whether core and chip samples have been logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.
11	Sub-sampling techniques and sample preparation	-If core, whether cut or sawn and whether quarter, half or all core taken. -If non-core, whether riffled, tube sampled, rotary split etc. and whether sampled wet or dry. -For all sample types, the nature, quality and appropriateness of the sample preparation technique. -Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples. -Measures taken to ensure that the sampling is representative of the in situ material collected. -Whether sample sizes are appropriate to the grain size of the material being sampled.
12	Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established. Check analysis of atleast 10% of samples may be analyzed from third party NABL accredited/or department of science & technology (DST) / BIS recognized laboratories or government laboratories for assessing the acceptable levels of accuracy.
13	Moisture.	-Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.
14	Bulk Density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.
15	Resource estimation techniques	- Discussion on sufficient data density to assure continuity of mineralization and synthesis adequate data base for estimation procedure used. -The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, maximum distance of extrapolation from data points. -The basis for the classification of the Mineral Resources into varying confidence categories. -The assumptions made regarding recovery of byproducts. -Detailed description of the method used and the assumptions made to estimate tonnages and grades (section, polygon, inverse distance, geostatistical, or other method).

		-Description of how the geological interpretation was used to control the resource estimates. -Discussion of basis for using or not using grade cutting or capping. If a computer method was chosen, description of programmes and parameters used. -Geostatistical methods are extremely varied and should be described in detail. The method chosen should be justified. The geostatistical parameters, including the variogram, and their compatibility with the geological interpretation should be discussed. Experience gained in applying geostatistics to similar deposits should be taken into account. -Data verification and /or validation procedures used.
16	Further work	-The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large scale step-out drilling).
17	Annexures/ enclosures to the report	The report shall include all relevant data including maps, sections, logs, analysis reports, photographs etc. in support of the estimates made.
18	Any other information	Any other information as may be available or required by any authority as prescribed

Part IV-B

Estimation and Reporting of Diamonds and other Gemstones

Criteria listed in Part IVA also apply to this group; additional guidelines are available in the 'Guidelines for the Reporting of Diamond Exploration Results' issued by the Diamond Exploration Best Practices Committee established by the Canadian Institute of Mining, Metallurgy and Petroleum.

1	Indicator minerals	- Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.
2	Source of diamonds.	- Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment.
3	Sample collection.	- Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose, e.g. large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution. - Sample size, distribution and representativity.
4	Sample treatment.	-Type of facility, treatment rate, and accreditation. - Sample size reduction. Bottom screen size, top screen size and re-crush. - Processes (dense media separation, grease, X-ray, hand-sorting etc.). - Process efficiency, tailings auditing and granulometry. - Laboratory used, type of process for micro diamonds and accreditation.
5	Carat.	One fifth (0.2) of a gram (often defined as a metric carat or MC).
6	Sample grade.	- Sample grade in this section is used in the context of carats per units of mass, area or volume. - The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats per square metre or carats per cubic metre are acceptable if accompanied by a volume to weight basis for calculation. - In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive sample grade (carats per tonne).
7	Reporting of Bulk Exploration Results.	- Complete set of sieve data using a standard progression of sieve sizes per facies. sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry. - Sample density determination. - Per cent concentrate and undersize per sample.

		- Sample grade with change in bottom cut-off screen size. - Adjustments made to size distribution for sample plant performance and performance on a commercial scale. - If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples. - The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.
8	Grade estimation for reporting Mineral Resources and Ore Reserves.	- Description of the sample type and the spatial arrangement of drilling or sampling reporting Mineral designed for grade estimation. - The sample crush size and its relationship to that achievable in a commercial treatment plant. - Total number of diamonds greater than the specified and reported lower cut-off sieve size. - Total weight of diamonds greater than the specified and reported lower cut-off sieve size. - The sample grade above the specified lower cut-off sieve size.
9	Value estimation.	- Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples. - To the extent that such information is not deemed commercially sensitive, Public Reports should include: • Diamonds quantities by appropriate screen size per facies or depth. • *Details of parcel valued.* • *Number of stones, carats, lower size cut-off per facies or depth.* • The average $/carat and $/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value. • The basis for the price (e.g. dealer buying price, dealer selling price etc.). • An assessment of diamond breakage.
10	Classification.	- In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be considered, and classification developed accordingly.

Part-V

Contents of Prefeasibility Report

Contents of a Prefeasibility Report for Estimation and Reporting of Mineral Reserves based on a Geological Report prepared as per Part IV-A and Part IV-B. The Geological Study Report shall also form a part of the Prefeasibility Report.

Sl. No.	Contents	Explanation
1	Mineral Resource estimate for conversion to Mineral Reserve	- Description of Mineral Resource estimate used as a basis for the conversion to a Mineral reserve. - Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Mineral Reserves. -The type and level of study undertaken to enable Mineral Resources to be converted to Mineral Reserves i.e. Prefeasibility/Feasibility level.
2	Cut off Parameters	-The basis of the adopted cut-off grade(s) or quality parameters applied, including the basis, if appropriate, of equivalent metal formulae& the threshold values prescribed.
3	Mining factors or assumptions.	-The method and assumptions used to convert the Mineral Resource to a Mineral Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design supported with Conceptual plan for mining). - Anticipated Ore to OB ratio, mine recoveries, dilutions etc. for both open cast and U/G workings.

		-The choice of, the nature and the appropriateness of the selected mining method(s), the size of the selected mining unit (length, width, height) and other mining parameters including associated design issues such as pre-strip, access, etc. -The assumptions made regarding geotechnical parameters (eg. pit slopes, stope sizes, etc.), grade control and pre-production drilling. -The major assumptions made and Mineral Resource model used for pit optimisation (if appropriate). -The mining dilution factors, mining recovery factors, and minimum mining widths used. -The infrastructure requirements of the selected mining methods. Where available, the historic reliability of the performance parameters.
4	Metallurgical factors or assumptions.	-The metallurgical process proposed and the appropriateness of that process to the type of deposit. -The nature, amount and representativeness of metallurgical test work undertaken and the metallurgical recovery factors applied. -Any assumptions or allowances made for deleterious elements. -The existence of any bulk sample or pilot scale test work and the degree to which such samples are representative of the ore body as a whole. -The tonnages and grades reported for Mineral Reserves should state clearly whether these are in respect of material to the plant or after recovery. Comment on existing plant and equipment, including an indication of replacement and salvage value.
5	Cost and revenue factors	-The derivation of, or assumptions made, regarding projected capital and operating costs. - The assumptions made regarding revenue including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, etc. - The allowances made for royalties payable, both Government and private. - Basic cash flow inputs for a stated period. -Yearly planned production, Net Present Value (NPV) and Internal Rate of Return (IRR) of the deposit, intrinsic value of the deposit based on annual projected production.
6	Market assessment	-The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. -A customer and competitor analysis along with the identification of likely market windows for the product. -Price and volume forecasts and the basis for these forecasts. -For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.
7	Other modifying factors	-The effect, if any, of natural risk, infrastructure, environmental, legal, marketing, social or governmental factors on the likely viability of a project and/or on the estimation and classification of the Mineral Reserves. -The status of titles and approvals critical to the viability of the project, such as mining leases, discharge permits, government and statutory approvals. -Environmental descriptions of anticipated liabilities. Location plans of mineral rights and titles.
8	Classification.	-The basis for the classification of the Mineral Reserves into varying confidence categories. - Finalization of estimates of grade wise mineable quantities in contemplation with proposed preliminary mine design/conceptual plan subject to all necessary approvals/contracts have been confirmed or there are reasonable expectations that all such approvals/contracts will be obtained within a reasonable timeframe and with certification that that Economic viability is not affected by short-term adverse market conditions provided that longer-term forecasts remain positive.

[F. No. 7/2/2015-M.IV]

R. SRIDHARAN, Addl. Secy.

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खान मंत्रालय

अधिसूचना

नई दिल्ली, 20 मई, 2015

सा.का.नि. 406(अ).—केंद्रीय सरकार, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, निम्नलिखित नियम बनाती है, अर्थात् :—

अध्याय 1
प्रारंभिक

1. संक्षिप्त नाम और प्रारंभ.—(1) इन नियमों का संक्षिप्त नाम खनिज (नीलामी) नियम, 2015 है ।

(2) ये राजपत्र में उनके प्रकाशन की तारीख को प्रवृत्त होंगे ।

2. परिभाषाएं.—(1) इन नियमों में, जब तक कि संदर्भ से अन्यथा अपेक्षित न हो,—

(क) "अधिनियम" से खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) अभिप्रेत है ;

(ख) "समेकित अनुज्ञप्ति" से नियम 18 के अधीन अनुदत्त पूर्वेक्षण अनुज्ञप्ति-सह-खनन पट्टा अभिप्रेत है ;

(ग) "खान विकास और उत्पादन करार" से नियम 10 के उपनियम (4) या नियम 18 के उपनियम (8) में निर्दिष्ट करार अभिप्रेत है ;

(घ) "अधिमानी बोली लगाने वाले" से नियम 9 के उपनियम (4) के खंड (ख) के उपखंड (iii) में निर्दिष्ट बोली लगाने वाला अभिप्रेत है ;

(ङ) "अर्हित बोली लगाने वाले" से नियम 9 के उपनियम (4) के खंड (क) के उपखंड (iv) में निर्दिष्ट बोली लगाने वाला अभिप्रेत है ;

(च) "आरक्षित कीमत" से नियम 8 के उपनियम (1) में यथानिर्दिष्ट प्रेषित खनिज मूल्य की न्यूनतम प्रतिशतता अभिप्रेत है ;

(छ) "अनुसूची" से इन नियमों के साथ उपाबद्ध अनुसूची अभिप्रेत है ;

(ज) "धारा" से अधिनियम की धारा अभिप्रेत है ;

(झ) "सफल बोली लगाने वाले" से नियम10 के उपनियम (3) या नियम 18 के उपनियम (2) में यथा निर्दिष्ट बोली लगाने वाला अभिप्रेत है ;

(ञ) "तकनीकी रूप से अर्हित बोली लगाने वाले" से नियम 9 के उपनियम (4) के खंड (क) के उपखंड (ii) में निर्दिष्ट बोली लगाने वाला अभिप्रेत है ;

(ट) "निविदा दस्तावेज" से नियम 9 के उपनियम (2) में निर्दिष्ट किसी नीलामी का संचालन करने के लिए किसी राज्य सरकार द्वारा जारी किया गया निविदा दस्तावेज अभिप्रेत है ;

(ठ) "अग्रिम संदाय" से नियम 11 के उपनियम (1) में निर्दिष्ट संदाय अभिप्रेत है ;

(ड) "अनुमानित साधनों के मूल्य" से ऐसी रकम अभिप्रेत है जो

(i) ऐसे खनिज साधनों के, जिसके लिए खनिज ब्लाक का आबंटन किया जाता है, मीट्रिक टन में व्यक्त अनुमानित मात्रा के ; और

(ii) ऐसे खनिज के प्रति मीट्रिक टन औसत कीमत के, जो सुसंगत राज्य के लिए भारतीय खान **ब्यूरो** द्वारा अनुमानित साधनों के मूल्य की संगणना वाले मास के ठीक पूर्ववर्ती बारह मास की अवधि के लिए प्रकाशित की गई है,

गुणनफल के बराबर है ।

(ढ) "प्रेषित खनिज मूल्य" का वही अर्थ होगा जो नियम 8 के उपनियम (2) में विनिर्दिष्ट है ।

(2) उन शब्दों और पदों के, जो इन नियमों में प्रयुक्त हैं किंतु उनमें परिभाषित नहीं हैं, वही अर्थ होंगे जो अधिनियम या उसके अधीन बनाए गए नियमों में उनके हैं ।

3. लागू होना—ये नियम अधिनियम की धारा 3 के खंड (ङ) में विनिर्दिष्ट गौण खनिजों या प्रथम अनुसूची के भाग क और भाग 2 में विनिर्दिष्ट खनिजों के रूप में अधिसूचित खनिजों के सिवाय, सभी खनिजों को लागू होंगे ।

4. रियायत का अनुदत्त किया जाना—(1) जहां किसी क्षेत्र के खनिज पदार्थों को खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 में विनिर्दिष्ट रूप में सिद्ध किया गया है, वहां धारा 10 ख की उपधारा (3) में निर्दिष्ट किन्हीं अधिसूचित खनिजों की बाबत या धारा 11 की उपधारा (2) में निर्दिष्ट अधिसूचित खनिजों से भिन्न किन्हीं खनिजों की बाबत खनन पट्टा अध्याय 2 के अधीन विनिर्दिष्ट रीति में अनुदत्त किया जाएगा ।

(2) ऐसे किसी क्षेत्र की बाबत, जहां खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 के नियम 7 में निर्दिष्ट अपेक्षाओं को पूरा किया गया है, धारा 10ख की उपधारा (2) में निर्दिष्ट किन्हीं अधिसूचित खनिजों की बाबत या धारा 11 की उपधारा (3) में निर्दिष्ट अधिसूचित खनिजों से भिन्न किन्हीं खनिजों की बाबत समेकित अनुज्ञप्ति अध्याय 3 में विनिर्दिष्ट रीति में अनुदत्त की जाएगी ।

अध्याय 2
खनन पट्टे का अनुदत्त किया जाना

5. खनन पट्टे की नीलामी के लिए पूर्व अध्यपेक्षाएं—(1) राज्य सरकार, राज्य के भीतर के किसी क्षेत्र की बाबत खनन पट्टा अनुदत्त करने की नीलामी प्रक्रिया आरंभ कर सकेगी यदि उस क्षेत्र में खनिज पदार्थों का साक्ष्य, खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 के उपबंधों के अनुसार सिद्ध किया गया है ।

(2) राज्य सरकार, खनिज नीलामी की बाबत निविदा आमंत्रण सूचना जारी किए जाने के पूर्व, उस क्षेत्र की, जहां खनन पट्टा, कुल स्थापन और भिन्न-भिन्न वैश्विक अवस्थानन प्रणाली (टोटल स्टेशन एंड डिफ्रेंशियल ग्लोबल पोजिशनिंग सिस्टम) का प्रयोग करके नीलामी के माध्यम से अनुदत्त किए जाने का प्रस्ताव है, पहचान और उसका सीमांकन करेगी और इस प्रकार सीमांकित क्षेत्र को वन भूमि, राज्य सरकार के स्वामित्वाधीन भूमि और राज्य सरकार के स्वामित्वाधीन न आने वाली भूमि के रूप में वर्गीकृत किया जाएगा ।

(3) इस प्रकार सीमांकित क्षेत्र की सीमा में, खान अधिनियम, 1952 (1952 का 35) की धारा 2 की उपधारा (1) के खंड (ञ) में यथा परिभाषित "खान" की परिभाषा के अधीन आने वाले सभी क्रियाकलापों के लिए अपेक्षित क्षेत्र भी आएगा ।

6. खनन पट्टे के लिए पात्रता—(1) खनन पट्टे की नीलामी में भाग लेने के प्रयोजन के लिए, आवेदक धारा 5 में यथा विनिर्दिष्ट सभी अपेक्षाओं तथा अनुसूची 1 में यथा विनिर्दिष्ट पात्रता के निबंधनों और शर्तों को पूरा करेगा ।

(2) राज्य सरकार, भारत के संविधान के अनुच्छेद 244 और पांचवीं अनुसूची और छठी अनुसूची, पंचायत उपबंध (अनुसूचित क्षेत्रों पर विस्तार) अधिनियम, 1996 (1996 का 40) और अनुसूचित जनजाति और अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 (2007 का 2) को ध्यान में रखते हुए अनुसूची 1 में ऐसे संशोधन कर सकेगी, जो वह आवश्यक समझे ;

(3) धारा 10ख की उपधारा (6) के परंतुक के अधीन केंद्रीय सरकार की शक्तियों का प्रयोग राज्य सरकार द्वारा किसी विशिष्ट अंतिम उपयोग के लिए, जिसके अंतर्गत अनुसूची 2 में यथा विनिर्दिष्ट अंतिम उपयोग भी है, विशिष्ट खान या खानों का आरक्षण करने के लिए किया जाएगा और राज्य सरकार खानों की एक निश्चित प्रतिशतता को भी अंतिम प्रयोग के लिए चिह्नांकित कर सकेगी ।

(4) जहां राज्य सरकार किसी खान या किन्हीं खानों को किसी विशिष्ट विनिर्दिष्ट अंतिम उपयोग के लिए आरक्षित करती है तो खनन पट्टे के अधीन निकाले गए खनिजों का,--

(i) केवल विनिर्दिष्ट अंतिम उपयोग के लिए उपयोग किया जाएगा ; और

(ii) प्रत्यक्ष या अप्रत्यक्ष रूप से विक्रय या अंतरण या अन्यथा व्ययन नहीं किया जाएगा ।

(5) नीलामी में भाग लेने संबंधी पात्रता का अवधारण पात्रता के निबंधनों और शर्तों के अनुसार किया जाएगा और सफल बोली लगाने वाले का विनिश्चय केवल पात्र बोली लगाने वालों द्वारा प्रस्तुत की गई वित्तीय बोलियों के आधार पर किया जाएगा ।

7. इलैक्ट्रॉनिक नीलामी—(1) नीलामी केवल ऑनलाइन इलैक्ट्रॉनिक नीलामी प्लेटफार्म के माध्यम से संचालित की जाएगी ।

(2) राज्य सरकार, ऐसे किसी ऑनलाइन इलैक्ट्रॉनिक नीलामी प्लेटफार्म का उपयोग कर सकेगी, जो मानकीकरण जांच और क्वालिटी प्रमाणन निदेशालय, सूचना प्रौद्योगिकी विभाग, संचार एवं सूचना प्रौद्योगिकी मंत्रालय, भारत सरकार द्वारा ई-उपापन पद्धतियों की क्वालिटी अपेक्षाओं के अनुपालन संबंधी मार्गदर्शक सिद्धांतों में यथा विनिर्दिष्ट न्यूनतम तकनीकी और सुरक्षा अपेक्षाओं को पूरा करता है ।

8. बोली लगाने के लिए पैरामीटर—(1) राज्य सरकार, निविदा दस्तावेज में प्रेषित खनिज मूल्य की ऐसी न्यूनतम प्रतिशतता विनिर्दिष्ट करेगी, जो 'आरक्षित कीमत' के रूप में ज्ञात होगी ।

(2) प्रेषित खनिज मूल्य—

(i) एक मास में प्रेषित खनिज की रकम के ; और

(ii) प्रेषण के ऐसे मास के लिए भारतीय खान ब्यूरो द्वारा यथा प्रकाशित (श्रेणीवार और राज्यवार) खनिज की विक्रय कीमत के गुणनफल के बराबर होगा ।

(3) बोली लगाने वाले, राज्य सरकार को संदाय करने के प्रयोजन के लिए, बोली लगाने के पैरामीटर के अनुसार, आरक्षित कीमत के बराबर या उससे अधिक की प्रेषित खनिज मूल्य की प्रतिशतता उद्धृत करेंगे और सफल बोली लगाने वाला राज्य सरकार को,--

(i) यथा उद्धरित प्रतिशतता के ; और

(ii) प्रेषित खनित के मूल्य के,

गुणनफल के बराबर रकम का संदाय करेगा ।

(4) जहां किसी क्षेत्र की एक से अधिक खनिज के लिए नीलामी की जा रही है, तो सफल बोली लगाने वाले द्वारा उपनियम (2) के अधीन यथा उद्धृत प्रेषित खनिज मूल्य की प्रतिशतता, ऐसे प्रत्येक खनिज के संबंध में राज्य सरकार को संदाय करने के प्रयोजन के लिए लागू होगी ।

(5) यदि कोई खनन पट्टा अनुदत्त किए जाने के पश्चात्, एक या अधिक नए खनिजों का पता चलता है, तो सफल बोली लगाने वाले द्वारा उपनियम (2) के अधीन यथा उद्धरित प्रेषित खनिज मूल्य की प्रतिशतता ऐसे प्रत्येक खनिज के संबंध में राज्य सरकार को संदाय करने के प्रयोजन के लिए लागू होगी ।

9. बोली लगाने की प्रक्रिया—(1) राज्य सरकार, नियम 5 के उपबंधों के अधीन रहते हुए, नीलामी की प्रक्रिया प्रारंभ करने के लिए एक निविदा आमंत्रण सूचना जारी करेगी, जिसके अंतर्गत उसकी वेबसाइट पर उसका प्रकाशन भी है और ऐसी सूचना में नीलामी के अधीन आने वाले क्षेत्र के बारे में संक्षिप्त विशिष्टियां अंतर्विष्ट होंगी, जिनके अंतर्गत निम्नलिखित भी हैं,--

(i) कुल स्थानन और भिन्नक वैश्विक अवस्थानन प्रणाली का प्रयोग करके चिह्नांकित और सीमांकित क्षेत्र की, जिसे वन भूमि, राज्य सरकार के स्वामित्वाधीन भूमि और राज्य सरकार के स्वामित्वाधीन न आने वाली भूमि के रूप में विभाजित किया जाएगा, विशिष्टियां ;

(ii) खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 के उपबंधों के अनुसार खोज के दौरान किसी क्षेत्र में खोजे गए सभी खनिजों की बाबत खनिज पदार्थों के साक्ष्य के बारे में अनुमानित खनिज साधन और संक्षिप्त विशिष्टियां ।

(2) राज्य सरकार द्वारा जारी किए गए निविदा दस्तावेज में निम्नलिखित अंतर्विष्ट होगा,--

(क) खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 के अनुसरण में भू-वैज्ञानिक रिपोर्ट, जिसमें उस क्षेत्र में खोजे गए सभी खनिजों की विशिष्टियां और अनुमानित मात्रा विनिर्दिष्ट हो ; और

(ख) कुल स्थानन और भिन्नक वैश्विक अवस्थानन प्रणाली का प्रयोग करके पहचान किए गए और सीमांकित ऐसे क्षेत्र के, जिसे वन भूमि,राज्य सरकार के स्वामित्वाधीन भूमि और राज्य सरकार के स्वामित्वाधीन न आने वाली भूमि के रूप में विभाजित किया गया हो, राजस्व सर्वेक्षण ब्यौरे ।

(3) बोली लगाने वाले को निविदा दस्तावेज का और ऐसी रिपोर्टों का अध्ययन करने के लिए राज्य सरकार द्वारा यथा अधिसूचित एक नियत अवधि दी जाएगी और बोली लगाने की प्रक्रिया ऐसी अवधि की समाप्ति पर प्रारंभ होगी ।

(4) नीलामी एक उच्चगामी आनलाइन इलैक्ट्रॉनिक नीलामी होगी और इसमें निम्नलिखित दौर समाविष्ट होंगे, अर्थात् :--

(क) नीलामी के प्रथम दौर का आयोजन निम्नलिखित रीति में किया जाएगा, अर्थात् :--

(i) बोली लगाने वाले,--

(अ) एक तकनीकी बोली प्रस्तुत करेंगे, जिसमें अन्यों के साथ-साथ, अधिनियम और उसके अधीन बनाए गए नियमों के उपबंधों के अनुसार, बोली में भाग लेने के लिए पात्रता की पुष्टि करने संबंधी दस्तावेजी साक्ष्य, बोली की प्रतिभूति और ऐसे अन्य दस्तावेज तथा संदाय समाविष्ट हों, जो निविदा दस्तावेज में विनिर्दिष्ट किए जाएं ; और

(आ) आरंभिक कीमत प्रस्थापना प्रस्तुत करेंगे, जिसमें प्रेषित खनिज मूल्य की प्रतिशतता होगी ;

(ii) केवल उन बोली लगाने वालों पर, जो नियम 6 में विनिर्दिष्ट पात्रता के निबंधनों और शर्तों के अनुसार पात्र पाए जाते हैं और जिनकी आरंभिक कीमत प्रस्थापना आरक्षित कीमत के बराबर या उससे अधिक हो और जिन्हें तकनीकी रूप से अर्हित बोली लगाने वालों के रूप में निर्दिष्ट किया गया है, नीलामी के दूसरे दौर के लिए विचार किया जाएगा ;

(iii) तकनीकी रूप से अर्हित बोली लगाने वालों के बीच उच्चतम आरंभिक कीमत प्रस्थापना आनलाइन इलैक्ट्रानिक नीलामी के दूसरे दौर के लिए न्यूनतम कीमत होगी ;

(iv) तकनीकी रूप से पात्र बोली लगाने वालों को उनके द्वारा प्रस्तुत निम्नगामी आरंभिक कीमत प्रस्थापना के आधार पर श्रेणीबद्ध किया जाएगा और उन श्रेणियों के प्रथम पचास प्रतिशत तकनीकी रूप से अर्हित बोली लगाने वाले (किसी भिन्नांश को उच्चतर पूर्णांक में पूर्णांकित किया जाएगा) या शीर्ष के पांच तकनीकी रूप से अर्हित बोली लगाने वाले, इनमें से जो भी उच्चतर हो, इलैक्ट्रानिक नीलामी के दूसरे दौर में भाग लेने के लिए अर्हित बोली लगाने वालों के रूप में अर्हित होंगे ;

परंतु जहां तकनीकी रूप से अर्हित बोली लगाने वालों की कुल संख्या तीन से कम है वहां किसी भी तकनीकी रूप से अर्हित बोली लगाने वाले को अर्हित बोली लगाने वाला नहीं माना जाएगा और नीलामी प्रक्रिया बातिल हो जाएगी :

परंतु यह और कि राज्य सरकार, स्वविवेकानुसार, नीलामी की प्रक्रिया को बातिल न करने का विनिश्चय कर सकेगी, यदि तीसरे या पश्चातवर्ती प्रयास में तकनीकी रूप से अर्हित बोली लगाने वालों की कुल संख्या तीन से कम बनी रहती है और राज्य सरकार, ऐसे मामले में, तकनीकी रूप से अर्हित बोली लगाने वालों पर अर्हित बोली लगाने वालों के रूप में विचार किए जाने का विनिश्चय कर सकेगी जिससे बोली लगाने वाले की प्रक्रिया को जारी रखा जा सके ।

परंतु यह भी कि यदि तकनीकी रूप से अर्हित बोली लगाने वालों की संख्या तीन से पांच के बीच में है तो तकनीकी रूप से अर्हित बोली लगाने वालों को अर्हित बोली लगाने वालें के रूप में माना जाएगा :

परंतु यह भी कि दो या अधिक तकनीकी रूप से अर्हित बोली लगाने वालों द्वारा समरूप आरंभिक कीमत प्रस्थापना की दशा में ऐसे सभी तकनीकी रूप से अर्हित बोली लगाने वालों को, अर्हित बोली लगाने वालों का अवधारण करने के प्रयोजनों के लिए समान श्रेणी में रखा जाएगा और ऐसे मामलों में ऊपर उल्लिखित पचास प्रतिशत को पचास प्रतिशत धन तकनीकी रूप से अर्हित ऐसे बोली लगाने वालों की संख्या तक बढ़ा दिया जाएगा जिनकी आरंभिक कीमत प्रस्थापनाएं ऐसी समरूप आरंभिक कीमत प्रस्थापनाओं की संख्या से कम समरूप हैं ।

दृष्टांत : उस दशा में जिसमें तकनीकी रूप से अर्हित बोली लगाने वालों की कुल संख्या दस है और तकनीकी रूप से अर्हित प्रत्येक बोली लगाने वाला भिन्न-भिन्न आरंभिक कीमत प्रस्थापना प्रस्तुत करता है वहां पहले पचास प्रतिशत श्रेणी वाले तकनीकी रूप से अर्हित बोली लगाने वालों को अर्हित बोली लगाने वाला माना जाएगा ।

यदि ऐसे तीन तकनीकी रूप से अर्हित बोली लगाने वाले समान आरंभिक कीमत प्रस्थापना प्रस्तुत करते हैं और उन्हें कुल श्रेणी संख्या के पहले पचास प्रतिशत श्रेणी में श्रेणीकृत किया जाता है तो ऐसे सभी तकनीकी रूप से अर्हित बोली लगाने वालों को अर्हित बोली लगाने वाला समझा जाएगा और अर्हित बोली लगाने वालों की संख्या में दो की वृद्धि हो जाएगी ।

(ख) दूसरे चक्र की नीलामी निम्नलिखित रीति में की जाएगी, अर्थात् –

(i) अर्हित बोली लगाने वाले अपनी अंतिम कीमत प्रस्थापना प्रस्तुत कर सकेंगे जो न्यूनतम कीमत से अधिक प्रेषित खनिज मूल्य का प्रतिशत होगी :

परंतु नीलामी मंच के तकनीकी विनिर्देशों के अनुसार अंतिम कीमत प्रस्थापना को नीलामी की समाप्ति तक पुनरीक्षित किया जा सकेगा ।

(ii) यदि कोई अर्हित बोली लगाने वाला, आन लाइन इलैक्ट्रानिक नीलामी मंच पर अंतिम कीमत प्रस्थापना प्रस्तुत नहीं करता है तो नीलामी प्रक्रिया बातिल हो जाएगी ।

(iii) ऐसे अर्हित बोली लगाने वाले को, जिसने उच्चतर अंतिम कीमत प्रस्थापना प्रस्तुत की है, नीलामी समाप्त होने के तुरंत बाद अधिमानी बोली लगाने वाले के रूप में घोषित किया जाएगा ।

10. खनन पट्टे का अनुदत्त किया जाना –(1) अधिमानी बोली लगाने वाला पहली किश्त प्रस्तुत करेगा जो नियम 11 के अनुसार अग्रिम संदाय का दस प्रतिशत होगी ।

(2) अग्रिम संदाय की पहली किश्त प्राप्त होने पर राज्य सरकार अधिमानी बोली लगाने वाले को अशय पत्र जारी करेगा ।

(3) अधिमानी बोली लगाने वाले को –

(क) पात्रता के सभी निबंधनों और शर्तों का पालन जारी रखने पर;

(ख) दूसरी किश्त का, जो अग्रिम संदाय का दस प्रतिशत होगी, संदाय किए जाने पर;

(ग) उपनियम 12 में यथा विनिर्दिष्ट कार्यपालन प्रतिभूति दिए जाने पर ;

(घ) खनन योजना की बाबत धारा 5 की उपधारा (2) के खंड (ख) में विनिर्दिष्ट शर्तों का समाधान किए जाने पर, और

(ङ) ऐसी अन्य शर्तों का, जो राज्य सरकार केंद्रीय सरकार के पूर्व अनुमोदन से विनिर्दिष्ट करें, समाधान किए जाने पर,

"सफल बोली लगाने वाला" माना जाएगा ।

(4) सफल बोली लगाने वाला, सभी सहमतियां, अनुमोदन अनुज्ञापत्र, अनापत्तियां और वैसे ही दस्तावेजों को जो खनन संक्रियाओं के प्रारंभ के लिए लागू विधियों के अधीन अपेक्षित हों, अभिप्राप्त करने के पश्चात् राज्य सरकार के साथ खान विकास और उत्पादन करार पर हस्ताक्षर करेगा ।

(5) सफल बोली लगाने वाला खान विकास और उत्पादन करार के निष्पादन के पश्चात् तीसरी किश्त का संदाय करेगा जो अग्रिम संदाय का अस्सी प्रतिशत होगी और ऐसे संदाय किए जाने पर राज्य सरकार सफल बोली लगाने वाले को खनन पट्टा अनुदत्त करेगी ।

(6) राज्य सरकार द्वारा उपनियम (5) में विनिर्दिष्ट शर्तों का पालन किए जाने की तारीख के तीस दिन के भीतर खनन पट्टा विलेख निष्पादित किया जाएगा और यह अधिनियम और उसके अधीन बनाए गए नियमों के उपबंधों के अध्ययधीन होगा ।

(7) खनन पट्टा ऐसे खनिजों के लिए होगा जो नीलामी के पहले खोज के अनुसरण में किसी क्षेत्र में पाए जाते हैं :

परंतु जहां नीलामी के पश्चात् किसी नवीन खनिज का पता चलता है वहां खनन पट्टे का धारक, खनन पट्टा विलेख में ऐसे नवीन खनिज को जोड़ने के लिए खनिज रियायत नियम, 1960 के उपबंधों का अनुसरण करेगा ।

(8) जहां नीलामी से पहले या नीलामी के पश्चात् लघु खनिज की मौजूदगी स्थापित हो जाती है या उसका पता चलता है वहां ऐसे लघु खनिजों पर ऐसे नियमों के अनुसार विचार किया जाएगा जो धारा 15 के अधीन राज्य सरकार द्वारा बनाए जाएं ।

(9) ऐसी तारीख, जिसको खनन पट्टा विलेख सम्यक् रूप से रजिस्ट्रीकृत किया जाता है, खनन पट्टे के प्रारंभ होने की तारीख होगी ।

11. खनन पट्टे के लिए अग्रिम संदाय :--

(1) ऐसी रकम जो अनुमानित साधनों के मूल्य के 0.50 प्रतिशत के बराबर है "अग्रिम संदाय" होगी ।

(2) राज्य सरकार को अग्रिम संदाय निविदा दस्तावेज में यथाविनिर्दिष्ट दस प्रतिशत ; दस प्रतिशत; और अस्सी प्रतिशत की तीन किश्तों में संदेय होगा और निविदा दस्तावेज में, यथाविनिर्दिष्ट खनिज का उत्पादन प्रारंभ होने के पहले पांच वर्ष के भीतर नियम 8 के उपनियम (2) के अधीन संदत्त रकम के विरूद्ध पूर्ण समायोजन किया जाएगा ।

12. खनन पट्टे के लिए कार्यपालन प्रतिभूति -- (1) सफल बोली लगाने वाला अनुमानित साधनों के मूल्य की 0.50 प्रतिशत रकम का अग्रिम संदाय कराने के लिए कार्यपालन प्रतिभूति देगा और कार्यपालन प्रतिभूति प्रत्येक पांच वर्ष में समायोजित की जाएगी जिससे उसे अनुमानित साधनों के पुन:र्निधारित मूल्य का 0.50 प्रतिशत के तत्समान बनाए रखा जा सके ।

(2) अनुसूची 3 में यथाविनिर्दिष्ट रूप विधान में बैंक गारंटी के माध्यम से या प्रतिभूति निक्षेपों के माध्यम से दी गई कार्यपालन प्रतिभूति को, --

(i) खान विकास और उत्पादन करार के ; और

(ii) खनन पट्टा विलेख के ;

उपबंधों के अनुसार बनाया जा सकेगा ।

13. खनन पट्टे के अधीन भुगतान (1) पट्टेदार, राज्य सरकार को अधिनियम और उसके अधीन बनाए गए नियमों में यथाविनिर्दिष्ट स्वामिस्वों और अनिवार्य भाटक का संदाय करेगा

(2) पट्टेदार, राज्य सरकार को मासिक आधार पर नियम 8 के अधीन उद्धृत लागू रकम का संदाय करेगा ।

(3) पट्टेदार ऐसी रकमों का, जो अधिनियम के अधीन अपेक्षित हो निम्नलिखित में अभिदाय करेगा,–

(i) राष्ट्रीय खनिज खोज न्यास के अभिहित खाते में ;

(ii) जिला खनिज प्रतिष्ठान के अभिहित खाते में ।

(4) पट्टेदार, ऐसे संबंधित प्राधिकारियों को ऐसी अन्य रकमों का भी संदाय करेगा जो तत्समय प्रवृत्त किसी अन्य विधि के अधीन अपेक्षित हो ।

14. ब्याज का संदाय –राज्य सरकार, इन नियमों के अधीन राज्य सरकार को देय किसी ऐसे संदाय पर, जिसके संदाय में उसकी देय होने की तारीख से साठ दिन का विलंब हुआ है, चौबीस प्रतिशत प्रतिवर्ष की दर से साधारण ब्याज प्रभारित करेगी ।

15. समयावधि -- नियम 10 से नियम 14 की अपेक्षाओं का पालन करने के लिए समयावधि निविदा दस्तावेज में यथाविनिर्दिष्ट होगी ।

अध्याय 3
समेकित अनुज्ञप्ति का दिया जाना

16. समेकित अनुज्ञप्ति की नीलामी के लिए पूर्व अध्यपेक्षाएं –(1) राज्य सरकार अधिनियम और इस अध्याय के उपबंधों के अनुसार और इस शर्त के अधीन रहते हुए कि खनिज (खनिज पदार्थों का साक्ष्य) नियम, 2015 के नियम 7 के उपनियम (1) की अपेक्षाओं का समाधान हो गया है, राज्य के भीतर किसी क्षेत्र की बाबत समेकित अनुज्ञप्ति अनुदत्त करने के लिए नीलामी प्रक्रिया आरंभ कर सकेगी ।

परंतु अधिसूचित खनिज की बाबत नीलामी की दशा में केंद्रीय सरकार का पूर्व अनुमोदन अपेक्षित होगा ।

(2) राज्य सरकार, नीलामी की बाबत निविदा आमंत्रित करने की सूचना जारी करने के पूर्व ऐसे क्षेत्र की पहचान और सीमांकन करेगी जहां कुल स्थानन और भिन्न-भिन्न वैश्विक अवस्थानन प्रणाली का प्रयोग करके नीलामी के माध्यम से समेकित अनुज्ञप्ति का अनुदत्त किया जाना प्रस्तावित है और इस प्रकार सीमांकित क्षेत्र को वन भूमि, राज्य सरकार के स्वामित्वाधीन भूमि और राज्य सरकार के स्वामित्वाधीन न आने वाली भूमि के रूप में, वर्गीकृत किया जाएगा ।

17. समेकित अनुज्ञप्ति के लिए नीलामी (1) नियम 6 से नियम 9 में यथाविनिर्दिष्ट नीलामी प्रक्रिया निम्नलिखित के अधीन रहते हुए समेकित अनुज्ञप्ति अनुदत्त किए जाने हेतु नीलामी का संचालन करने को लागू होगी, अर्थात् –

(क) राज्य सरकार अंतिम उपयोग के आधार पर कोई आरक्षण नहीं करेगी ;

(ख) राज्य सरकार, नियम 16 के पालन के अधीन रहते हुए, निविदा प्रक्रिया आरंभ किए जाने के लिए निविदा आमंत्रित करते हुए सूचना जारी करेगी, जिसके अंतर्गत उसकी वेबसाइट भी है, और ऐसी सूचना में निविदा के अंतर्गत आने वाली क्षेत्र से संबंधित संक्षिप्त विशिष्टयां अंतर्विष्ट होंगी, जिसके अंतर्गत निम्नलिखित भी हैं –

(i) कुल स्थानन और भिन्नक वैश्विक अवस्थानन प्रणाली का प्रयोग करके चिह्नाकित और सीमांकित क्षेत्र की, जिसे वनभूमि, राज्य सरकार के स्वामित्वाधीन भूमि और राज्य सरकार के स्वामित्वाधीन न आने वाली भूमि के रूप में विभाजित किया जाएगा, विशिष्टयां; और

(ii) क्षेत्र में पाए जाने वाले सभी खनिजों की बाबत अनुमानित खनिज साधनों और खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 के नियम 7 में विनिर्दिष्ट अपेक्षाओं के समाधानप्रद रूप में संक्षिप्त विशिष्टियां ।

(ग) राज्य सरकार द्वारा जारी किए गए निविदा दस्तावेज में निम्नलिखित अंतर्विष्ट होगा,--

(i) खनिज (खनिज पदार्थ साक्ष्य) नियम, 2015 के अनुसरण में भू-वैज्ञानिक रिपोर्ट जिसमें खोज के दौरान क्षेत्र में पता लगाए गए सभी खनिजों की विशिष्टियां और अनुमानित मात्रा विनिर्दिष्ट हो ;

(ii) कुल स्थान और भिन्नक वैश्विक अवस्थानन प्रणाली का प्रयोग करके पहचान किए गए और सीमांकित ऐसे क्षेत्र के, वनभूमि, राज्य सरकार के स्वामित्वाधीन भूमि और राज्य सरकार के स्वामित्वाधीन न आने वाली भूमि के रूप में विकसित किया गया हो, राजस्व सर्वेक्षण ब्यौरे,

(घ) बोली लगाने वालों के निविदा दस्तावेज का और ऐसी रिपोर्टों का अध्ययन करने के लिए राज्य सरकार द्वारा यथाविहित एक नियत अवधि दी जाएगी और बोली लगाने की प्रक्रिया ऐसी अवधि की समाप्ति पर आरंभ होगी ।

18. समेकित अनुज्ञप्ति का अनुदत्त किया जाना – (1) नीलामी प्रक्रिया पूरी होने पर अधिमानी बोली लगाने वाला नियम 19 के उपनियम (1) में विनिर्दिष्ट रीति में कार्यपालन प्रतिभूति प्रस्तुत करेगा और ऐसी कार्यपालन प्रतिभूति के प्राप्त होने पर राज्य सरकार अधिमानी बोली लगाने वाले को आशयपत्र जारी करेगी ।

(2) आशयपत्र प्राप्त होने पर अधिमानी बोली लगाने वाले को निम्नलिखित शर्तों को पूरा करने पर सफल बोली लगाने वाला समझा जाएगा, अर्थात् –

(क) पात्रता संबंधी सभी शर्तों का पालन ;

(ख) सभी सहमतियों, अनुमोदन, अनुज्ञापत्रों, अनापत्तियों और वैसे ही अन्य दस्तावेजों को जो पूर्वेक्षण संबंधी संक्रियाओं को प्रारंभ करने संबंधी लागू विधियों के अधीन अपेक्षित हों, अभिप्राप्त करना ; और

(ग) पूर्वेक्षण की स्कीम प्रस्तुत करना ।

(3) उपनियम (2) में विनिर्दिष्ट शर्तों को पूरा करने पर राज्य सरकार सफल बोली लगाने वाले को एक समेकित अनुज्ञप्ति अनुदत्त करेगी और ऐसी समेकित अनुज्ञप्ति अधिनियम और उसके अधीन बनाए गए नियमों के ऐसे उपबंधों के अधीन रहते हुए होगी जो पूर्वेक्षण अनुज्ञप्ति और खनन पट्टे को लागू हो ।

(4) समेकित अनुज्ञप्ति अनुदत्त किए जाने के लिए न्यूतम क्षेत्र ऐसे न्यूतम क्षेत्र से कम नहीं होगा जिसके लिए खनिज रियायत नियम 1960 के उपबंधों के अनुसार अनुदत्त की जा सकती है और अधिकतम क्षेत्र पूर्वेक्षण अनुज्ञप्ति को यथा लागू नियम 6 के अनुसार होगा ।

(5) समेकित अनुज्ञप्ति का धारक, समेकित अनुज्ञप्ति के अधीन क्षेत्र में भू-वैज्ञानिक खोज का संचालन करेगा जिससे खनिज पदार्थों का साक्ष्य सुनिश्चित किया जा सके और अधिनियम और उसके अधीन बनाए गए ऐसे नियमों के अनुसार जो पूर्वेक्षण अनुज्ञप्ति को लागू होते हैं, कालिक रिर्पोट प्रस्तुत करेगा और समेकित अनुज्ञप्ति के अधीन क्षेत्र के भू-सर्वेक्षण खोज से संबंधित सभी रिपोर्टें, अध्ययन और अन्य दस्तावेज राज्य सरकार और भारतीय खान ब्यूरो को प्रस्तुत की जाएगी ।

(6) यदि समेकित अनुज्ञप्ति का धारक, --

(क) धारा 11 की उपधारा (9) के अनुसार पूर्वेक्षण संक्रियाओं को पूरा करने में असफल रहता है या धारा 11 की उपधारा (10) और खनिज (खनिज पदार्थों का साक्ष्य) नियम, 2015 के अनुसार खनिज पदार्थों की विद्यमानता को स्थापित करने में असफल रहता है तो ऐसा धारक खनन पट्टा प्राप्त करने का पात्र नहीं होगा और समेकित अनुज्ञप्ति समाप्त हो जाएगी ;

(ख) खनिज (खनिज पदार्थों का साक्ष्य) नियम, 2015 के अनुरूप खनिज पदार्थों के साक्ष्य का अवधारण करने के परिणामस्वरूप धारा 11 की उपधारा (9) के अनुसार पूर्वेक्षण संक्रियाओं को पूरा कर लेता है तो ऐसा धारक राज्य सरकार को पहली किश्त, जो अग्रिम संदाय का दस प्रतिशत होगी, के साथ खनन अनुज्ञप्ति दिए जाने के लिए आवेदन करेगा ।

परंतु खनन पट्टा केवल ऐसे क्षेत्र की बाबत अनुदत्त किया जाएगा जिसके लिए खनिज पदार्थों का साक्ष्य पाया गया है और यह ऐसे अधिकतम क्षेत्र अधिक क्षेत्र नहीं होगा जिसके लिए अधिनियम के अधीन खनन पट्टा अनुदत्त किया जाएगा ।

परंतु यह और कि मिश्रित अनुज्ञप्ति के किसी धारक द्वारा कोई अतिरिक्त क्षेत्र इसमें सुधार होने के पश्चात् अभ्यर्पित समझा जाएगा;

(7) सम्यक् रूप से पूरा पट्टा आवेदन और उपनियम (6) के खंड (ख) में यथाविनिर्दिष्ट अग्रिम संदाय की पहली किश्त के प्राप्त होने पर राज्य सरकार खनन पट्टे के लिए आशय पत्र जारी करेगी ।

(8) खनन विकास और उत्पादन करार राज्य सरकार और समेकित अनुज्ञप्ति के धारक के बीच निष्पादित किया जाएगा, यदि समेकित अनुज्ञप्ति का धारक –

(क) पात्रता के निबंधनों और शर्तों का पालन करना जारी रखता है ;

(ख) अग्रिम संदाय का दस प्रतिशत दूसरी किश्त संदत्त करता है;

(ग) नियम 19 के उपनियम (2) में यथाविर्निदिष्ट बढ़ी हुई निष्पादन प्रतिभूति प्रस्तुत करता है;

(घ) खान योजना के संबंध में धारा 5 की उपधारा (2) के खंड (ख) में विर्निदिष्ट शर्तों को पूर्ण करता है;

(ङ) खान प्रचालनों को प्रारंभ करने के लिए लागू विधियों के अधीन यथाअपेक्षित सभी सहमतियां, अनुमोदन, अनुज्ञप्तियां, अनापत्तियां और समरूप प्राप्त करता है; और

(च) ऐसी अन्य शर्तें पूर्ण करता है जो केन्द्रीय सरकार के पूर्व अनुमोदन से राज्य सरकार द्वारा विर्निदिष्ट की जाएं ।

(9) मिश्रित अनुज्ञप्ति का धारक, खान विकास उत्पादन करार के कार्यकरण के पश्चात् अग्रिम संदाय का अस्सी

प्रतिशत तीसरी किश्त संदत्त करेगा तथा ऐसे संदाय पर राज्य सरकार उपनियम (8) में विर्निदिष्ट सभी शर्तों को पूर्ण करने की तारीख के तीस दिन के भीतर मिश्रित अनुज्ञप्ति के धारक के साथ खान पट्टा विलेख करेगी ।

(10) खान पट्टा अधिनियम और उसके अधीन बनाए गऐ नियमों के उपबंधों के अधीन होगा ।

(11) खान पट्टा नीलामी के पूर्व खोज के अनुसरण में क्षेत्र में पाए गए खनिजों के लिए होगा ।

परंतु यह कि नीलामी के पश्चात् किसी नए खनिज की खोज होती है तो खान पट्टे का धारक खान पट्टा विलेख में ऐसे नए खनिज को सम्मिलित करने के लिए खनिज रियायत नियम, 1960 के उपबंधों का अनुसरण करेगा ।

(12) जहां नीलामी के पहले या नीलामी के पश्चात् गौण खनिज की उपस्थिति प्रमाणित होती है या उसकी खोज होती है तो ऐसा गौण खनिज, धारा 15 के अधीन राज्य सरकार द्वारा बनाए गए ऐसे नियमों के अनुसार व्यवहार किए जाएंगे ।

(13) वह तारीख जिसको सम्यक् रूप से निष्पादित खान पट्टा विलेख रजिस्ट्रीकृत किया जाता है, खान पट्टा प्रारंभ होने की तारीख होगी ।

19. मिश्रित अनुज्ञप्ति के लिए निष्पादन प्रतिभूति-- (1) प्राक्कलित संसाधन के मूल्य के 0.25 % की रकम मिश्रित अनुज्ञप्ति जारी करने से पूर्व निष्पादन प्रतिभूति के रूप में अधिमानी नीलामीकर्ता द्वारा संदेय होगी ।

(2) खान पट्टा जारी करने से पूर्व निष्पादन प्रतिभूति की रकम प्राक्कलित संसाधनों के मूल्य के 0.50 % की रकम होगी ।

(3) उपनियम (2) के अधीन निष्पादन प्रतिभूति प्रत्येक पांच वर्ष में समायोजित की जाएगी ताकि वह प्राक्कलित संसाधन के पुन: र्निधारित मूल्य के 0.50 % के तत्स्थानी बनी रहे ।

(4) निष्पादन प्रतिभूति निम्न के उपबंधों के अनुसार अवलंब ली जा सकेगी,--

(i) खान विकास और उत्पादन करार; और

(ii) खान पट्टा विलेख ।

अध्याय 4:
प्रकीर्ण

20. प्रकट भूलों को सुधारने की शक्ति– सरकार या इन नियमों के अधीन किसी प्राधिकारी और अधिकारी द्वारा पारित किसी आदेश में किसी लिपिकीय या गणितीय भूल और आकस्मिक चूक या लोप में उदभूत् किसी गलती को, यथास्थिति, सरकार, संबंधित प्राधिकारी या अधिकारी द्वारा ठीक किया जा सकेगा :

परंतु ऐसा कोई भूल सुधार आदेश, जो किसी व्यक्ति के प्रतिकूल हो, तब तक नहीं पारित किया जाएगा जब तक की उस व्यक्ति को सुने जाने का अवसर प्रदान न कर दिया गया हो ।

21. अधिनियम की प्रथम अनुसूची के भाग ख में विर्निदिष्ट खनिजों से संबंधित विशेष उपबंध—(1) इन नियमों में अंतविर्ष्ट किसी बात के होते हुए भी--

(क) यदि मिश्रित अनुज्ञप्ति या खनिज पट्टा का धारक ऐसे अनुज्ञप्ति या पट्टे के अधीन अनुदत्त क्षेत्र में, अधिनियम की प्रथम अनुसूची के भाग ख में विर्निदिष्ट ऐसे किसी खनिज की खोज करता है, जो अनुज्ञप्ति या पट्टे में विर्निदिष्ट नहीं है, तो ऐसे खनिज की खोज को, ऐसे खनिज की खोज की तारीख से साठ दिन के भीतर निदेशक, परमाण्विक खनिज खोज और अनुसंधान निदेशालय, हैदराबाद को रिपोर्ट किया जाएगा;

(ख) अनुज्ञप्तिधारी या पट्टाधारी अधिनियम की प्रथम अनुसूची के भाग ख में विर्निदिष्ट खनिज का उपार्जन या निपटान नहीं करेगा यदि इस प्रयोजन के लिए प्राप्त अनुज्ञप्ति या पट्टे अथवा पृथक अनुज्ञप्ति या पट्टे में ऐसा खनिज सम्मिलित नहीं किया जाता है;

(ग) ऐसी पूर्वेक्षण और खनन सक्रियाओं के आनुषंगिक रूप में अधिनियम की प्रथम अनुसूची के भाग ख में सूचीबद्ध खनिजों की मात्राएं पृथक रूप से संगृहीत और चट्टा लगाई जाएंगी और अनुज्ञप्तिधारी या पट्टाधारी द्वारा ऐसी और कार्रवाई के लिए प्रत्येक मास इस बारे में एक रिपोर्ट निदेशक परमाण्विक खनिज खोज और अनुसंधान निदेशालय, हैदराबाद को भेजी जाएगी, जैसा परमाणु खोज और अनुसंधान खनिज निदेशालय को निदेशित किया जाए ।

(2) उपनियम (1) में निर्दिष्ट अनुज्ञप्तिधारी या पट्टाधारी परमाणु उर्जा अधिनियम, 1962 (1962 का 33) और उनके अधीन बनाए गए नियमों के उपबंधों के अधीन अधिनियम की प्रथम अनुसूची के भाग ख में विर्निदिष्ट किसी खनिज का पता लगने की तारीख से साठ दिन के भीतर उक्त खनिजों की अनुज्ञप्ति अनुदत्त करने के लिए राज्य सरकार के माध्यम से सचिव, परमाणु उर्जा विभाग, मुंबई को आवेदन करेगा और परमाणु उर्जा विभाग इस बारे में अनुज्ञप्ति जारी करने के संबंध में राज्य सरकार को सूचित करेगा ।

22. खोज की बाध्यता—खान पट्टे का धारक विस्तृत खोज (जी 1 स्तरीय खोज) को पूर्ण करेगा तथा ऐसे खोज पट्टे के प्रारंभ की तारीख से पांच वर्ष की अवधि के भीतर खनन पट्टे के अधीन संपूर्ण क्षेत्र पर खनिज (खनिज अंतर्वस्तु का साक्ष्य) नियम, 2015 के भाग 4 और भाग 5 के अनुरूप विस्तृत साध्यता अध्ययन रिपोर्ट तैयार करेगा ।

अनुसूची 1
पात्रता की निबंधन और शर्तें
[नियम 6(1) और 6(2) देखिए]

1. निम्नलिखित शुद्ध मूल्य अपेक्षाएं प्राक्कलित संसाधनों के मूल्य पर निर्भर करते हुए खान पट्टे की नीलामी के लिए लागू होंगी,--

(क) यदि प्राक्कलित संसाधनों का मूल्य 25 करोड़ रुपये से अधिक है तो आवेदक, जिसके अंतर्गत व्यष्टिक भी है, के पास प्राक्कलित संसाधनों के मूल्य के 4% से अधिक शुद्ध मूल्य होगा ।

(ख) यदि प्राक्कलित संसाधनों का मूल्य 25 करोड़ रुपये से कम या उसके बराबर है तो आवेदक, जिसके अंतर्गत व्यष्टिक भी है, के पास प्राक्कलित संसाधनों के मूल्य के 2% से अधिक शुद्ध मूल्य होगा ।

(ग) यदि प्राक्कलित संसाधनों का मूल्य 25 करोड़ रुपये से कम या उसके बराबर है तो, आवेदक, जो व्यष्टि है, के पास प्राक्कलित संसाधनों के मूल्य का 1% न्यूनतम शुद्ध मूल्य होगा ।

2. मिश्रित अनुज्ञप्ति की नीलामी के मामले में, आवेदक के पास प्राक्कलित संसाधनों के मूल्य का 1% से अधिक शुद्ध मूल्य होगा ।

स्पष्टीकरण:

(1) यदि आवेदक भारत में निगमित किसी अन्य कंपनी का अनुषंगी है तो ऐस धृति कंपनी का शुद्ध मूल्य भी विचार में लिया जा सकेगा ।

परंतु ऐसे मामले में आवेदक ऐसी धृति कंपनी का अनुषंगी बना रहना चाहिए, जब तक कि आवेदक ऊपर वर्णित शुद्ध मूल्य सीमा तक न पहुंचे ।

(2) कंपनी के मामले में, शुद्ध मूल्य संदत्त शेयर पूंजी और मुक्त आरक्षिति का सकल होगा जैसा कि ठीक पूर्ववर्ती वित्तीय वर्ष के संपरीक्षित तुलन पत्र के अनुसार है ।

(3) किसी व्यष्टि के मामले में, शुद्ध मूल्य आवेदन प्रस्तुत करने की अंतिम तारीख को बंद नकद बकाया होगा और ऐसी रकम में अनुसूचित बैंक/डाकघर में बचत बैंक खाता में रकम, अनुसूचित बैंको, डाकघर, सूचीबद्ध कंपनियों/सरकारी संगठन राज्यय और केन्द्रीय सरकार के पब्लिक सेक्टर उपक्रम में मुक्त और अविल्लंगमित नियत जमा, किसान विकास पत्र, राष्ट्रीय बचत पत्र, बंधपत्र, सूचीबद्ध कंपनियों के शेयर, सूचीबद्ध पारस्परिक निधियां, यूनिट संबंद्ध बीमा योजना, लोक भविष्य निधि, आवेदक के नाम पर जीवन बीमा पालिसियों का अभ्यर्पण मूल्य सम्मिलित हो सकेगा ।

अनुसूची 2
विर्निदिष्ट अंतिम उपयोग की सूचक सूची
(नियम 6(3)देखिए)

क्र0 सं0	खनिज/अयस्क	अंतिम उपयोग
1	बॉक्साइट	एलुमिना रिफाइनरी
2	लौह अयस्क	एकीकृत इस्पात संयंत्र
3	चूना पत्थर	सीमेंट संयंत्र

अनुसूची 3
निष्पादनसुरक्षा का प्रारूप
(नियम 12(2) देखिए)

[बैंक की संदर्भ सं.] [तारीख]

सेवा में,

राज्यपाल (राज्य का नाम)

(पता)

क. कंपनी अधिनियम के अधीन भारत में निगमित **(सफल बोलीदाता का नाम),** कॉरपोरेट पहचान संख्या (सफल बोलीदाता का सीआईएन) सहित, जिनका रजिस्ट्रीकृत कार्यालय (रजिस्ट्रीकृत कार्यालय का पता), भारत है और कारोबार काप्रमुख स्थान (कारोबार के प्रमुख स्थान का पता, यदि रजिस्ट्रीकृत कार्यालय से भिन्न हो) **("सफल बोली दाता")** है को (बैंक निष्पादन गांरटी की समाप्ति की तारीख) **("समाप्ति तारीख")** तक वैधसुरक्षा निष्पादन के तौर पर आईएनआर (आंकड़े) [भारतीय रूपए (शब्दों में)] के समान रकम के लिए शर्तविहीन एवं अप्रतिसंहरणीय बैंक प्रत्याभूति देना आवश्यक है ।

ख. राज्य और सफल बोलीदाता **(संयुक्त रूप से "समझौता")**के बीच निष्पादित किया जाने वाला खान विकास और उत्पादन करार और नीलामी (नीलामी का विवरण) के संबंध में (तारीख), की तारीख केटेंडर दस्तावेज के तहत कुछ बाध्यताओं की पूर्ति हेतु सरक्षा निष्पादन **राज्यपाल (राज्य का नाम), ("राज्य")** को प्रस्तुत करना अपेक्षित है ।

ग. सफल बोलीदाता के अनुरोध पर यह बैंक, **(बैंक का नाम) ("बैंक")** इसमें अंतर्विष्ट निबंधनों एवं शर्तों पर राज्य की मांग पर करार के अधीन सफल बोलीदाताकी बाध्यताओं को सुरक्षित रखने हेतु आईएनआर (आंकड़े) (भारतीय रूपए (शब्दों में) **("प्रत्याभूतिरकम")** तक की रकमराज्य को संदाय करने का वचन देती है । **अत: अब,**बैंक यहां सेराज्य के पक्ष में गांरटी मात्रा में सफल बोलीदाता की ओर से यह अप्रतिसंहरणीय और शर्त रहित संदाय बैंक प्रत्याभूति **("प्रत्याभूति")** राज्य केपक्ष में जारी करती है :

1. बैंक इस उद्देश्य से राज्य से प्राप्त प्रथम लिखित मांग की प्राप्ति पर तत्काल राज्य को उसमें विनिर्दिष्ट राशि हेतुऐसी मांग के लिए राज्य द्वारा बैंक वजहों अथवा कारणों को दर्शाने अथवा साबित करने की राज्य की आवश्यकता के बिना और किसी भी मामले पर राज्य और सफल बोलीदाता केमध्य किसी विवाद अथवा मतभेद के बावजूद वह राशि अथवा राशियां (एक अथवा अधिक दावों के माध्यम से) जो कि कुल की प्रत्याभूति मात्रा से अधिक न हो, बिना किसी आपत्ति, आरक्षण, केवियट, विरोध अथवा आश्रय के बिना शर्त रहित तथा स्थायी तौर पर संदाय करने का वचन देता है । संपूर्ण और स्पष्ट होने के तहत बैंक के दायित्वों के संबंध में किसी न्यायालय अथवाअधिकरण के समक्ष लंबित किसी मामले अथवा कार्यवाही में सफल बोलीदाता द्वारा उत्पन्न किसी विवाद अथवा विवादों के होते हुए भी मांगी गई राशि का संदाय राज्य को करने का वचन देता है ।

2. बैंक यह स्वीकारता है कि राज्य को बैंक द्वारा संदाय की जाने वाली रकम की राज्य द्वारा ऐसी कोई भी मांग करार के अधीन राज्य को सफल बोलीदाता द्वारा संदाय की जाने वाली रकम के संबंध में अंतिम, बाध्यकारी और निर्णायक प्रमाण होगा ।

3. बैंक इसके द्वारा राज्य की उपर्युक्त राशि अथवा सफल बोलीदाता से उसके किसी अंश की मांग की आवश्यकता को हटाता है और साथ ही इस प्रत्याभूति के अधीन संदाय हेतु बैंक की किसी लिखित मांग को प्रस्तुत करने से पूर्व सफल बोलीदाता के विरूद्ध अपने विधिक उपचार का राज्य द्वारा अपनाने को आवश्यक बनाने के बैंक के किसी अधिकार को भी हटाता है ।

4. इसके अतिरिक्त बैंक बिना किसी शर्त के राज्य से सहमति रखता है कि राज्य को छूट होगी कि, बिना बैंक की सहमति के और इस प्रत्याभूति के अधीन बैंक के किसी दायित्व को किसी रूप में प्रभावित किए बिना, समय-समय पर :

   (i) भिन्न होगा और/अथवा करार के निबंधनों और शर्तों को उपांतरित करेगा;

   (ii) विस्तृत करेगा और/अथवा करार के अधीन सफल बोलीदाता के कर्तव्यों के निष्पादन हेतु समय को स्थगित करेगा, अथवा

   (iii) करार के निबंधनों और शर्तों के अधीन सफल बोलीदाता के विरूद्ध राज्य द्वारा अपनाए जाने वाले किसी अधिकारों से प्रविरत रहना अथवा प्रवृत्त करना ।

   और बैंक को ऐसे किसी कृत्य के कारण अथवा राज्य की ओर से हुए लोप अथवा सफल बोलीदाता के राज्य द्वारा किसी अनुग्रह अथवा किसी अन्य कारण जो प्रतिभूतियों से संबंधित नियम के अधीन बैंक को उसके कर्तव्यों से मुक्त नहीं करेगा बल्कि इस उपबंध हेतु, इस प्रत्याभूति के अधीन बैंक को उसके कर्तव्यों से मुक्त करने का प्रभाव होगा।

5. इसके तहत किया गया कोई भी संदाय किसी वर्तमान एवं भविष्य कर, उद्ग्रहन, इमपोस्ट, शुल्क, प्रभारों, फीस, कमीशनों, कटौतियों अथवा किसी भी प्रकृति की रोकों, के कारण से, किसी कटौतियों से मुक्त होगा ।

6. बैंक सहमति देता है कि राज्य अपने विकल्प पर सफल बोलीदाता के विरूद्ध प्रथम दृष्टया कार्यवाही के बिना प्रथम दृष्टांत में प्रमुख ऋणदाता के तौर पर, बैंक के विरूद्ध इस प्रत्याभूति को लागू करने का हकदार होगा ।

7. बैंक और सहमति देता है कि इसमें निहित प्रत्याभूति, करार में विनिर्दिष्ट अवधि के दौरान पूरी तरह प्रभाव में एवं लागू रहेगी और यह कि यह तब तक लागू रहेगा जब तक सफल बोलीदाता के सुरक्षा निष्पादन के

संबंध में कथित करार के आधार पर अथवा उसके अधीन सभी कर्तव्यों की पूरी तरह पूर्ति नहीं हो जाती और उसके दावों की संतुष्टि अथवा पूर्ति या जब तक राज्य यह प्रमाणित नहीं करता कि सुरक्षा निष्पादन के संबंध में अनुबंध की नियम एवं शर्तों का पूरी तरह एवं उचित रूप में सफल बोलीदाता द्वारा पालन किया गया है और तदनुसार इस प्रत्याभूति का निर्वहन किया गया है । इसमें अंतर्विष्ट किसी बात के होते हुए भी, जब तक समाप्ति की तारीख तक अथवा उसके पूर्व लिखित में बैंक पर इस प्रत्याभूति के अधीन कोई मांग अथवा दावा नहीं पेश किया जाता बैंक को तदनंतर इस प्रत्याभूति के अधीन सभी दायित्वों से मुक्त रखा जाएगा ।

8. इस प्रत्याभूति के अधीन बैंक द्वारा कियागया संदाय इस आधार पर संदाय हेतु बैंक के दायित्वों की वैध पूर्ति मानी जाएगी और राज्य ऐसा संदाय करने के लिए बैंक के विरूद्ध कोई दावा पेश नहीं कर पाएगा ।

9. यह प्रत्याभूति भारत की विधि के अधीन है ।इस प्रत्याभूति अथवा इसकी विषय वस्तु के कारण राज्य में (संबंधित राज्य) उत्पन्न किसी वाद, कार्रवाई अथवा अन्य कार्रवाई दिल्ली के न्यायालयों के विशेष अधिकार क्षेत्र के अधीन होगी ।

10. बैंक के पास इस प्रत्याभूति को राज्य केपक्ष में जारी करने का अधिकार है । इस प्रत्याभूति का बैंक के गठन में परिवर्तन के फलस्वरूप निर्वहन नहीं किया जा सकेगा ।

11. बैंक लिखित में राज्य की पूर्व सहमति के अलावा इस प्रत्याभूति को इसके जारी के दौरान प्रति संहरन ने करने का वचनबद्ध है ।

12. राज्य, बैंक को पूर्व सूचना द्वारा, किसी अन्य विभागों, मंत्रालयों अथवा अन्य सरकारी एजेंसियों को इस प्रत्याभूति के अधीन अधिकार दे सकेगा, जो राज्यपाल के नाम पर लागू होंगे । खंड-12 में उपबंधित के सिवाय, यह प्रत्याभूति समनुदेशनीय अथवा हस्तांतरणीय नहीं होगी ।

13. इसमें अंतर्विष्ट किसी बात के होते हुए भी,

    क. इस बैंक प्रत्याभूति के अधीन बैंक का दायित्व प्रत्याभूति रकम से अधिक नहीं होगा।

    ख. यह बैंक प्रत्याभूति समाप्ति की तारीख तक मान्य होगी ।

14. बैंक इस बैंक प्रत्याभूति के अधीन प्रत्याभूति की रकम अथवा उसके किसी अंश के संदाय का केवल सिर्फ और केवल तभी उत्तरदायी है यदि राज्य समाप्ति तारीख को अथवा उसके पूर्व बैंक को लिखित दावा अथवा मांग पेश करता है ।

तारीख (दिवस) को बैंक हेतु (महीने) (वर्ष) का दिन

गवाही में जिसके बैंक ने, अपने प्राधिकृत अधिकारी के द्वारा, अपना हस्ताक्षर और मोहर किया है।

(हस्ताक्षर)

(नाम और पद)

(बैंक का मोहर)

[फा. सं. 1/11/2015-M.VI (Part I)]

आर. श्रीधरन, अपर सचिव

MINISTRY OF MINES

NOTIFICATION

New Delhi, 20th May, 2015

G.S.R. 406(E).—In exercise of the powers conferred by section 13 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government hereby makes the following rules, namely:—

CHAPTER I

PRELIMINARY

1. **Short title and commencement**.- (1) These rules may be called the Mineral (Auction) Rules, 2015.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. **Definitions**.- (1) In these rules, unless the context otherwise requires, -

(a) "**Act**" means the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957);

(b) "**Composite Licence"** means prospecting licence-cum-mining lease granted under rule 18;

(c) "**Mine Development and Production Agreement**" means the agreement referred to in sub-rule (4) of rule 10 or sub-rule (8) of rule 18;

(d) "**preferred bidder**" means the bidder referred to in sub-clause (iii) of clause (b) of sub-rule (4) of rule 9;

(e) "**qualified bidders**" means the bidder referred to in sub-clause (iv) of clause (a) of sub-rule (4) of rule 9;

(f) "**reserve price**" means the minimum percentage of value of mineral despatched as referred to in sub-rule (1) of rule 8;

(g) "**section**" means section of the Act;

(h) "**Schedule**" means a Schedule appended to these rules;

(i) "**successful bidder**" means the bidder as referred to in sub-rule (3) of rule 10 or sub-rule (2) of rule 18;

(j) "**technically qualified bidders**" means the bidder as referred to in sub-clause (ii) of clause (a) of sub-rule (4) of rule 9;

(k) "**tender document**" means the tender document issued by a State Government for conduct of an auction referred to in sub-rule (2) of rule 9;

(l) "**upfront payment**" means the payment referred to in sub-rule (1) of rule 11;

(m) "**value of estimated resources**" means an amount equal to the product of, -

(i) the estimated quantity of mineral resources for which the mineral block is being auctioned, expressed in metric tonne; and

(ii) the average price per metric tonne of such mineral as published by Indian Bureau of Mines for the relevant State for a period of twelve months immediately preceding the month of computation of the Value of Estimated Resources; and

(n) "**value of mineral despatched**" shall have the meaning specified in sub-rule (2) of rule 8.

(2) The words and expressions used in these rules but not defined herein shall have the same meaning as assigned to them in the Act or rules made thereunder.

3. **Application.-** These rules shall apply to all minerals, except minerals notified as minor minerals specified in clause (e) of section 3 and minerals specified in Part A and Part B of the First Schedule to the Act.

4. **Grant of concession.-** (1) Where mineral contents of an area has been established as specified in the Minerals (Evidence of Mineral Contents) Rules, 2015, mining lease shall be granted in the manner specified under Chapter II with respect to any notified minerals referred to in sub-section (3) of section 10B or with respect to any minerals other than notified minerals referred to in sub-section (2) of section 11.

(2) A Composite Licence with respect to an area where requirements specified in rule 7 of the Minerals (Evidence of Mineral Contents) Rules, 2015 have been satisfied, shall be granted in the manner specified under Chapter III with respect to any notified minerals referred to in sub-section (2) of section 10B or with respect to any minerals other than notified minerals referred to in sub-section (3) of section 11.

CHAPTER II

GRANT OF MINING LEASE

5. **Prerequisites for auction of Mining Lease.-** (1) The State Government may initiate an auction process for grant of a mining lease with respect to an area within the State if the mineral contents in such area has been established in accordance with the provisions of the Minerals (Evidence of Mineral Contents) Rules, 2015.

(2) The State Government shall, prior to issuance of the notice inviting tender with respect to mineral auction, identify and demarcate the area where a mining lease is proposed to be granted through auction by using total station and differential global positioning system and the area so demarcated shall be classified into forests land, land owned by the State Government and land not owned by the State Government.

(3) The extent of area so demarcated shall include area required for all the activities falling under the definition of 'mine' as defined in clause (j) of sub-section (1) of section 2 of the Mines Act 1952 (35 of 1952).

6. **Eligibility for Mining Lease.**- (1) For the purpose of participating in the auction of mining lease, an applicant shall meet the requirements as specified in section 5 and the terms and conditions of eligibility as specified in Schedule I.

(2) The State Government may having regard to article 244 and the Fifth Schedule and Sixth Schedule to the Constitution, the provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 (40 of 1996); and the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (2 of 2007), make such amendments to Schedule I as it may deem necessary.

(3) The powers of Central Government under the proviso to sub-section (6) of section 10B shall be exercised by the State Government for reservation of particular mine or mines for any particular end use including the end use as specified in Schedule II and the State Government may earmark certain percentage of mines for end use.

(4) Where the State Government reserves a mine or mines for any particular specified end use, the minerals extracted under the mining lease shall, -

(i) be utilised solely for the specified end use; and

(ii) not be sold or transferred or otherwise disposed of, either directly or indirectly.

(5) The eligibility for participating in the auction shall be determined as per the terms and conditions of eligibility for participating in the auction and the Successful Bidder shall be decided solely on the basis of financial bids submitted by the eligible bidders.

7. **Electronic Auction.**- (1) An auction shall be conducted only through an online electronic auction platform.

(2) The State Government may utilise any online electronic auction platform which meets the minimum technical and security requirements as specified in the Guidelines for compliance to Quality requirements of e-Procurement Systems issued by the Standardisation Testing and Quality Certification Directorate, Department of Information Technology, Ministry of Communications and Information Technology, Government of India.

8. **Bidding parameters.-** (1) The State Government shall specify in the tender document the minimum percentage of the value of mineral despatched, which shall be known as the "reserve price".

(2) The value of mineral despatched shall be an amount equal to the product of,-

(i) mineral despatched in a month; and

(ii) sale price of the mineral (grade-wise and State-wise) as published by Indian Bureau of Mines for such month of despatch.

(3) The bidders shall quote, as per the bidding parameter, for the purpose of payment to the State Government, a percentage of value of mineral despatched equal to or above the reserve price and the successful bidder shall pay to the State Government, an amount equal to the product of,-

(i) percentage so quoted; and

(ii) value of mineral despatched.

(4) Where an area is being auctioned for more than one mineral, the percentage of value of mineral despatched as quoted by the successful bidder under sub-rule (3) shall be applicable for the purpose of payment to the State Government in respect of each such mineral.

(5) If subsequent to grant of a mining lease, one or more new minerals are discovered, the percentage of value of mineral despatched as quoted by the successful bidder under sub-rule (3) shall be applicable for the purpose of payment to the State Government in respect of each such mineral.

9. **Bidding Process.-** (1) Subject to the provisions of rule 5, the State Government shall issue a notice inviting tender, including on their website, to commence the auction process and such notice shall contain brief particulars regarding the area under auction, including,-

(a) particulars of the area identified and demarcated using total station and differential global positioning system divided into forest land, land owned by the State Government, and land not owned by the State Government; and

(b) estimated mineral resources and brief particulars regarding evidence of mineral contents with respect to all minerals discovered in the area during exploration in accordance with the provisions of the Minerals (Evidence of Mineral Contents) Rules, 2015.

(2) The tender document issued by the State Government shall contain,-

(a) geological report pursuant to the Minerals (Evidence of Mineral Contents) Rules, 2015 specifying particulars and estimated quantities of all minerals discovered in the area; and

(b) revenue survey details of the area identified and demarcated using total station and differential global positioning system divided into forest land, land owned by the State Government, and land not owned by the State Government.

(3) The bidders shall be provided a fixed period, as notified by the State Government, to study the tender document and such reports and the bidding process shall commence only on expiry of such period.

(4) The auction shall be an ascending forward online electronic auction and shall comprise of the following rounds, namely:-

(a) First Round of Auction to be held in the following manner, namely:-

(i) the bidders shall submit -

(A) a technical bid comprising amongst others, documentary evidence to confirm eligibility as per the provisions of the Act and the rules made thereunder to participate in the auction, bid security and such other documents and payments as may be specified in the tender document; and

(B) an initial price offer which shall be a percentage of value of mineral despatched;

(ii) only those bidders who are found to be eligible in accordance with the terms and conditions of eligibility specified in rule 6 and whose initial price offer is equal to or greater than the reserve price, referred to as "technically qualified bidders", shall be considered for the second round of auction;

(iii) the highest initial price offer amongst the technically qualified bidders shall be the floor price for the second round of online electronic auction;

(iv) the technically qualified bidders shall be ranked on the basis of the descending initial price offer submitted by them and the technically qualified bidders holding the first fifty per cent. of the ranks (with any fraction rounded off to higher integer) or the top five technically qualified bidders, whichever is higher, shall qualify as qualified bidders for participating in the second round of electronic auction:

Provided that where the total number of technically qualified bidders is less than three, then no technically qualified bidder shall be considered to be qualified bidder and the auction process shall be annulled:

Provided further that the State Government may, in its discretion, decide not to annul the auction process if even in the third or subsequent attempt the total number of technically qualified bidders continues to be less than three and the State Government may, in such case, decide to consider the technically qualified bidders as qualified bidders so as to continue with the bidding process:

Provided also that if the number of technically qualified bidders is between three and five, then all the technically qualified bidders shall be considered as qualified bidders:

Provided also that in the event of identical initial price offers being submitted by two or more technically qualified bidders, all such technically qualified bidders shall be assigned the same rank for the purposes of determination of qualified bidders and in such case, the aforementioned fifty per cent. shall stand enhanced to fifty per cent. plus the number of technically qualified bidders, whose initial price offers are identical less the number of such identical initial price offers.

Illustration:

In the event there are a total of ten technically qualified bidders, and each technically qualified bidder submits different initial price offer, then the technically qualified bidders holding the first fifty per cent. of ranks shall be considered to be qualified bidders.

If three such technically qualified bidders submit the same initial price offer and are ranked in first fifty per cent. of the total number of ranks, then, all the three technically qualified bidders shall be considered to be qualified bidders and the total number of qualified bidders shall stand increased by two.

(b) Second Round of Auction to be held in the following manner, namely:-

(i) the qualified bidders may submit their final price offer which shall be a percentage of value of mineral despatched and greater than the floor price:

Provided that the final price offer may be revised till the conclusion of the auction as per the technical specifications of the auction platform;

(ii) The auction process shall be annulled if none of the qualified bidders submits a final price offer on the online electronic auction platform;

(iii) the qualified bidder who submits the highest final price offer shall be declared as the "preferred bidder" immediately on conclusion of the auction.

10. Grant of Mining Lease.- (1) The preferred bidder shall submit the first instalment being ten per cent. of the upfront payment as per rule 11.

(2) Upon receipt of the first instalment of the upfront payment, the State Government shall issue a letter of intent to the preferred bidder.

(3) The preferred bidder shall be considered to be the "successful bidder" upon,-

(a) continuing to be in compliance with all the terms and conditions of eligibility;

(b) payment of the second instalment being ten per cent. of the upfront payment;

(c) furnishing performance security as specified in rule 12;

(d) satisfying the conditions specified in clause (b) of sub-section (2) of section 5 with respect to a mining plan; and

(e) satisfying such other conditions as may be specified by the State Government with the prior approval of the Central Government.

(4) The successful bidder shall sign the Mine Development and Production Agreement with the State Government upon obtaining all consents, approvals, permits, no-objections and the like as may be required under applicable laws for commencement of mining operations.

(5) The successful bidder shall pay the third instalment being eighty per cent. of the upfront payment subsequent to execution of the Mine Development and Production Agreement, and upon such payment the State Government shall grant a mining lease to the successful bidder.

(6) The Mining Lease Deed shall be executed by the State Government within thirty days of the date of completion of the conditions specified in sub-rule (5) and shall be subject to the provisions of the Act and the rules made thereunder.

(7) The mining lease shall be for minerals found in the area pursuant to exploration prior to the auction:

Provided that where, subsequent to the auction, any new mineral is discovered, then the holder of mining lease shall follow the provisions of the Mineral Concession Rules, 1960 for inclusion of such new mineral in the Mining Lease Deed.

(8) Where, prior to the auction or subsequent to the auction, presence of minor mineral is established or discovered, such minor minerals shall be dealt in accordance with such rules made by the State Government under section 15.

(9) The date on which a duly executed Mining Lease Deed is registered shall be the date of commencement of the mining lease.

11. Upfront payment for mining lease.- (1) An amount equal to 0.50% of the value of estimated resources shall be the upfront payment.

(2) The upfront payment shall be payable to the State Government in three instalments of ten per cent.; ten per cent.; and eighty per cent. as specified in the tender document and shall be adjusted in full against the amount paid under sub-rule (3) of rule 8 within the first five years of commencement of production of mineral as specified in the tender document.

12. **Performance security for mining lease**.—(1) The successful bidder shall provide a performance security of an amount of 0.50% of the value of estimated resources and the performance security shall be adjusted every five years so that it continues to correspond to 0.50% of the reassessed value of estimated resources.

(2) The performance security provided through bank guarantee in the format as specified in Schedule III or through security deposit, may be invoked as per the provisions of –

(i) the Mine Development and Production Agreement; and

(ii) the Mining Lease Deed.

13. **Payments under mining lease.—**(1) The lessee shall pay royalties and dead rent to the State Government as specified in the Act and the rules made thereunder.

(2) The lessee shall pay the applicable amount quoted under rule 8 to the State Government on a monthly basis.

(3) The lessee shall contribute such amounts as may be required under the Act to -

(a) the designated account of the National Mineral Exploration Trust; and

(b) the designated account of the District Mineral Foundation.

(4) The lessee shall also pay such other amounts as may be required under any law for the time being in force to the concerned authorities.

14. **Payment of Interest.—**The State Government shall charge simple interest at the rate of twenty four per cent. per annum on any payment due to State Government under these rules the payment of which is delayed beyond sixty days from the due date thereof.

15. **Time Period**.—The time period for compliance of rules 10 to 14 shall be as specified in the tender document.

CHAPTER III

GRANT OF COMPOSITE LICENCE

16. **Prerequisites for auction of Composite Licence.—**(1) The State Government may initiate an auction process for grant of a Composite Licence with respect to an area within the State in accordance with the provisions of the Act and this Chapter subject to the condition that the requirements of rule 7 of the Minerals (Evidence of Mineral Contents) Rules, 2015 have been satisfied:

Provided that in case of an auction with respect to a notified mineral, prior approval of the Central Government shall be required.

(2) The State Government shall, prior to issuance of the notice inviting tender with respect to auction, identify and demarcate the area where a Composite Licence is proposed to be granted through auction using total station and differential global positioning system and the area so demarcated shall be classified into forests land, land owned by the State Government, and land not owned by the State Government.

17. **Auction for Composite Licence.—**(1) The auction process as specified in rules 6 to 9 shall be applicable for conduct of auction for grant of a Composite Licence subject to the following, namely:—

(a) the State Government shall not make any reservation on the basis of end use;

(b) the State Government shall subject to compliance of rule 16, issue a notice inviting tender, including on their website, to commence the auction process and such notice shall contain brief particulars regarding the area under auction, including,-

(i) particulars of the area identified and demarcated using total station and differential global positioning system divided into forest land, land owned by the State Government, and land not owned by the State Government; and

(ii) estimated mineral resources with respect to all minerals discovered in the area and brief particulars regarding satisfaction of the requirements specified in rule 7 of the Minerals (Evidence of Mineral Contents) Rules, 2015;

(c) the tender document issued by the State Government, shall contain,—

(i) geological report specifying particulars and estimated quantities of all minerals discovered in the area during exploration pursuant to Minerals (Evidence of Mineral Contents) Rules, 2015; and

(ii) revenue survey details of the area identified, demarcated using total station and differential global positioning system divided into forest land, land owned by the State Government, and land not owned by the State Government;

(d) the bidders shall be provided a fixed period, as prescribed by the State Government, to study the Tender Document and such reports and the bidding process shall commence only on expiry of such period.

18. Grant of Composite Licence.—(1) Upon completion of the auction process, the preferred bidder shall submit a performance security in the manner specified in sub-rule (1) of rule 19 and upon receipt of such performance security, the State Government shall issue a letter of intent to the preferred bidder.

(2) On receipt of the letter of intent the preferred bidder shall be considered to be the successful bidder upon fulfilment of the following conditions, namely:—

(a) compliance with all the terms and conditions of eligibility;

(b) obtaining all consents, approvals, permits, no-objections and the like as may be required under applicable laws for commencement of prospecting operations; and

(c) submitting the Scheme of prospecting.

(3) Upon fulfilment of the conditions specified in sub-rule (2), the State Government shall grant a Composite Licence to the successful bidder and such Composite Licence shall be subject to the provisions of the Act and the rules made thereunder, as applicable to a prospecting licence and mining lease.

(4) The minimum area for grant of a Composite Licence shall not be less than the minimum area for which a mining lease may be granted in accordance with the provisions of the Mineral Concession Rules, 1960 and the maximum area shall be in accordance with section 6 as applicable to a prospecting licence.

(5) The holder of a Composite Licence shall conduct geological exploration of the area under the Composite Licence so as to ascertain evidence of mineral contents and shall submit periodic reports in accordance with the Act and rules made thereunder, as applicable to a prospecting licence and all reports, studies and other documentation related to the geological exploration of the area under the Composite Licence shall be submitted to the State Government and Indian Bureau of Mines.

(6) If a holder of a Composite Licence,—

(a) fails to complete prospecting operations in accordance with sub-section (9) of section 11 or fails to establish the existence of mineral contents in accordance with sub-section (10) of section 11, and the Minerals (Evidence of Mineral Contents) Rules, 2015, such holder shall not be eligible to receive a mining lease and the Composite Licence shall be terminated;

(b) completes prospecting operations in accordance with sub-section (9) of section 11 resulting in determination of evidence of mineral contents conforming to the Mineral (Evidence of Mineral Contents) Rules, 2015, such holder shall make an application to the State Government for grant of a mining lease accompanied with the first instalment, being ten per cent. of the upfront payment:

Provided that the mining lease shall be granted only with respect to the area for which evidence of mineral contents has been found and shall not be for an area larger than the maximum area for which a mining lease may be granted under the Act:

Provided further that any excess area shall be deemed to be surrendered by the holder of Composite Licence after completing its reclamation.

(7) Upon receipt of the duly completed mining lease application and the first instalment of the upfront payment as specified in clause (b) of sub-rule (6), the State Government shall issue a letter of intent for mining lease.

(8) A Mine Development and Production Agreement shall be executed between the State Government and the holder of Composite Licence if the holder of a Composite Licence—

(a) continues to comply with the terms and conditions of eligibility;

(b) pays the second instalment being ten per cent. of the upfront payment;

(c) furnishes the enhanced performance security as specified in sub-rule (2) of rule 19;

(d) satisfies the conditions specified in clause (b) of sub-section (2) of section 5 with respect to a mining plan;

(e) obtains all consents, approvals, permits, no-objections and the like as may be required under applicable laws for commencement of mining operations; and

(f) satisfies such other conditions as may be specified by the State Government with the prior approval of the Central Government.

(9) The holder of the Composite Licence shall pay the third instalment being eighty per cent. of the upfront payment, subsequent to execution of the Mine Development and Production Agreement, and upon such

payment, the State Government shall execute a Mining Lease Deed with the holder of the Composite Licence within thirty days of the date of completion of all the conditions specified in sub-rule (8).

(10) The mining lease shall be subject to the provisions of the Act and the rules made thereunder.

(11) The mining lease shall be for minerals found in the area pursuant to exploration prior to the auction:

Provided that where subsequent to the auction, any new mineral is discovered, then the holder of the mining lease shall follow the provisions of the Mineral Concession Rules, 1960 for inclusion of such new mineral in the Mining Lease Deed.

(12) Where prior to the auction or subsequent to the auction, presence of minor mineral is established or discovered, such minor minerals shall be dealt in accordance with such rules as may be made by the State Government under section 15.

(13) The date on which a duly executed Mining Lease Deed is registered shall be the date of commencement of the mining lease.

19. Performance Security for Composite Licence.—(1) An amount of 0.25% of the value of estimated resources shall be payable by the preferred bidder as performance security prior to the issuance of the Composite Licence.

(2) The amount of performance security shall be revised, prior to the issuance of the mining lease, to an amount of 0.50% of the value of estimated resources.

(3) The performance security provided under sub-rule (2) shall be adjusted every five years so that it continues to correspond to 0.50% of the reassessed value of estimated resources.

(4) The performance security may be invoked as per provisions of,-

(i) the Mine Development and Production Agreement; and

(ii) the Mining Lease Deed.

CHAPTER IV

MISCELLANEOUS

20. Power to rectify apparent mistakes.—Any clerical or arithmetical mistake in any order passed by the Government or any authority or officer under these rules and any error arising therein due to accidental slip or omission, may be corrected by the Government, the concerned authority or officer, as the case may be:

Provided that no rectification order prejudicial to any person shall be passed unless such person has been given a reasonable opportunity of being heard.

21. Special provisions relating to minerals specified in Part B of the First Schedule to the Act.—(1) Notwithstanding anything contained in these rules—

(a) if the holder of a Composite Licence or mining lease discovers any mineral specified in Part B of the First Schedule to the Act and not specified in such licence or lease, in the area granted under such licence or lease, the discovery of such mineral shall be reported to the Director, Atomic Minerals Directorate for Exploration and Research, Hyderabad within sixty days from the date of discovery of such mineral;

(b) the licencee or lessee shall not win or dispose of any mineral specified in Part B of the First Schedule to the Act unless such mineral is included in the licence or lease or a separate licence or lease for the purpose has been obtained;

(c) the quantities of any mineral specified in Part B of the First Schedule to the Act recovered incidental to such prospecting or mining operations shall be collected and stacked separately and a report to that effect shall be sent to the Director, Atomic Minerals Directorate for Exploration and Research, Hyderabad every month for such further action by the licencee or lessee as may be directed by the Atomic Minerals Directorate for Exploration and Research.

(2) The licencee or lessee referred to in sub-rule (1) shall, within sixty days from the date of discovery of any mineral specified in Part B of the First Schedule to the Act, apply to the Secretary, Department of Atomic Energy, Mumbai, through the State Government, for grant of a licence to handle such minerals under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and the rules made thereunder and the Department of Atomic Energy shall intimate to the State Government regarding issue of the licence in this regard.

22. Exploration Obligation.—The holder of a mining lease shall complete detailed exploration (G1 level exploration) and prepare a detailed feasibility study report conforming to Part IV and V of the Mineral (Evidence of Mineral Contents) Rules, 2015 over the entire area under the mining lease, within a period of five years from the date of commencement of such mining lease.

SCHEDULE I

Terms and conditions of eligibility

[See rules 6(1) and 6(2)]

1. The following net worth requirements shall be applicable for an auction of mining lease depending on the Value of Estimated Resources,—

   (a) If the Value of Estimated Resources is more than Rupees 25 Crores, the applicant, including an individual, shall have a net worth more than 4% of Value of Estimated Resources.

   (b) If the Value of Estimated Resources is less than or equal to Rupees 25 Crores, the applicant, not being an individual, shall have a net worth more than 2% of Value of Estimated Resources.

   (c) If the Value of Estimated Resources is less than or equal to Rupees 25 Crores, the applicant, being an individual, shall have a minimum net worth of 1% of the Value of Estimated Resources.

2. In case of auction of Composite Licence, the applicant must have a net worth of more than 1% of the Value of Estimated Resources.

Explanation:

(1) In case an applicant is a subsidiary of another company incorporated in India, the net worth of such holding company may also be considered:

Provided that, in such case, the applicant must continue to be a subsidiary of such holding company until such time the applicant meets the aforementioned net worth threshold.

(2) In case of a Company, the Net worth shall be the sum of paid up share capital and the free Reserves as per the audited Balance Sheet of the immediately preceding financial year.

(3) In case of an individual, the Net worth shall be the closing cash balance on the last date for submission of application, and such amount may include amount in Savings Bank accounts in Scheduled Bank/ Post Office, free and un-encumbered Fixed Deposits in Scheduled Banks, Post Office, Listed Companies/Government Organisation/Public Sector Undertaking of State and Central Government, Kisan Vikas Patra, National Saving certificate, Bonds, Shares of Listed Companies, Listed Mutual Funds, Unit Linked Insurance Plan, Public Provident Fund, Surrender Value of Life Insurance policies in the name of Applicant.

SCHEDULE II

Indicative list of specified End Use

[See rule 6(3)]

Sl. No.	Mineral/Ore	End Use
1	Bauxite	Alumina Refinery
2	Iron ore	Integrated steel plants
3	Limestone	Cement Plant

SCHEDULE III

Format of Performance Security

[See rules 12(2)]

[*Reference number of the bank*] [*date*]

To
The Governor of [Name of State]
[*address*]

WHEREAS

A. **[Name of the Successful Bidder]** incorporated in India under the Companies Act, [1956/2013] with corporate identity number [CIN of the Successful Bidder], whose registered office is at [address of registered office], India and principal place of business is at [address of principal place of business, if different from registered office] (the "**Successful Bidder**") is required to provide an unconditional and irrevocable bank guarantee for an amount equal to INR [*figures*] (Indian Rupees [*words*]) as a performance security valid until [*date of expiry of performance bank guarantee*] ("**Expiry Date**").

B. The Performance Security is required to be provided to **The Governor of [Name of State]**, (the "**State**") for discharge of certain obligations under the Tender Document dated, [date] with respect to auction of [particulars of auction] and the Mine Development and Production Agreement to be executed between the State and the Successful Bidder (collectively the "**Agreement**").

C. We, [***name of the bank***] (the "**Bank**") at the request of the Successful Bidder do hereby undertake to pay to the State an amount not exceeding INR [*figures*] (Indian Rupees [*words*]) ("**Guarantee Amount**") to secure the obligations of the Successful Bidder under the Agreement on demand from the State on the terms and conditions herein contained herein.

NOW THEREFORE, the Bank hereby issues in favour of the State this irrevocable and unconditional payment bank guarantee (the "**Guarantee**") on behalf of the Successful Bidder in the Guarantee Amount:

1. The Bank for the purpose hereof unconditionally and irrevocably undertakes to pay to the State without any demur, reservation, caveat, protest or recourse, immediately on receipt of first written demand from the State, a sum or sums (by way of one or more claims) not exceeding the Guarantee Amount in the aggregate without the State needing to prove or to show to the Bank grounds or reasons for such demand for the sum specified therein and notwithstanding any dispute or difference between the State and Successful Bidder on any matter whatsoever. The Bank undertakes to pay to the State any money so demanded notwithstanding any dispute or disputes raised by the Successful Bidder in any suit or proceeding pending before any court or tribunal relating thereto the Bank's liability under this present being absolute and unequivocal.

2. The Bank acknowledges that any such demand by the State of the amounts payable by the Bank to the State shall be final, binding and conclusive evidence in respect of the amounts payable by Successful Bidder to the State under the Agreement.

3. The Bank hereby waives the necessity for the State from demanding the aforesaid amount or any part thereof from the Successful Bidder and also waives any right that the Bank may have of first requiring the State to pursue its legal remedies against the Successful Bidder, before presenting any written demand to the Bank for payment under this Guarantee.

4. The Bank further unconditionally agrees with the State that the State shall be at liberty, without the Bank's consent and without affecting in any manner the Bank's obligation under this Guarantee, from time to time to:

   (i) vary and/or modify and of the terms and conditions of the Agreement;

   (ii) extend and / or postpone the time for performance of the obligations of the Successful Bidder under the Agreement, or

   (iii) forbear or enforce any of the rights exercisable by the State against the Successful Bidder under the terms and conditions of the Agreement.

   and the Bank shall not be relieved from its liability by reason of any such act or omission on the part of the State or any indulgence by the State to the Successful Bidder or other thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of relieving the Bank of its obligations under this Guarantee.

5. Any payment made hereunder shall be made free and clear of and without deduction for, or on account of, any present or future taxes, levies, imposts, duties, charges, fees, commissions, deductions or withholdings of any nature whatsoever.

6. The Bank agrees that State at its option shall be entitled to enforce this Guarantee against the Bank, as a principal debtor in the first instance without proceeding at the first instance against the Successful Bidder.

7. The Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that specified in the Agreement and that it shall continue to be enforceable till all the obligations of the Successful Bidder under or by virtue of the said Agreement with respect to the Performance Security have been fully paid and its claims satisfied or discharged or till the State certifies that the terms and conditions of the Agreement with respect to the Performance Security have been fully and properly carried out by the Successful Bidder and accordingly discharges this guarantee. Notwithstanding anything contained herein, unless a demand or claim under this guarantee is made on the Bank in writing on or before the Expiry Date the Bank shall be discharged from all liability under this guarantee thereafter.

8. The payment so made by the Bank under this Guarantee shall be a valid discharge of Bank's liability for payment thereunder and the State shall have no claim against the Bank for making such payment.

9. This Guarantee is subject to the laws of India. Any suit, action, or other proceedings arising out of this Guarantee or the subject matter hereof shall be subject to the exclusive jurisdiction of courts at the State of [respective State].

10. The Bank has the power to issue this Guarantee in favour of the State. This guarantee will not be discharged due to the change in the constitution of the Bank

11. The Bank undertakes not to revoke this Guarantee during its currency except with the previous consent of the State in writing.

12. The State may, with prior intimation to the Bank, assign the right under this Guarantee to any other departments, ministries or any governmental agencies, which may act in the name of the Governor. Save as provided in this Clause 12, this Guarantee shall not by assignable or transferable.

13. Notwithstanding anything contained herein,

a. the liability of the bank under this bank guarantee shall not exceed the Guarantee Amount.

b. This bank guarantee shall be valid up to the Expiry Date.

14. The Bank is liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if the State serves upon the Bank a written claim or demand on or before the Expiry Date.

Dated the [day] day of [month] [year] for the Bank.

In witness whereof the Bank, through its authorized officer, has set its hand and stamp.

_____

(Signature)

_____

(Name and Designation)

(Bank Stamp)

[F. No. 1/11/2015-M.VI (Part I)]

R. SRIDHARAN, Addl. Secy.

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खान मंत्रालय

अधिसूचना

नई दिल्ली, 14 अगस्त, 2015

सा.का.नि.632 (अ).- केन्द्रीय सरकार, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 9ग की उपधारा (2), उपधारा (3) और उपधारा (4) तथा धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए निम्नलिखित नियम बनाती है, अर्थात् :-

1. संक्षिप्त नाम और प्रारंभ--(1) इन नियमों का संक्षिप्त नाम राष्ट्रीय खनिज खोज न्यास नियम, 2015 है ।

(2) ये उनके राजपत्र में प्रकाशन की तारीख को प्रवृत्त होंगे ।

2. परिभाषाएं—(1) इन नियमों में जब तक कि संदर्भ से अन्यथा अपेक्षित न हों,--

(क) **"अधिनियम"** से खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) अभिप्रेत है ;

(ख) **"अध्यक्ष, कार्यपालक समिति"** से अधिनियम की धारा 9ग की उपधारा (1) के अधीन स्थापित राष्ट्रीय खनिज खोज न्यास की कार्यपालक समिति का अध्यक्ष अभिप्रेत है ;

(ग) **"अध्यक्ष, शासी निकाय"** से अधिनियम की धारा 9ग की उपधारा (1) के अधीन स्थापित राष्ट्रीय खनिज खोज न्यास के शासी निकाय का अध्यक्ष अभिप्रेत है ;

(घ) **"कार्यपालक समिति"** से न्यास की कार्यपालक समिति अभिप्रेत है ;

(ङ) **"निधि"** से नियम 6 में निर्दिष्ट निधि अभिप्रेत है ;

(च) **"शासी निकाय"** से न्यास का शासी निकाय अभिप्रेत है ;

(छ) **"सदस्य, कार्यपालक समिति"** से कार्यपालक समिति का सदस्य अभिप्रेत है ;

(ज) **"सदस्य, शासी निकाय"** से शासी निकाय का सदस्य अभिप्रेत है ;

(झ) **"सुस्पष्ट भू-गर्भीय संभावना क्षेत्र"** से भारत के भू-गर्भीय सर्वेक्षण द्वारा समय-समय पर पहचान किया गया क्षेत्र अभिप्रेत है ;

(ञ) **"न्यास"** से अधिनियम की धारा 9ग की उपधारा (1) के अधीन केंद्रीय सरकार द्वारा स्थापित राष्ट्रीय खनिज खोज न्यास अभिप्रेत है ।

(2) शब्द और पद, जो इन नियमों में प्रयुक्त हैं, किंतु परिभाषित नहीं हैं, का वही अर्थ होगा जो उनका अधिनियम में है ।

3. शासी निकाय और कार्यपालक समिति के कृत्य—(1) शासी निकाय, न्यास द्वारा कार्य करने के लिए वृहत्त नीति ढांचे को अधिकथित करेगी और उसके कार्यकरण का पुनर्विलोकन करेगी ।

(2) शासी निकाय, कार्यपालक समिति की सिफारिशों पर न्यास की वार्षिक योजना और वार्षिक बजट का अनुमोदन करेगा और यह वर्ष में कम से कम एक बैठक करेगा।

(3) कार्यपालक समिति न्यास का प्रबंध, प्रशासन और पर्यवेक्षण करेगी तथा नियमित अंतरालों पर न्यास निधि के व्यय की मानीटरी और पुनर्विलोकन भी करेगी ।

(4) कार्यपालक समिति अपने कृत्यों का निर्वहन करते हुए नीति ढांचे का और समय-समय पर शासी निकाय द्वारा दिए गए निदेशों का अनुसरण करेगी ।

(5) कार्यपालक समिति का अध्यक्ष किसी नामनिर्दिष्ट सदस्य की पदावधि में फेरफार कर सकेगा या उसकी पदावधि के पूरा होने से पूर्व उसे कार्यपालक समिति से हटा सकेगा ।

4. शासी निकाय की सदस्यता—(1) शासी निकाय के सदस्य पदेन सदस्य होंगे ।

(2) शासी निकाय के विशेष आमंत्रिती, यदि कोई हों, ऐसी बैठक फीस, यात्रा व्यय और जेब से किए गए खर्च के हकदार होंगे, जैसा शासी निकाय विनिश्चय करे ।

5. कार्यपालक समिति की सदस्यता—(1) पदेन सदस्यों को मत देने का अधिकार होगा।

(2) पदेन सदस्यों से भिन्न सदस्य, जिसके अंतर्गत विशेष आमंत्रिती हैं, को मत देने का अधिकार नहीं होगा, किंतु वे ऐसी बैठक फीस, यात्रा व्यय और जेब से किए गए खर्च के हकदार होंगे, जैसा शासी निकाय विनिश्चय करे ।

6. न्यास के अधीन निधि का गठन—(1) केंद्रीय सरकार आदेश द्वारा "राष्ट्रीय खनिज खोज न्यास निधि" के नाम से ज्ञात न्यास के अधीन एक निधि स्थापित करेगी, जिसका प्रबंधन न्यास की कार्यपालक समिति द्वारा किया जाएगा ।

(2) न्यास निधि नियम 8 के उपबंधों के अनुसार संदाय करने के लिए धन प्राप्त करेगी और यह ऐसे अन्य स्रोतों से, जो केंद्रीय सरकार द्वारा अनुमोदित किए जाएं, अंशदान भी प्राप्त करेगी ।

7. न्यास निधि में अंशदान—(1) न्यास को भारतीय रिजर्व बैंक अधिनियम, 1934 (1934 का 2) की दूसरी अनुसूची में यथाविनिर्दिष्ट किसी अधिसूचित बैंक में अपने स्वयं के नाम से बैंक खाते खोलने और प्रचालित करने की शक्ति होगी ।

(2) न्यास अधिनियम की धारा 9ग की उपधारा (4) के अधीन किए जाने के लिए अपेक्षित संदायों के प्रयोजन के लिए राज्य सरकार को अपने बैंक खाते की विशिष्टियों से संसूचित करेगा ।

(3) खनन पट्टे और पूर्वेक्षण अनुज्ञप्ति–सह–खनन पट्टे के धारक न्यास निधि को अंशदान के लिए राज्य सरकार को अधिनियम की धारा 9ग की उपधारा (4) के अधीन संदेय रकम का स्वामिस्व के संदाय के साथ संदाय करेंगे ।

(4) राज्य सरकार ऐसे संदायों से एकत्रित रकम को न्यास के बैंक खाते में जमा करेगी ।

(5) उपनियम (4) में निर्दिष्ट जमा को यथाशीघ्र किंतु किसी भी दशा में उस मास, जिसकी बाबत किसी विशिष्ट मास में रकम एकत्रित की गई है, के पश्चातवर्ती मास के दस दिन से पूर्व जमा किया जाएगा ।

(6) इस प्रकार एकत्रित रकम को एकत्रित करने और न्यास निधि में जमा करने तथा केंद्रीय सरकार के साथ लेखाओं को बांटने के लिए, अपेक्षित लेखाओं का अनुरक्षण करने का उत्तरदायित्व राज्य सरकार का होगा ।

(7) राज्य सरकार अधिनियम की धारा 9ग की उपधारा (4) के अनुसरण में संदत्त रकमों और भारतीय खान ब्यूरों को स्वामिस्व के संदाय की बाबत सूचना मासिक आधार पर उपलब्ध कराएगी ।

(8) भारतीय खान ब्यूरो न्यास के बैंक खाते में अंतरित धन का अद्यतन अभिलेख को रखने के साथ स्वामिस्व संदायों के डाटा बेस का अनुरक्षण करेगा तथा न्यास को आवधिक आधार पर ऐसी सूचना उपलब्ध कराएगा ।

8. कार्यालय और बैंक खाता—(1) न्यास का कार्यालय, खान मंत्रालय, शास्त्री भवन, डा. राजेन्द्र प्रसाद रोड, केंद्रीय सचिवालय, नई दिल्ली-110001 या ऐसे अन्य स्थान पर, जो कार्यपालक समिति द्वारा विनिश्चित किया जाएं, होगा ।

(2) न्यास के बैंक खाते को सदस्य सचिव या कार्यपालक समिति के किसी अन्य सदस्य या केंद्रीय सरकार के किसी अन्य अधिकारी द्वारा, जैसा कार्यपालक समिति द्वारा प्राधिकृत किया जाए, के माध्यम से खोला और प्रचालित किया जाएगा ।

9. न्यास के उद्देश्य और कृत्य—(1) न्यास खनिजों के लिए प्रादेशिक और विस्तृत खोज करेगा तथा यह ऐसे कार्यकलाप हाथ में लेगा जैसा शासी निकाय द्वारा अपने उद्देश्यों को पूरा करने के लिए आवश्यक समझे जाएं, जिसके अंतर्गत निम्नलिखित हैं,--

(क) विशेष अध्ययनों और परियोजनाओं का वित्तपोषण करना, जो गहरे या छिपे हुए खनिज भंडारों की पहचान, खोज, निकालने, धातु शोधन और परिष्करण के लिए डिजाइन की गई हैं ;

(ख) खनिज विकास, उन्नत, वैज्ञानिक और प्रौद्योगिकीय पद्धतियों तथा खनिज निकासी, धातु विज्ञान के लिए भरणीय खनन को अंगीकार करने के लिए अध्ययन हाथ में लेना ;

(ग) प्रादेशिक और विस्तृत खोज के लिए क्षेत्रों को पूर्विकता देते हुए विशिष्टता सामरिक और महत्वपूर्ण खनिजों की खोज को हाथ में लेना ;

(घ) न्यास द्वारा खोज के लिए पूर्विकताओं का विनिश्चय करने के लिए केंद्रीय भू-गर्भीय कार्यक्रम बोर्ड से परामर्श करना ;

(ङ) ऐसी रीति में खोज कार्यकलापों को सुकर बनाना, जिससे खोजे गए क्षेत्रों को अधिनियम और उसके तद्धीन बनाए गए नियमों के उपबंधों के अनुसार खनिज छूटों को अनुदत्त करने के लिए हाथ में लिया जा सके ;

(च) स्पष्ट भू-गर्भीय संभावना क्षेत्रों (जी3) में ब्राउन फील्ड प्रादेशिक खोज परियोजनाओं को पूरा करने को सुकर बनाना, जिसके अंतर्गत आधुनिक प्रौद्योगिकीयों के माध्यम से गहरे खनिज भंडारों की उच्च जोखिम खोज संचालित करना है ;

(छ) संपूर्ण भारत में उन क्षेत्रों में, जहां जी3 स्तर की खोज पूरी कर ली गई है, विस्तृत खोज (जी2 या जी1) को पूरा करने का संवर्धन करना ;

(ज) भू-भौतिकीय, भू और हवाई सर्वेक्षण और स्पष्ट भू-गर्भीय संभावना क्षेत्रों के सर्वेक्षण और शेष भारत के सर्वेक्षण को सुकर करना ;

(झ) पृथ्वी विज्ञान और खनिज पूर्वेक्षण के मूल्यांकन के लिए अनुसंधान को प्रोत्साहित करने के लिए राष्ट्रीय कोर निक्षेपागार को सुकर बनाना ;

(ञ) खोज में लगे हुए या लगने वाले कार्मिकों की तकनीकी सक्षमता को बढ़ाने के लिए सक्षमता निर्माण कार्यक्रमों का आयोजन करना ; और

(ट) न्यास निधि का ऐसे अन्य प्रयोजनों के लिए इस्तेमाल करना, जैसा शासी निकाय विनिश्चय करे, या कार्यपालक समिति को भारत में खनिज संसाधनों के संरक्षण, विकास और खोज के हित में समीचीन या आवश्यक के लिए कार्यपालक समिति को प्राधिकृत करना, जो अधिनियम के उपबंधों से असंगत नहीं है ।

(2) उपनियम (1) में निर्दिष्ट उद्देश्यों के लिए शासी निकाय कार्मिकों को नियोजित कर सकेगा या भाडे पर ले सकेगा, संपत्ति, जिसके अंतर्गत बौद्धिक संपदा है, का स्वामी हो सकेगा या उसका निपटान कर सकेगा, प्रशासनिक व्यय उपगत कर सकेगा और दस्तावेजों का निष्पादन कर सकेगा, जैसा अपेक्षित हो ।

10. न्यास का प्रबंधन—(1) न्यास का समग्र नियंत्रण, आवधिक पुनर्विलोकन और नीति निदेश शासी निकाय में विहित होंगे ।

(2) कार्यपालक समिति न्यास के दिन-प्रतिदिन के कार्यकलापों का प्रबंध, प्रशासन और पर्यवेक्षण करेगी ।

(3) शासी निकाय कार्यपालक समिति को उपनियम (1) में यथावर्णित अपनी किसी या सभी शक्तियों का उपयोग करने के लिए प्राधिकृत कर सकेगी ।

(4) कार्यपालक समिति वित्तीय शक्तियों के प्रत्योजन के लिए स्कीम की विरचना करेगी और उसे अंतिम रूप देगी ।

11. समितियां—(1) कार्यपालक समिति ऐसे कार्यों में हाथ में लेने के लिए, जो कार्यपालक समिति द्वारा समिति या समितियों को सौंपे जाएं या प्रत्यायोजित किए जाएं, के लिए समिति या उप समितियों का गठन कर सकेगी ।

(2) उपनियम (1) के अधीन गठित समिति या उप समिति इन नियमों के अधीन कर्तव्यों और उत्तरदायित्वों के निर्वहन करने के लिए तथा ऐसी शक्तियों और कृत्यों का पालन करने के लिए, जैसा कार्यपालक समिति द्वारा विनिर्दिष्ट किए जाएं, स्वयं की प्रक्रिया बनाएगी ।

12. कार्यपालक समिति द्वारा परियोजनाओं का कार्यान्वयन—(1) कार्यपालक समिति स्वयं या राज्य सरकार या किसी अन्य निकाय, जिसके अंतर्गत प्राइवेट सेक्टर निकाय हैं, से परियोजना प्रस्ताव की प्राप्ति पर न्यास के उद्देश्यों से संगत परियोजनाओं का कार्यान्वयन कर सकेगी ।

(2) कार्यपालक समिति उपनियम (1) में निर्दिष्ट परियोजनाओं के कार्यान्वयन के लिए अधिनियम और तद्धीन बनाए गए नियमों से सुसंगत स्वयं की प्रक्रिया की विरचना कर सकेगी ।

तद्धीन

13. परियोजनाओं की मॉनिटरी.– (1) न्यास परियोजनाओं के कार्यान्वयन की मॉनिटरी स्वयं या किसी सरकारी सत्ता के माध्यम से करेगा, जिसके अंतर्गत भारतीय खान ब्यूरो है ।

(2) उपनियम (1) के प्रयोजनों के लिए न्यास अधिनियम और उसके अधीन बनाए गए नियमों से संगत अपनी प्रक्रिया बनाएगा ।

14. शासकीय निकाय की बैठकें. – (1) शासकीय निकाय एक वर्ष में कम से कम एक बार बैठक करेगा ।

(2) शासकीय निकाय की बैठकों की अध्यक्षता शासकीय निकाय के अध्यक्ष द्वारा की जाएगी और अध्यक्ष की अनुपस्थिति में शासकीय निकाय के पदेन सदस्यों में से किसी स्थानापन्न अध्यक्ष का निर्वाचन कर सकेंगे ।

(3) सभी विनिश्चय और संकल्प जिनके अंतर्गत शासकीय निकाय के परिपत्र संकल्प है, आम सहमति द्वारा किए या अंगीकार किए जाएंगे ।

(4) किसी असहमति या विसम्मति की दशा में, अध्यक्ष, शासकीय निकाय का विनिर्णय अंतिम होगा ।

15. कार्यपालक समिति की बैठकें – (1) कार्यपालक समिति प्रत्येक तीन मास की अवधि में कम से कम एक बार बैठक करेगी ।

(2) कार्यपालक समिति की बैठकों की अध्यक्षता अध्यक्ष, कार्यपालक समिति द्वारा की जाएगी । अध्यक्ष, कार्यपालक समिति की अनुपस्थिति में कार्यपालक समिति के पदेन सदस्य, सदस्यों में से स्थानापन्न अध्यक्ष का निर्वाचन करेंगे ।

(3) कार्यपालक समिति की बैठकें भौतिक या वास्तविक या परिचालन द्वारा या दोनों से मिलकर होगी :

परंतु परिचालन द्वारा बैठक न्यास के लेखों के अंगीकरण, न्यास की वार्षिक योजना, वार्षिक बजट और वार्षिक रिपोर्ट के अनुमोदन हेतु शासकीय निकाय की सिफारिश को लागू नहीं होगी ।

(4) सभी विनिश्चय और संकल्प जिनके अंतर्गत कार्यपालक समिति के परिपत्र संकल्प हैं, कार्यपालक समिति के उपस्थित और मतदान करने वाले सदस्यों के बहुमत द्वारा किए जाएंगे या अंगीकार किए जाएंगे ।

(5) मतों की बराबरी की दशा में, अध्यक्ष, कार्यपालक समिति या उसकी अनुपस्थिति में अध्यक्ष के रूप में ऐसी बैठक की अध्यक्षता करने वाले सदस्य का निर्णायक मत होगा:

परंतु कोई सदस्य, कार्यपालक समिति या उसकी किन्हीं समितियों या उप-समितियों की बैठक में विचार-विमर्श हेतु किसी विषय पर चर्चा में मतदान नहीं करेगा या भाग नहीं लेगा, यदि मामला ऐसा है जिसमें ऐसे सदस्य का कोई प्रत्यक्ष, अप्रत्यक्ष या धनीय हित है ।

16. शासकीय निकाय और कार्यपालक समिति की बैठक के लिए नोटस और कार्यसूची. – (1) शासकीय निकाय का अध्यक्ष या संयोजक, अध्यक्ष, शासकीय निकाय की सहमति से शासकीय निकाय की बैठक का यह आयोजन सभी सदस्यों को न्यूनतम 15 दिन का नोटिस देते हुए करेगा :

परंतु अध्यक्ष, शासकीय निकाय इससे लघुत्तर नोटिस-अवधि के साथ बैठक को आयोजित करने हेतु प्राधिकृत कर सकेगा ।

(2) कार्यपालक समिति का अध्यक्ष या सदस्य-सचिव, अध्यक्ष की सहमति से कार्यपालक समिति की बैठक का यह आयोजन सभी सदस्यों को न्यूनतम 7 दिन का नोटिस देते हुए करेगा :

परंतु कार्यपालक समिति का अध्यक्ष इससे लघुत्तर नोटिस-अवधि के साथ बैठक को आयोजित करने हेतु प्राधिकृत कर सकेगा ।

(3) किसी बैठक के लिए नोटिस के अंतर्गत उस बैठक की कार्यसूची, पूर्वत्तर बैठक का प्रारूप कार्यवृत्त और पूर्वत्तर बैठक के कार्यवृत्त पर कृत कार्रवाई रिपोर्ट हो सकेगी ।

17. बैठक की गणपूर्ति. – (1) शासकीय निकाय की किसी बैठक की गणपूर्ति, विशेष निमंत्रितों को अपवर्जित करते हुए, छह से होगी ।

(2) कार्यपालक समिति की किसी बैठक, जिसके अंतर्गत कोई वास्तविक बैठक है, नामनिर्देशित सदस्यों को अपवर्जित करते हुए, की गणपूर्ति सात से होगी ।

18. कार्यपालक समिति के सदस्य-सचिव की शक्तियों, कर्तव्यों और उत्तरदायित्व – (1) कार्यपालक समिति के कृत्यों का निर्वहन करने के लिए कार्यपालक समिति का एक सदस्य-सचिव होगा ।

(2) कार्यपालक समिति का सदस्य सचिव, -

(क) कार्यपालक समिति के अधीक्षण, नियंत्रण और निर्देशन के अध्यधीन न्यास का प्रशासन और प्रबंध करेगा ।

(ख) ऐसी प्रशासनिक और वित्तीय शक्तियों का प्रयोग करेगा, जो कार्यपालक समिति द्वारा प्रत्यायोजित की जाए या जो अध्यक्ष, कार्यपालक समिति द्वारा समनुदेशित की जा सकेगी ।

(3) उप नियम (2) और (3) की व्यापकता पर प्रतिकूल प्रभाव डाले बिना, कार्यपालक समिति के सदस्य-सचिव के निम्नलिखित कर्तव्य और उत्तरदायित्व होंगें, अर्थात् :-

(क) वार्षिक योजना और संबंधित वार्षिक बजट तैयार करवाना और उनको कार्यपालक समिति को शासकीय निकाय के विचार और सिफारिश हेतु प्रस्तुत करना;

(ख) यह सुनिश्चित करना कि न्यास द्वारा अपने जिम्मे लिए जाने वाले प्रस्तावों और परियोजनाओं पर विचार करने से पूर्व कार्यपालक समिति की प्रथाओं, प्रक्रियाओं, नियमों या निदेशों के अनुसार सम्यक तत्परता का प्रयोग किया गया है;

(ग) यह सुनिश्चित करना कि न्यास के कार्यकलाप वार्षिक योजना और संबंधित वार्षिक बजट के अनुसार संचालित किए जा रहे हैं; और

(घ) शासकीय निकाय को प्रत्येक वित्तीय वर्ष के लिए अनुमोदित वार्षिक योजना और संबंधित वार्षिक बजट केंद्रीय सरकार को पूर्ववर्ती वित्तीय वर्ष के जनवरी के अंत तक प्रस्तुत करना ।

19. वार्षिक योजना - कार्यपालक समिति का सदस्य सचिव प्रत्येक वित्तीय वर्ष के प्रारंभ में सुसंगत वित्तीय वर्ष में न्यास द्वारा अपने जिम्मे लिए जाने हेतु प्रस्तावित अल्पावधि परियोजनाओं और दीर्घावधि परियोजनाओं के लिए योजना, जिसे वार्षिक योजना के रूप में निर्दिष्ट किया जाएगा, ऐसे समय के दौरान, परियोजनाओं को पूरा करने का अनुमानित समय और ऐसी परियोजनाओं हेतु लागत न्यास द्वारा अपने जिम्मे लिए जाने वाले या पूरे किए जाने वाले कार्यकलापों के ब्यौरे सहित तैयार करवाएगा ।

(2) वार्षिक योजना में न्यास द्वारा अपने उद्देश्यों को प्राप्त करने के लिए अपने जिम्मे लिए जाने हेतु प्रस्तावित सभी परियोजनाएं, कार्यक्रम, कार्यकलाप अंतर्विष्ट होंगे और सुस्पष्टत: निर्धारित लक्ष्य होंगे ।

20. वार्षिक बजट – कार्यपालक समिति का सदस्य सचिव प्रत्येक वित्तीय वर्ष के प्रारंभ में उस विशेष वित्तीय वर्ष हेतु वार्षिक योजना के अंतर्गत कार्यकलापों पर प्रस्तावित आय और व्यय के ब्यौरों से अंतर्विष्ट वार्षिक बजट तैयार करवाएगा, जिसके अंतर्गत इस संबंध में निधिकरण अपेक्षाओं के ब्यौरों सहित न्यास द्वारा उपगत किए जाने हेतु प्रस्ताव विधिक, प्रशासनिक और अन्य खर्चे हैं, किसी वार्षिक बजट के रूप में निर्दिष्ट किया जाएगा ।

21.वार्षिक योजना और वार्षिक बजट का अनुमोदन – (1) वार्षिक योजना और वार्षिक बजट शासकीय निकाय के समक्ष उनके अनुमोदन के लिए रखे जाएंगे ।

(2) कार्यपालक समिति का सदस्य-सचिव शासकीय निकाय के संयोजक से सम्यक रुप से अनुमोदित वार्षिक योजना और संबंधित वार्षिक बजट की प्रतियां प्राप्त करने पर उनको शासकीय निकाय के अनुमोदन की प्राप्ति की तारीख से तीस दिन की अवधि के भीतर केंद्रीय सरकार को प्रस्तुत करेगा ।

(3) उप नियम (2) के उपबंधों पर प्रतिकूल प्रभाव डाले बिना न्यास, अध्यक्ष, शासकीय निकाय के विनिर्दिष्ट अनुमोदन के अध्यधीन, ऐसे कार्यकलापों हेतु व्यय का जिम्मा ले सकेगा जो वार्षिक योजना में अनुमोदित नहीं किए गए हैं, जिनको शासकीय निकाय के समक्ष अगले वार्षिक बजट सहित रखा जाएगा ।

(4) वार्षिक योजना और संबंधित वार्षिक बजट, अध्यक्ष, शासकीय निकाय के अनुमोदन के अध्यधीन किसी भी समय संशोधित किए जा सकेंगे, जो अगले वर्ष की वार्षिक योजना या बजट सहित शासकीय निकाय के समक्ष रखे जाएंगे ।

3506 GI/15-2

22. वार्षिक रिपोर्ट – (1) कार्यपालक समिति का सदस्य-सचिव प्रत्येक वित्तीय वर्ष के अंत से 90 दिन के भीतर ऐसी सूचना जो कार्यपालक समिति द्वारा समुचित समझी जाए से अंतर्विष्ट एक वार्षिक रिपोर्ट प्रस्तुत करेगा ।

(2) वार्षिक रिपोर्ट कार्यपालक समिति द्वारा अनुमोदित की जाएगी और उसमें, अन्य बातों के साथ-साथ, न्यास द्वारा वित्तीय वर्ष के दौरान पूरे किए गए कार्यकलापों के ब्यौरे और ऐसे वित्तीय वर्ष के दौरान न्यास द्वारा उपगत व्यय अंतर्विष्ट होंगे ।

(3) वार्षिक रिपोर्ट की एक प्रति उसके कार्यपालक समिति द्वारा अनुमोदन की तारीख से तीस दिन की अवधि के भीतर केंद्रीय सरकार को भेजी जाएगी ।

23. वित्तीय वर्ष – (1) न्यास का लेखांकन या वित्तीय वर्ष 1 अप्रैल से 31 मार्च तक होगा ।

(2) न्यास की संक्रियाओं का प्रथम वर्ष आंशिक वर्ष हो सकता है ।

24. लेखों का अनुरक्षण और संपरीक्षा –(1) न्यास के लेखे ऐसे प्ररूप, पद्धति और रीति में अनुरक्षित की जाएगी, जो केंद्रीय सरकार द्वारा विनिश्चित की जाए ।

(2) न्यास निधि के लेखे ऐसे रीति में संपरीक्षित किए जाएंगे जो केंद्रीय सरकार द्वारा विनिश्चित की जाए ।

(3) न्यास, उपनियम (2) में निर्दिष्ट संपरीक्षा के पश्चात् वार्षिक रिपोर्ट केंद्रीय सरकार को प्रस्तुत करेगा ।

[फा. सं. 11/8/2015-एम.आई]

आर.श्रीधरन, अपर सचिव

MINISTRY OF MINES

NOTIFICATION

New Delhi, the 14th August, 2015

G.S.R.632 (E).—In exercise of the powers conferred by sub-sections (2), (3) and (4) of section 9C and section 13 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government hereby makes the following rules, namely:—

1. **Short title and commencement.**- (1) These rules may be called the National Mineral Exploration Trust Rules, 2015.

   (2) They shall come into force on the date of their publication in the Official Gazette.

2. **Definitions.**- (1) In these rules, unless the context otherwise requires,-
   (a) "**Act**" means the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957);
   (b) "**Chairperson, Executive Committee**" means the Chairperson of the Executive Committee of the National Mineral Exploration Trust established under sub-section (1) of section 9C of the Act;
   (c) "**Chairperson, Governing Body**" means the Chairperson of the Governing Body of the National Mineral Exploration Trust established under sub-section (1) of section 9C of the Act;
   (d) "**Executive Committee**" means the Executive Committee of the Trust;
   (e) "**Fund**" means the fund referred to in rule 6;
   (f) "**Governing Body**" means the Governing Body of the Trust;
   (g) "**Member, Executive Committee**" means the member of the Executive Committee of the Trust;
   (h) "**Member, Governing Body**" means the member of the Governing Body of the Trust;
   (i) "**obvious geological potential areas**" means the area identified by the Geological Survey of India from time to time; and
   (j) "**Trust**" means the National Mineral Exploration Trust established by the Central Government under sub-section (1) of section 9C of the Act.

   (2) Words and expressions used and not defined in these rules but defined in the Act shall have the same meanings as assigned to them in the Act.

3. **The Functions of the Governing Body and the Executive Committee.**- (1) The Governing Body shall lay down the broad policy framework for the functioning of the Trust and review its working.

(2) The Governing Body shall approve the annual plan and annual budget of the Trust upon the recommendations of the Executive Committee and it shall meet at least once in a year.

(3) The Executive Committee shall manage, administer and supervise the Trust and shall also monitor and review the expenditure of the Trust fund at regular intervals.

(4) The Executive Committee shall, while discharging its functions, follow the policy framework and the directions of the Governing Body from time to time.

(5) The Chairperson of the Executive Committee may vary the term of office of any nominated member or remove him from the Executive Committee before the completion of his term.

4. **Membership of Governing Body.**- (1) The members of the Governing Body shall be *ex officio* members.

(2) Special invitees, if any, of the Governing Body shall be entitled to such sitting fee, conveyance and out of pocket expenditure as the Governing Body may decide.

5. **Membership of Executive Committee.**- (1) The ex officio members only shall have voting rights.

(2) Members, other than ex-officio members including special invitees shall have no voting rights but shall be entitled to such sitting fee, conveyance and out of pocket expenditure as the Governing Body may decide.

6. **Constitution of a fund under the Trust.**- (1) The Central Government shall, by order, set up a fund under the Trust to be called as the "National Mineral Exploration Trust Fund" to be managed by the Executive Committee of the Trust.

(2) The Trust Fund shall receive monies to be paid in accordance with the provisions of rule 8 and may also receive contributions from such other sources as may be approved by the Central Government.

7. **Contribution to Trust Fund.**- (1) The Trust shall have power to open and operate bank accounts in its own name at any Scheduled Bank as specified in the Second Schedule to the Reserve Bank of India Act, 1934 (2 of 1934).

(2) The Trust shall communicate the particulars of its bank account to the State Government for the purposes of payments required to be made under sub-section (4) of section 9C of the Act.

(3) The holders of mining lease and prospecting licence-cum-mining lease shall make payments for contribution to the Trust Fund of amount payable under sub-section (4) of section 9C of the Act to the State Government simultaneously with payments of the royalty.

(4) The State Government shall deposit the amount collected from such payments into the bank account of the Trust.

(5) The deposit referred to in sub-rule (4) by the State Government into the designated bank account of the Trust, shall be made as soon as possible, but in any case not later than tenth day of the succeeding month in respect of the amount collected in any particular month.

(6) The responsibility of collection and depositing the amount so collected in the Trust Fund and maintaining necessary accounts to be shared with the Central Govemment shall be that of the State Government.

(7) The State Government shall provide information regarding amounts paid pursuant to sub-section (4) of section 9C of the Act and royalty payments to the Indian Bureau of Mines on a monthly basis.

(8) The Indian Bureau of Mines shall maintain an updated record of the monies transferred to the bank account of the Trust along with a database of royalty payments and provide such information to the Trust on a periodic basis.

8. **Office and bank account.**- (1) The office of the Trust shall be situated at Ministry of Mines, Shastri Bhawan, Dr. Rajendra Prasad Road, Central Secretariat, New Delhi 110001 or at such other place as may be determined by the Executive Committee.

(2) The bank accounts of Trust shall be opened and operated through the Member Secretary or any other Member of the Executive Committee or any officer of the Central Government, as may be authorised by the Executive Committee.

9. **Objects and Functions of the Trust.**- (1) The Trust shall carry out regional and detailed exploration for minerals and it shall undertake such activities as may be deemed necessary by the Governing Body to achieve its objects including,-

(a) funding special studies and projects designed to identify, explore, extract, beneficiate and refine deep-seated or concealed mineral deposits;

(b) undertaking studies for mineral development, sustainable mining adoption of advanced scientific and

3506GI/15-3

technological practices and mineral extraction metallurgy;

(c) taking up exploration of areas for regional and detailed exploration, giving priority particularly to strategic and critical minerals;
(d) consulting Central Geological Programming Board to decide the priorities for exploration of the Trust;
(e) facilitating exploration activities in such a manner that areas explored can be taken up for grant of mineral concessions in accordance with the provisions of the Act and the rules made thereunder;
(f) facilitating completion of brownfield regional exploration projects in obvious geological potential areas (G3) including conducting high-risk exploration for deep-seated mineral deposits through modern technologies;
(g) promoting completion of detailed exploration (G2 or G1) across India in the areas where G3 stage exploration has been completed;
(h) facilitating geophysical, ground and aerial, survey and geochemical survey of obvious geological potential areas and rest of India;
(i) facilitating a national core repository for encouraging research in earth sciences and for evaluation of the mineral prospects;
(j) organizing capacity building programmes to raise technical capability of personnel engaged in or to be engaged in exploration; and
(k) using the Trust Fund for such other purposes that the Governing Body may decide, or authorise the Executive Committee, to be necessary or expedient in the interest of conservation, development and exploitation of mineral resources of India, not inconsistent with the provisions of the Act.

(2) In furtherance of the objectives referred to in sub-rule (1), the Governing Body may employ or hire personnel, own and dispose off property, including intellectual property, incur administrative expenses and execute documents as may be necessary.

10. **Management of the Trust.-** (1) The overall control, periodical reviews and policy directions the Trust shall vest with the Governing Body.

(2) The Executive Committee shall manage, administer and supervise the day to day activities of the Trust.

(3) The Governing Body may authorise the Executive Committee to exercise any or all of its powers as mentioned in sub-rule (1).

(4)The Executive Committee shall formulate and finalise the scheme for delegation of financial powers.

11. **Committees.-** (1) The Executive Committee may constitute committees or sub-committees to undertake such tasks that may be assigned or delegated by the Executive Committee to such committees or sub-committees.

(2) The committee or sub-committee constituted under sub-rule (1) shall devise its own procedure in the discharge of the duties and responsibilities under these rules and in exercise of such powers and functions as may be specified by the Executive Committee.

12. **Implementation of projects by the Executive Committee.-** (1) The Executive Committee may implement the projects consistent with the objectives of the Trust on its own accord or upon receipt of a project proposal from a State Government or any other entity, including private sector entities.

(2) In implementation of the projects referred to in sub-rule (1), the Executive Committee may devise its own procedure consistent with the Act and the rules made thereunder.

13. **Monitoring of projects.-** (1) The Trust shall monitor implementation of the projects either by itself or by engaging any government entity, including the Indian Bureau of Mines.

(2) For the purposes of sub-rule (1), the Trust may devise its own procedure consistent with the Act and the rules made thereunder.

14. **Meetings of the Governing Body.-** (1) The Governing Body shall meet at least once in a year.

(2) The meetings of the Governing Body shall be presided by the Chairperson, Governing Body and in the absence of the Chairperson, Governing Body, the ex-officio Members of the Governing Body may elect an officiating Chairperson, from among themselves.

(3) All decisions or resolutions including circular resolutions of the Governing Body shall be made or adopted by consensus.

(4) In case of any disagreement or dissent, the ruling of the Chairperson, Governing Body shall be final.

15. **Meetings of the Executive Committee.-** (1) The Executive Committee shall meet at least once in every three months.

(2) The meetings of the Executive Committee shall be presided by the Chairperson, Executive Committee and in the absence of the Chairperson, Executive Commitee, the ex-officio Members of the Executive Committee may elect an officiating Chairperson, from among themselves.

(3) The meetings of the Executive Committee may be either physical or virtual or by circulation or by combination of both:

Provided that the meeting by circulation shall not apply for adoption of accounts of the Trust, recommendation to Governing Body for approval of annual plan, annual budget and annual report of the Trust.

(4) All decisions or resolutions including circular resolutions of the Executive Committee shall be made or adopted by a majority of votes of the members of the Executive Committee present and voting.

(5) In case of equality of votes, the Chairperson, Executive Committee, or in his absence, the member presiding over such meeting as the Chairperson shall have a casting vote:

Provided that no member shall vote or take part in the discussion of any matter coming up for consideration at a meeting of the Executive Committee or any of its committees or sub-committees, if the matter is one in which such member has any direct, indirect or pecuniary interest.

16. **Notice and agenda for meeting of the Governing Body and Executive Committee.-** (1) The Chairperson or the Convenor of the Governing Body with the consent of the Chairperson, Governing Body, shall convene the meeting of the Governing Body by giving a minimum fifteen days' notice to all the members:

Provided that the Chairperson, Governing Body may authorise to convene a meeting with a shorter notice period.

(2) The Chairperson or the Member Secretary of the Executive Committee, with the consent of the Chairperson shall convene the meeting of the Executive Committee by giving a minimum seven days' notice to all the Members:

Provided that the Chairperson of the Executive Committee may authorise to convene a meeting with a shorter notice period.

(3) Notice for any meeting may include an agenda for that meeting, draft minutes of the earlier meeting and action taken report on the minutes of the earlier meeting.

17. **Quorum for meeting.-** (1) The quorum for any meeting of the Governing Body shall be six, excluding the special invitees.

(2) The quorum for any meeting of the Executive Committee, including a virtual meeting, shall be seven, excluding the nominated members.

18. **Powers, Duties and Responsibilities of the Member Secretary of the Executive Committee.-** (1) There shall be a Member Secretary of the Executive Committee to discharge the functions of the Executive Committee.

(2) The Member Secretary of the Executive Committee shall,-

(a) administer and manage the Trust subject to the superintendence, control and direction of the Executive Committee.

(b) exercise such administrative and financial powers as may be delegated by the Executive Committee or as may be assigned by the Chairperson, Executive Committee.

(3) The Member Secretary of the Executive Committee shall have the following duties and responsibilities, without prejudice to the generality of sub-rule (2) and (3), namely:-

(a) to cause the preparation of the annual plan and related annual budget and submit them to the Executive Committee for consideration and recommendation to the Governing Body;

(b) to ensure that due diligence has been exercised before considering proposals or projects to be undertaken by the Trust in accordance with the practices, procedure, rules or directions of the Executive Committee;

(c) to ensure that the activities of the Trust are being conducted in accordance with the annual plan and related annual budget; and

(d) to submit to the Governing Body the approved annual plan and related annual budget for each financial year to the Central Government, by the end of January of previous financial year.

19. **Annual Plan.-** (1) The Member Secretary of the Executive Committee shall, at the beginning of each financial year, cause preparation of plans for short term projects and long term projects proposed to be undertaken by the

Trust in the relevant financial year, to be referred as the **annual Plan**, together with details of the activities to be undertaken or completed by the Trust during such time, the expected time for completion of the projects and cost for such projects.

(2) The annual plan shall contain all projects, programmes, activities proposed to be undertaken by the Trust for achieving its objective and shall have clearly demarcated milestones.

20. **Annual Budget.**- The Member Secretary of the Executive Committee shall, at the beginning of each financial year, cause preparation of an annual budget containing the details of the proposed income and expenditure on activities covered in the annual plan for that particular financial year, including the legal, administrative and other costs and expenditure proposed to be incurred by the Trust together with details of the funding requirements in this regard, to be referred as the **annual budget**.

21. **Approval of the Annual Plan and the Annual Budget.-** (1) The annual plan and the annual budget shall be laid before the Governing Body for its approval.

(2) The Member Secretary of the Executive Committee shall, on receipt of the copies of the duly approved annual plan and the related annual budget from the Convener of the Governing Body, submit the same to the Central Government within a period of thirty days from the date of receipt of approval of the Governing Body.

(3) Without prejudice to the provisions of sub-rule (2), the Trust may undertake expenditures for activities that are not approved in the annual plan subject to specific approval by the Chairperson, Governing Body, which shall be laid before the Governing Body with the next annual budget.

(4) The annual plan and related annual budget may be amended at any time subject to the approval of the Chairperson, Governing Body, which shall be laid before the Governing Body with the next year annual plan or budget.

22. **Annual Report.-** (1) The Member Secretary of the Executive Committee shall, within ninety days of the end of each financial year, submit an annual report containing such information as deemed appropriate by the Executive Committee.

(2) The annual report shall be approved by the Executive Committee and shall contain details, *inter alia*, of the activities completed by the Trust during the financial year and the expenditure incurred by the Trust during such financial year.

(3) A copy of the annual report shall be sent to the Central Government within a period of thirty days from the date of its approval by the Executive Committee.

23. **Financial year.-** (1) The accounting or financial year of the Trust shall be from the 1st of April to the 31st of March.

(2) The first year of operations of the Trust may be a partial year.

24. **Maintenance and Audit of Accounts.-** (1) The accounts of the Trust shall be maintained in the form, mode and manner as may be decided by the Central Government.

(2) The accounts of the Trust Fund shall be audited in such manner as may be decided by the Central Government.

(3) After the audit referred to in sub-rule (2), the Trust shall submit the annual report to the Central Government.

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