

The Mines and Minerals (Development & Regulation) Act, 2010

An Act to provide for the scientific development of mines and minerals under the control of the Union and the regulation of activities connected therewith.

Be it enacted by Parliament in the Sixty First Year of the Republic of India as follows:-

Chapter-I: PRELIMINARY

1. Short title, extent and commencement:

(1) This Act may be called the Mines and Minerals (Development and Regulation) Act, 2010.

(2) It extends to the whole of India

(3) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

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2. Declaration as to the expediency of Union control:

It is hereby declared that it is expedient in the public interest that the Union should take under its control the regulation of mines and mineral development to the extent hereinafter provided.

3. Definitions:

In this Act, unless the context otherwise requires

(a) '*atomic minerals*' means minerals listed in Part 'B' of First Schedule to this Act.

(b) '*Atomic Minerals Directorate*' means the Director, Atomic Minerals Directorate for Exploration and Research, Hyderabad under the Department of Atomic Energy of the Central Government

- (c) ‘*cess*’ means a duty imposed and collected on any major or minor mineral in accordance with the provisions of this Act.
- (d) ‘*mineral concession*’ means a Reconnaissance Licence, a Large Area Prospecting Licence, a Prospecting Licence, or a Mining Lease in respect of major mineral, and in respect of minor minerals also any quarrying permits and other concessions permitting the mining of minor minerals in accordance with Rules made by the State Government under the Act .
- (e) ‘*detailed exploration*’ means detailed three-dimensional delineation of a known deposit achieved through close spaced sampling, pitting, trenching and drilling etc in a grid, including analysis of outcrops, trenches, boreholes, shafts and tunnels, so that the size, shape, structure, grade of the deposit are established with high degree of accuracy, in order to conduct a feasibility study.
- (f) ‘*Fund*’ means the National Mineral Fund created under Section 44 of this Act or the State Mineral Fund created under Section 45 of the Act as the case may be.
- (g) ‘*forest area*’ means any area to which the provisions of the Forest (Conservation) Act 1980, is applicable
- (h) ‘*general exploration*’ means the process of initial delineation of an identified deposit in an area using surface mapping, wide spaced sampling, trenching and drilling for preliminary evaluation of mineral quantity and quality, including mineralogical tests on laboratory scale, and any indirect method of mineral investigation, in order to conduct a pre-feasibility study and further detailed exploration.
- (i) ‘*licence*’ means Reconnaissance Licence, a Large Area Prospecting Licence and Prospecting Licence.
- (j) ‘*coal minerals*’ means minerals listed in Part A of First Schedule of this Act.
- (k) The ‘*Indian Bureau of Mines*’ means the Controller General of the Indian Bureau of Mines, a subordinate office of the Ministry of Mines in the Central Government or any officer of the Indian Bureau of Mines authorized by Controller General of the Indian Bureau of Mines in this behalf by general or special order.
- (l) A ‘*Large Area Prospecting Licence*’ means a licence granted under this Act for reconnaissance and prospecting, including general and detailed exploration.
- (m) ‘*major mineral*’ means a mineral included in First Schedule to this Act.

- (n) '*Mine*' and '*Owner*' and terms not defined here but defined in the Mines Act, 1952, shall have the meanings assigned to them in the Mines Act, 1952.
- (o) '*mining lease*' means a lease granted by the competent authority for the purpose of undertaking mining operations in accordance with or under this Act, and in respect of minor minerals, shall include quarrying permits and other concessions permitting the mining of minor minerals in accordance with Rules made by the State Government under the Act
- (p) '*minor mineral*' means a mineral other than a major mineral, notified as such by the Central Government in consultation with a State Government.
- (q) '*notified*' means notified in the Official Gazette or in the official website as the case may be.
- (r) '*Official Gazette*' means the Official Gazette by whatever name called, of the Central or the State Government as the case may be, including a District Gazette.
- (s) '*official website*' means the public website owned or managed by the Ministry concerned in the Central Government and the Department concerned of the State Government as the case may be.
- (t) '*prescribed*' means prescribed through Rules made under this Act.
- (u) '*prospecting*' means the systematic process of searching for a mineral deposit by narrowing down an area of promising enhanced mineral potential through outcrop identification, geological mapping, geophysical and geochemical studies, trenching, drilling, sampling, etc. in order to facilitate general and detailed exploration.
- (v) A '*prospecting licence*' means a licence granted under this Act to conduct prospecting, general exploration and detailed exploration operations, and unless the context otherwise requires, the expression, '*prospecting licence*' shall be deemed to include '*a large area prospecting licence*'
- (w) '*Reconnaissance*' means a systematic study to identify areas of enhanced mineral potential on a regional scale based primarily on results of regional geological, geophysical and geochemical studies through remote sensing, aerial and ground sampling surveys including, preliminary field inspections, in order to facilitate further investigation for deposit identification.

- (x) '*Reconnaissance licence*' means a licence to conduct systematic process of identifying areas of enhanced mineral potential through reconnaissance.
- (y) '*State Directorate*' means the Directorate of Mining and Geology (by whatever name called) of the State Government headed by a Director (or any other designation of this nature) responsible for regulation of mining activities within the State.
- (z) "*sustainable development framework*" means the National Sustainable Development Framework or a State Sustainable Development Framework prepared in pursuance to the provisions of Section 45(2) of the Act.
- (aa) '*Prospecting Report*' means a report containing all relevant information on a mineral in an area on the basis of results of prospecting, general exploration and detailed exploration giving details of ore bodies in terms of size, shape, grade, quantity of mineralization and geological assessment represented by codes in UNFC, including baseline and geo-environmental study data.
- (ab) '*Reconnaissance report*' means a report containing all relevant information on mineral occurrences in an area of enhanced mineral potential on regional scale obtained through reconnaissance.
- (ac) '*Feasibility Study*' means the report prepared after conducting a study of a mineral deposit in accordance with the UNFC system, assessing in detail the technical soundness and economic viability of a mining project, including an audit of all geological, engineering, environmental, legal and economic information accumulated on the project,
- (ac) '*UNFC*' means the United Nations Framework Classification for Fossil Energy and Mineral Resources framed by the United Nations Economic Commission for Europe and attached as Appendix to this Act.

## Chapter-II: CONCESSIONS GENERALLY

4. Reconnaissance, prospecting and mining operations to be licenced except as provided

(1) Unless other wise provided in this Act, no person shall undertake any reconnaissance, prospecting, general exploration, detailed exploration or mining in respect of any major or minor mineral except under a Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence or Mining Lease in case of a major mineral or any other concession, in case of minor minerals, as the case may be granted in accordance with the provisions of this Act and Rules made thereunder.

Provided that nothing in this sub-section shall apply to any reconnaissance, prospecting, general exploration, detailed exploration or mining operation undertaken in any area in accordance with the terms and conditions of a Reconnaissance Permit, Prospecting Licence or Mining Lease granted before the commencement of this Act which is in force at such commencement.

Provided further that nothing in this sub-section shall apply to any mining lease (whether called mining lease, mining concession or by any other name) in force immediately before the commencement of the Mines and Minerals (Development and Regulation) Act, 1957 in the Union Territory of Goa, Daman and Diu

(2) No licence shall be necessary in respect of reconnaissance or prospecting operations undertaken by the Geological Survey of India, Atomic Minerals Directorate, Mineral Exploration Corporation Limited, Central Mine Planning and Design Institute Limited and State Directorate and such other Government agencies, as may be notified by the Central Government from time to time in respect of any land where rights on minerals vest in the Government.

Provided that no such operation shall be undertaken in an area for which a Licence or mining lease has been granted or for which application for a licence or mining lease is pending.

Provided further that all such operations shall be notified in the Official Gazette and official website by the State Government and may be undertaken for a period not

exceeding three years in respect of reconnaissance operations and six years in respect of prospecting operations, as may be specified in such notification.

*Explanation:* In respect of Mineral Exploration Corporation Limited, Central Mine Planning and Design Institute and other Government agencies as may be notified for the purpose, provisions of sub-section (2) are intended to apply only with respect to promotional work, undertaken on behalf of the Central or State Government.

(3) During the period of the notification for prospecting operations under sub-section (2), no person shall be entitled to make any application for grant of mineral concession, and on expiry of the period given in the notification under sub-section (2) or such earlier period as may be notified by the State Government, the area shall be deemed to be available for grant of mineral concessions;

(4) In respect of land on which prospecting operations are conducted in accordance with the provisions of sub section (2), before expiry of the period specified in the Notification, the Central Government in case of coal minerals, and the State Government in case of all other minerals, may by notification sequester for a period not exceeding three years all or any portion of the land specified in the notification under sub-section (2), for grant of concession under section 13 of this Act and no application for grant of any concession shall lie, except in terms of a notification under section 13(1) or (5) of the Act, as the case may be.

(5) No mineral concession shall be granted except on application to the State Government alongwith application fee and earnest money, in such form and manner as may be prescribed

*Explanation:* In case an applicant files his application for grant of mineral concession in respect of major as well as minor minerals in the same area, the application shall be considered for all the minerals applied for in accordance with the provisions of the Act applicable to major minerals.

Provided that in case of applications for grant of mineral concession pending with the State Government at the time of commencement of Act, the provisions of the sub-section shall not be applicable.

(6) No person shall transport or store, or cause to be transported or stored, any minerals other than in accordance with the provisions of this Act and Rules made thereunder.

(7) Notwithstanding anything in this Act, no licence shall be necessary in respect of mining of Atomic minerals undertaken by the Atomic Minerals Directorate or such other Government agency as may be notified by the Government from time to time, in such a manner as may be prescribed.

(8) In any reconnaissance or prospecting operations undertaken by the Geological Survey of India, Atomic Minerals Directorate, Mineral Exploration Corporation Limited, Central Mine Planning and Design Institute Limited and such other Government agencies, in terms of the provisions of sub-section (2), such agency conducting the reconnaissance or prospecting operations shall provide a report of the reconnaissance or prospecting operations to the State Government in such manner as may be prescribed, to enable the State Government to notify the area for prospecting or mining, as the case may be, under section 13 of the Act.

#### 5. Eligibility for grant of Concessions

(1) No person shall be eligible for grant of a mineral concession unless such person is an Indian National or a Company as defined in Sub-Section (1) of Section 3 of the Companies Act, 1956, or a Firm registered under the Indian Partnership Act and has registered himself with the Indian Bureau of Mines or the State Directorate or any other agency authorized by Central Government through notification in Official Gazette, as the case may be in such manner as may be prescribed.

Provided that in case of an area specified in the Fifth and Sixth schedule, and in case of other area, in respect of cluster deposits referred to in sub-section (3) of Section 6, a cooperative society constituted under the Cooperative Societies Act of the State concerned and registered in terms of provision under sub-section (1) shall also be eligible;

Provided also that applications for grant or renewal of mineral concession pending with the State Governments at the commencement of the Act shall not be disqualified merely on the ground that the applicants are not registered with the Indian Bureau of Mines, and adequate opportunity shall be given to the applicant to register with the Indian Bureau of Mines, within such time as may be notified for the purpose.

*Explanation 1:-* For the purposes of this Sub-Section, a person shall be deemed to be an Indian National:-

- (a) in the case of a firm or other association of individuals, only if all the members of the firm or members of the association are citizens of India; and
- (b) in the case of an individual, only if he is a citizen of India.

*Explanation 2:* Subject to provision of any notification issued under sub-section (1), the registration process in respect of concessions for major minerals shall be administered by the Indian Bureau of Mines, and in respect of minor minerals, by the State Directorate.

(2) No person shall be eligible for grant of a mineral concession if he is in breach of any of the provisions of this Act or Rules made thereunder which renders him ineligible to hold a mineral concession.

#### 6. Maximum and Minimum area of Concessions:

- (1) The maximum area which can be held under concession at any time by a person in respect of any mineral or prescribed group of associated minerals in a State shall be:-
  - (a) 10,000 square kilometers in respect of Reconnaissance Licences.
  - (b) 5,000 square kilometers in respect of Large Area Prospecting Licences.
  - (c) 500 square kilometers in respect of Prospecting Licences; and
  - (d) 100 square kilometers in respect of Mining Leases.



Provided that a Large Area Prospecting Licence shall be granted only for such groups of associated minerals as may be prescribed, and subject to such general conditions regarding use of advanced technologies and methodologies as may be notified from time to time by the Central Government.

Provided further that in case of coal minerals, if the Central Government is of the opinion that in the interests of the development of coal minerals, it is necessary so to do, it may, for reasons to be recorded in writing, permit any person to acquire one or more prospecting licence or mining leases covering an area in excess of the maximum area specified in sub-section (1).

*Explanation:* The advanced technologies and methodologies notified would be indicative, and would not operate to restrict introduction of new advanced technologies and methodologies other than those notified.

(2) In respect of major minerals, the minimum area for grant of:-

- (a) a Large Area Prospecting Licence shall be five hundred square kilometers
- (b) a Prospecting Licence shall be 1.0 square kilometers; and
- (c) a Mining Lease shall be 0.1 square kilometers (10 hectares).

(3) In respect of minor minerals the minimum area for grant of:-

- (a) a Prospecting Licence shall be 0.1 square kilometers (10 hectares); and
- (b) a Mining Lease shall be 0.05 square kilometers (5 hectares).

Provided that for reasons to be recorded in writing, a State Government, in consultation with the Ministry of Environment and Forests in the Central Government, in respect of any area and any minor mineral, may notify a minimum area different than the area specified in the sub-section.

*Explanation:* For purposes of sub-section (1), (2) and (3), the area held by a person as a shareholder of a cooperative society, company or other corporation and a Hindu Undivided Family and a partner of a firm or as an individual shall be jointly computed.

(4) Notwithstanding anything in sub-section (2) and (3) , a person holding a Prospecting Licence or a Mining Lease shall be entitled to be considered for a Prospecting Licence for the same mineral for an area lower than the minimum area

specified in sub-section (2) or sub-section (3), as the case may be, in an area contiguous to the area of his licence or lease as the case may be.

(5) The holder of a Reconnaissance Licence, Large Area Prospecting Licence, and Prospecting Licence shall progressively surrender area out of his licence annually as may be specified in the licence in the manner prescribed so that at the end of the last year after commencement of operations of the Reconnaissance Licence, the area held does not exceed the maximum eligibility of the Licence holder for a Prospecting Licence and at the end of the last year of the Large Area Prospecting Licence or Prospecting Licence, the area held does not exceed the maximum eligibility of the Licence holder for a Mining Lease in terms of sub-section (1).

(6) No Mining Lease shall be given in respect of any area which is not compact and contiguous or otherwise not amenable to scientific development.

Provided that in respect of small deposits not amenable to scientific mining in isolated patches, a mining lease may be granted for a cluster of such deposits within a defined area of not less than the area specified in sub-section (2) or (3) as the case may be as per prescribed procedure and subject to such prescribed conditions regarding scientific mining as may be necessary in the circumstances.

*Explanation:* (i) Many minor minerals and some major minerals occur as small and surface deposits or as placer deposits. The provision for mining of such cluster deposits is being made in order to prevent illegal mining and to ensure adequate regulation for reducing adverse impact of mining of small and dispersed deposits.

(ii) In order to encourage mining of such cluster deposits, dead rent for the area will be appropriately determined, having regard to the actual area for mining purposes,

(iii) In Fifth and Sixth Schedule areas, the State Government may allocate such mines to local Scheduled Tribes as a Cooperative through the framing of regulations under Section 5 of the Fifth Schedule or Section 3 of the Sixth Schedule as the case may be.

(iv) The State Government may, through procedure prescribed to this effect give preference to local cooperative for the grant of concession for such deposits.

(7) Any Rules prescribed by the State Governments for minor minerals shall be in accordance with the provisions of sub sections (1) to (6).

7. Period of grant and extension of a Concession:

(1) A Reconnaissance Licence shall be granted for a period of not less than one year and not more than three years.

(2) A Large Area Prospecting Licence shall be granted for a period of not less than three years and not more than six years and may be extended on application by the licensee in respect of such part of the area as may be specified, for a period not exceeding two years.

(3) A Prospecting Licence shall be granted for a period of not less than two years and not more than three years and may be extended on application by the licensee in respect of such part of the area as may be specified, for such period that the sum total of the time granted to the licensee and his predecessor-in-interest for reconnaissance operations and prospecting operations does not exceed eight years.

(4) A Mining Lease for major minerals shall be granted for a period of not less than twenty years and not more than thirty years.

Provided that where more than one mineral is found in any area and leases have been granted for exploring two or more minerals, the period of lease of all minerals shall be coterminous with that for which the first lease was originally granted.

Provided further that in the interest of mineral development, amalgamation of two or more adjoining leases held by a lessee may be approved by the authority competent to grant the lease and the period of the amalgamated leases shall be coterminous with the lease whose area is the largest.

(5) A Mining Lease for a minor mineral shall be granted for such period and extended in such manner as may be prescribed in Rules framed by the State Government for the purpose,

Provided that having regard to the nature and manner of occurrence of mineral deposits, different period may be specified for different minerals.

Provided further that the minimum period of grant of mining lease for minor minerals shall not be less than five years.

(6) A mining lease may be extended on application by the lessee in respect of such part of the area as may be specified, for such period not exceeding twenty years at a time, as may be required to ensure full exploitation of the run-of-the-mine in a scientific manner.

Provided that no such extension shall be granted except after approval in the prescribed manner of a fresh Mining Plan for the area for which the lease is sought to be extended.

#### 8. Grant and extension of Concessions:

Other than in respect of lands reserved under the provisions of Chapter VII:-

(1) In respect of any land in which the minerals vest in the Government the State Government shall grant and extend Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence and Mining Lease in accordance with the provisions of this Act and Rules made thereunder.

Provided that in respect of minor minerals, a State Government may, through notification in Official Gazette, restrict the grant to only such types of mineral concessions as are appropriate having regard to the nature of occurrence of the minor mineral concerned.

(2) A Reconnaissance Licence shall not be issued in respect of an area held under a Large Area Prospecting Licence, Prospecting Licence or a Mining Lease; a Prospecting Licence shall not be issued in an area held under Large Area Prospecting Licence and vice-versa; and a Large Area Prospecting Licence or a Prospecting Licence shall not be issued in respect of an area under a Mining Lease,

(3) Without prejudice to the generality of sub-section (1) every person granted a licence or lease shall deposit such sum as security as may be specified for complying with the provisions of the Act and Rules thereunder .

(4) A Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence and Mining Lease in respect of Coal Minerals and Atomic Minerals shall be granted and extended only with the previous approval of the Central Government.

(5) A Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence or Mining Lease for Coal minerals shall be granted by the State Government only to a company selected by the Central Government on such terms and conditions as may be prescribed, through competitive bidding and auction in such manner as may be prescribed.

Provided that the sub-section shall not be applicable for grant of mineral concession:

(a) to a Government company or corporation for mining or such other specified end use;

(b) to a company or corporation that has been awarded a power project (including Ultra Mega Power Project) on the basis of competitive bids for tariff.

(7) Grant of Reconnaissance Licences, Large Area Prospecting Licence, Prospecting Licence and Mining Leases in respect of any mineral underlying the ocean within the territorial waters or the continental shelf of India shall be granted only by the Central Government.

(8) The Government, and every holder of a concession, shall make available data regarding grant, extension, relinquishment, termination and plan of operations in the official website in such manner as may be prescribed,

(9) It is hereby clarified that for the purpose of this Act the onus of proving that ownership of minerals vest in a person other than the State Government, is on the person making the claim.

9. Prospecting Licence and Mining Lease of an area under reconnaissance:

(1) A Large Area Prospecting Licence, Prospecting Licence or a Mining Lease may be granted under the provisions of this Act notwithstanding the fact that a Reconnaissance Licencee is operating in such area,

(2) A Reconnaissance Licence holder who applies for a Prospecting Licence under Section 23(6) of this Act shall be entitled, on grant of such licence, to get such areas vacated as may have been given on Prospecting licence under Sub-Section (1) if such prospecting licence was granted after grant of the reconnaissance licence.

Provided that in a forest area, in case an application for prospecting licence has been made before the grant of the Reconnaissance Licence and is pending for disposal only for want of forest clearance, then any application for prospecting licence by the reconnaissance licence holder on such area shall not be considered till the disposal of the prior application for prospecting licence.

Provided further that a person holding a Large Area Prospecting Licence or a person holding a Prospecting Licence granted under Section 23(6) or a person granted a Mining Lease shall not be required to vacate the area.

10. Special provisions in respect of Atomic Minerals:

(1) Notwithstanding anything contained in the Act, the holder of a Prospecting Licence or Mining Lease for a mineral other than a minor mineral may undertake incidental prospecting/mining operations also in respect of atomic minerals in the area held by him on the conditions that :

(a) if in the course of prospecting or mining operations, he discovers any atomic mineral, he shall within sixty days from the date of discovery of such mineral, report the fact of such discovery to the Atomic Minerals Directorate, the Geological Survey of India, the Indian Bureau of Mines and the State Directorate of the State in which the prospecting or mining operations are carried on.

(b) the quantities of atomic minerals recovered incidental to such prospecting or mining operations shall be collected and stacked separately and a report to that effect sent to the Atomic Minerals Directorate every three months for such further action by the licensee or lessee as may be directed by the Atomic Minerals Directorate .

(2) The licensee or lessee referred to in sub-section (1) shall, within sixty days from the date of discovery of atomic mineral, apply to the Secretary, Department of Atomic Energy, Mumbai, through the State Government, for grant of a licence to handle the said atomic minerals in terms of the provisions of the Atomic Energy (Radiation Protection) Rules 2004, and on obtaining such licence may apply for inclusion of such Atomic Minerals in his licence or lease as the case may be, and in case of lease, to remove and dispose off the atomic mineral on payment of the prescribed royalty to the State Government.

Provided that if in the opinion of the Department of Atomic Energy the atomic mineral recovered incidental to such prospecting or mining operations is not of an economically exploitable grade or the quantity found is insignificant, it shall not be necessary to obtain a separate licence or lease under this Act and Rules thereunder for the atomic minerals.

(3) An applicant under this Act, for obtaining concession for Atomic Minerals shall also apply for a Licence under the Atomic Energy (Radiation Protection ) Rules 2004 to the State Government which shall forward the application to the Secretary, Department of Atomic Energy, Mumbai, and no concession shall be granted except in accordance with the conditions of such licence.

11. Concession to be void if in contravention of Act:

(1) Any mineral concession granted, extended, held or acquired in contravention of the provisions of this Act or any rules or orders made thereunder shall be void and of no effect.

*Explanation:-* Where a person has acquired more than one Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence or Mining Lease, as the case may be, and the aggregate area covered by such licences or leases in respect of a mineral in a State, as the case may be, exceeds the maximum area permissible under Section 6, only that Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence or Mining Lease the acquisition of which has resulted in such maximum area being exceeded shall be deemed to be void.

(2) In every case where a concession is void under sub-section (1), the earnest money deposited in respect of that application shall stand forfeited, and the concession shall be granted to the next eligible applicant or notified for grant of concession, as the case may be, in accordance with the provisions of the Act.

*Explanation:* The area would be notified for grant of concession if it was previously notified and there is no eligible applicant, or where a concession under section 26(1) is deemed void.

12. Cancellation of a concession or disqualification:

(1) In respect of any land in which minerals vest in Government:

(a) Where any person fails to conduct reconnaissance or prospecting or mining operations in accordance with a Reconnaissance, or Prospecting or Mining Plan, as the case may be, prepared in such manner as is hereinafter provided, the State Government may after asking him to show cause and affording him due opportunity, forfeit all or any part of the security deposit and also, or in the alternative, suspend, curtail or revoke the licence or lease having regard to the circumstances of the case,

*Explanation:* The framework of mining operations in respect of minor minerals not requiring a Mining Plan shall be deemed to be a Mining Plan for purpose of this section, pursuant to the provisions of sub-section (1) of section 25.

(b) In every case where a part or all of the security deposit has been forfeited, the licensee or the lessee, as the case may be, shall furnish security to make up the deficiency before recommencing operations under the licence or lease.

(c) Without prejudice to the foregoing the State Government may also ask a person who fails to conduct reconnaissance or prospecting or mining operations in accordance with the Reconnaissance plan or a Prospecting or a mining plan, to show cause and may after affording him due opportunity declare him to be ineligible for consideration for any concession in terms of Sub-Section (3) of Section 20 or Sub-Section (3) of Section 22 or Sub-Section (3) of Section 23 as the case may be, for such period as may be specified, not exceeding five years, having regard to the circumstances.



(d) Where at the expiry of a Reconnaissance Licence, Large Area Prospecting Licence or Prospecting Licence, the licensee fails to adhere to the conditions of the licence, the State Government may, within a period of six months, issue a notice asking him to show cause, and after affording him an opportunity, forfeit all or any part of the security deposit and may declare him to be ineligible for consideration for any concession in terms of Sub-Section (3) of Section 20 or Sub-Section (3) of Section 22 or Sub-Section (3) of Section 23 as the case may be for such period as may be specified, not exceeding five years, having regard to the circumstances.

(e) Orders under this section shall be made by the State Government:

(i) In respect of any major mineral where Indian Bureau of Mines has approved mining plan and mine closure plans, after consultation with the Indian Bureau of Mines on technical issues pertaining to such mining plan and mine closure plans, and

(ii) in case of coal minerals, in consultation with the Central Government.

Provided that in case the Indian Bureau of Mines or the Central Government does not express a contrary opinion within a 3 months period, the State Government may presume its concurrence;

(2) Where the concession relates to land where the minerals vest with a private person, and the operations are not conducted in accordance with the Reconnaissance, Prospecting or Mining Plan, as the case may be, the State Government may, in the interest of mineral conservation and development, in the interest of mineral conservation and development, after giving such private person an opportunity of being heard, issue a direction to him to suspend, curtail or revoke the concession and take any other action in accordance with the terms and conditions thereof.

13. Notification of certain areas for grant of concessions:

In respect of any land where the minerals vest in the Government:-

(1) The State Government may by notification in the Official Gazette and in the Official Website in such manner as may be prescribed, invite applications in the form of competitive offers for any mineral excepting coal minerals, for grant of :

(i) a Prospecting Licence over any area where reconnaissance has been conducted and sufficient evidence of enhanced mineralization of the specified minerals has been established, or,

(ii) a Large Area Prospecting Licence over any area where survey shows that the geological potential is conducive to mineralisation of specified minerals ;

Provided that no application for a Prospecting or Large Area Prospecting Licence , as the case may be, is pending on such area.

Provided further that applications for Large Area Prospecting Licence shall not be invited or entertained for minerals such as iron ore, bauxite, limestone, dolomite or any other mineral notified as a bulk mineral.

Provided also that no such notification shall be issued in respect of an area in which reconnaissance or prospecting operations was completed under a licence less than six months earlier, unless the area has been relinquished,

(2) A notification issued under sub-section (1) may specify that offers received shall be considered with reference to such criteria including any of the following as per weightages assigned, as may have been specified in the Notification:-

(a) specific knowledge and experience of prospecting possessed or accessed by the applicant;

(b) nature and quality of technical resources proposed to be employed;

(c) value addition such as mineral processing and beneficiation ;

(d) end –use including industries based on the mineral

(e) provision of ore-linkage through long-term agreements with domestic industry;

(f) in the case of iron ore, bauxite and limestone, having production capacity at the time of commencement of this Act and captive ore resources which are likely to be exhausted in the near future;

(g) in case of Large Area Prospecting Licence, the nature of the high technology and investment proposed in exploration

(h) a financial bid quoted either as a lump sum recoverable in installments at the time of mining or a percentage of royalty or a profit sharing (to be specified in the notification) of mineral production,

*Explanation 1:* The purpose of the financial bid is to allow the State to recover a value for Government efforts in managing the information relating to survey / regional exploration work, including computer databases and samples for the notified minerals, if such a deposit leads to mining.

*Explanation 2:* The weightage shall be numerical in character and shall enable a composite ranking based on numerical marks assigned for each of the criteria listed in the notification in order to determine the best offer.

(3) Applications and offers received in accordance with the conditions specified in the Notification under sub section (1) and (2) shall be considered in accordance with such criteria and weightage thereto as may have been specified in the Notification, in accordance with Rules made under this Act, and the best offer shall be granted the Prospecting Licence,

(4) A Prospecting Licence granted pursuant to the provisions of sub-section (3) shall, subject to the provisions of the Act and Rules, be granted on or subject to, such special conditions as may be specified in the licence having regard to the provisions of the notification with respect to the criteria stated in the notification issued in accordance with sub-section (2) and the response of the applicant thereto.

*Explanation:* Such special conditions may also relate to conditionalities under which mining lease shall be granted on application under section 26(3) including, in the case of captive resources, restrictions on sale of ore.

(5) In such areas where prospecting has been conducted and sufficient evidence of promising enhanced mineralization has been established through a Prospecting Report and Feasibility Study, and where no application for a mining lease is pending, the State Government may by notification in the Official Gazette and in the Official Website in such manner as may be prescribed, invite applications in the form of competitive bids for any minerals excepting coal minerals, for grant of mining lease, and grant the mining lease to the bidder who in terms of sub-section (6) quotes the best financial bid for the Prospecting Report and Feasibility Study for the area so notified;

*Explanation:* The Financial bid may either be a lump sum, recoverable in installment or a percentage of royalty or a profit sharing , as may be specified in the notification. Royalty is the principal revenue sharing mechanism between the State Government, as the owner of the mineral, and lease holder. The purpose of the financial bid for the Prospecting Report and Feasibility Study is to allow the States to recover a value for the Government efforts in acquiring and managing the information through survey and exploration work, including computer databases, and cores and samples.

Provided that no such notification shall be issued in respect of an area in which prospecting operations was completed under a licence less than six months earlier, unless the area has been relinquished.

Provided further that application for grant of mining lease through competitive bidding shall not be invited in respect of Atomic minerals, and an application for grant of Mining Lease for Atomic Minerals may be considered and Mining Lease granted by the State Government after obtaining prior approval of the Department of Atomic Energy in the Central Government as per prescribed procedure.

Provided also that before issuing the notification under this sub section in respect of any forest or wildlife area, the State Government shall obtain:

- (i) all forest clearances under the Forest (Conservation) Act and wildlife clearance under Wildlife (Protection) Act necessary to reasonably enable the commencement of operations, and
- (ii) all necessary permissions from the owners of the land and those having occupation rights.

*Explanation:* Forest clearance shall comprise recommendations of the Committee constituted for the purpose (Forest Advisory Committee in Central Government and State Advisory Group in State Government).

(6) A notification issued under sub-section (5) may specify that bids received shall be considered with reference to such criteria including any of the following, as per weightages assigned, as may be specified in such notification:-

- (a) special knowledge and appropriate experience in scientific mining and mineral beneficiation;

- (b) bringing in new and advanced technologies;
- (c) investments in value addition such as mineral processing and beneficiation;
- (d) setting up industries based on the mineral, having achieved financial closure for such project;
- (e) providing ore-linkage through long-term agreements with domestic industry
- (f) constructing transportation networks (road and rail) and other infrastructure facilities in the mineral bearing area;
- (g) in the case of iron ore, bauxite and limestone, having production capacity at the time of commencement of the Act and captive ore resources which are likely to be exhausted in the near future.
- (h) financial bid for the Prospecting Report and Feasibility Study for the area so notified

*Explanation:* The weightage shall be numerical in character and shall enable a composite ranking based on bid price and numerical marks assigned for each of criteria listed in the notification in order to determine the best bid.

(7) Bids received in accordance with the notification shall be evaluated in the prescribed manner and the best bid shall be issued the letter of intent, to be awarded the Mining Lease on obtaining all necessary statutory approvals and clearances, on such conditions as may be specified having regard to the criteria stated in the notification issued in accordance with sub-section (6) and the response thereto.

(8) In respect of Atomic Minerals, notification inviting applications and grant of the concession shall be made with the prior approval of the Central Government.

(9) In respect of coal minerals, notification for inviting and grant of concessions shall be made by the Central Government in a manner as may be prescribed.

(10) In respect of grant of concessions for minor minerals, notwithstanding anything in this section, the procedure for notification and grant thereunder shall be as may be prescribed by the State Government.

Provided that before granting concession for minor minerals in an area covered by the Fifth or Sixth Schedule, the Gram Sabha or District Council shall be consulted.

(11) Notwithstanding anything contained in this section, notification of an area for inviting applications in respect of public lands in areas covered by Fifth or Sixth Schedule shall be issued after consultation with the Gram Sabhas or District Councils as the case may be, and in respect of non-scheduled areas, after consultation with the District Panchayat.

(12) The State Government shall entertain application for grant of large area prospecting licence or prospecting licence in an area relinquished by a holder of large area prospecting licence or a prospecting licence only if such area is notified by the State Government for inviting application for grant of large area prospecting licence or a prospecting licence under:

- (i) the provisions of sub-section (1) of section 13 of the Act or,
- (ii) the sub-section (1) of section 22 or sub-section (1) of section 23, as the case may be;

Provided that if the State Government does not notify such relinquished area within three months of relinquishment, any person interested may apply to the National Mining Tribunal in case of major minerals and State Mining Tribunal in case of minor minerals for notification of that area and the Tribunal may either direct the State Government to notify the area within such period as it may specify or may declare that the area shall be deemed to have been notified for the purpose of sub-section (4) of section 22 or sub-section (4) of section 23 as the case may be

14. Time limit for disposal of applications:

In respect of any lands where the minerals vest in the Government:-

(1) The State Government shall dispose of the applications for grant of Reconnaissance Licence, Large Area Prospecting Licence, Prospecting License or Mining Lease within the following period, reckoned from the date of receipt of application:

- (a) Reconnaissance Licence – within three months.

(b) Large Area Prospecting Licence and Prospecting License-within three months.

*Explanation:-* Where applications for prospecting licences are received in response to a notification, the time period for disposal shall be reckoned from the last date notified for receipt of applications.

(2) The State Government shall dispose off the application for grant of Mining Lease in the following manner and within the time limit specified hereunder:-

(a) Letter of intent shall be issued within three months of opening of bids in respect of applications under Section 13 or within three months from date of application in respect of application under Section 26: and

(b) Mining Lease shall be executed within three months of intimation by means of a written communication by the applicant of having obtained all clearances and approvals specified in the Letter of intent;

(3) In any matter requiring the prior approval of the Central Government, the matter shall be disposed of by Central Government within three months, and the State Government shall issue letter of intent within one month from the date of prior approval.

(4) Where any application or written communication is deficient in information or documentation, the State Government shall by notice issued within sixty days of receipt thereof, require the applicant to supply the omission within such period as may be specified having regard to the nature of the document or information, but not being a period of less than fifteen days and not more than sixty days, and such period shall be excluded from the time limits specified in sub-sections (1) and (2).

(5) Where an applicant for mineral concession fails to furnish documents and material information as required under sub-section (4) for processing the application or written communication, the State Government after asking him to show cause in writing and affording him due opportunity, may forfeit the earnest money and reject his application for grant of mineral concession.

(6) Where an application is not disposed off within the limit specified in sub-sections (1), (2) or (3) subject to the provisions of sub-section (4), the applicant may apply to the National Mining Tribunal in the case of major minerals and the State Mining Tribunal in case of minor minerals, for a direction to the Central Government or State Government as the case may be, to dispose off the application within such reasonable period as may be specified, and the Central Government or the State Government, as the case may be, shall comply with such directions.

15. Rights of a holder of reconnaissance Licence, prospecting licence or mining lease:

On the issue of a Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence or Mining Lease under this Act, it shall be lawful for the holder of such licence or lease, his agents or his servants or workmen to enter the lands over which such Licence or Lease had been granted at all times during its currency and carry out all such reconnaissance, prospecting or mining operations as may have been permitted.

Provided that no person shall enter into any building or upon an enclosed court or garden attached to a dwelling-house (except with the consent of the occupier thereof) without previously giving such occupier at least seven days notice in writing of his intention to do so.

16. Act and rules to apply to all extension of concessions:

The provisions of this Act and rules made thereunder shall apply in relation to the extension after the commencement of this Act of any Reconnaissance Permit, Prospecting Licence or Mining Lease granted before such commencement as they apply in relation to the extension of a Reconnaissance Licence, Prospecting Licence or Mining Lease granted after such commencement.

17. Transfer of Reconnaissance Licence and Prospecting Licences:

(1) A holder of a Reconnaissance Licence, Large Area Prospecting Licence or Prospecting Licence may, except in the case of Atomic Minerals and Coal Minerals,



transfer his licence to any person eligible to hold such licence under the provisions of the Act and Rules made thereunder, after expiry of a notice of not less than 90 days to the State Government concerned.

Provided that the original Licencee shall intimate to the State Government the consideration payable or paid by the successor-in-interest for the transfer, including the consideration in respect of the reconnaissance or prospecting operations already undertaken and the Reports and data generated during the operations.

Provided further that no such transfer shall take place if within the period of 90 days the State Government, for reasons to be communicated in writing, disapproves of the transfer on the grounds that the transfer is to a person not eligible under the Act.

(2) A Reconnaissance Licence or Large Area Prospecting Licence or Prospecting Licence in respect of Atomic Minerals and Coal Minerals shall be transferred only with the prior approval of the Central Government.

(3) On transfer of the licence, all rights and liabilities of and under the licence shall be transferred to the successor-in-interest.

(4) Nothing in the preceding sub-Sections shall be deemed to prohibit a licensee from transferring his rights and liabilities after the expiry of the concession period to a person eligible under the Act.

*Explanation:-* On transfer of rights and liabilities, the successor-in-interest will be entitled to consideration in terms of Section 23 or Section 26 as the case may be as if he were the original holder of the concession, if the transfer takes place within the period of eligibility for consideration under the section.

(5) The State Government may charge fees for transfer of the concession as may be prescribed by the Central Government.

(6) Nothing in this Section shall be deemed to enable a holder of a Reconnaissance Licence, Large Area Prospecting Licence or a Prospecting Licence in respect of land

where the minerals vest in a private person to transfer such licence other than in accordance with the terms and conditions of the concession agreement in regard to the consent of such person.

18. Transfer of a Mining Lease:

(1) The holder of a Mining Lease shall not, without the previous approval in writing of the State Government, and in case of Atomic Minerals and Coal Minerals, the previous approval in writing of the Central Government:-

(a) assign, sublet, mortgage, or in any other manner, transfer the Mining Lease, or any right, title or interest therein; or

(b) enter into or make any arrangement, contract, or understanding whereby the lessee will or may be directly or indirectly financed to a substantial extent by, or under which the lessee's operations or undertakings will or may be substantially controlled by, any person or body of persons other than the lessee:

Provided further that where the mortgagee is an institution or a Bank or a Corporation notified for the purpose by the Central Government under this Act, it shall not be necessary for the lessee to obtain any such consent of the State Government.

(2) The State Government or the Central Government, as the case may be shall not give its consent to transfer of a Mining Lease unless the transferee has accepted all the conditions and liabilities to which the transferor was subject to in respect of such mining lease, under any law for the time being in force.

(3) No transfer of a Mining Lease shall be made to a person not eligible under this Act to hold the lease and no transfer shall be made by a person in contravention of the condition of, and subject to which the lease was granted.

(4) An application for transfer of Mining Lease shall state:-

(a) the reason for the transfer; and

(b) the consideration for the transfer.

and such other particulars as may prescribed.

(5) No transfer of a Mining Lease that may lead to fragmentation or unscientific mining or is not in the interest of mineral development or is against the national interest shall be permitted.

(6) Where the Mining Lease is in respect of land where the minerals vest in a private person, no transfer shall be permitted except in accordance with the terms and conditions of the concession agreement in regard to the consent of such person.

(7) The State Government may charge fees for the transfer of the Mining Lease in case of a major mineral as may be prescribed by the Central Government and in case of minor minerals, as may prescribed by the State Government.

### Chapter-III : RECONNAISSANCE LICENCE

#### 19. Conditions of a Reconnaissance Licence:

(1) In respect of every Reconnaissance Licence granted for major and minor minerals under this Act and Rules thereunder, the licence holder shall:

(a) progressively relinquish the area granted under the Licence as shall be specified in accordance with the provisions of the Act and Rules thereunder.

(b) file a Reconnaissance Plan in case of major minerals other than coal minerals with the Geological Survey of India, Indian Bureau of Mines, the State Directorate, and in case of coal minerals with the Central Government, and in case of minor minerals with the State Directorate concerned in a manner as may be prescribed, indicating the manner in which he proposes to carry out reconnaissance operations in the area covered by the Licence and in particular: -

(i) particulars of the area such as aerial extent, in terms of latitude and longitude;

(ii) the scale of the plan and the area of geological mapping;

(iii) the particulars of the machines and instruments to be used, and the nature of the data proposed to be collected;

(iv) a quarterly plan of operations; and

(iv) the quarterly schedule of expenditure on the operations.

Provided that in respect of minerals other than coal minerals, with the prior approval of State Directorate and in case of coal minerals with the prior approval of Central Government, the licence holder may modify the plan of operations or the State Directorate or the the Central Government, as the case may be may ask the licensee to modify his plan of operations if it appears that ground operations proposed may be in conflict with ground operations of another licensee who has already filed his plan.

*Explanation:* The quarterly plan of operations will be prepared so as to exclude overlapping of ground operation of the non-exclusive licence holders who have already filed the plan of operations for the area.

(c) make available all data collected by him including all the aerial, photo-geological, geophysical, geochemical and such other data collected by him to the Geological Survey of India, the State Directorate and in case of coal minerals to the Central Government, in such manner and with such periodicity as may be prescribed.

(d) In case radiometric instruments are used, make available all radiometric data available to the Atomic Minerals Directorate.

(e) maintain accurate and faithful account of all the expenses incurred by him on the reconnaissance operations.

(f) submit Reports to the Geological Survey of India, Indian Bureau of Mines, the State Directorate and in case of coal minerals Central Government, in such manner and with such periodicity as may be prescribed. While submitting reports, the Licence holder may specify that the whole or any part of the report or data submitted by him shall be kept confidential; and the Geological Survey of India, Indian Bureau of Mines, the State Directorate, and in case of coal minerals Central Government, shall thereupon, keep the specified portions as confidential for a period of six months from the expiry of the Licence, or abandonment of operations or termination of the Licence, whichever is earlier.

(g) allow every officer authorized by the Central Government or the State Government in case of major minerals and the State Governments in case of minor minerals, in this behalf to examine at any time the accounts maintained.

(h) furnish to the Geological Survey of India, Indian Bureau of Mines, and the State Directorate in case of major minerals, in case of coal minerals to the Central Government, and in case of minor minerals to the State Directorate concerned, such information and returns as may be required in relation to reconnaissance operations.

(i) allow any officer authorized by the Geological Survey of India or the State Directorate in case of major minerals and the officers of State Directorate in the case of minor minerals to inspect any reconnaissance operations carried on by licence holder.

(j) pay to the State Government in respect of land in which minerals vest in the Government, and to the person in whom the minerals vests in other cases, a Licence fee as may be prescribed by the Central Government by Notification from time to time, being not less than fifty rupees per square kilometer per year and not more than five hundred rupees per square kilometer per year or part thereof.

(k) obtain clearance from Ministry of Defence in the Central Government, in case Defence establishments lie in the area proposed for exploration

(l) comply with such other condition as may be prescribed through Rules made under this Act.

(2) The Reconnaissance Licence may contain such other general conditions as may be prescribed in the interest of public safety or national security by the Central Government which inter-alia may include the condition that a representative of the Directorate General, Civil Aviation or Ministry of Defence shall be present during the aerial surveys.

(3) The Indian Bureau of Mines may issue direction to a Reconnaissance Licence holder to ensure compliance with the conditions of the Licence and the Licence holder shall be bound to comply.

(4) The Licence holder shall before starting operations, deposit as security an amount equal to the Licence fee levied for the first year and in case of breach of any condition imposed on a holder of a Reconnaissance Licence by or under this Act, the State Government may by order in writing, suspend, curtail or revoke the Licence, and may in addition or in the alternative forfeit in whole or in part, the amount deposited by the Licence holder as security.

Provided that no such order shall be made without asking the Licence holder to show cause and affording him a reasonable opportunity of being heard.

Provided also that in case of land in which the minerals vest in a person other than the Government, the State Government shall afford such person an opportunity of being heard and may issue directions to him to suspend, curtail or revoke the concession or forfeit the security in accordance with the terms and conditions of the concession agreement.

(5) In every case where a part or all of the security deposit has been forfeited, the licensee, shall furnish security to make up the deficiency before recommencing operations under the licence,

(6) Any amount deposited as security in pursuance to the provision of sub section (3) shall unless forfeited, be returned to the licensee at the end of the six month period following the expiry or termination of the licence,

Provided that in case the return of the security or such part thereof as may be payable takes place more than 30 days after the expiry of the six month period, simple interest at the rate of 6 percent per annum shall be payable for the period beyond 30 days.

20. Procedure for grant of Reconnaissance Licence:

(1) An application for grant of a Reconnaissance Licence in respect of any land in which the minerals vest in the Government shall be made to the State Government concerned in the manner prescribed alongwith application fees and earnest money as prescribed.

(2) The State Government shall acknowledge receipt of the application and shall register the application in such manner as may be prescribed, in a Register that shall be open to inspection by the public,

Provided that if it so prescribed, the Register may be published in the official website instead,

(3) The State Government shall grant the Reconnaissance Licence to every applicant who is eligible in terms of this Act and the Rules made thereunder.

(4) In all cases where the State Government refuses an application, it shall communicate the reasons therefor.

Provided that no application shall be refused

(a) without first communicating the grounds and giving the applicant an opportunity to represent within a reasonable period of not less than thirty days; and

(b) on grounds of incompleteness of material particulars without first requiring the applicant to supply the requisite documents or information.

(5) The grant of Reconnaissance Licences shall be notified in the Official Gazette and in the Official Websites in such manner as may be prescribed.



#### Chapter-IV : PROSPECTING LICENCES

21. Conditions of a Large Area prospecting licence and Prospecting Licence:

(1) In respect of every Large Area Prospecting Licence and Prospecting Licence granted for major minerals and minor minerals under the Act and Rules thereunder, the licence holder shall:

(a) progressively relinquish the area granted under the licence as shall be specified in accordance with the provisions of the Act and Rules thereunder.

(b) prepare and file a Prospecting Plan with the Geological Survey of India, Indian Bureau of Mines and the State Directorate in respect of major minerals other than coal minerals and in case of coal minerals with the Central Government, and the State Directorate in the case of minor minerals, in a manner as may be prescribed, indicating the manner in which he proposes to carry out the prospecting operations, in the area covered by the licence and in particular:

(i) particulars of the area being prospected;

(ii) the scale of the plan and the area of geological mapping;

(iii) a six monthly plan of operations including:

(a) the number of pits, trenches, and bore holes which he proposes to put in the area;

(b) the number of samples proposed to be drawn and analysed;

(c) the particulars of the machines to be used;

(d) the details of exploratory mining (if any, proposed) to be undertaken;

(e) the beneficiation studies proposed to be undertaken;

(iv) appropriate baseline information of prevailing environmental conditions before the beginning of prospecting operations;

(v) steps proposed to be taken for protection of environment which will include prevention and control of air and water pollution, progressive reclamation and rehabilitation of the land disturbed by the prospecting operations, a scheme for the plantation of trees, restoration of local flora and water regimes and such other measures, as may be directed from time to time by the Indian Bureau of Mines or the State Directorate as the case may be for minimizing the adverse effect of prospecting operations on the environment.

(vi) the six monthly expenditure to be incurred on the operations;

(vii) any other matter relevant for scientific prospecting, as directed by the Indian Bureau of Mines or the State Directorate as the case may be from time to time by a general or specific order.

Provided that such a plan need be filed with the Geological Survey of India in respect of Large Area Prospecting Licences only, and only to such extent as may be notified by the Geological Survey of India from time to time.

(c) carry out prospecting operations in accordance with the prospecting plan submitted by him, with such modifications, if any, as directed by the Indian Bureau of Mines or the State Directorate and in case of coal minerals the Central Government, as the case may be.

Provided that where the licensee proposes to conduct prospecting operations in a manner at variance with the plan already intimated, he shall prepare and file a revised or supplementary prospecting plan in such manner as may be prescribed.

(d) make available all data collected by him during prospecting operations to the Geological Survey of India, Indian Bureau of Mines and the State Directorate, in case of

coal minerals to the Central Government, and in case of Atomic Minerals, also to the Atomic Minerals Directorate in such manner as may be prescribed.

Provided that such data need to be made available to the Geological Survey of India in respect of Large Area Prospecting Licence only, and only to such extent as may be notified by the Geological Survey of India from time to time.

(e) maintain complete and faithful accounts of all the expenses incurred by him during the prospecting operations.

(f) submit a Report on progress of operations under the Prospecting Plan to the Indian Bureau of Mines and the State Directorate and in case of coal minerals to the Central Government, in such manner and with such periodicity as may be prescribed.

(g) pay to the Government in respect of any land in which the minerals vest with it, and to the person in whom the minerals vest in other case such prospecting fee as may be prescribed by the Central Government by Notification from time to time being not exceeding rupees fifty per hectare of land covered by the licence for each year or part of a year of the period for which the licence is granted or extended.

Provided that the notification of the Central Government may specify a rate that may be different for each of the successive years.

(h) within three months after the determination of the licence or the date of abandonment of the prospecting operations, whichever is earlier, securely plug all bores and fill up or fence all excavations in the land covered by the licence; provided if in any part of the area the licensee receives a letter of intent for grant of mining lease within this period he may carry out only such amount of the work as may be consistent with mining operations under such lease.

(i) report to the State Directorate in case the minerals vest in the Government, the discovery of any mineral not specified in the licence within a period of sixty days from the date of such discovery. Consequent upon such reporting, such newly discovered

minerals (except atomic and coal minerals) shall be deemed to have been included in the prospecting licence.

(j) take immediate measures in such manner as may be prescribed to restore, as far as possible and at least to the extent given in the Prospecting Plan, the areas in which prospecting operations have been conducted, including replacement of soil cover, removal of contaminants and pollutants introduced during prospecting operations, restoration of local flora and water regimes in such manner as may be prescribed.

(k) pay to the person holding occupation rights of the surface of the land such compensation as may be prescribed.

(l) obtain clearance from Ministry of Defence in the Central Government, in case Defence establishments lie in the area proposed for exploration

(m) comply with such other conditions as may be prescribed through Rules made under this Act.

(2) A prospecting licence may contain such other general conditions relating to the following as the Central Government may prescribe, namely:

(a) compensation for damage to land in respect of which the licence has been granted;

(b) indemnity to Government against the claims of a third party for any damage, injury or disturbance caused to him by the licensee;

(c) restrictions regarding felling of trees on occupied and unreserved Government land;

(d) restrictions on prospecting operations in any area prohibited by any competent authority;

(e) operations in a reserved or protected forest;

- (f) regarding entry on occupied land;
- (g) facilities to be given by the licensee for working other minerals in the licenced area or adjacent areas; and
- (h) filing of civil suits or petitions relating to disputes arising out of the area under prospecting licence.

(3) The Indian Bureau of Miens or the State Directorate may issue direction to a holder of a Large Area Prospecting Licence or a Prospecting Licence to ensure compliance with the conditions of the Licence and the licence holder shall be bound to comply.

(4) Before grant of a prospecting licence, the applicant shall deposit as security a sum equal to the licence fee for the first year and in case of breach of any condition imposed on any holder of a prospecting licence by or under this Act, the State Government may, by order in writing, suspend, curtail or revoke cancel the licence and in addition or in the alternative, forfeit in whole or part, the amount deposited by the licensee.

Provided that no such order shall be made without asking the licensee to show cause and affording him a reasonable opportunity of being heard.

Provided further that in case of land in which the minerals vest in a person other than the Government, the State Government shall afford such person an opportunity of being heard and may issue directions to him to suspend, curtail or revoke the concession or forfeit the security in accordance with the terms and conditions thereof.

(5) In every case where a part or all of the security deposits has been forfeited the licensee shall furnish security to make up the deficiency before recommencing operations under the licence.

(6) Any amount deposited as security in pursuance to the provision of Sub Section (4) shall unless forfeited, be returned to the licensee at the end of the six month period following the expiry or termination of the licence,

Provided that in case the return of the security or such part thereof as may be payable takes place more than 30 days after the expiry of the six month period, simple interest at the rate of 6 percent per annum shall be payable for the period beyond 30 days.

*Explanation:* Unless the context requires otherwise, the term 'Prospecting Licence' includes a 'Large Area Prospecting Licence'.

22. Procedure for Grant of a Large Area Prospecting Licence:

(1) An application for grant of a Large Area Prospecting Licence in respect of any land in which the minerals vest in the Government shall be made to the State Government concerned alongwith application fees and earnest money in such manner as may be prescribed.

(2) The State Government shall acknowledge receipt of the application and shall register the application in such manner as may be prescribed in a Register that shall be open to the public

Provided that if it so prescribed the Register may be published in the official website instead.

(3) The State Government shall consider only such applications as are eligible in terms of the Act and shall refuse all ineligible applications for reasons to be communicated, and an application received later shall not be considered till disposal of all applications received earlier and communication to the earlier applicant of the reasons of the disposal.

(4) Except in the case of applications received in response to a notification under Section 13 of this Act, the State Government shall grant the Large Area Prospecting Licence to the first applicant eligible under this Act and Rules made thereunder and all other applicants shall be deemed to have been refused to the extent of the area granted to the applicant.

*Example:* All applications will be time-stamped in some manner and receiving time shall be recorded in a register maintained for this purpose. In such a scenario if applicant 'A'

has applied on an area comprising block P, Q, and R, and applicant 'B' has applied for Q, R, S and T and applicant 'A' has applied before applicant 'B' (whether on the same or another day), on grant of P, Q, and R to applicant 'A', applicant 'B' will be deemed to have been refused to the extent of Q, and R, but shall be entitled to be considered for grant of S and T and may be granted S and T blocks, if he is the first applicant for these blocks (subject to minimum area condition)

(5) In all cases where the State Government refuses an application and proceeds to consider a subsequent application, it shall first communicate the reason therefor;

Provided that no such refusal shall be made:-

(a) without first communicating the grounds and giving the applicant an opportunity to represent within a reasonable period of not less than 30 days; and

(b) on grounds of incompleteness of material particulars, without first requiring the applicant to first supply the requisite documents or information.

(6) Details of the grant of the Licence shall be notified in the Official Gazette and in the Official Websites in such manner as may be prescribed.

23. Procedure for Grant of Prospecting Licence:

(1) Applications for grant of a Prospecting Licence in respect of any land in which minerals vest in the Government shall be made to the State Government concerned in such manner as may be prescribed alongwith application fees and earnest money, as may be prescribed.

(2) The State Government shall acknowledge all applications received and shall cause them to be registered, in such manner as may be prescribed in the Register that shall be open to the public;

Provided that if it so prescribed the Register may be published in the official website instead.

(3) The State Government shall consider only such applications as are eligible in terms of this Act and shall refuse all ineligible applications for reasons to be communicated and except in the case of applications received in response to a notification under Section 13 of this Act, and subject to the provisions of Sub-Section (6),

an application received later in respect of an area shall not be considered till disposal of all applications received earlier and communication to the applicants of the reason for the disposal.

(4) Except in the case of applications received in response to a notification under Section 13 of this Act, and subject to the provisions of Sub-Section (6), the State Government shall grant the Prospecting Licence in respect of the land to the first applicant eligible under this Act and the Rules thereunder and all other applicants shall be deemed to have been refused to the extent of the area granted to the first applicant.

(5) In all cases where the State Government refuses an application and proceeds to consider a subsequent application, it shall first communicate the reason therefor; provided that no such refusal shall be made:-

(a) without first communicating the grounds and giving the applicant an opportunity to represent within a reasonable period of not less than thirty days; and

(b) on grounds of incompleteness of material particulars, without first requiring the applicant to first supply the requisite documents or information.

Provided that an application for grant of a prospecting licence shall not be refused on the only ground that applications have been received for Reconnaissance or Large Area Prospecting Licence.

(6) The application of a person eligible under this Act, made within six months of completion of reconnaissance operations under a reconnaissance Licence held by him or held by his predecessor-in-interest shall have the first right to the exclusion of other applications notwithstanding anything in Sub-Section (3) and (4) to the contrary and where there is more than one such application for the same land, the application received later shall not be considered till disposal of all applications received earlier and communication of reasons for the disposal, and the State Government shall grant the licence to the earliest applicant eligible for the licence.

*Explanation:* - The purpose of this Sub-Section is to ensure that the person who intends to invest in reconnaissance operations (directly or by acquiring the reconnaissance data) must have the legitimate expectation that his investment will enable him to acquire prospecting rights to the exclusion of a person who makes no such investment.



(7) Details of grant of the licence shall be notified in the Official Gazette and the Official Website in such manner as may be prescribed.

24. Issue of notification where prospecting operations are to be undertaken by the Geological Survey of India etc.:

(1) Where a prospecting operation in respect of lands in which minerals vest in the Government is to be undertaken by the Geological Survey of India, the Indian Bureau of Mines, the Atomic Minerals Directorate, the State Directorate, or the Mineral Exploration Corporation Limited or the Central Mine Planning & Design Institute Limited or such other agencies as may have been notified for the purpose, in terms of section 4, the State Government shall issue a notification in the official Gazette and Official Websites giving details of the area, and the period for which prospecting operations are to be undertaken.

Provided that such period shall not be for more than six years.

(2) The agency undertaking prospecting operation shall make a six monthly report of progress of prospecting in such manner as may be prescribed, and submit the prospecting report and the geological study, pre-feasibility study or feasibility study as the case may be, to the State Government at end of the prospecting operations in such manner and such terms and conditions as may be prescribed.

(3) The State Government may revoke a notification issued under sub-section (1), if the prospecting operations have been completed before the expiry of the period stated in the notification.

(4) The State Government shall not entertain any application for grant of a any prospecting licence or mining lease to any person for an area or a part thereof in relation to which a notification has been issued under sub-rule (1), for period that the notification is in effect, and such applications shall be deemed never to have been made.

## Chapter-V : MINING LEASE

### 25. Conditions of a Mining Lease:

(1) Every mining lease for a major mineral or a minor mineral shall be subject to the following conditions:

(a) All mining operations will be in accordance with a Mining Plan which shall be prepared in such manner as is provided in the Act or may be prescribed.

(b) the lessee shall report to the State Government the discovery in the leased area of any mineral not specified in the lease for which rights vest in the Government, within sixty days of such discovery;

(c) if any mineral not specified in the lease is discovered in the leased area, the lessee shall not win and dispose of such mineral unless such mineral is included in the lease or a separate lease is obtained therefor ;

(d) the lessee shall pay to the Government in case of land in which minerals vest in the Government and to the person in whom the minerals vest in other cases, for every year or part thereof, except the first year of the lease, yearly dead rent at the rate specified in the Third Schedule of the Act subject to the provisions of section 42.

Provided that if the lease licences the working of more than one mineral in the same area, the State Government or the person in whom the minerals vest in other cases, as the case may be shall not charge separate dead rent in respect of each mineral:

Provided further that the lessee shall be liable to pay the dead rent or royalty in respect of each mineral whichever be higher in amount but not both ;

(e) the lessee shall also pay, for the surface area used by him for the purposes of mining operations, surface rent and water rate at such rate, as may be prescribed by the State Government;

(f) The lessee shall furnish in such manner and such periodicity as may be prescribed:-

(i) all geological, geochemical and geophysical and hydrological data relating to the leased area collected by him during the course of operations to the Indian Bureau of Mines and the State Directorate and in case of coal minerals to the Central Government.

(ii) all information pertaining to investigations of atomic minerals collected by him during the course of mining operations to the Atomic Minerals Directorate and to the State Directorate.

(g) the lessee shall commence mining operations within two years from the date of execution of the lease and shall thereafter conduct such operations in a scientific, skillful and workman-like manner

*Explanation.-* For the purpose of this clause, mining operations shall include the erection of machinery, laying of a tramway or construction of a road in connection with the working of the mine ;

(h) the lessee shall, at his own expense, erect and at all times maintain and keep in good repair boundary marks and pillars necessary to indicate the demarcation shown in the plan annexed to the lease;

(i) the lessee shall not carry on, or allow to be carried on, any mining operations at any point within a distance of fifty metres from any railway line, except under and in accordance with the written permission of the railway administration concerned or under or beneath any ropeway or ropeway trestle or station, except under and in accordance with the written

permission of the authority owning the ropeway or from any reservoir, canal or other public works, or buildings, except under and in accordance with the previous permission of the State Government ;

(j) the lessee shall strengthen and support, to the satisfaction of the railway administration concerned or the State Government, as the case may be, any part of the mine which in its opinion requires such strengthening or support for the safety of any railway, reservoir, canal, roads or any other public works or buildings ;

(k) the lessee shall keep accurate and faithful accounts showing the quantity and other particulars of all minerals obtained and dispatched from the mine, the number and nationality of the persons employed therein, and complete plans of the mine, and shall allow any officer authorized by the Central Government or the State Government in this behalf, by general or special order, to examine at any time any accounts, plans and records maintained by him and shall furnish the Central or the State Government with such information and returns as it or any officer authorized by it in this behalf may require ;

(l) the lessee shall keep in such manner and in respect of such matters as may be prescribed, accurate records of all trenches, pits and drillings made by him in the course of mining operations carried on by him under the lease, and shall allow any officer authorised by the Central or the State Government in this behalf by general or special order to inspect the same.

(m) the lessee shall allow any officer authorized by the Central or the State Government in this behalf by general or special order to enter upon any building, excavation or land comprised in the lease for the purpose of inspecting the same ;

(n) the lessee shall carry on his operations in accordance with the approved Mining Plan and shall take immediate measures in such manner

as may be prescribed to restore, as far as possible and at least to the extent given in the Mining Plan, the areas in which mining operations have been conducted, including replacement of soil cover, removal of contaminants and pollutants introduced during mining operations, restoration of local flora, and water regimes in such manner as may be prescribed.

(o) the lessee shall pay to person holding occupation rights of the surface of the land such compensation as may be prescribed;

(p) the lessee shall deposit with the State Government in case of major minerals that vest in the Government, an amount calculated at the rate of Rupees one lakh per hectare of the lease area payable in equal installments over the mining plan period as security for due observance of the terms and conditions of the lease.

Provided that the Central Government may from time to time, by notification, vary the amount of the deposit in respect of leases granted after such notification,

Provided further that in case the mineral vests in a person other than the Government, such person shall require deposit of such sum not less than the rate specified above from the lessee.

Provided also that in case of small deposits the lessee shall be required to pay security deposit for the broken up area, mineral storage and waste and over-burden are in the mining lease as per the rate prescribed in the sub-section.

Provided also that in the case of minor minerals the deposit shall be such as may be notified by the State Government and the provisions of this section shall apply mutatis-mutandis to minor minerals

(q) comply with such other conditions as may be prescribed through Rules made under this Act.

(2) The Indian Bureau of Mines or the State Directorate may issue direction to a lessee to ensure compliance with the conditions of the lease and the lessee shall be bound to comply.

(3) If the lessee does not allow entry or inspection in respect of any matter covered by sub-section (1), without prejudice to the provisions of sub-section (2), the State Government shall give notice in writing to the lessee requiring him to show cause within such time as may be specified in the notice which shall be not less than two days and not more than fifteen days as to why the lease should not be determined and his security deposit forfeited; and if the lessee fails to show cause within the aforesaid time to the satisfaction of the State Government, in respect of land in which mineral vest in the Government, the State Government may determine the lease and forfeit the whole or part of the security deposit.

Provided that in respect of any land in which the minerals vest in a person other than the Government, the Government may, after giving due opportunity to such person, direct that he determine the lease and forfeit the whole or part of the security deposit.

(4) If the lessee makes any default in the payment of royalty as required under section 41 or payment of dead rent as required under Section 42 or cess as required under section 44 or section 45 or commits a breach of any of the conditions specified in sub-section (1), the State Government shall give a show cause notice to the lessee requiring him to pay the royalty or dead rent or cess alongwith interest at the rate of fifteen percent per annum or remedy the breach, as the case may be, within thirty days from the date of the receipt of the notice and if the royalty or dead rent or cess is not duly paid or the breach is not remedied within the said period, the State Government in case the minerals vest in

it, may without prejudice to any other proceedings that may be taken against him, determine the lease and forfeit the whole or part of the security deposit.

Provided that in respect of land where the minerals vest in a person other than the Government, the Government may after affording an opportunity to such person, direct that he determine the lease and forfeit the whole or part of the security deposit.

(5) In every case where part or all of the security has been forfeited the lessee shall furnish security to make up the deficiency before recommencing operations,

(6) Any amount deposited as Security in pursuance to the provision of Sub Section (4) shall unless forfeited, be returned to the lessee at the end of the six month period following the expiry or termination of the lease,

Provided that in case the return of the security or such part thereof as may be payable takes place more than 30 days after the expiry of the six month period, simple interest at the rate of 6 percent per annum shall be payable for the period beyond 30 days.

## 26. Procedure for Grant of Mining Lease:

(1) Except in the case where a mining lease is granted pursuant to the provisions of section 13, mining lease in respect of minerals that vest in the Government shall be granted only on application made by a person who has held a large area prospecting licence or a prospecting licence for the area and no other applications shall be entertained.

*Explanation:* A person who has acquired the rights and liabilities of a licensee in terms of Section 17 of this Act shall be deemed to have been a holder of the licence.

(2) The State Government shall acknowledge all applications received and cause them to be registered in such manner as may be prescribed in a register that shall be open to the public

Provided that if it so prescribed the Register may be published in the official website instead.

(3) The application of a person eligible under this Act, made within six months of completion of operations under a Large Area Prospecting Licence or Prospecting Licence held by him or held by his predecessor-in-interest shall be approved for grant of mining lease subject to eligibility and the fulfillment of general conditions as prescribed, and such special conditions as may have been prescribed under sub-section (4) of section 13. Provided that in case such application for Mining Lease is refused no other application shall be considered and the area will be notified for grant of concession under Section 13 (1) or Section 13 (5) of the Act.

(4) In every case of an approval for grant of mining lease under the preceding sub-section, the State Government shall issue a letter of intent to the applicant enabling him to obtaining the statutory approvals and clearances necessary for the execution of lease deed.

(5) Details of grant of the lease shall be notified in the Official Gazette and the Official Website in such manner as may be prescribed.

27. Mining operations to be in accordance with Mining Plan:

(1) Mining operations shall be undertaken in accordance with a Mining Plan, prepared for the entire leased area in a manner as shall be prescribed, and without prejudice of the generality of these provisions, the Rules in this regard may provide for scientific methods of mining within a sustainable development framework, beneficiation and economic utilization and induction of technology to ensure extraction and best utilization of the run of the mine.

Provided that a Mining Plan shall not be required in respect of such minor minerals as are notified by the State Government in consultation with the Indian Bureau of Mines.

Provided further that in respect of any minor mineral for which a mining plan is not required, the State Government, in consultation with the Indian Bureau of Mines, shall prescribe a framework with which mining operations will be carried out and the mining



framework shall be deemed to be in the nature of a general direction under Section 47 of this Act.

Provided also that for the purposes of section 12, the framework shall be deemed to be the mining plan.

(2) On acceptance of application for a mining lease, and before the execution of the lease, the applicant shall cause to be prepared and approved in such manner as may be prescribed and approved, a Mining Plan for the entire area proposed to be granted for lease.

(3) without prejudice to the generality of the provisions of the mining plan, there shall be attached to the mining plan, a Corporate Social Responsibility (CSR) document, comprising of a scheme for annual expenditure by the lessee on socio-economic activities in and around the mine area for the benefit of the host populations in the panchayats adjoining the lease area and for enabling and facilitating self employment opportunities, for such populations.

(4) No mining plan shall be approved unless it is prepared by a qualified person empanelled in this behalf in the prescribed manner.

(5) No person shall be empanelled for purposes of sub-section (4) unless he

(a) is educationally qualified as a mining engineer or geologist;

(b) has the requisite experience; and

(c) meets such other requirements as may be prescribed in order to further the objective of scientific mining.

(6) Except in the case of Coal minerals and Atomic Minerals, the Mining Plan for major minerals shall be approved by officers of the Indian Bureau of Mines subordinate to the Controller General, authorized by general orders in this behalf by the Controller General, and for minor minerals the plan shall be approved by officers of the State Directorate subordinate to the Director authorized in this behalf, by the general order of the State Government.

(7) Any person aggrieved by the approval or refusal of a Mining Plan for major minerals may apply to the Controller General, Indian Bureau of Mines, for reversal or modification of such an order and the Controller General may confirm, modify or set aside the order or direction in respect of the Mining Plan.

Provided that the Central Government may, on being satisfied that the State Directorate possesses the necessary technical and management capability as may be prescribed, may empower the State Directorate to grant approvals for such major minerals, and in such circumstances as may be specified in the notification.

Provided further that in case the Central Government, at any time, is of the opinion that the State Directorate does not possess the requisite technical and management capability, it may suspend or revoke the power granted and may direct it to be exercised by officers of the Indian Bureau of Mines in accordance with the provisions of the sub-section.

(8) Any person aggrieved by the approval or refusal of a Mining Plan or Framework for minor minerals may apply to the Director in the State Directorate for reversal or modification of such an order and the Director may confirm, modify or set aside the order or direction in respect of the Mining Plan or Framework as the case may be.

(9) No person shall conduct mining operations in any area except in accordance with a Mining Plan approved under the Act.

(10) The Controller General or authorised officer of the Indian Bureau of Mines or the officer authorised in this behalf by the State Directorate, as the case may be, may require the holder of a mining lease to make such modifications in the mining plan or impose such conditions as he may consider necessary by an order in writing if such modifications or imposition of conditions are considered necessary-

(a) in the light of the experience of operation of mining plan; and

(b) in view of the change in the technological environment.

(11) In respect of Coal Minerals and Atomic Minerals, the provision of this section shall be applied *mutatis mutandis* by the Central Government.

28. Rights of a Lessee:

The lessee, with respect to the land leased to him, shall have the right for the purpose of mining operations on the land and in the manner prescribed, and subject to statutory provisions, to:-

- (a) work the mines ;
- (b) sink pits and shafts and construct buildings and roads ;
- (c) erect plant and machinery ;
- (d) quarry and obtain building material and road materials and make bricks ;
- (e) use water and take timber ;
- (f) use land for stacking purpose ;
- (g) install fuel pumps/stations for diesel/petrol for own use;
- (h) construct magazine for explosives, and storage sheds for explosive related substances with permission from the licencing authority concerned;
- (i) store overburden material in areas identified for the purpose;
- (j) divert public roads, overhead electric lines etc. (at his own cost) passing through the lease, to facilitate scientific mining, and;
- (k) do any other thing specified in the lease.

29. Extension of mining lease:

(1) An application for the extension of a mining lease shall be made in such manner as may be prescribed to the State Government through such officer or authority as the State Government may specify in this behalf, or the person in whom the minerals vest as

the case may be, at least twenty four months before the date on which the lease is due to expire.

(2) The extension of a lease which was granted with, or would require, the prior approval of the Central Government for grant, shall be extended with the prior approval of the Central Government.

(3) An application for extension made under sub-section (1) shall be decided by the authority competent to grant a lease for the mineral within twelve months thereof and the provisions of sub-section (3) to (6) of Section 14 shall apply *mutatis-mutandis* to application for extension;

Provided that before granting approval for second or subsequent extension of a mining lease, in respect of land in which minerals vest in the Government, the State Government shall seek a report from the Indian Bureau of Mines in respect of major minerals other than coal and atomic minerals and the State Directorate in the case of minor minerals, as to whether it would be in the interest of mineral development to grant the extension of the mining lease.

Provided further that in case a report is not received from the Indian Bureau of Mines in a period of three months of receipt of the communication from the State Government, it would be deemed that the Indian Bureau of Mines has no objection to the grant of extension of the mining lease.

(4) If an application for the extension of a mining lease made within the time referred to in sub-rule (1) is not disposed of by the State Government before the date of expiry of the lease, the period of the lease shall be deemed to have been extended till the State Government passes an order thereon or the person in whom the minerals vest communicates his approval or rejection of the application, as the case may be.

(5) The State Government may by an order in writing condone the delay in an application for extension of mining lease made after the time limit prescribed in sub-rule (1) provided the application has been made before the expiry of the lease and there are

good reasons to condone the delay, and the provisions of sub-section (4) shall be applicable in such a case.

30. Lapsing of leases and revival:

(1) In respect of land in which the minerals vest in the Government, subject to other conditions of this section, where mining operations are not commenced within a period of two years from the date of execution of the lease, or are discontinued for a continuous period of two years after commencement of such operations, the State Government may after asking the lease holder to show cause and affording him due opportunity, declare that the lease has lapsed.

Without prejudice to the foregoing, the State Government on being satisfied that the lessee did not show due diligence, may also declare him to be in breach of the conditions of such lease and, therefore, ineligible for consideration in terms of Sub-Section (3) of Section 20 or Sub-Section (3) of Section 22 or Sub-Section (3) of Section 23 as the case may be, for such period not exceeding five years as may be specified, having regard to the nature of the breach.

(2) A lessee who is unable to commence the mining operation within a period of two years from the date of execution of the mining lease, or discontinues mining operations for a period exceeding two years for reasons beyond his control, may, at least three months before expiry of such period, seek extension of period for commencing or recommencing mining operations as the case may be, and the State Government on being satisfied about the adequacy and genuineness of the reasons for the non-commencement of mining operations or discontinuance thereof, pass an order condoning the period of delay in commencement or recommencement of the mining operations as the case may be;

Provided that such an order shall be passed by the State Government within three months of receipt of the application.

(3) A lessee who is unable to commence the mining operations within a period of two years from the date of execution of the mining lease, or discontinues mining operations

for a period of exceeding two years for reasons beyond his control, may within six months from the date of its lapse, seek revival of the lease and the State Government on being satisfied about the adequacy of the reasons for non-commencement of mining operations or discontinuance, may pass an order reviving the lease;

Provided that such an order is passed within six months of an application seeking revival

Provided further that the lease has not been revived earlier under this provision for more than twice during the entire period of the lease.

Provided also that in respect of coal minerals, prior approval of the Central Government shall be obtained before orders are issued under this section.

(4) The procedures in respect of matters given in Sub-Section (2) and (3) may be as prescribed.

(5) Any person aggrieved by an order passed by the State Government under sub-section (1), (2) or (3) or by failure of the State Government to pass an order within the time limit provided may apply to the National Mining Tribunal or State Mining Tribunal as the case may be, and the Tribunal may issue such direction as may be appropriate in the circumstances.

31. Determination of lease:

(1) The lessee shall not determine the lease except after notice in writing of not less than twelve calendar months to the State Government or to such officer, or authority as the State Government may specify in this behalf in respect of land in which minerals vest with the Government and to the person in whom the minerals vest in other cases, in accordance with the terms and conditions of the concession.

Provided that where a lessee holding a mining lease for a mineral or for a group of minerals applies for the surrender of the lease or part area thereof or any mineral from the lease on the ground that deposits of that mineral have since exhausted or depleted to such

an extent that it is no longer economical to work the mineral, he shall give notice of not less than six months and the State Government or the person in whom the minerals vest as the case may be may permit the lessee to surrender that lease or part area thereof or mineral as the case may be, subject to conditions as may be prescribed.

(2) In every case where a lease is determined or surrendered under sub-section (1) the lessee shall get approved a Final Mine Closure Plan in terms of section 33 and shall close the mine or part thereof in accordance with the provisions of the section 34,

(3) In respect of any land in which the minerals vest in the Government, in the event of breach of any of the conditions of the lease, the State Government may, in the manner prescribed, and after giving reasonable opportunity to the lessee determine the lease and, or in the alternative, forfeit in whole or in part, the amount deposited as security by the lessee, and in case the lease is determined, shall at the cost of the lessee prepare and implement a Final Mine Closure Plan in accordance with the provisions of the Section 33 and 34.

(4) In respect of any land in which the minerals vests in a person other than the Government where in the event of breach of any of the conditions of the lease, the lease is determined, the person shall prepare and implement the Final Mine Closure Plan at his cost.

(5) Any person aggrieved by an order under sub-section (3) may apply to the National Mining Tribunal in respect of a lease for major mineral and to the State Mining Tribunal in respect of lease for a minor mineral.

32. Premature termination of lease:

(1) Where the State Government is of the opinion that it is in the urgent public interest or in the interest of public safety to so do, it may for reason to be recorded for writing make an order of premature termination of the mining lease in case the minerals vest in the Government, and issue a direction to this effect to the person in whom the minerals vest in other cases to prematurely determine the lease.

(2) In every case of premature termination of a lease under sub section (1) the State Government shall, having regard to the nature of the loss caused to the lessee, recompense the lessee in such manner as may be prescribed,

(3) No order of premature termination of a mining lease shall be made without giving reasonable opportunity to the lessee of being heard.

### 33. Mine Closure Plan:

(1) Every mine shall have a Mine Closure Plan prepared in terms of a Sustainable Development Framework, which shall consist of:-

(i) a progressive mine closure plan; and

(ii) a final mine closure plan,

(2) Every Mine Closure Plan shall be available for inspection by the public in the office of the authority competent to approve such a Plan, and also in the office of the Panchayat having jurisdiction and such other places as may be notified.

(3) A Progressive Mine Closure Plan will be prepared for each mine for a period of five years at a time commencing with the start of the period of the lease, and for every period of five years thereafter, in such manner as may be prescribed.

Without prejudice to the provisions of this sub-section the Progressive Mine Closure Plan shall include details of closure, rehabilitation and restoration activities proposed to be carried out in the five year period and the projected investments in this respect.

(4) The lessee shall submit the Progressive Mine Closure Plan to the Indian Bureau of Mines and the State Directorate in the case of major minerals and to the Atomic Minerals Directorate in case of atomic minerals, and only the State Directorate in the case of minor minerals and a copy thereof shall be sent to the Panchayats of the area.

Provided that in respect of a mine for a minor mineral for which a mining plan has been dispensed with under sub-section (1) of section 27, the State Government in consultation with the Indian Bureau of Mines may, having regard to the nature of the mineral, exempt any such lease from preparing a Mine Closure Plan, subject to suitable provision in the Mining Framework in respect of that mineral in such manner as may be prescribed, and the Mining Framework shall be deemed to be the Progressive Mine Closure Plan and the Final Mine Closure Plan for the purpose of this Act.



(5) The Indian Bureau of Mines or the Atomic Mineral Directorate, or the State Directorate as the case may be shall, after consulting the Panchayats concerned, convey its approval or disapproval to the Progressive Mine Closure Plan within a period of ninety days from receipt.

Provided that in case approval or disapproval is not communicated within this period, the Progressive Mine Closure Plan shall be deemed to have been approved on a provisional basis till such approval or disapproval is conveyed.

(6) No mining operation shall be carried out in a mine in respect of which a Progressive Mine Closure Plan has not been approved, or in a manner contrary to the Progressive Mine Closure Plan.

Provided that the authority responsible for approving the Progressive Mine Closure Plan may at any time inspect the mining operations to satisfy himself in this regard, and may issue any direction necessary to ensure compliance to the provisions of the Plan.

(7) A Final Mine Closure Plan shall be prepared for each mine in such manner as may be prescribed, and shall be approved by the authority competent to approve the Progressive Mine Closure Plan in respect of the mine,

Without prejudice to the generality of this provision, the Final Mine Closure Plan shall be based on the land use determined for the mine after its closure including measures to reduce hazards, improve productivity and ensure that it best supports the needs of the host populations.

Provided that the land use for the mine after its closure shall be determined in consultation with the Panchayats having jurisdiction, in such manner as may be prescribed.

(8) The Final Mine Closure Plan shall be revised every five years having regard to the progress of mining operations and shall be submitted alongwith every Progressive Mine Closure Plan,

(9) The Final Mine Closure Plan submitted at the start of the last five years period of the lease shall be approved with such modification as may be specified by the authority approving the Progressive Mine Closure Plan in consultation with the Panchayat concerned, within a period of one year;

Provided that in the case where the lease is extended under the provisions of Sub-Section (4) of Section 7 of the Act the lessee shall submit a Progressive Mine Closure Plan for the next five years in accordance with the provisions of the Act along with a final Mine closure Plan in accordance with the provisions of sub-section (8) and for the purpose of section (9) the last five years shall be reckoned with reference to the extended period.

(10) The Central Government may make rules for the preparation and implementation of Mine Closure Plans, and without prejudice to the generality of this sub-section, the Rules may provide for:-

- (a) manner of preparation of the plan, including determination of final land use.
- (b) the qualification and experience of persons responsible for the preparation of the plan.
- (c) the manner of submission of the plan to the Indian Bureau of Mines, Atomic Mineral Directorate, State Directorate or to the Panchayats.
- (d) the procedure to be adopted by the Indian Bureau of Mines, Atomic Mineral Directorate or State Directorate for approving or refusing to approve the plan.
- (e) addressing socio-economic effects of mine closure including rehabilitation of mining communities.
- (f) gathering and communication of baseline and periodical data relating to environmental parameters in the area in and around the mine.
- (g) public disclosure of the progressive and final mine closure plans and implementation thereof.
- (h) independent monitoring of rehabilitation and restoration measures under the mine closure plans, and post-mine closure.
- (i) manner in which directions may be issued for implementation of Progressive or Final Mine Closure Plan,
- (j) procedure for imposition of fine and penalties for violation or unauthorized deviations from the Progressive or Final Mine Closure Plan.

(11) Notwithstanding anything in the preceding sub-sections, the procedures in respect of coal minerals shall be as may be prescribed.

34. Closure:

(1) The lessee shall not determine the lease or part thereof unless a final mine closure plan duly approved by the Indian Bureau of Mines, Atomic Minerals Directorate or authority as may be designated by the Central Government in respect of coal minerals or the State Directorate in this behalf, as the case may be, is implemented.

(2) For the purposes of sub-section (1), the lessee shall be required to obtain a certificate from the Indian Bureau of Mines, Atomic Minerals Directorate or authority as may be designated by the Central Government in respect of coal minerals or the State Directorate in this behalf, as the case may be, to the effect that protective, reclamation, restoration and rehabilitation work in accordance with the approved mine closure plan or with such modifications as approved by the competent authority have been carried out by the lessee.

(3) In all cases where a lessee has defaulted in implementing a progressive Mine Closure Plan, the State Government may order suspension of the mining operation till the default is remedied and may demand additional security so as to ensure deposit of security to the extent of the maximum specified under sub section (1) of section 25. for the remaining period of the lease, and for any or all other leases of the lessee for reasons to be specified in a show cause notice, and in case the lessee fails to show adequate cause, or fails to furnish the additional security, as the case may be, within a reasonable period not exceeding 30 days, the State Government may determine the lease in respect of which such security was not furnished.

(4) If the lessee defaults in implementing the final Mine Closure Plan, abandons the mine, without prejudice to any action under section 52, the State Government may after serving to the notice to the Lessee, cause the plan to be implemented by such other authority as it may direct at the cost of the lessee determined in such manner as may be

prescribed and the lessee shall be declared to be ineligible for the purposes of any concessions under this Act.

Chapter-VI : MINERAL CONCESSION IN CASES WHERE MINERALS DO NOT  
VEST EXCLUSIVELY WITH GOVERNMENT

35. Applications in case minerals vest with private persons:

(1) Applications for concessions in respect of minerals which vest exclusively in a person other than the Government shall be made to such person and all concessions shall be granted subject to the provisions of this Act and Rules thereunder and in accordance with the provisions therein to the extent applicable.

(2) Without prejudice to the generality of the foregoing, all such concerns shall be subject to the conditions specified in section 19, 21, 25, 27, 33 and 34, as the case may be.

36. Concessions to be in the form of a Registered Deed:

The concession granted in pursuance to the provisions of Section 35 shall be in the form of a Registered Deed executed by the Parties on such terms and conditions not inconsistent with the provisions of this Act or Rules thereunder, as may be agreed, and an authenticated copy of the Deed shall be deposited by the person granted the concession with the State Government and the Indian Bureau of Mines before commencing operations.

Provided that notwithstanding anything in such deed to the contrary, it shall be lawful for the State Government to issue any direction to the leaseholder or to the person in whom the minerals vest, in accordance with the provisions of the Act.

37. Cases where minerals vest partly with Government:

In respect of lands where minerals vest partly in the Government and partly with a private person, the provisions of this Act shall apply in the same manner as they would apply in respect of land where minerals vest exclusively with the Government.

Provided that the dead rent and royalty payable in respect of minerals which vest partly in Government and partly in a private person shall be shared by the Government and by that person in proportion to the share they have in the minerals.

## Chapter-VII : RESERVATION

38. Reservation of areas for conservation of mineral resources:

(1) The State Government, or the Central Government after consultation with the State Government concerned, may reserve for purposes of mineral conservation any area not already held under a prospecting licence or mining lease, and shall notify the reservation in the Official Gazette, and also the official websites specifying the reasons and the period of reservation.

Provided that the period may be extended from time to time in the public interest.

(2) No application for mineral concessions shall be entertained in respect of an area reserved under Sub-Section (1), and any such application shall be deemed to have lapsed.

(3) An area reserved for purposes of mineral conservation shall not be used for such purposes during the period of the reservation that is contrary to the object of such reservation.

39. Saving of already reserved areas:

Subject to the provisions of Section 40, all areas reserved under the provisions of the Mines and Minerals (Development and Regulation) Act 1957 or Rules made thereunder shall be deemed to be reserved under section 38 for a period of five years from the commencement of this Act or upto the date specified in such reservation order, whichever is less;

40. Expiry and revocation of reservation:

On the expiry of the period of reservation under Section 38 and section 39, or such earlier date as may be notified by the Central Government or the State Government as the case may be, an area reserved under Section 38 or section 39 shall be deemed to be available for grant of concessions after a lapse of thirty days or from such earlier date as may be notified for the purpose.

## Chapter-VIII : ROYALTY ETC.

### 41. Royalty payable in respect of minerals:

(1) The holder of a mining lease, whether granted before or after the commencement of this Act shall notwithstanding anything in the instrument of lease or in any other law for the time being in force, pay royalty in respect of any mineral removed or consumed by him or by his agent, manager, employee or contractor from the leased area..

(2) The rate of royalty in respect of major minerals shall be as specified in Second Schedule of the Act.

(3) The Central Government shall by notification constitute a National Mineral Royalty Commission consisting of representatives of Central and State Governments, which may:

(i) review the existing rates of royalty on minerals (other than coal, lignite and sand for stowing) given in Second Schedule to this Act and recommend revision of rates

(ii) review the guidelines for calculation of ad valorem rates of royalty from time to time

(iii) suggest progressive royalty rates for various minerals having regard to international practices.

(iv) suggest mechanisms to improve royalty realizations and penal action for failure to pay royalty on minerals extracted

(v) suggest suitable mechanisms to moderate royalty to support investment in remote areas or for induction of special technology or for promoting mineral beneficiation or to produce downstream products of strategic value.

(v) suggest appropriate revision in the existing rates of dead rent given in the Third Schedule to this Act

(vi) make recommendation on any other matter as the Central Government may refer to it from time to time.

(4) The National Mineral Royalty Commission shall present an Annual Report to the Central Government giving its recommendations,

Provided that recommendations for enhancement of rates of royalty or dead rent shall be presented to the Central Government not more than once in three years.

(5) The Central Government, after taking into consideration the Report and recommendations of the National Mineral Royalty Commission, may by notification in the Official Gazette, amend the Second Schedule of the Act so as to enhance or reduce the rate at which royalty shall be payable in respect of any mineral with effect from such date as may be specified in the notification:

Provided that the Central Government shall not enhance the rate of royalty in respect of any mineral more than once during any period of five years.

(6) The State Government may by notification from time to time, declare the rate at which royalty shall be payable in respect of minor minerals and the rate of royalty shall be effective from such date.

Provided that the State Government shall not enhance the rate of royalty on respect of a minor mineral more than once during any period of five years.

(7) Notwithstanding anything contained in this Act, the provisions of sub-section (1) of section 41 shall not apply to or in relation to mining leases granted before the 25<sup>th</sup> day of October, 1949, in respect of coal, but the Central Government, if it is satisfied that it is expedient so to do, may be, by notification in the Official Gazette, direct that all or any of the said provisions (including any rules made under the Act) shall apply to or in relation to such leases subject to such exceptions and modifications, if any, as may be specified in that or in any subsequent notification.

42. Dead rent payable by the lessee:

(1) The holder of a mining lease, whether granted before or after the commencement of the Act, shall notwithstanding anything contained in the instrument of lease or in any



other law for the time being in force, pay every year, dead rent at such rate as may be specified, for all the areas included in the instrument of lease:

Provided that where the holder of such mining lease becomes liable, under section 41, to pay royalty for any mineral removed or consumed by him or by his agent, manager, employee or contractor from the leased area, he shall be liable to pay either such royalty, or the dead rent in respect of that area, whichever is greater.

(2) The dead rent in respect of mining leases for major minerals shall be as specified in the Third Schedule to the Act and the Central Government may, after taking into consideration the recommendations of the National Mineral Royalty Commission, by notification in the Official Gazette, amend the Third Schedule so as to enhance or reduce the rate at which the dead rent shall be payable in respect of any area covered by a mining lease and such enhancement or reduction shall take effect from such date as may be specified in the notification:

Provided that the Central Government shall not enhance the rate of the dead rent in respect of any such area more than once during any period of three years.

(3) The State Government may by notification from time to time, declare the rate at which dead rent shall be payable in respect of minor minerals and the rate of dead rent shall be effective from such date.

Provided that the State Government shall not enhance the rate of the dead rent in respect of any such area more than once during any period of three years.

Provided further that in respect of such portion of a lease as is for both major and minor minerals, dead rent if payable, shall be the higher of the two dead rents.

43. In respect of land in which minerals vest in the Government:

(1) the holder of a reconnaissance licence, large area prospecting licence or prospecting licence shall be liable to pay to the person holding occupation or usufruct or traditional rights of the surface of the land over which the licence has been granted such

reasonable annual compensation as may be mutually agreed or in the alternative, determined by an officer appointed by the State Government by notification in this behalf, in the manner prescribed in Rules made by the State Government.

Provided that such amount shall be determined before commencement of operations and paid in advance each year, in such manner as may be prescribed.

(2) the holder of a mining lease shall, in respect of person or persons holding occupation or usufruct or traditional rights of the surface of the land over which the lease has been granted be liable to, -

(i) allot free shares equal to twenty six percent in the company through the promoter's quota in case the holder of the lease is a company, or, an annuity equal to 26% of the profit after tax in case holder of lease is a person, on account of annual compensation, and,

(ii) provide employment and or other assistance in accordance with the Rehabilitation and Resettlement Policy of the State Government concerned;

*Explanation:* For the purposes of sub-section (2), it is hereby clarified that:-

(a) the State Government through the Gram Sabhas or District Councils or Panchayats as the case may be, shall identify the families affected by the mining operations, directly or indirectly, before the commencement of such operations, and the lease holder concerned shall institute a mechanism in consultation with the Gram Sabha / District Council or Panchayat and ensure appropriate benefits to such identified families.

(b) the intention of providing compensation is to help ensure that families do not get classified as below poverty line category, for protecting the existing levels of monthly income earned by the affected family, and for improving incomes and quality of life of affected families.

(3) After the termination of a Reconnaissance Licence, Large Area Prospecting Licence, Prospecting Licence or a Mining Lease, the State Government shall after giving

the person holding occupation or usufruct or traditional rights of the surface land due opportunity, assess the damage, if any, done to the land by the reconnaissance or prospecting or mining operations and shall determine the amount of compensation payable by the licensee or the lessee as the case may be to the person holding occupation rights of the surface land in such manner as may be prescribed in Rules made by the State Government.

Provided that in case the licensee or lessee and the person holding occupation or usufruct or traditional rights mutually agree on the compensation through a communication in writing addressed to the officer appointed by the State Government for the purpose in such manner as may be prescribed, the State Government may make a determination accordingly.

(4) In case the licensee or lessee as the case may be fails to pay the compensation within three months of its determination under sub-section (3), the State Government may on application, either forfeit the security deposit and make payment there from, or may recover the amount as provided in Section 57 of this Act, and may also declare the licensee or lessee ineligible for the purposes of any concessions under this Act.

#### 44. National Mineral Fund:

(1) With effect from such date as the Central Government may, by notification in the Official Gazette, appoint in this behalf, there shall be established for the purposes of this Act, a Fund to be called as the “National Mineral Fund”.

(2) The Fund shall be under the control of the Central Government, and the balance to the credit of the Fund shall not lapse at the end of the Financial Year.

(3) The Central Government may levy and collect a cess on major minerals, at a rate that as it may by notification in the Official Gazette specify, in the following manner:

(i) as a duty of customs, where the ore is exported

(ii) as a duty of excise, where the ore is sold or other wise disposed of to the occupier of any end-use industry, or to any other person who in turn sells it to an end-user, or is used by the owner of the mine in any end-use industry himself,

Provided that the rate shall not be enhanced more than once during any period of five years.

(4) The cess shall be paid by the person holding the mining lease for the mineral.

Provided that where the minerals vest in a person other than the Government, and the holder of the mining lease fails to pay the cess, the person in whom the minerals vest shall, on demand, pay the amount of the cess demanded, without demur.

(5) The proceeds of the cess collected under sub-section (3) after deduction of collection charges may be credited to the Consolidated Fund of India, and may, if Parliament by appropriation made by law in this behalf so provides, be credited to the National Mineral Fund from time to time, for being utilized exclusively for the purposes of this Act.

(6) The Fund may be used for:-

(a) promoting scientific management of mining activities, and mine closures, including research and development and training.

(b) research and development in sustainable development frameworks,

(c) developing capacity of the Indian Bureau of Mines, and any other agency as may be determined by the Central Government, in enforcing the provisions of the Act,

(d) detecting and preventing illegal mining including commissioning of surveys and studies, and developing awareness amongst local communities and the mining sector, and

(e) investigation for the conservation and scientific management, etc. of mineral resources in accordance with the provisions of section 48 of the Act;

(f) providing grants-in-aid for promoting techno-economic studies for the mineral sector; and

(g) promotion of information technology application in support of the mining and minerals sector

(h) Grant-in-aid for holding of and participation in National / International minerals and mining workshops, conferences and promotional events

(7) The Central Government shall be responsible for the administration and management of the Fund and may

(a) formulate criteria for allocation of funds for such projects which are required to be implemented; and,

(b) approve schemes and sanction grants and loans from the Fund to institutions and authorities as may be decided and monitor their utilization,

(c) implement directly or through the Geological Survey of India or the Indian Bureau of Mines and any other agency as may be determined by the Central Government, projects subserving the purposes of sub-section (6) and for this purpose may authorize the Director General, Geological Survey of India and the Controller General, Indian Bureau of Mines to incur such expenditure from the Fund as may be necessary in this regard.

(8) The Central Government shall maintain proper accounts and other relevant records and prepare an annual statement of accounts, including the profit and loss account and the balance-sheet in respect of the Fund in such form, as may be prescribed in consultation with the Comptroller and Auditor-General of India.

(9) The accounts of the Fund shall be audited by the Comptroller and Auditor-General of India at such intervals as may be specified by him.

45. State Mineral Fund:

(1) With effect from such date as the State Government may by notification approve in this behalf, there may be established for the purposes of this Act, a Fund called the "State Mineral Fund", shall be under the control of the State Government, and the balance to the credit of the Fund shall not lapse at the end of the Financial Year.

(2) The State may levy and collect a cess on major and minor minerals extracted at a rate not exceeding 10% of the royalty in such manner as may be prescribed and at such rate that as it may by notification in the Official Gazette, specify.

Provided that the rate shall not be enhanced more than once during any period of five years.

(3) The cess shall be paid by the person holding the mining lease for the minor mineral.

Provided that where the minerals vest in a person other than the Government, and the holder of the mining lease fails to pay the cess, the person in whom the minerals vest shall, on demand, pay the amount of the cess demanded, without demur.

(4) The proceeds of the cess levied under Sub-Section (2) shall first be credited to the Consolidated Fund of State, and the State Government may by appropriation made by law in this behalf, if so provided, credit such proceeds and any other sums including the proceeds credited in pursuance to the provisions of sub-section (3) of section 44 to the State Mineral Fund from time to time, for being utilized exclusively for the purposes of this Act.

(5) The Fund may be used for:-

(a) funding of Panchayats or Gram Sabhas (in the case of Scheduled V areas), for the purposes of :

(i) improvement of local infrastructure for socio-economic purposes,

(ii) maintenance of community assets and services for local populations in the area;  
and

(iii) human resource development of local populations for creating employment and self-employment capabilities.

(b) developing capacity of the State Directorate to achieve the objects of this Act and for the operation of the State Mining Tribunal.

(c) promotion of information technology applications in support of the mining and mineral sector

(d) setting up and operation of Special Court under section 55 of the this Act.

(e) recompensing Lessees whose Leases are prematurely terminated under Section 32 of this Act

(f) reward whistle-blowers on illegal mining

Explanation: A whistle blower for the purposes of this section is a person who provides credible information of commission of an offence under the Act.

(g) such other public purposes in relation to the objects of the Act including measures to prevent and detect illegal mining, as may be deemed expedient by the State Government from time to time.

(6) Without prejudice to the generality of the above provisions, it shall be lawful for the State Government to sanction grants out of the Fund to an authority for implementation of a mine closure plan under sub-section (4) of Section 34 and cause the recovery of the cost thereof from the lessee in accordance with the provisions of section 57 to be deposited into the Fund.

(7) The State Government shall be responsible for the administration and management of the Fund and may

(a) formulate criteria for allocation of funds for such projects which are required to be implemented;

(b) approve schemes and sanction grants and loans from the Fund for the purpose to Panchayats or other institutions and authorities and monitor their utilization;

(c) implement directly or through the State Directorate, projects sub serving the purpose of sub-section (5) and for this purpose, may authorize the Director of the State Directorate to incur such expenditure from the Fund as may be necessary in this regard.

(8) The State Government shall maintain proper accounts and other relevant records and prepare an annual statement of accounts, including the profit and loss account and the balance-sheet in respect of the Fund in such form, as may be prescribed in consultation with the Comptroller and Auditor-General of India.

(9) The accounts of the Fund shall be audited by the Comptroller and Auditor-General of India at such intervals as may be specified by him.

#### Chapter-IX : POWER TO ISSUE DIRECTIONS, ETC.

46. Power of the Central Government to issue directions in the interest of scientific mineral exploration and mining and sustainable development:

(1) It shall be the duty of the Central Government to take all such steps as may be necessary for the conservation of strategic mineral resources in the national interest and for the scientific development and exploitation of mineral resources.

(2) To facilitate the scientific development and exploration of mineral resources and to ensure the protection of the environment and prevention and control of pollution from prospecting and mining related operations, the Central Government shall cause to be

developed a National Sustainable Development Framework in consultation with the State Governments

Provided that the State Government may with the previous approval of the Central Government frame a State Sustainable Development Framework not inconsistent with the National Sustainable Development Framework.

*Explanation:* The National Sustainable Development Framework shall contain guidelines enabling formulation of project-level practices for sustainable mining, and shall include the following:

- (i) Specification of factors and parameters influencing sustainable and scientific mining (and indicators thereof)
- (ii) Broad criteria beyond which mining may not be deemed sufficiently sustainable and /or scientifically manageable
- (iii) Systemic measures needed to be taken or built in to increase sustainability of mining operations considering its entire life cycle, inter-alia
  - (a) Ensuring minimal adverse impact on quality of life of the local communities
  - (b) Protecting interests of affected persons including host populations
  - (c) Creating new opportunities for socio-economic development including for sustainable livelihoods
  - (d) Mineral conservation (both in terms of mining technologies/practices and mineral beneficiation)
  - (e) Reduction in waste generation and related waste management practices
  - (f) Minimizing and mitigating adverse environmental impacts particularly on surface as well as ground water (both in terms of its quality and availability as as resource), air, ambient noise and land
  - (g) Ensuing minimal ecological disturbance, in terms of bio-diversity, flora, fauna and habitat
  - (h) Promoting restoration and reclamation activities so as to make optimal use of mined out land for the benefit of the local communities
- (iv) Measurable indicators of sustainable development
- (v) Consultative mechanisms with stakeholder groups right from pre-mining stages (including exploration) through the life cycle and upto post closure stages to ensure that



the stakeholder groups involvement and participation in identifying and addressing the sustainability issues,

(vi) System of public disclosure of mining related activities and environmental parameters including indicators and mechanisms to facilitate formal and informal sustainability audits.

(3) It shall be lawful for the Central Government to issue general directions as may be required, consistent with the provisions of the Act to State Governments or to any authority under the Central or State Government for the conservation of strategic mineral resources in the national interest and for the scientific and sustainable development and exploration of mineral resources and detection, prevention and prosecution of cases of illegal mining, and all such directions will be given effect to the extent possible, and without demur.

(4) Without prejudice to the generality of the provisions of this Section, the Central Government shall for the purpose of scientific management and exploration of mineral resources, prescribe a framework for disclosure of information related to mineral resources and their exploration and exploitation, including the development of websites and Portals and databases; and such framework shall specify the nature and extent of the information required to be disclosed and the person or authority responsible for such disclosure and any such person or authority shall be bound to comply except where the information is of a nature that would be entitled for exemption under Section 8 of the Right to Information Act in relation to a public authority.

*Explanation:* Section 61 and 62 shall not apply to directions under this section, but it will apply to any consequential directions issued by the State Government under section 47 in relation to any concession.

47. Power to issue directions generally:

(1) The State Government may, in the interest of systematic development of mineral deposits, conservation of minerals, scientific mining, sustainable development and

protection of the environment, issue directions to the owner, agent, mining engineer, geologist or manager of a mine.

(2) Every such direction shall be given effect within such period as may be specified, not being a period of less than one week.

Provided that where there is difficulty in giving effect to any direction, the owner, agent, mining engineer, geologist or manager of the mine as the case may be may apply for modification or rescinding of such direction and the State Government, may either modify or rescind the direction or confirm it.

Provided further that in case the State Government does not pass any order modifying or rescinding such direction within a period of thirty days from the date of application, the order shall be deemed to have been confirmed.

(3) Directions under sub-section (1) and (2) shall be issued in consultation with the Indian Bureau of Mines in such classes of cases as may be prescribed.

(4) Any person aggrieved by a direction or order under this section may apply to the National Mining Tribunal under section 61 or the State Mining Tribunal under section 62, as the case may be.

48. Power to authorise Geological Survey of India and Indian Bureau of Mines, Atomic Minerals Directorate etc. to investigate and report:

(1) Where the Central Government is of the opinion that for the purpose of conservation of strategic mineral resources or for the scientific management, exploration and exploitation of mineral resources it is expedient to conduct a technical or scientific investigation with regard to any mineral or any land including lands in relation to which mineral concessions may have been granted, the Central Government may authorize the Geological Survey of India or the Indian Bureau of Mines or the Atomic Minerals Directorate or such other authority it may specify in this behalf, to carry out such detailed

technical or scientific investigation as may be necessary, and to submit a report within such period as shall be specified.

(2) No such authorization under Sub-Section (1) shall be made by the Central Government in the case of any land in which mineral concession has been granted, except after consultation with the State Government where minerals vest in the State Government and with the person in whom the mineral vests in other cases.

(3) On issue of an authorization under Sub-Section (1), it shall be lawful for the Geological Survey of India, Indian Bureau of Mines, Atomic Mineral Directorate or the specified authority or agency, and its servants and workman –

- (a) to enter upon such land,
- (b) to dig or bore into the sub-soil, conduct studies and take samples,
- (c) to do all other acts necessary to determine the nature and extent of any mineral available in or under such land,
- (d) to set out boundaries of the land in which any mineral is expected to be found, and to mark such boundaries and line by placing marks,
- (e) where otherwise the survey cannot be completed on the boundaries and line marked, to cut down and clear away any part to any standing crop, fence or jungle with the approval of the authority concerned.

Provided that no such authority or agency shall enter into any building or upon any enclosed court or garden attached to a dwelling-house (except with the consent of the occupier thereof) without previously giving such occupier at least seven days' notice in writing of its intention to do so.

(4) Whenever any action of the nature specified in sub-section (3) is to be taken, the Central Government shall, before or at the time when such action is taken, pay or tender payment for all necessary damage which is likely to be caused, and in case of dispute as to the sufficiency of the amount so paid or tendered or as to the person to whom it should be paid or tendered, the Central Government shall refer the dispute to the Collector of the District in which the land is situated for determination.

(5) The fact that there exists any such dispute as is referred to in sub-section (4) shall not be a bar to the taking of any action under sub-section (3).

(6) After the completion of the investigation, the Geological Survey of India, Indian Bureau of Mines, Atomic Minerals Directorate or the specified authority or agency by which the investigation was made shall submit to the Central Government a detailed report indicating therein the nature and extent of any mineral which lies deposited in or under the land and such other information as may have been required.

(7) The costs of the investigation made under this section shall be borne by the Central Government.

Provided that any portion of the cost may be paid out of the National Mineral Fund in accordance with the provisions of Section 44.

(8) The Central Government may, having regard to the utility of the Report submitted under Sub-Section (6), and the public interest, make available the Report to such persons and at such cost as may be determined in the prescribed manner.

49. Power of the Indian Bureau of Mines, Coal Controller, Atomic Minerals Directorate and State Directorate to issue certain directions and to seek information:

(1) The Indian Bureau of Mines, Coal Controller, Atomic Minerals Directorate or the State Directorates or any officer duly authorised by the Central or State Government to enter and inspect a mine, may examine or direct the examination of any mineral deposit in any area under prospecting licence or mining lease and take samples therefrom at any time for the purposes of this Act.

(2) If any mine or part thereof, in the opinion of the Indian Bureau of Mines, Coal Controller, Atomic Minerals Directorate or the State Directorate poses a grave and immediate threat to the conservation of minerals or to the environment, he may, by an order in writing to the owner, agent, mining engineer or manager, require him to take such measures as may be specified in the order and may prohibit, until the requirements as specified in the order are complied with to his satisfaction, the deployment of any person other than those required for compliance with the requirement of the order.

(3) The Indian Bureau of Mines, Coal Controller, Atomic Minerals Directorate or the State Directorate, may by a general or specific order require the cores or specimens of rocks and minerals obtained from specified boreholes or shafts during prospecting or mining operation conducted under this Act, to be preserved for any specific period.

(4) Every holder of a prospecting licence or a mining lease on being directed to do so shall afford all reasonable facilities to persons authorised by the Indian Bureau of Mines, Coal Controller, Atomic Minerals Directorate and the State Directorate for the purpose of undertaking research or training in matters relating to mining or geology.

(5) The holder of a Reconnaissance Licence, Prospecting License or Mining Lease, or his agent shall furnish such information regarding his reconnaissance or prospecting or mining operations or regarding the mine or any matter connected therewith as the Indian Bureau of Mines, Coal Controller, Atomic Minerals Directorate or the authorised officer of the Central or State Government may require by an order in writing and the information shall be furnished within such time and with such periodicity as may be specified in the aforesaid order.

50. Power of entry and inspection:

(1) For the purpose of ascertaining the position of the working, actual or prospective, of any mine or abandoned mine or for any other purpose connected with this Act or the rules made thereunder, any person authorised by the Indian Bureau of Mines or the State Directorate in this behalf, by general order, may:-

- (a) enter and inspect any mine;
- (b) survey and take measurements in any such mine;
- (c) weigh, measure or take measurements of the stocks of minerals lying at any mine;
- (d) examine any document, book, register, or record in the possession or power of any person having the control of, or connected with, any mine and place marks of identification thereon, and take extracts from or make copies of such document, book, register or record;

(e) order the production of any such document, book, register, record, as is referred to in clause (d); and

(f) examine any person having the control of, or connected with, any mine.

*Explanation:* "Record" includes electronic record maintained on a computer system

(2) Every person authorized by the Indian Bureau of Mines or a State Directorate under sub-section (1) shall be deemed to be a public servant within the meaning of section 21 of the Indian Penal Code, and every person to whom an order or summons is issued by virtue of the power conferred by clause (c) or clause (f) of that sub-section shall be legally bound to comply with such order or summons, as the case may be.

51. Delegation of powers:

(1) The Central Government may, by notification in the Official Gazette, direct that any power exercisable by it under this Act may, in relation to such matters and subject to such conditions, if any, as may be specified in the notification be exercisable also by –

(a) Such officer or authority subordinate to the Central Government; or

(b) Such State Government or such officer or authority subordinate to a State Government;

as may be specified in the notification.

(2) The State Government may, by notification in the Official Gazette, direct that any power exercisable by it under this Act may, in relation to such matters and subject to such conditions, if any, as may be specified in the notification, be exercisable also by such officer or authority subordinate to the State Government as may be specified in the notification.

(3) Any rules made by the Central Government under this Act may confer powers and impose duties or authorise the conferring of powers and imposition of duties upon any State Government or any officer or authority subordinate thereto.

## Chapter-X : OFFENCES AND PENALTIES

### 52. Offences and Penalties:

(1) Whoever contravenes any of the provisions of section 4, shall be punished with imprisonment for a term which may extend to three years, or with fine which may extend to twenty-five thousand rupee per hectare or part thereof, or with both.

(2) Whenever any person raises, without any lawful authority, any mineral from any land, without prejudice to any other action under the law for the time being in force, the State Government may recover from such person, or from such other person to whom the mineral may have been transferred, the mineral so raised, and the cost of its disposal or, where such mineral has already been disposed of, the price of the mineral so disposed off, and may also recover from such person, rent, royalty or tax, as the case may be, for the period during which the land was occupied by such person without such lawful authority, alongwith penalty of which may extend to ten times the price of the mineral.

(3) Whenever any person raises, transports or causes to be raised or transported, without any lawful authority, any mineral from any land, and, for that purpose, uses any tool, equipment, vehicle or any other thing, any officer empowered by the Central Government or State Government by general or special order in this behalf may seize such mineral, tool, equipment, vehicle or any other thing, and the court having jurisdiction may order the confiscation and disposal of any such mineral, tool, equipment, vehicle or any other thing so seized.

(4) A lessee who fails to implement a Final Mine Closure Plan in accordance with the provisions of this Act or abandons the mine such that the mine or any portion of the mining lease area, is likely to be a danger to the health and safety of the inhabitants of the area, shall be liable, on conviction to be punished with a fine which may extend to Rupees ten thousand per day for the period of such default.

(5) Whoever disobeys any direction given by the State Government or the Indian Bureau of Mines or any other authority empowered in this behalf under this Act shall,

unless there is a specific penalty in this regard, be liable on conviction to be punished with a fine that may extend to Rupees ten thousand per day or part thereof for the period of such disobedience.

(6) 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 one year or with fine which may extend to five thousand rupees, or with both, and in the case of continuing contravention, with an additional fine which may extend to one thousand rupees for every day during which such contravention continues after conviction for the first such contravention.

(7) Notwithstanding anything contained in the Code of Criminal Procedure, 1973, an offence under sub-section (1), (2) and (3) shall be cognizable.

#### 53. Offences by companies:

(1) If the person committing an offence under this Act or any rules made thereunder is a company, every person who at the time the offence was committed was in charge of, and was responsible to the company for the conduct of the business of the company, shall be liable for the offence and may be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render any such person liable to any punishment, if he proves that the offence was committed without his knowledge and that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed with the consent or connivance of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall be liable for the offence and may be proceeded against and punished accordingly.

*Explanation:-* For the purposes of this section.



(a) "*company*" means any body corporate and includes a firm or other association of individuals;

(b) "*director*" in relation to a firm means a partner in the firm.

54. Cognizance of offences:

A Court may take cognizance of any offence punishable under this Act or any rules made thereunder upon complaint in writing made by a person authorised in this behalf by the Central Government or the State Government as the case may be, or any other person having an interest.

Provided that where a complaint made by a person other than one authorized by the State or Central Government is found by the Court to be vexatious, the Courts may impose a fine on such complainant which may extend upto twenty-five thousand rupees.

55. Constitution of Special Courts.

(1) The State Government may, at any time, and for such period as may be deemed necessary, for the purposes of providing speedy trial of offences referred to in sub-section (1), (2) and (3) of section 52, by notification in the Official Gazette, constitute 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 single 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 was, immediately before such appointment, atleast an Additional District and Sessions Judge.

(4) Where the office of the Judge of a Special Court is vacant, or such Judge is absent from the ordinary place of sitting of such Special Court, or he is incapacitated by illness or otherwise in the performance of his duties, any business of the Special Court shall be

disposed of in accordance with the direction of District and Sessions Judge having jurisdiction over the ordinary place of sitting of the Special Court, as notified under sub-section (1).

Provided that the High Court of the State may, in case it is necessary or expedient to do so, direct that any business of the special court as may be specified shall be disposed off by any other Special Court or person qualified to be a judge of a Special Court.

(5) Notwithstanding anything contained in the Code of Criminal Procedure, 1973, every offence punishable under sub-section (1), (2) and (3) of section 52 shall be triable only by the Special Court within whose jurisdiction such offence has been committed.

(6) Where it appears to any court in the course of any inquiry or trial in respect of any offence that the case is one which is triable by a Special Court constituted under this Act for the area in which such case has arisen, it shall transfer such case to such Special Court, and thereupon such case shall be tried and disposed of by such Special Court in accordance with the provisions of this Act :

Provided that it shall be lawful for such Special Court to act on the evidence, if any, recorded by any court in the case of presence of the accused before the transfer of the case to any Special Court :

Provided further that if such Special Court is of opinion that further examination, cross-examination and re-examination of any of the witnesses whose evidence has already been recorded, is required in the interest of justice, it may re-summon any such witness and after such further examination, cross-examination or re-examination, if any, as it may permit, the witness shall be discharged.

(7) The Special Court may, notwithstanding anything contained in subsection (1) of section 260 or section 262 of the Code of Criminal Procedure, 1973, try the offence referred to in sub-section (1), (2) and (3) of section 52 in a summary way in accordance with the procedure prescribed in the said Code and the provisions of sections 263 to 265 of the said Code shall, so far as may be, apply to such trial :

Provided that where in the course of a summary trial under this subsection, it appears to the Special Court that the nature of the case is such that the interest of the justice is better served, the Special Court may recall any witness who may have been examined and proceed to re-hear the case in the manner provided by the provisions of the said Code for the trial of such offence:

(8) A Special Court may, with a view to obtaining the evidence of any person who may have been directly or indirectly concerned in or privy to, any offence tender pardon to such person on condition of his making a full and true disclosure of the circumstances within his knowledge relating to the offence and to every other person concerned whether as principal or abettor in the commission thereof, and any pardon so tendered shall , for the purposes of section 308 of the Code of Criminal Procedure,1973, be deemed to have been tendered under section 307 thereof.

(9) The Special Court may determine the liability against a person in terms of money for raising, transporting or causing to be raised or transported without any lawful authority any mineral from any land, which shall not be less than an amount equivalent to two times of the value of mineral and the amount of liability so determined shall be recovered as if it were a decree of civil court.

(10) The liability so determined finally by the Special Court shall be payable to the State Government or to the person in whom the mineral vests, as the case may be.

(11) Save as otherwise provided in this Act, the Code of Criminal Procedure, 1973, in so far as they are not inconsistent with the provisions of this Act, shall apply to the proceedings before the Special Court and for the purpose of the provisions of the said enactments, 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.

(12) The High Court may exercise, so far as may be applicable, all the powers conferred by Chapters XXIX and XXX of the Code of Criminal Procedure, 1973, as if the Special Court within the local limits of the jurisdiction of the High Court is a District

Court, or as the case may be, the Court of Session , trying cases within the local limits of jurisdiction of the High Court.

(13) The Special Court may, on a petition or otherwise and in order to prevent miscarriage of justice, review its judgment or order passed under this section, but no such review petition shall be entertained except on the ground that it was such order passed under a mistake of fact, ignorance of any material fact or any error apparent on the face of the record:

Provided that the Special Court shall not allow any review petition and modify its previous order or judgment without hearing the parties affected.

*Explanation.-* For the purpose of this Part, "Special Courts" means the Special Courts constituted under sub-section (1) of section 55.

56. Power to search, enter and inspect:-

(1) If any officer of the Central Government or a State Government authorized by the Central Government or a State Government, as the case may be in this behalf by general or special order has reason to believe that any mineral has been raised in contravention of the provisions of this Act or rules made thereunder or any document or thing in relation to such mineral is secreted in any place or vehicle, he may search for such mineral, document or thing and the provisions of section 100 of the Code of Criminal Procedure, 1973 shall apply to every such search.

(2) For the purpose of ascertaining the position of the working, actual or prospective, of any mine or abandoned mine or for any other purpose connected with this Act or the rules made thereunder, including the prevention and detection of mining operations in contravention of provisions of this Act or Rules made thereunder, any person authorised by the Central Government or a State Government in this behalf, by general or special order, may-

- (a) enter and inspect any mine or mineral bearing area;
- (b) survey and take measurements in any such mine or area;

- (c) weigh, measure or take measurements of the stocks of minerals lying at any mine or in any area;
- (d) examine any document, book, register, or record in the possession or power of any person having the control of, or connected with, any mine or mining operations and place marks of identification thereon, and take extracts from or make copies of such document, book, register or record;
- (e) order the production of any such document, book, register, record, as is referred to in clause (d); and
- (f) examine any person having the control of, or connected with, any mine or mining operations.

*Explanation:* 'Record' includes electronic record maintained in a computer system

(3) Every person authorised by the Central Government or a State Government under sub-section (1) shall be deemed to be a public servant within the meaning of section 21 of the Indian Penal Code, and every person to whom an order or summons is issued by virtue of the power conferred by clause (c) or clause (f) of that sub-section shall be legally bound to comply with such order or summons, as the case may be.

*Explanation:* Mining operations for the purposes of this section includes any activity relating to the raising of any mineral, whether licenced or not.

#### 57. Compounding of offences:

(1) Any offence punishable under this Act or any rule made thereunder may, either before or after the institution of the prosecution, be compounded by the person authorised by the Central or State Government under section 54 to make a complaint to the court with respect to that offence, on payment to that person, for credit to the Government, of such sum as the compounding fee at such rate as may be prescribed which shall not exceed two times the maximum rate of the fine for the offence,

Provided that in the case of an offence punishable with fine only, such rate shall not exceed the maximum rate of the fine which may be imposed for that offence.

(2) Where an offence is compounded under sub-section (1), no proceeding or further proceeding, as the case may be, shall be taken against the offender in respect of the offence so compounded, and the offender, if in custody, shall be released forthwith.

58. Recovery of certain sums as arrears of land revenue:

(1) Any rent, royalty, tax, cess, fee or other sum due to the Government either under this Act or any rule made thereunder or under the terms and conditions of any Reconnaissance Licence, Prospecting Licence or Mining Lease may, on a certificate of such officer as may be specified by the State Government in this behalf by general or special order, be recovered in the same manner as if it were an arrear of land revenue and every such sum which becomes due to the Government after the commencement of this Act, together with the interest due thereon shall be a first charge on the assets of the holder of the Reconnaissance Licence, Prospecting Licence or Mining Lease, as the case may be.

Provided that in respect of a concession relating to a land in which the mineral vest in a private person, such sum may also be recovered in the same manner from such person.

59. Ineligibility for grant of concession:-

(1) Any person or company convicted of an offence punishable under Section 52 of the Act shall be ineligible for the purpose of grant of any concession under this Act for a period of five years from date of conviction.

(2) If any person convicted of an offence under Section 52 of this Act holds a concession under this Act at the time of such conviction, the State Govt. may, having regard to the nature and gravity of the offence, prematurely terminate any or all such concessions.

Provided that in respect of a concession in respect of land the minerals of which vest in a private person, the Government may direct such person to prematurely determine the lease;

Provided further that no such order shall be made without affording an adequate opportunity to the person holding the concession and after recording the reasons.

Provided also that provision of sub-section (3) of section 31 shall, *mutatis-mutandis*, apply to every such case.

60. Protection of action taken in good faith:

No suit, prosecution or other legal proceedings shall lie against any person for anything which is in good faith done or intended to be done under this Act.

## Chapter-XI : MINING TRIBUNALS, ETC.

### 61. National Mining Tribunal:

(1) The Central Government may by notification establish a Tribunal to be known as the National Mining Tribunal, to exercise jurisdiction, powers and authority conferred on such Tribunal by or under this Act.

(2) The Principal Bench of the National Mining Tribunal shall be in the National Capital Territory of Delhi, with benches at such other places as may be notified from time to time.

(3) The National Mining Tribunal shall consist of a Chairperson, and upto three legal Members and three subject Members, who shall be appointed and shall hold office in accordance with the provisions of this Act and rules made thereunder.

(4) No person shall be eligible to be appointed as Chairperson to National Mining Tribunal unless he:-

- (a) is at least 55 years of age and not more than 62 years of age.
- (b) is a person of sound integrity.
- (c) has special knowledge of Mining law; and
- (d) is experienced in handling quasi-judicial work

Provided that a person who is, or has been in the service of Government shall not be appointed as a chairman unless such person has held the post of Secretary or Additional Secretary to the Government of India or any equivalent post in the Central Government or the State Government for a period of not less than three years.

(5) No person shall be eligible to be appointed a legal Member unless he

- (a) is at least 55 years of age and not more than 62 years of age.
- (b) is a person of sound integrity; and
- (c) has held a judicial office in the territory of India for at least ten years or who has been a member of the Indian Legal Service and has held a post in Grade I of that service equivalent to Joint Secretary to the Government of India or any equivalent or higher post for at least three years, or who has been an advocate for at least ten years with extensive practice in mining related matters.

(6) No person shall be eligible to be appointed as subject Member unless he:-



- (a) is at least 55 years of age and not more than 62 years of age.
- (b) is a person of sound integrity; and
- (c) has experience of the mining sector at the national level, and has held the post of Joint Secretary to the Government of India or any other post under the Central Government carrying the scale of pay which is not less than that of a Joint Secretary to the Government of India or any equivalent or higher post for at least five years.

(7) A person shall be disqualified for appointment to the post or continuance in the post of chairperson or member, if he –

- (a) has been convicted and sentenced to imprisonment for any offence; or
- (b) is an undischarged insolvent; or
- (c) is of unsound mind and stands so declared by a competent court; or
- (d) has been removed or dismissed from the service of the Government or a body corporate owned or controlled by the Government; or
- (e) has in the opinion of the Central Government such financial or other interest as is likely to affect prejudicially the discharge by him of his functions as a member; or
- (f) has such other disqualifications as may be prescribed.

(8) Every appointment under sub-section (4), (5) and (6) shall be made by the Central Government on the recommendation of a Search-cum-Selection Committee consisting of three eminent persons with sound knowledge of the mining sector to be appointed by the Central Government;

(9) The Chairperson of the National Mining Tribunal shall hold office for a term not exceeding five years from the date he enters upon his office or upto the age of sixty seven years, whichever is earlier.

(10) A member of the National Mining Tribunal shall hold office for a term not exceeding five years from the date he enters upon his office or upto the age of sixty five years, whichever is earlier.

(11) The salary or honorarium and other allowances payable to and other terms and conditions of service of the chairperson and other members of the National Mining Tribunal shall be such as may be prescribed by the Central Government.

Provided that neither the salary or honorarium and other allowances nor the other terms and conditions of service of the chairperson and other members of the National Mining Tribunal shall be varied to their disadvantage after appointment.

(12) A Chairperson and a Member of the National Mining Tribunal may, by notice in writing under his hand addressed to the Central Government, resign his office.

Provided that a Chairperson and a Member of the National Mining Tribunal shall, unless he is permitted by the Central Government to relinquish his office sooner, continue to hold office until the expiry of three months from the date of receipt of such notice or until a person duly appointed as his successor enters upon his office or until the expiry of his term of office, whichever is the earliest.

(13) The Chairperson or any other Member of the National Mining Tribunal shall not be removed from his office except on the ground of proved mis-behaviour or physical or mental incapability or if he is disqualified in terms of Sub-Section (7).

Provided that the Central Government may pass an order for such removal only after an inquiry in which the Chairperson or Member as the case may be has been informed of the charges against him and given a reasonable opportunity of being heard in respect of those charges.

(14) The Central Government may, by rules, regulate the procedure for the inquiry or disqualification of the Chairperson or Member of National Mining Tribunal under this section.

(15) The Central Government may suspend from office the chairperson or a Member in respect of whom an inquiry has been initiated under sub-section (12) of this section.

(16) The subject Member who has the longest tenure in the Tribunal shall officiate as Chairman whenever the post is vacant or the Chairman is incapable of discharging his functions.

62. Powers and procedures of the National Mining Tribunal:

(1) Subject to the provisions of this Act the National Mining Tribunal shall have the powers with respect to major minerals to:-

(a) hear applications from affected persons and confirm or set aside any order passed by the Central or State Government under this Act or Rules thereunder as it may deem just and proper.

(b) hear applications from any affected party in relation to preparation, approval and implementation of Mining Plans and Mine Closure Plans including orders or directions issued under this Act in relation thereto.

(c) adjudicate on applications seeking directions to Central or State Governments to dispose an application, including an application for grant of concession under the Act, with respect to any major mineral within such time as the National Mining Tribunal may stipulate, in such cases where the Central and State Government have failed to dispose the application within the time prescribed by the Act.

(2) The powers and functions of the National Mining Tribunal may be exercised and discharged by Benches constituted by the Chairperson of the National Mining Tribunal from among the Members thereof, and such Bench shall be deemed also to be the Tribunal for purposes of this section unless the context otherwise requires

Provided that:-

(a) a Bench shall consist of three Members, consisting of the Chairperson or a subject Member, and one legal member, and a third member who may be either a subject member or a legal Member.

(b) the majority opinion shall be deemed to be the decision on the issue..

(3) Subject to the provisions of this Act and Rules thereunder, the National Mining Tribunal shall have the power to regulate its own procedure and the procedure of Benches thereof in all matters arising out of the exercise of its powers or of the discharge of its functions.

(4) For exercising its powers in its jurisdiction the National Mining Tribunal may call for the records of the case and pass such order or direction in respect of the matter specified in sub-section (1), as it deems fit.

Provided that the National Mining Tribunal shall, before passing any order or direction, shall issue notice to the Central Government or State Government, and give a reasonable

opportunity to the affected parties and if necessary any other authority, as the case may be, of being heard.

Provided further that the National Mining Tribunal shall dispose off the case within a period of six months from the date of filing of the application unless for reasons to be recorded, the Tribunal extends the time period for such disposal.

(5) Every application to the National Mining Tribunal shall be filed within a period of ninety days from :

(i) the date on which a copy of the order made by the State Government or Central Government, as the case may be, is received by the aggrieved party, or,

(ii) the date by which the State Government or Central Government should have disposed of an application of the aggrieved party;

and it shall be in such form and be accompanied by such fee as may be prescribed:

Provided that the National Mining Tribunal may entertain an application after the expiry of the said period of ninety days if it is satisfied, for reasons to be recorded that there was sufficient cause for not filing it within that period.

(6) The National Mining Tribunal shall have, for the purposes of discharging its functions under this Act, the same powers as are vested in a civil court under the Code of Civil Procedure, 1908 (5 of 1908), while hearing an application.

(7) Application for revision of the order of a Bench may be made to the full Tribunal within a period of ninety days from the date of the decision or order appealed against.

Provided that a revision application shall not lie except on grounds substantially similar to those specified in section 115 of the code of Civil Procedure.

(8) Where an application for revision instituted before the National Mining Tribunal is found to be frivolous or vexatious, it shall, for reasons to be recorded in writing, dismiss the application for revision and make an order that the revision applicant shall pay to the respondent such costs as may be specified in the order.

(9) If any person willfully fails to comply with the order of the National Mining Tribunal, he shall be punishable with fine which may extend to one lakh rupees.

(10) Any order passed by the National Mining Tribunal under to this section shall be executable in the manner of a decree of civil court, and for this purpose, the Tribunal shall have all the powers of a civil court.

(11) All revision cases pending before the Central Government under Section 30 of the Mines and Minerals (Development and Regulation) Act, 1957, shall stand transferred to the National Mining Tribunal on its establishment to be disposed off as an application under sub-section (1).

(12) No civil court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which the National Mining Tribunal is empowered by or under this Act to determine and no injunction shall be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Act.

(13) (a) Notwithstanding anything contained in the Code of Civil Procedure, 1908 (5 of 1908) or in any other law, an appeal shall lie against any order, not being an interlocutory order, of the National Mining Tribunal to the High Court on one or more grounds specified in section 100 of that Code.

(b) No appeal shall lie against any decision or order made by the National Mining Tribunal with the consent of the Parties.

(14) If any person willfully fails to comply with the order of the National Mining Tribunal, he shall be punishable with fine which may extend to Rupees two hundred and fifty per day of delay as the National Mining Tribunal may order in writing.

63. State Mining Tribunal:

(1) The State Government may by notification establish a Tribunal to be known as the State Mining Tribunal, to exercise jurisdiction, powers and authority conferred on such Tribunal by or under this Act.

Provided that in case no State Mining Tribunal is constituted in respect of a State the National Mining Administrative Tribunal shall exercise the powers exercisable in the State Mining Tribunal until such time as the State Mining Tribunal is constituted.

(2) The Principal Bench of the Tribunal shall be in the Capital of State concerned, with benches at such other places as may be notified from time to time.

(3) The composition, qualification and terms of office of the Chairperson, Judicial Members and subject Members of the State Mining Tribunal may be as prescribed by the State Government in consultation with the Central Government.

- (4) The State Mining Tribunal shall have the powers in respect to minor minerals:-
- (a) to hear applications from affected persons and confirm or modify or set aside any order passed by the State Government under this Act or Rules thereunder as it may deem just and proper.
  - (b) to hear applications as the case may be from any affected party in relation to preparation, approval and implementation of Mining Plans, Mining Frameworks and Mine Closure Plans, including orders or directions issued under this Act or in relation thereto.
  - (c) to adjudicate on applications seeking directions to State Governments to dispose an application for grant of concession with respect of minor mineral within such time as the State Mining Tribunal may stipulate, in such cases where the State Government have failed to dispose the application within the time prescribed by the Act.
- (5) The powers and functions of the State Mining Tribunal may be exercised and discharged by Benches constituted by the Chairperson of the State Mining Tribunal from among the members thereof as prescribed.
- (6) The State Mining Tribunal shall dispose off the case within a period of six months from the date of filing of the application unless for reasons to be recorded, the Tribunal extends the time period for such disposal.
- (7) Application for revision of the order of a Bench may be made to the full State Mining Tribunal within a period of ninety days from the date of the decision or order appealed against, on grounds substantially similar to those specified in Section 115 of the Code on Civil Procedure..
- Provided that the State Mining Tribunal may entertain a revision petition after the expiry of the said period of ninety days if it is satisfied, for reasons to be recorded that there was sufficient cause for not filing it within that period.
- (8) The State Mining Tribunal shall have, for the purposes of discharging their functions under this Act, the same powers as are vested in a civil court under the Code of Civil Procedure, 1908 (5 of 1908), while hearing an application.
- (9) If any person willfully fails to comply with the order of the State Mining Tribunal, he shall be punishable with fine which may extend to one lakh rupees.

(10) Any order passed by the State Mining Tribunal under to this section shall be executable in the manner of a decree of civil court, and for this purpose, the State Mining Tribunal shall have all the powers of a civil court.

(11) No civil court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which the State Mining Tribunal is empowered by or under this Act to determine and no injunction shall be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Act.

(12) (a) Notwithstanding anything contained in the Code of Civil Procedure, 1908 (5 of 1908) or in any other law, an appeal shall lie against any order, not being an interlocutory order, of the State Mining Tribunal to the High Court on one or more grounds specified in section 100 of that Code.

(b) No appeal shall lie against any decision or order made by the State Mining Tribunal with the consent of the Parties.

(13) If any person willfully fails to comply with the order of the National Mining Tribunal, he shall be punishable with fine which may extend to Rupees two hundred and fifty per day of delay as the National Mining Tribunal may order in writing.

64. Central Coordination-cum-Empowered Committee:-

(1) The Central Government shall by notification constitute a Central Coordination-cum-Empowered Committee consisting of representative of Central and State Governments to implement the objects of the Act;

(2) The functions of the Central Coordination-cum-Empowered Committee shall be as may be notified.

(3) Without prejudice to the foregoing, the Central Coordination-cum-Empowered Committee may consider and make recommendations regarding any of the following:

- (i) improvement in procedures for grant of concessions,
- (ii) coordination among agencies entrusted with according statutory clearances,
- (iii) maintenance of internet-based databases including a mining tenement registry,
- (iv) development, implementation and evaluation of sustainable development framework; and
- (v) prevention and detection of illegal mining

(4) The Central Coordination-cum-Empowered Committee shall meet at least two times in a year.

65. State Coordination-cum-Empowered Committee:-

(1) The State Government shall by notification constitute a State Coordination-cum-Empowered Committee with representatives of the concerned Departments of State Government, headed by Chief Secretary or Additional Chief Secretary of the State Government;

(2) The function of the State Coordination-cum-Empowered Committee shall be

(i) to oversee clearance by various Departments of the State Government necessary to ensure timely grant of concessions,

(ii) review of activities in and around leased areas pursuant to the Corporate Social Responsibility document; and

(iii) to monitor implementation of Final Mine Closure Plans in consonance with the Sustainable Development Framework,

(iv) coordination of operations for prevention, detection and prosecution of cases of illegal mining,

(v) any other functions as may be prescribed;

(3) The State Coordination-cum-Empowered Committee shall meet at least once in two months.



## Chapter-XII : POWER TO FRAME RULES

66. Power of Central Government to frame Rules:

(1) The Central Government may by notification in the Official Gazette make such Rules as it may think fit in furtherance of the provisions of this Act for the scientific development, exploitation and management of mineral resources and for grant of concessions in respect of major minerals.

(2) Without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely,

(a) the person by whom, and the manner in which, applications for reconnaissance Licences, prospecting licences or mining leases in respect of land in which the minerals vest in the Government may be made and the fees to be paid therefor;

(b) the manner in which reconnaissance or prospecting operations may be undertaken in pursuance of the provision of the subsection (2) of section 4

(c) the manner in which notifications shall be issued under the provision of subsection (2) and subsection (3) of section 4.

(d) the earnest money to be paid in respect of applications for various concessions

(e) the fees and security deposit to be paid by an applicant for obtaining a licence or lease.

(f) the time within which, and the form in which, acknowledgement of the receipt of any such application may be sent and the manner in which the applications shall be registered;

(g) the manner in which concessions will be granted through competitive offers and bidding processes, and the manner of payment of the bid price.

(h) the manner in which applications will be considered and disposed off; and

(i) the procedure for notifying the grant of concessions in official websites;

(j) the opening of new mines and the regulation of mining operations in any area;

(k) the regulation of the excavation or collection of minerals from any mine and arrangements for the storage of minerals and the stocks thereof that may be kept by any person;

- (l) the measures to be taken by owners of mines for the purpose of beneficiation of ores, including the provision of suitable contrivances for such purpose;
- (m) the development of mineral resources in any area;
- (n) the notification of all new borings and shaft sinking and the preservation of bore-hole records, and specimens of cores of all new bore-holes;
- (o) the submission of samples of minerals from any mine by the owner thereof and the manner in which and the authority to which such samples shall be submitted;
- (p) and the taking of samples of any minerals from any mine by the State Government or any other authority specified by it in that behalf;
- (q) the maintenance and submission of such plans, registers or records as may be specified by the Government and the submission by owners of mines of such special or periodical returns and reports as may be specified, and the form in which and the authority to which such returns and reports shall be submitted;
- (r) the regulation of prospecting and mining operations and the employment of qualified geologists or mining engineers to supervise prospecting or mining operations;
- (s) preparation, approval and implementation of Mining Plans;
- (t) determination of mining leases;
- (u) preparation, approval and implementation of Mine Closure Plans;
- (v) management of the National Mineral Fund including accounting procedures;
- (w) the manner in which and the authority by which directions may be issued to the owners of any mine to do or refrain from doing certain things in the interest of conservation or systematic development of minerals or for the protection of environment by preventing or controlling pollution which may be caused by prospecting or mining operations;
- (x) the submission of records or reports by persons carrying on prospecting or mining operations regarding any research in mining or geology carried out by them;
- (y) the facilities to be afforded by persons carrying out prospecting or mining operations to persons authorised by the Central Government for the purpose of undertaking research or training in matters relating to mining or geology;
- (z) circumstances and conditions under which licences and leases may be granted to a person other than the first eligible applicant;

- (aa) procedure for payment of royalty and cess; ;
- (bb) fees to be charged for transfer of concessions and procedures in relation to applications for transfer;
- (cc) matters relating to appointments, terms and conditions, procedures, etc. in relation to the National Mining Tribunal;
- (dd) the procedure for and the manner of imposition of fines for the contravention of any of the rules framed under this section and the authority who may impose such fines;
- (ee) management of National Repositories, including licencing of agencies holding or managing repository data on behalf of the National Repository.;
- (ff) matters relating to concessions in respect of lands the minerals in which vest in a private person; and
- (gg) any other matter which under this Act is required to be prescribed.

67. Power of State Government to frame Rules:

(1) The State Government may, by notification in the Official Gazette, make rules for regulating the grant of concession for minor minerals and for any other purpose to the extent provided in the Act

(2) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:-

- (a) the person by whom and the manner in which, applications for quarry leases, mining leases or other mineral concessions may be made and the fees to be paid therefore and the time within which, and the form in which, acknowledgement of the receipt of any such applications may be sent;
- (b) the matters which may be considered where applications in respect of the same land are received within the same day;
- (c) the terms on which, and the conditions subject to which and the authority by which quarry leases, mining leases or other mineral concessions may be granted or renewed and the procedure for obtaining quarry leases, mining leases or other mineral concessions;

- (d) the facilities to be afforded by holders of quarry leases, mining leases or other mineral concessions to persons deputed by the Government for the purpose of undertaking research or training in matters relating to mining operations;
- (e) the fixing and collection of rent, royalty, fees, dead rent, fines or other charges and the time within which and the manner in which these shall be payable;
- (f) the manner in which the rights of third parties may be protected (whether by way of payment or compensation or otherwise) in case where any such party is prejudicially affected by reason of any prospecting or mining operations;
- (g) the manner in which the rehabilitation of flora and other vegetation, such as trees, shrubs and the like destroyed by reasons of any quarrying or mining operations shall be made in the same area or in any other area selected by the State Government (whether by way of reimbursement of the cost of rehabilitation or otherwise) by the person holding the quarrying or mining lease;
- (h) the manner in which and the conditions subject to which, a quarry lease, mining lease or other mineral concessions may be transferred;
- (i) the construction, maintenance and use of roads, power transmission lines, tramways, railways, aerial ropeways, pipelines and the making of passage for water for mining purposes or any land comprised in a quarry or mining lease or other mineral concessions;
- (j) the form of registers to be maintained under this Act and the reports and statements to be submitted by holders of quarry or mining leases or other mineral concessions and the authority to which such reports and statements shall be submitted;
- (k) the management of the State Mineral Fund and the accounting procedures in relation thereto
- (l) the composition, qualification and term of office of the Chairman and members of the State Mining Tribunal and procedures of the Tribunal
- (m) any other matter which under this Act is to be, or may be prescribed.

(3) The State Government may, by notification in the Official Gazette, make rules for preventing illegal mining, transportation and storage of minerals and for the purposes connected therewith.

(4) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:-

(a) establishment of check-posts for checking of minerals under transit;

(b) establishment of weigh-bridges to measure the quantity of mineral being transported;

(c) regulation of mineral being transported from the area granted under a prospecting licence or a mining lease or a quarrying licence or a Licence, in whatever name the permission to excavate minerals, has been given;

(d) inspection, checking and search of minerals at the place of excavation or storage or during transit;

(e) maintenance of registers and forms for the purposes of these rules;

(f) the period within which and the authority to which applications for revision of any order passed by any authority be preferred under any rule made under this section and the fees to be paid therefor and powers of such authority for disposing of such applications; and

(g) any other matter which is required to be, or may be, prescribed for the purpose of prevention of illegal mining, transportation and storage of minerals.

## Chapter-XIII : MISCELLANEOUS

### 68. Declaration of a mineral as a major mineral:

Notwithstanding anything in the Act to the contrary, the Central Government may by notification in the Official Gazette, declare any mineral as a major mineral for all or any specified purpose or delete any mineral from the list of major minerals by notification to this effect in the Official Gazette, and upon so doing the First Schedule to the Act shall be deemed to have been so amended with effect from such date as may be specified in the notification.

### 69. National Repositories:-

(1) The Central Government may by notification establish under its control a National Drill Core Repository for preservation and archiving of drill cores generated during mineral exploration and a National Geophysical Data Repository for holding, authenticating and disseminating geophysical data obtained through operations under this Act..

(2) The Repositories shall be managed in such manner as may be prescribed.

(3) The holder of any mineral concession shall, at his own expense, cause to be deposited with the National Drill Core Repository a representative portion of cores selected in such manner as may be specified by the Repository.

Provided that the Repository shall not disclose information with respect to any core received by it under this subsection till after lapse of six months from the date of termination of the concession

(4) The holder of any mineral concession shall, at his own expenses, cause to be deposited with the National Geophysical Data Repository in such manner as may be prescribed, all geophysical data collected by him during or part of his reconnaissance and large area prospecting operation.

Provided that the Repository shall not disclose information received by it with regard to any concession area till after lapse of six months from the date of termination or expiry of the concession.

70. Special provisions to deal with contingencies:-

(1) It shall be the duty of the Indian Bureau of Mines or any authority of Central Government as may be designated in respect of coal and atomic minerals, to render such assistances as may be required by the State Government to ensure that mining activities are regulated in accordance with the objects of this Act.

(2) Where the Indian Bureau of Mines or authority designated under sub-section (1), on the basis of information available to it comes to the conclusion that the provisions of the Act and Rules thereunder are not being adequately and properly exercised and that illegal or unscientific mining is going on in any State in a large scale, it shall make a Report to this effect to the Government of India, and Government of India may issue a direction to the State Government.

(3) Without prejudice to the generality of the foregoing Sub-Section such directions may relate to:-

- (a) investigation and prosecution of offences;
- (b) revocation of concessions; and
- (c) any measures to strengthen the administrative machinery.

(4) A State Government shall on receipt of a direction under the foregoing sub-sections, immediately comply with such directions in accordance with the provisions of the Act and the Rules thereunder.

(5) Where it appears to the Central Government that the foregoing Sub-Section have not been complied with or where it appears that despite the purported compliance of the directions further steps are urgently necessary, the Central Government may order:-

- (a) the investigation and prosecution of offences;
- (b) revocation of concessions in accordance with the provisions of the Act; and
- (c) any other measures as may be deemed just and proper in the circumstances; and may authorize the Indian Bureau of Mines to give effect to the order.

(6) No suit or prosecution of other legal proceeding shall lie against any person for anything which is in good faith done or intended to be done under or pursuant to this Section.

71. Approval of Central Government through State Government:

Where in any case previous approval of the Central Government is required under this Act or Rules thereunder, the application for such approval shall be made to the Central Government through the State Government.

72. Amendment of Appendix:

The Central Government may by notification amend the Appendix from time to time.

73. Validation of certain acts and indemnity:

(1) All rules made or purporting to have been made under the Mines and Minerals (Regulation and Development) Act, 1948, and Mines and Mineral (Development and Regulation) Act, 1957, shall in so far as they relate to matters for which provision is made in this Act and are not inconsistent therewith, be deemed to have been made under this Act as if this Act had been in force on the date on which such rules were made and shall continue in force unless and until they are superseded by any rules made under this Act.

(2) All acts of executive authority done, proceedings taken and sentences passed under the Mines and Minerals (Development and Regulation) Act, 1957, with respect to the regulation of mines and the development of minerals by the Government or by any officer of the Government or by any other authority, in the belief or purported belief that the acts, proceedings or sentences were being done, taken or passed under the said Act, shall be as valid and operative as if they had been done, taken or passed in accordance with law, and no suit or other legal proceeding shall be maintained or continued against any person whatsoever, on the ground that any such acts, proceedings or sentences were not done, taken or passed in accordance with law.

(3) No suit, prosecution or other legal proceedings shall lie against any person for anything which is in good faith done or intended to be done under this Act.



74. Repeal & Saving:

(1) The Mines and Minerals (Development & Regulation) Act, 1957 (Act No.67 of 1957) is hereby repealed. Notwithstanding such repeal any act done or order passed under that Act shall be deemed to have been done or passed under this Act except to the extent that such act or order is inconsistent with the provisions of this Act.

(2) No applications for grant of mineral concessions shall lie for a period of one year from the date of commencement of this Act;

Provided that a State Government may by notification, determine an earlier date for the making of applications for mineral concessions.

(3) Without prejudice to the generality of the provisions of the sub-section (1), applications for grant of concessions which have received the prior approval of the Central Government under the Mines and Minerals (Development & Regulation) Act, 1957 shall be processed under the provisions of this Act as if they had received approval of the competent authority under this Act.

(4) Applications for grant of mineral concessions made under the Mines and Minerals (Development & Regulation) Act, 1957 and pending on the date of commencement of this Act shall be disposed off in accordance with the provisions of this Act.

Provided that where consequent to the provisions of this subsection, an application for mining lease is deemed ineligible, the area shall be notified in accordance with provisions of proviso to Section 26(3).

Provided further that where prior to the commencement of this Act, an area had been notified for prospecting and applications received are pending consideration under Section 11 of the Mines and Minerals (Development and Regulation) Act, 1957, the State Government may invite offers from eligible applicants other than those whose applications have already been disposed off, with reference to matters provided in clause (g) of sub section (2) of section 13 in order to dispose of the application in accordance with the provisions of Section 13 of this Act..

*Explanation:* A person who has been issued a letter of intent for mining lease (by whatever name called) prior to commencement of this Act would be deemed to have been issued a letter of intent under this Act.

Provided that in respect of time limit for disposal of such applications, the period shall be reckoned from date of commencement of this Act;

(5) Applications for renewal of mineral concessions made under the Mines and Minerals (Development & Regulation) Act, 1957 and pending on the date of commencement of this Act shall be disposed off as application for extension in accordance with the provisions of this Act.

Provided further that applications already made for renewal of leases shall be disposed off as though they were applications for extension of lease under this Act.

(6) Notwithstanding anything in this Act, a person who holds a Reconnaissance permit prior to the commencement of this Act shall be entitled to continue to hold the permit to the exclusion of all others for a period of two years or validity of the permit whichever is less and during the period no other Reconnaissance or Large Area Prospecting Licence applications shall be entertained for the area covered by the Reconnaissance permit, and the permit holder shall be deemed to be the holder of a Reconnaissance Licence for the purpose of sub-section (6) of section 23.

(7) Nothing in this Act shall affect the provisions of the Atomic Energy Act, 1962 (33 of 1962) and Rules made thereunder

75. Powers to remove difficulties:

If any difficulties arises in giving effect to any of the provisions of this Act, the Central Government may issue such orders or directions as may be necessary or expedient in the circumstances, not inconsistent with the provisions of the Act for the purpose of removing the difficulty,

Provided that no such order or direction shall be issued under the section after the expiry of the two years from the commencement of this Act.

(See section 3(ab) of the Act)

I. UNFC classification of reserves:-

A. DEFINITION OF TERMS AND CODES ON RESERVES AND RESOURCES UNDER UNITED NATIONS FRAMEWORK CLASSIFICATION (UNFC) OF MINERAL RESOURCES

The UNFC consists of a three dimensional system with the following three axes: Geological Assessment, Feasibility Assessment and Economic viability. The process of geological assessment is generally conducted in stages of increasing details. The typical successive stages of geological investigation i.e. reconnaissance, prospecting, general exploration and detailed exploration, generate resource data with a clearly defined degrees of geological assurance. These four stages are therefore used as geological assessment categories in the classification. Feasibility assessment studies form an essential part of the process of assessing a mining project. The typical successive stages of feasibility assessment i.e. geological study as initial stage followed by prefeasibility study and feasibility study/mining report are well defined. The degree of economic viability (economic or subeconomic) is assessed in the course of prefeasibility and feasibility studies. A prefeasibility study provides a preliminary assessment with a lower level of accuracy than that of a feasibility study, by which economic viability is assessed in detail.

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It is a three digit code based system, the economic viability axis representing the first digit, the feasibility axis the second digit and the geologic axis the third digit. The three categories of economic viability

have codes 1,2 and 3 in decreasing order, similarly the three categories of feasibility study have also codes 1,2 and 3 while the four stages of geological assessment are represented by 4 codes i.e. 1 (detailed exploration), 2 (general exploration), 3 (prospecting) and 4 (reconnaissance). Thus the highest category of resources under UNFC system will have the code (111) and lowest category the code (334). The various terms used in this classification and their definitions are as follows:

1. Total Mineral Resource

- A concentration (or occurrence) of material of intrinsic economic interest.
- Reasonable prospects for eventual economic extraction.
- Location, grade, quantity, geological characteristic known, estimated or interpreted  
from specific geological evidence and knowledge.

(i) Measured Mineral Resource (331)

- That part of mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence i.e. based on detailed exploration.

(ii) Indicated Mineral Resource (332)

- Tonnage, densities, shape, physical characteristic, grade and mineral content can be estimated with reasonable level of confidence based on exploration, sampling and testing information, location of borehole, pits etc. too widely spaced.

(iii) Inferred Mineral Resource (333)

- **Tonnage, grade and mineral content can be estimated with low level of confidence.**

**Inferred from geological evidence.**

2. **Mineral Reserve**

- **Economically mineable part of measured and/or indicated mineral resource.**

(i) **Proved Mineral Reserves (111)**

- **Economically mineable part of Measured Mineral Resource.**

(ii) **Probable Mineral Reserves (121 & 122)**

- **Economically mineable part of indicated or in some cases a measured mineral resource.**

3. **Reconnaissance Mineral Resource (334)**

- **Estimates based on regional geological studies and mapping, airborne and indirect**

**Methods, preliminary field inspections as well as geological inference and extrapolation**

4. **Prefeasibility Mineral Resource (221 and 222)**

- **That part of an indicated and in some circumstances measured mineral resource that has**

**been shown by prefeasibility study to be not economically mineable.**

- **Possibly economically viable subject to changes in technological, economic,**

**environmental and/or other relevant condition.**

5. **Feasibility Mineral Resource (211)**

- **That part of measured mineral resource, which after feasibility study has been found to**

**be economically not mineable.**

- **Possibly economically viable subject to changes in technological, economic,**

**environmental and/or other relevant condition.**

## **Definition of Uneconomic Occurrence**

**Materials of estimated quantity, that are too low in grade or for other reasons are not considered potentially economic. Thus, Uneconomic Occurrence is not part of a Mineral Resource. If quantity and quality are considered worthy of reporting, it should be recognized that an Uneconomic Occurrence cannot be exploited without major technological and/or economic changes, which are not currently predictable.**

### **Mineral Occurrence:**

**A Mineral Occurrence is an indication of mineralisation, that is worthy of further investigation. The term Mineral Occurrence does not imply any measure of volume/tonnage or grade/quality and is thus not part of a Mineral Resource.**

B. Definitions of Terms to be used in the United Nations International Framework Classification for Reserves/Resources

**Solid Fuels and Mineral Commodities –**

Definitions of Stages of Feasibility Assessment

<p><b>Mining Report</b></p>	<p><b>A Mining Report is understood as the current documentation of the state of development and exploitation of a deposit during its economic life including current mining plans. It is generally made by the operator of the mine. The study takes into consideration the quantity and quality of the minerals extracted during the reporting time, changes in Economic Viability categories due to changes in prices and costs, development of relevant technology, newly imposed environmental or other regulations, and data on exploration conducted concurrently with mining.</b></p> <p><b>It presents the current status of the deposits, providing a detailed and accurate, up-to-date statement on the reserves and the remaining resources.</b></p>
<p><b>Feasibility Study</b></p>	<p><b>A Feasibility Study assesses in detail the technical soundness and Economic Viability of a mining project, and serves as the basis for the investment decision and as a bankable document for project financing. The study constitutes an audit of all geological, engineering, environmental, legal and economic information accumulated on the project. Generally, a separate environmental impact study is required.</b></p>

	<p><b>Cost data must be reasonably accurate (usually within <math>\pm 10\%</math>), and no further investigations should be necessary to make the investment decision. The information basis associated with this level of accuracy comprises the reserve figures based on the results of Detailed Exploration, technological, pilot tests and capital and operating cost calculations such as quotations of equipment suppliers.</b></p> <p><b>A detailed list of the important items addressed in a Feasibility Study is given below :</b></p>
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**List of the more important items to be addressed in a Feasibility Study**

<p><i>Geographical conditions</i></p> <p><b>Infrastructure</b>          P public utilities          P road, railways and other          P manpower</p> <p><b>Geology</b>          P structure, size, shape          P Mineral content, grade, density          P reserve/resource quantity and quality          P other relevant geological features</p> <p><b>Legal Matters</b>          P Rights and ownership          P Socioeconomic impact studies          P Public acceptance          P Land requirements          P Government factors</p>	<p><i>Operating</i></p> <p>P rock mechanics          P mining equipment          P mining method          P construction plan and schedule          P appropriate technological pilot tests          P mill and processing plant          P tailings disposal          P water management          P transportation          P power supply          P manpower/labour relations          P auxiliary facilities and services          P closure design</p> <p><b>Environment</b> (if not dealt with in a separate study)</p> <p><b>Market analysis</b></p> <p><b>Financial Analysis</b>          P Capital cost          P Cashflow forecast          P Investment cost          P Inflation forecast          P Operating cost          P Sensitivity studies          P Closure cost          P Rehabilitation cost</p> <p><b>Risk Assessment</b></p>
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**A sensitivity study may require independent verification in certain circumstances.**

Definition of Stages of Feasibility Assessment (Contd.)

<p><b>Prefeasibility Study</b></p>	<p><b>A Prefeasibility Study provides a preliminary assessment of the Economic Viability of a deposit and forms the basis for justifying further investigations (Detailed Exploration and Feasibility Study). It usually follows a successful exploration campaign, and summarizes all geological, engineering, environmental, legal and economic information accumulated to date on the project.</b></p> <p><b>In projects that have reached a relatively advanced stage, the Prefeasibility Study should have error limits of <math>\pm 25\%</math>. In less advanced projects higher errors are to be expected. Various terms are in use internationally for Prefeasibility Studies reflecting the actual accuracy level. The data required to achieve this level of accuracy are reserves/resources figures based on Detailed and General Exploration, technological tests at laboratory scale and cost estimates e.g. from catalogues or based on comparable mining operations.</b></p> <p><b>The Prefeasibility Study addresses the items listed under the Feasibility Study, although not in as much details.</b></p>
<p><b>Geological Study</b></p>	<p><b>A Geological Study 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.</b></p> <p><b>Economic Viability categories, however, cannot in general be defined from the Geological Study because of the lack of detail necessary for an Economic Viability evaluation. The resource</b></p>

	<p><b>quantities estimated may indicate that the deposit is of intrinsic economic interest, i.e. in the range of economic to potentially economic.</b></p> <p><b>A Geological Study is generally carried out in the following four main stages: Reconnaissance, Prospecting, General Exploration and Detailed Exploration (for definition of each stage see below). 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.</b></p>
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## Definitions of Stages of Geological Study

<p><b>Reconnaissance</b></p>	<p>A Reconnaissance study identifies areas of enhanced mineral potential on a regional scale 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.</p>
<p><b>Prospecting</b></p>	<p>Prospecting 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 trenching, drilling, and sampling may be carried out. The objective is to identify a deposit which will be the target for further exploration. Estimates of quantities are inferred, based on interpretation of geological, geophysical and geochemical results.</p>
<p><b>General Exploration</b></p>	<p>General Exploration involves the initial delineation of an identified deposit. Methods used include surface mapping, widely spaced sampling, trenching and drilling for preliminary 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</p>

<b>Detailed Exploration</b>	<p><b>providing an initial estimate of size, shape, structure and grade. The degree of accuracy should be sufficient for deciding whether a Prefeasibility Study and Detailed Exploration are warranted.</b></p> <p><b>Detailed Exploration involves the detailed three-dimensional delineation of a known deposit achieved through sampling, such as from outcrops, trenches, boreholes, shafts and tunnels. 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. A decision whether to conduct a Feasibility Study can be made from the information provided by Detailed Exploration.</b></p>
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Definition of Economic Viability Categories

<p>Economic</p>	<p><b>Quantities, reported in tonnes/volume with grade/quality, demonstrated by means of a Prefeasibility Study, Feasibility Study or Mining Report, 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.</b></p>
<p><b>Normal Economic</b></p>	<p><b>The term economic comprises both normal economic and exceptional economic as defined below. These two subcategories are for optional use on a national level.</b></p>
<p><b>Exceptional Economic (Conditional economic)</b></p> <p>-----</p>	<p><b>Normal economic reserves are reserves that justify extraction under competitive market conditions. Thus, the average value of the commodity mined per year must be such as to satisfy the required return on investment.</b></p> <p><b>Exceptional (conditional) economic reserves are reserves which at present are not economic under competitive market conditions. Their exploitation is made possible through government subsidies and/or other supportive measures.</b></p> <p>-----</p>
<p>Potentially Economic</p>	<p>-----</p> <p><b>Quantities, reported in tonnes/volume with grade/quality, demonstrated by means of a Prefeasibility Study, Feasibility Study or Mining Report, 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.</b></p>
<p><b>Marginal Economic</b></p>	<p><b>The term potentially economic comprises both marginal and submarginal as defined below. These two subcategories are for optional use on a national level.</b></p> <p><b>Marginal economic resources are resources which at the time</b></p>

<p><b>Submarginal Economic</b></p> <p>-----</p>	<p>of determination are not economic, but border on being so. They may become economic in the near future as a result of changes in technological, economic, environmental and/or other relevant conditions.</p> <p>Submarginal economic resources are resources that would require a substantially higher commodity price or a major cost-reducing advance in technology to render them economic.</p>
<p>Economic to Potentially Economic (intrinsically economic)</p>	<p>-----</p> <p>Quantities, reported in tonnes/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<sup>1/</sup>. These Resources are therefore said to lie in the range of economic to potentially economic.</p>

1/ Except in the case of low investment mineral commodities like sand, gravel and common clay, where a distinction between economic and potential economic can be made.

## **C. FIELD GUIDELINES FOR ADOPTION OF UNITED NATIONS FRAMEWORK CLASSIFICATION**

### **I. Stratiform, Stratabound and Tabular Deposits of Regular Habit**

#### **Characteristics of deposits**

Of regular habit with predictable change in trend with sharp to moderate physical contrast with bounded surfaces, low dipping to moderately steep, simply folded and faulted. Also as blanket cappings and surficial tabular bodies.

#### **Principal kinds of minerals**

Coal seams, lignite beds, iron ore formation and cappings, manganese horizons in sedimentary and meta-sedimentary sequences, thick bauxite cappings, regional chromite lodes in large ultramafics; limestone, dolomite, barytes, gypsum, evaporites (including potash and salt beds), chalk and fireclay, fuller's earth.

#### **GEOLOGICAL AXIS**

G4 (Reconnaissance)	G3 (Prospecting)	G2(General Exploration)	G1(Detailed Exploration)
<p><b>1.Aerial reconnaissance:</b> Remote sensing, airborne geophysical survey etc.</p> <p><b>2.Geological survey:</b> Mapping on 1: 50,000 or smaller scales.</p> <p><b>3.Geochemical survey:</b> (i)Grab/chip sampling of rocks or weathered profiles (Nil for coal/lignite); (ii)Recording of broad geomorphology, drainage, etc.</p> <p><b>4. Geophysical survey:</b> Ground geophysical survey.</p> <p><b>5. Technological :</b> (i)Trenching - One or two to expose mineralised zone at ideal locations only; (ii)Pitting/drilling: Up to 5 test pits/boreholes per 100 sq.km. area; (iii)Scout drilling – A few to know the existence of coal/lignite; (iv)Sampling -Regional and random grab/chip sampling.</p> <p><b>6. Petrographic and mineragraphic studies:</b> Determination of principal rock types, mineral assemblage, identification of minerals of interest (especially of metallic minerals and gangues).</p> <p><b>7. Synthesis of all available data/concepts.</b></p> <p><b>8.The activities as above or less than that required for G3.</b></p>	<p><b>1.Geological survey:</b> (i) Mapping on 1:50,000 to 1:25,000 scale (for coal, lignite exploration-mapping on 1:10,000); (ii)Linking of maps so prepared with topo-grids; (iii)Assessment of lithology, structure, surface mineralisation, analysis of old history of mining.</p> <p><b>2.Geochemical survey:</b> Geochemical sampling, rock type-wise and if necessary, rock type-cum-skeletal soil-domain-wise (for all metallic mineral exploration).</p> <p><b>3.Geophysical survey:</b> Detailed ground geophysical work; bore-hole geophysical logging, if possible.</p> <p><b>4)Technological:</b> (a)Pitting/trenching to explore bed rock/mineralised zone; (b)Drilling:Preliminary drilling (dry drilling for bauxite and in formation vulnerable to wash). Bore-hole spacing - (i)Coal, gypsum, near surface potash and salt-beds- 1000 to 2000 meters; (ii) Iron and manganese ore - 200 to 400 m; (iii) Limestone and dolomite - 400 to 500 m; (iv)Bauxite of thick capping - 300 to 400 m. (v) Chromite as regional lode - 300 m; (vi) Barytes formations - 400 to 500 m. (c) Sampling: Sampling at well-defined locations at surface and also from</p>	<p><b>1.Geological survey :</b> (i)Mapping on 1:25,000 to 1:5,000 or larger scale with triangulation points, benchmarks, if any shown For coal, mapping on 1:10,000 scale (ii) Linking of maps so prepared with topogrid; (iii)Assessment of lithology, structure, surface mineralisation, analysis of old history of mining.</p> <p><b>2. Geochemical survey:</b> (i)Detailed litho-geochemical channel sampling from fresh rock exposures, trenches, pits; (ii)Recording of deleterious elements, likely by-product elements (e.g. Ga in bauxite, Ni, PGE etc. in chromite, Au in Fe ore, etc. (Nil for coal/lignite exploration); (iii)In coal/ lignite exploration, geo-chemical sampling of coal and water to be done for environmental study.</p> <p><b>3.Geophysical survey:</b> (i)Borehole geophysical survey; (ii)Special geophysical traverses for problem solving, if required .</p> <p><b>4. Technological:</b> (a)Pitting/trenching: systematic pitting/trenching for deciphering extent of mineralisation at surface. (b)Drilling: grid reduction needed: spacing (i) for coal, gypsum near surface potash and salt beds-400 to 1000m; (ii) Iron and manganese ore-100 to 200m. (iii) limestone and dolomite and</p>	<p><b>1.Geological survey:</b> (i)Mapping-For coal, mapping 1:5000;for other minerals 1:1000 (ii)Preparation of detailed topographical-cum-geological map including all surface geological features, extent of deposit, structure, location of boreholes, assay plan and sections of exploratory mine development and borehole data; (iii)Topogrid/triangulation stations/identified fiducials linking in the maps.</p> <p><b>2.Geochemical survey:</b> Detailed grid pattern sampling and analysis.</p> <p><b>3.Geophysical survey:</b> Detailed and specific borehole geophysical survey.</p> <p><b>4.Technological:</b> (i)Pitting - 2 to 5 per sq. km. for simple deposits;  (ii)Trenching - At spacing of 200-300m; (iii)Drilling-closer spaced (with definite grid pattern) than that for G2 category; For coal, i)Density of boreholes to be 12 to 15 per sq.km. depending on the complexities for geostructural proving. ii) For opencast project grid spacing may be 100m x 50m depending on the geology, weather mantle cover , burning nature of coal seams. (iv)Exploratory mining and check drilling results if</p>



	<p>pits/trenches, boreholes and existing mine openings.</p> <p><b>5.Petrographic/mineragraphic studies:</b></p> <p>(i) Petrographic study of rocks of the deposit and its surroundings, alterations (if any) connected with mineralisation;</p> <p>(ii) Determination of phase in which mineral of interest occur;</p> <p>(iii) Mineralogical studies including paragenesis, identification of zones of oxidation and primary zones, grain size distribution, overall characteristics of useful minerals.</p>	<p>barytes- 200 to 400m up to a depth of at least 30 m;</p> <p>(iv) bauxite of thick cappings and chromite as regional lode-100 to 300m.</p> <p>(c) Sampling:</p> <p>(i) Systematic pit and trench sampling, deep pitting if necessary;</p> <p>(ii) Core sampling: lithology and strength of mineralisation wise (check sampling -10%).</p> <p>(d) Laboratory scale scanning/chemical analysis,</p> <p>(e) Bulk sampling if necessary for testing processing technology.</p> <p>(f) Collection of abiotic geo-environmental parameters.</p> <p><b>5.Petrographic:</b> Study of petrographic character of rocks including grain size, texture etc.</p>	<p>possible ;</p> <p>(v) Sampling- systematic pit and trench sampling, core and sludge sampling for laboratory scale and bulk sample for the pilot plant scale beneficiation studies.</p> <p><b>5.Petrographic and mineragraphic study:</b> Refining of data on the petrographic character of rocks of the deposit and its surroundings, alterations (if any), including study of grain size texture gangue and its liberation characteristics for further refining of data</p> <p><b>6)Geostatistical analysis</b> of borehole data thickness of ore : waste encountered in holes, assay values of samples if considered necessary.</p>
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**FEASIBILITY AXIS**

<b>F3 (Geological Study)</b>	<b>F2 (Pre-feasibility Study)</b>	<b>F1 (Feasibility Study)</b>
<p><b>1. Geological and related study:</b>                      (i) Geological, mineralogical and chemical analysis data;                      (ii) Topographical setting and nature of land;                      (iii) Infrastructure;                      (iv) Meteorological and preliminary ecology data if possible.</p> <p><b>2.</b> The activities as above or less than that required for <b>F 2</b>.</p>	<p><b>1. Geology:</b>                      Local geology, mineralogy, identification of ore types and geometry.</p> <p><b>2. Mining:</b> Methods, pre-production plan, development plan, manpower ( rough estimate).</p> <p><b>3. Environment:</b>                      Base line data on environment.</p> <p><b>4. Processing:</b> Proven laboratory scale/pilot scale beneficiation, investigation data, likely establishment,</p> <p><b>5. Infrastructure and services, construction activities:</b>                      Brief details</p> <p><b>6. Costing:</b> Capital and operating cost - rough estimates based on comparable mining operations.</p> <p><b>7. Marketing:</b> Overview like industrial structure, demand supply relation, pricing, etc.</p> <p><b>8. Economic viability:</b> Preliminary study of cash flow forecasts.</p> <p><b>9. Other factors:</b> Statutory provisions relating to labour, land, mining, taxation, etc.</p>	<p><b>1. Geology:</b> Geology of area and project, detailed exploration, closed spaced drilling, ore body modelling, bulk samples for beneficiation, geotechnical and ground water &amp; surface waters studies. However for coal, beneficiation studies to be carried out depending upon coal qualities.</p> <p><b>2. Mining:</b> Mining plan, mine recoveries and efficiencies, equipment selection, manpower requirement.</p> <p><b>3. Environment:</b> EIA studies and EMP including socio-economic impact, rehabilitation of project affected persons, waste disposal/reclamation., detailed land use data.</p> <p><b>4. Processing:</b> Pilot scale/industrial scale investigation data, list of equipment, manpower and environmental considerations like waste disposal of tailing, etc.</p> <p><b>5. Infrastructure and services, construction activities:</b> Full details</p> <p><b>6. Costing:</b>                      Detailed break-up of capital cost, operating cost, details of working capital.</p> <p><b>7. Marketing:</b>                      Overview, specific market aspects.</p> <p><b>8. Economic viability:</b>                      Cash flow forecast, inflation effects, sensitivity studies.</p> <p><b>9. Other factors:</b> Statutory provisions relating to labour, land, mining, taxation etc.</p>

## ECONOMIC AXIS

<b>E3(Intrinsically Economic)</b>	<b>E2 (Potentially Economic)</b>	<b>E1(Economic)</b>
<p>1.Reconnaissance to detailed geological study, rough estimates of grades (may be below economic cut-off), general idea about forest /non –forest and land use status.</p> <p>2. The activities as above or less than that required for <b>E 2</b>.</p>	<p>1.General and detailed exploration</p> <p>2 .Specific end-use grades of reserves (above /marginally below economic cut-off grade).</p> <p>3. General knowledge of forest/non-forest and other land use data.</p>	<p>1.Detailed exploration.</p> <p>2.Mining report /mining plan / working mines.</p> <p>3.Specific end-use grades of reserves (above economic cut-off grade).</p> <p>4. Specific knowledge of forest/non-forest and other land use data.</p>

### II.Stratiform, Stratabound and Tabular Deposits of Irregular Habit

#### Characteristics of deposits

**Of irregular habit and /or with faults of large measures, shear zones, solution cavities, irregular erosion and weathering (oxidation) features, partings and bifurcations, igneous intrusives, facies changes, etc.**

#### Principal kinds of minerals

Coal seams, lignite belt, iron ore formations and cappings, manganese horizons in sedimentary and meta-sedimentary sequences, thick bauxite cappings, regional chromite lodes in large ultramafics, limestone, dolomite, barytes, gypsum, evaporites including potash and saltbelts, chalk and fireclay, fullers earth, gold in banded iron formation, platinum group of elements in chromite or in chromite bearing rocks and molybdenum in shear - controlled zones.

## GEOLOGICAL AXIS

<b>G4 (Reconnaissance)</b>	<b>G3 (Prospecting)</b>	<b>G2 (General Exploration)</b>	<b>G1(Detailed Exploration)</b>
<p><b>1.Aerial reconnaissance:</b> Remote sensing, airborne geophysical survey, etc.</p> <p><b>2.Geological survey:</b> Mapping on 1:50,000 or smaller scales.</p> <p><b>3. Geochemical survey:</b> (i) Grab/chip sampling of rocks or weathered profiles (Nil for coal/lignite exploration); (ii)Recording of broad</p>	<p><b>1.Geological survey:</b> (i) Mapping on 1:50,000 to 1:25,000 scale (for coal, lignite exploration-mapping on 1:10,000); (ii) Linking of maps so prepared with topogrids; (iii) Assessment of detailed stratigraphy, lithology, structure, surface mineralisation, analysis of old history of mining.</p>	<p><b>1.Geological survey:</b> (i) Mapping on 1:25000 to 1:1000 or larger scale with triangulation points, benchmarks, if any;For coal, mapping on 1:10,000 scale (ii) Linking of maps so prepared with topo- grids.</p> <p><b>2.Geochemical survey:</b> (i)Detailed litho-chemical channel sampling from fresh rock exposures, trenches, pits; (ii)Recording of deleterious</p>	<p><b>1.Geological survey:</b> (i)Mapping a)Coal –1:5000 b) For other minerals-1:1000 or larger scale; (ii)Preparation of detailed topographical -cum-geological map including all surface geological features, extent of deposit, structure, location of boreholes, assay plan and sections of exploratory mine development and borehole data.</p>

<p>geomorphology, drainage etc.</p> <p><b>4. Geophysical survey :</b> Ground geophysical survey.</p> <p><b>5. Technological :</b> (i) Trenching - One or two to expose mineralised zones at ideal locations only; (ii) Pitting /drilling- Upto 5 test pits / boreholes per 100 sq.km area; (iii) Scout drilling - a few to know existence of coal /lignite; (iv) Sampling – Regional and random grab/chip sampling.</p> <p><b>6. Petrographic and mineragraphic studies:</b> (i) Determination of principal rock types, mineral assemblage; (ii) Identification of minerals of interest (especially of metallic minerals and gangues); 7. Synthesis of all available data / concepts. 8. The activities as above or less than that required for <b>G-3</b>.</p>	<p><b>2. Geochemical survey:</b> Grid geochemical sampling- rock type wise and if necessary, soil-domain-wise (for all metallic mineral exploration).</p> <p><b>3. Geophysical survey:</b> Detailed ground geophysical work.</p> <p><b>4. Technological:</b> (i) Pitting/trenching/ drilling depending on variability; (ii) Selection of drilling sites best suited to unravel the lithological/ structural complexities.</p> <p><b>5. Petrographic/mineragraphic studies:</b> (i) Petrographic study of rocks of the deposit and its surroundings, alterations (if any), connected with mineralisation; (ii) Determination of phase in which mineral of interest occur; (iii) Mineralogical studies including paragenesis, identification of zones of oxidation and primary zones, grain size distribution, overall characteristics of useful minerals.</p>	<p>elements, likely by-product elements (e.g. Ga in bauxite, Ni, PGE etc. in chromite, Au in Fe ore, etc. (Nil for coal/ lignite exploration).</p> <p><b>3. Geophysical survey:</b> (i) Borehole geophysical survey; (ii) Special geophysical traverses for problem solving if required; (iii) Concurrent synthesis of multi-disciplinary data, Bore-hole geophysical logging, if possible.</p> <p><b>4. Technological:</b> (i) Pitting/trenching-pitting/trenching for helping surface and subsurface correlation of mineralised zones; (ii) Drilling - Close spaced at 200 x 200m grid to decipher the ore -shoot behaviour atleast at two level. In general, spacing of probe points along strike may be 100m but in specific cases depending on the necessity it may be brought down to 50 m. especially for precious metals. A few probe points for deeper intersections; (iii) Detailed core sampling, bulk sampling for testing of processing technology ; (iv) Collection of abiotic geo-environmental parameters.</p> <p><b>5. Petrographic:</b> Refining of data on the petrographic character of rocks including study of grain size, texture and liberation characteristics.</p>	<p><b>2. Geochemical survey:</b> Detailed lithochemical analysis</p> <p><b>3. Geophysical survey:</b> Detailed borehole geophysical survey</p> <p><b>4. Technological:</b> (i) Pitting: 3 to 5 nos. for every mass body or at 100-200 meter grid interval; <b>(ii) Trenching- At spacing of 50 to 200 meters;</b> (iii) Drilling- Closer spaced than that for G-2 at 3-4 levels down to a workable depth; (iv) Sampling- Core and sludge, pits samples for grade analysis or beneficiation, bulk samples for laboratory scale / pilot plant investigation; (v) Collection of abiotic geo-environmental data - its further refining and analysis.</p> <p><b>5. Petrographic:</b> Study of petrographic characters of rock and study of useful minerals.</p> <p><b>6) Geostatistical analysis</b> of borehole data, thickness of ore : waste encountered in holes, assay values of samples if considered necessary.</p>
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## FEASIBILITY AXIS

F3 (Geological Study)	F2 (Pre-feasibility Study)	F1 (Feasibility Study)
<p><b>1.Geological and related study:</b>            (i) Geological study encompassing reconnaissance to prospecting, general/ detailed exploration;            (ii) Geological map depicting extent of mineralisation lithology/host rocks, mineralogical and chemical data and its interpretations, studies on amenability to beneficiation, recoveries and their estimates;            (iii)Infrastructure;            (iv)Environmental: Meteorological and preliminary ecological data of area if possible.</p> <p><b>2.</b>The activities as above or less than that required for F-2.</p>	<p><b>1.Geology:</b>General/ detailed exploration ,moderate to close spaced drilling, trench/pit/ bore hole sampling to delineate complexity of ore body/ mineralisation, bulk sampling for processing/ beneficiation (bench scale/pilot scale).</p> <p><b>2. Mining:</b> Methods with geotechnical considerations,preproduction plan, likely mine recoveries.</p> <p><b>3. Environmental:</b>            Base line data on environment of the area.</p> <p><b>4. Processing:</b>            Proven laboratory scale/pilot plant scale ore dressing investigations on bulk samples, likely establishment of plant and cost estimates thereof.</p> <p><b>5. Infrastructure and services and constructions activities:</b>            Brief details.</p> <p><b>6. Costing:</b> Capital cost with estimates based on comparable mining operations</p> <p><b>7. Marketing:</b> Over view on demand supply relations, industry structure, pricing etc.</p> <p><b>8. Economic viability:</b>            Preliminary study of cash flow forecast.</p> <p><b>9. Other factors:</b> Statutory provisions relating to labour , land , mining, taxation etc.</p>	<p><b>1.Geology:</b> Geology of area and project, detailed exploration, closed spaced drilling,ore body modelling, bulk samples for beneficiation, geotechnical and ground water&amp;surface water studies.</p> <p><b>2.Mining:</b> Methods with special emphasis on detailed geotechnical test work/ site characterisation studies, safety measures; mining plan, mine recoveries and efficiency with variability due to structural complexeties like close folds and faults; detailed estimates of manpower.</p> <p><b>3. Environmental:</b>            (i)Environmental impact assessment (EIA) studies/environmental management plan (EMP) including socio-economic impacts;            (ii)Rehabilitation of project affected persons, and waste disposal/ reclamation ; detailed land use data.</p> <p><b>4. Processing :</b> Details of proven pilot plant scale/ industrial scale investigations appended with layout design ,equipment list fuel/power consumption, specification for product/ by-product, disposal of tailings, effluent and future remedial measures.</p> <p><b>5. Infrastructure and services and constructions activities: Full details.</b></p> <p><b>6. Costing:</b> Detailed breakup of capital and operating costs and details of working capital .</p> <p><b>7. Marketing:</b> Marketing overview, specific market aspects.</p> <p><b>8. Economic viability :</b> Cash flow forecast inflation effects and sensitivity studies</p> <p><b>9. Other factors :</b> Statutory provisions (labour , land , mining, taxation, etc.)</p>

**ECONOMIC AXIS**

E3(Intrinsically Economic)	E2 (Potentially Economic)	E1(Economic)
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<p><b>1.</b> Reconnaissance to detailed geological study, rough estimates of grades (may be below economic cutoff), general idea about forest/non-forest and land use status.</p> <p><b>2.</b> The activities as above or less than that required for <b>E 2</b>.</p>	<p><b>1.</b> General and detailed exploration.</p> <p><b>2.</b> Specific end-use grades of reserves (above economic cut-off grade).</p> <p><b>3.</b> General knowledge of forest/non-forest and other land use data</p>	<p><b>1.</b> Detailed exploration.</p> <p><b>2.</b> Mining report/mining plan/ working mine.</p> <p><b>3.</b> Specific end-use grades of reserves (above economic cut-off grade).</p> <p><b>4.</b> Specific knowledge of forest/non-forest and other land use data.</p>
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### III. Lenticular Bodies of All Dimensions Including Bodies Occurring en echelon, Silicified Linear Zones of Composite Veins

#### Characteristics of Deposits

Gradual and abrupt change in thickness and grade along strike and dip direction; bounding surfaces of mineralized bodies often, but in sulphides mostly, defined by assay contacts:

- (a) massive bodies with irregular shape and grade-homogeneous to inhomogeneous distribution of metal values as in replacement and disseminated type bodies - shapes interpretative;
- (b) steeply dipping narrow bodies with or without pitch, pinch and swell type, with or without bifurcations, partings etc.

#### Principal kinds of minerals

Base metal sulphides, supergene iron and manganese ore bodies in lateritoid country, pockety bauxite and nickel-cobalt lateritoids, auriferous quartz reefs, PGM in association with sulphides, graphite lenses, porphyry deposits of copper, molybdenum, and tin, pyrite, pyrrhotite bodies.

### GEOLOGICAL AXIS

<b>G4 (Reconnaissance)</b>	<b>G3 (Prospecting)</b>	<b>G2 (General Exploration)</b>	<b>G1 (Detailed Exploration)</b>
<p><b>1. Aerial Reconnaissance:</b> Remote sensing, airborne geophysical survey etc.</p> <p><b>2. Geological survey:</b> Mapping on 1:50,000 or smaller scales.</p> <p><b>3. Geochemical survey:</b> (i) Stream sediment, soil overburden, rocks, chips, grabs, groundwater and any other soluble media (decided on the basis of orientation survey) sampling, identification of ore significant zones; (ii) Delineation of predominantly forest area,</p>	<p><b>1. Geological survey:</b> : (i) Mapping on 1:50,000 to 1:5000 scale depending on geology of area; (ii) Linking of maps so prepared with topogrids; (iii) Assessment of lithology, structure, surface mineralisation and analysis of old history of mining.</p> <p><b>2. Geochemical survey:</b> (i) Study of detailed and primary and secondary geochemical parameters (close grid sampling) of prospects and their processing</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:5,000 to 1:1,000 or larger scale with triangulation stations, benchmarks, if any; (ii) Linking of maps so prepared with topo-grids, (iii) Assessment of lithology, structure, surface mineralisation, analysis of old history of mining.</p> <p><b>2. Geochemical survey:</b> (i) Detailed litho-geochemical channel sampling from fresh rock exposures, trenches, pits for further refinement of data; (ii) Recording of deleterious elements and likely by-</p>	<p><b>1. Geological survey:</b> (i) Mapping-1:1000 or larger scale; (ii) Preparation of detailed topographical -cum- geological map including all surface geological features, extent of deposit, structure, location of pits/trenches/boreholes, assay plan and sections of exploratory mine development and borehole data.</p> <p><b>2. Geochemical survey:</b> (i) Detailed litho-geochemical channel sampling from fresh rock exposures/ trenches, pits;</p>

<p>geomorphology, landforms and vegetable developments etc.</p> <p><b>4. Geophysical survey :</b> Ground geophysical survey.</p> <p><b>5. Technological :</b> (i) Widely spaced pitting/trenching to expose mineralised zones; (ii) Sampling - a) Regional and random grab/chip sampling, b) Channel sampling for exposures in trenches.</p> <p><b>6. Petrographic and mineragraphic studies:</b> (i) Determination of principal rock types, mineral assemblages; (ii) Identification of minerals of interest (especially of metallic minerals and gangues).</p> <p><b>7. Synthesis of all available data/concepts</b></p> <p><b>8. The activities as above or less than that required for G-3.</b></p>	<p>rock type-wise and rock type-cum-overburden wise for identification of ore significant anomaly zones; (ii) Recording of deleterious elements, likely by-product elements.</p> <p><b>3. Geophysical survey:</b> (i) Detailed ground geophysical work; (ii) Bore-hole geophysical survey.</p> <p><b>4. Technological:</b> (i) Pitting/trenching to explore mineralised zones to decipher surface manifestation of mineralisation - moderately spaced preferably at 500 - 400m interval; (ii) Preliminary drilling - (a) Spacing will be guided by the structural complexity or nature of discontinuity, (b) Spacing of probe points along strike generally between 100 and 200m; (iii) Further drilling to be planned to intersect ore-shoot, ore body at least at two levels with only few deeper level intersections; (iv) Exploration planning to be guided by the result of ground geochemical and geophysical studies, pit sampling/ trench/core sampling (5% check sampling).</p> <p><b>5. Petrographic/mineragraphic studies:</b> (i) Petrographic study of rocks of the deposit and its surroundings, alterations (if any), connected with</p>	<p>product elements.</p> <p><b>3. Geophysical survey:</b> (i) Borehole geophysical survey ; (ii) Special geophysical traverses for problem solving if required.</p> <p><b>4. Technological</b> (i) Pitting/trenching for helping surface and subsurface, correlation of mineralised zones;  (ii) Drilling- close –spaced drilling to decipher the ore -shoot behaviour atleast upto two levels; in general, spacing of probe points along strike may be 100m but in specific cases, depending on the necessity, it may be brought down to 50 m. especially for precious metals; a few probe points for deeper intersections; (iii) Detailed core sampling, bulk sampling for testing of processing technology; (iv) Collection of abiotic geo-environmental parameters. (10% check sampling).</p> <p><b>5. Petrographic;</b> Detailed study of data on the petrographic character of rocks including study of grain size ,texture, liberation characteristics.</p>	<p>(ii) Analysis of geo-chemical data for potential utilisation.</p> <p><b>3. Geophysical survey:</b> (i) Borehole geophysical survey ; (ii) Special geophysical traverses for problem solving , if required.</p> <p><b>4. Technological:</b> (i) Pitting/trenching for helping surface and subsurface correlation of mineralised zones; (ii) Drilling: closer–spaced than that for G-2 and upto the depth of 100-50 m. below the oxidation zone - depending on the necessity it may be brought down to 50 m. or less especially for precious metals; a few probe points for deeper intersections; (iii) Sampling- detailed core sampling, bulk sampling for testing of processing technology on laboratory/pilot plant scale; (iv) Collection of abiotic geo-environmental parameters.</p> <p><b>5. Petrographic:</b> Detailed study of data on the petrographic character of rocks including study of grain size ,texture, liberation characteristics and further refining of data.</p> <p><b>6) Geostatistical analysis</b> of borehole data (thickness of ore :waste encountered in holes, assay values) if considered necessary.</p>
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	mineralisation; (ii) Determination of phase in which mineral of interest occurs; (iii) Mineralogical studies including paragenesis, identification of zones of oxidation and primary zones, grain size distribution, overall characteristics of useful minerals.		
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### FEASIBILITY AXIS

F3 (Geological Study)	F2 (Pre-feasibility Study)	F1 (Feasibility Study)
<p><b>1. Geological and related study:</b> Geology of area, reconnaissance and prospecting by geo-chemical and geo-physical surveys/general exploration/detailed exploration, core and sludge samples, for beneficiation; geological maps depicting extent and dimension of mineralisation lithology of host rocks, controls and guides for mineralisation, amenability to beneficiation; infrastructure; environmental base line data.</p> <p><b>2.</b> The activities as above or less than that required for F-2.</p>	<p><b>1. Geology:</b> Geology of area, detailed exploration/general exploration guided by geo-chemical and geo-physical surveys, moderate to close - spaced drilling, different mineralised zones at viable cut off grades, core and sludge sampling for exploratory stage beneficiation studies/laboratory scale investigations.</p> <p><b>2. Mining :</b> Methods, pre-production plan, development plan, manpower requirements.</p> <p><b>3.Environment :</b> EIA/EMP with details of waste disposal and likely unavoidable effects of projects.</p> <p><b>4.Processing:</b> Proven laboratory scale/pilot plant scale ore dressing investigations on bulk samples and likely establishment, cost estimates for processing plant.</p> <p><b>5.Infrastructure and services and construction activities:</b> Brief details.</p> <p><b>6. Costing :</b> Capital and operating costs-rough estimates based on comparable mining operations.</p> <p><b>7. Marketing:</b> An overview, demand supply relations, industry structure.</p> <p><b>8. Economic viability:</b> Preliminary study</p>	<p><b>1.Geology:</b> Geology of area and project, detailed exploration, closed spaced drilling, exploratory mining upto 2<sup>nd</sup> level and underground boreholes, channel/groove sampling (50-100 cm), ore body modelling, bulk samples for beneficiation, geotechnical and ground &amp; surface waters studies. However for coal beneficiation studies to be carried out depending upon coal qualities.</p> <p><b>2.Mining:</b> Mining plan, mine recoveries and efficiencies, man power requirements.</p> <p><b>3.Environment:</b> EIA/EMP including socio economic impact, rehabilitation of project affected persons, waste disposal/reclamation;.detailed land use data.</p> <p><b>4.Processing:</b> Details of proven pilot plant /industrial scale investigations, appended with plant layout, design, equipment list, manpower, fuel/power consumption, environmental considerations, disposal of tailings,</p>



	<p>of cash flow forecasts.</p> <p><b>9. Other factors:</b> Statutory provisions relating to land, labour, mining, taxation, etc.</p>	<p>effluents and future/present remedial measures.</p> <p><b>5. Infrastructure and services and construction activities:</b> Full details.</p> <p><b>6. Costing:</b> Details of break up of capital and operating costs and working capital.</p> <p><b>7. Marketing:</b> Overview, specific marketing aspects.</p> <p><b>8. Economic viability:</b> Cash flow forecasts, inflation effects, sensitivity studies.</p> <p><b>9. Other factors:</b> Statutory provisions relating to land, labour, mining, taxation, etc.</p>
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### ECONOMIC AXIS

<b>E3(Intrinsically Economic)</b>	<b>E2 (Potentially Economic)</b>	<b>E1(Economic)</b>
<p><b>1.</b> Reconnaissance to detailed geological study, rough estimates of grades (may be below economic cut -off), general idea about forest / non - forest and land use status.</p> <p><b>2.</b> The activities as above or less than that required for E-2.</p>	<p><b>1.</b> General and detailed exploration.</p> <p><b>2.</b> Specific end-use grades of reserves (above/ marginally below economic cut-off grade).</p> <p><b>3.</b> General knowledge of forest/non-forest and other land use data .</p>	<p><b>1.</b> Detailed exploration.</p> <p><b>2.</b> Mining report/mining plan/ working mines.</p> <p><b>3.</b> Specific end-use grades of reserves (above economic cut-off grade).</p> <p><b>4.</b> Specific knowledge of forest/non-forest and other land use data.</p>

## IV. Lenses, Veins and Pockets; Stock-works, Irregular Shaped, Modest to Small size Bodies

### Characteristics of deposits

Bodies distributed in space lacking estimable regular patterns; structural control less than lithologic, if any; small cluster of multi-shaped bodies, of volcanic origin pipes and chimneys, of magmatic origin, plugs and pots, clots and seggregations of hydrothermal origin – vein and replacement. Bodies in stockwork, metamorphic and meta-somatic in skarn and tektites, in griesens and in thermal aureole around intrusives.

### Principal kinds of minerals

Small multimetal complex sulphide bodies of Cu-Pb-Zn-Sb-Hg, podiform chromite, Sn-Ag chimneys and pipes; tektite mineral bodies, skarn bodies of scheelite, powellite, wollastonite, fluorite etc. and semi-precious minerals, network of apatite, baryte, asbestos veins, vermiculite bodies, magnesite lenses and mica in pegmatites, pyrophyllite lenses and veins, high grade bauxite in clay pockets, clay, ochre and bentonite lenses, diamond pipes.

### GEOLOGICAL AXIS

G4 (Reconnaissance)	G3 (Prospecting)	G2 (General Exploration)	G1 (Detailed Exploration)
<p><b>1. Aerial reconnaissance:</b> Remote sensing, airborne geophysical survey etc.</p> <p><b>2. Geological survey:</b> Mapping on 1:50,000 scale or smaller scales.</p> <p><b>3. Geochemical survey:</b> (i) Sampling of stream, sediment, soil over burden, rock chips, grabs, ground water or any other soluble media; (ii) Delineation of predominantly forest areas, geomorphology, landforms and vegetable development.</p> <p><b>4. Geophysical survey:</b> Ground geophysical work.</p> <p><b>5. Technological:</b> (i) Pitting and drilling: Upto 5 test pits/bore holes per 100 sq. km. area;</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:5,000 scale and larger scale; (ii) Linking of the geological maps with topo-grids; (iii) Assessment of stratigraphy, lithology, structure surface shows of mineralisation and analysis of metallogeny.</p> <p><b>2. Geochemical survey:</b> (i) Study of detailed primary and secondary geochemical parameters based on closed grid sampling, identification of ore significant anomaly zones; (ii) Recording of deleterious and byproduct elements.</p> <p><b>3. Geophysical survey:</b></p>	<p><b>1. Geological survey:</b> Mapping on 1:5,000 to 1:1,000 scales with triangular stations, bench marks if any and fiducials plotted.</p> <p><b>2. Geochemical survey:</b> Detailed litho-geochemical sampling for further refining of data.</p> <p><b>3. Geophysical survey:</b> Borehole geophysical surveys, special geophysical surveys for problems solving if required.</p> <p><b>4. Technological:</b> (i) Closed spaced trenching and extensive sampling for exploring irregularly shaped zones of mineralization; (ii) Close space drilling (50m-30m); (iii) Bore hole deviation surveys; (iv) Beneficiation tests; (v) Exploration preferably with exploratory mining,</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:1000 scale; (ii) Preparation of topographical-cum-geological map including all surface geological features, extent of deposit, trenches, pits, borehole locations, level-wise assay plan and exploratory mine development.</p> <p><b>2. Geochemical survey:</b> Detailed litho-geochemical channel sampling from fresh rock exposures, pits /trenches.</p> <p><b>3. Geophysical survey:</b> Wherever necessary.</p> <p><b>4. Technological:</b> (i) Pitting /trenching- as necessary; (ii) Drilling - 30 to 15 m or less strike interval upto a depth of 100m; (iii) Exploratory mining: 2-3 levels at 20-30m interval wherever necessary; (iv) Core sludge, channel, bulk samples for</p>

(ii)Sampling : Regional and random sampling;	(i)Detailed ground geophysical work; (ii)Borehole geophysical survey.	systematic core sampling, check analysis 10%, deep pitting.	beneficiation studies on bench/ pilot scale. <b>5. Petrographic:</b> Further refining of data.
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<p>(iii)Collection of sample for deciphering the mineralised zones.</p> <p><b>6.Petrographic and mineragraphic study:</b> (i)Determination of principal rock types and mineral assemblages; (ii)Identification of minerals of interest and gangues and determination of useful minerals.</p> <p>7. Synthesis of all available data/concepts.</p> <p>8. The activities as above or less than that required for G-3.</p>	<p><b>4.Technological :</b> (i) Sampling at well defined locations, extensive pit, trench and surface sampling to decipher the extent and grade of mineralisation at surface; (ii)Core sampling; (iii)Laboratory studies of samples; (iv)Check samples- 10%; (v)Deep pitting to decipher grade variation of irregularly shape mineralisation; (vi)Drilling - 100m to 50 m. interval; borehole deviation survey.</p> <p><b>5.Petrographic and mineragraphic :</b> (i)Petrographic studies of rocks of deposits and its surrounding, alteration connected with mineralisation; (ii)Mineralogical studies including identification of zones of oxidation and primary zones, grain size analysis, overall characteristics of useful and deleterious minerals.</p>	<p><b>5.Petrographic:</b> Further refining of data.</p>	<p><b>6)Geostatistical analysis</b> of borehole data (thickness of ore :waste encountered in holes, assay values), if considered neccessary.</p>
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**FEASIBILITY AXIS**

<b>F3 (Geological Study)</b>	<b>F2 (Pre-feasibility Study)</b>	<b>F1 (Feasibility Study)</b>
<p><b>1. Geological and related study:</b>                      (i) Reconnaissance prospecting by geochemical, geophysical, scout drilling to understand controls of mineralisations/                      general and detailed exploration;                      (ii) Geological maps showing extent and persistence of mineralisations, guides, controls, hostrock, lithology etc;                      (iii) Infrastructure; (iv) Preliminary ecological and meteorological data, if possible.</p> <p><b>2.</b> The activities as above or less than that required for <b>F-2</b>.</p>	<p><b>1. Geology:</b>                      (i) Geology of area; (ii) General and detailed exploration guided by surface and sub-surface geochemical and geophysical data, exploratory mining details.</p> <p><b>2. Mining:</b> mine recoveries estimates, man power details, pre-production plan .</p> <p><b>3. Environment:</b> Baseline data, potential constraints on project.</p> <p><b>4. Processing:</b> Proven laboratory scale /pilot scale investigations on bulk samples; likely establishment of plant; possibilities of cost estimates.</p> <p><b>5. Infrastructure, construction, services etc:</b> Brief details .</p> <p><b>6. Costing:</b> Capital and operating cost estimates based on comparable mining operations .</p> <p><b>7. Marketing:</b> An overview, demand and supply relations, industry structure, pricing.</p> <p><b>8. Economic viability:</b> Preliminary studies of cash flow forecasts.</p> <p><b>9. Other factors:</b> Statutory provisions relating to land, labour, mining, taxation, etc.</p>	<p><b>1. Geology:</b>                      Geology of project, detailed exploration with larger inputs of exploratory mining, deep pitting, trenching /benching, underground boreholes, closed spaced drilling.</p> <p><b>2. Mining:</b> Mining plan, meticulous methods with special emphasis on geotechnical, production aspects; safety measures, mine recoveries, efficiency variability due to various controls.</p> <p><b>3. Environment:</b>                      EIA/EMP including socio- economic impact rehabilitation of project affected persons and waste disposal/ reclamation ;detailed land use data.</p> <p><b>4. Processing:</b> Proven details of pilot plant scale investigation, appended with layout, plant design, manpower requirements, fuel/power consumption, disposal of effulents and present/future remedial measures.</p> <p><b>5. Infrastructure, constructions and service:</b> Full details.</p> <p><b>6. Costing:</b> Detailed break up of capital and operating cost and details of working capitals.</p> <p><b>7. Marketing:</b> An overview, specific market aspects.</p> <p><b>8. Economic viability:</b> Cash flow forecast, inflation effects, sensitivity studies.</p> <p><b>9. Other factors:</b> Statutory provisions relating to land, labour, mining, taxation, etc.</p>

## ECONOMIC AXIS

E3(Intrinsically Economic)	E2 (Potentially Economic)	E1(Economic)
<p><b>1.</b> Reconnaissance to detailed geological study, rough estimates of grades (may be below economic cutoff), general idea about forest / non - forest and land use status.</p> <p><b>2.</b> The activities as above or less than that required for E-2.</p>	<p><b>1.</b> General and detailed exploration.</p> <p><b>2.</b> Specific end-use grades of reserves (above/marginally below economic cut-off grade).</p> <p><b>3.</b> General knowledge of forest/non-forest and other land use data.</p>	<p><b>1.</b> Detailed exploration.</p> <p><b>2.</b> Mining report/mining plan/working mines.</p> <p><b>3.</b> Specific end-use grades of reserves (above economic cut-off grade).</p> <p><b>4.</b> Specific knowledge of forest/non-forest and other land use data.</p>

## V. Gem- Stones and Rare Metal Pegmatites, Reefs and Veins

### Characteristics of Deposit

Highly erratic distribution of minerals and metals. No trend in grade and thickness, no assured continuity, cluster of high values in barren zones, structural and lithologic controls undeterminate.

### Principal kinds of Minerals

Tin-tungstun-tantalum-molybdenum veins and pegmatites, beryl, topaz, emerald, cesium deposits, mineralisation associated with alkaline rocks, complexes and veins and plugs of carbonatites.

## GEOLOGICAL AXIS

G4 (Reconnaissance)	G3 (Prospecting)	G2(General Exploration)	G1(Detailed Exploration)
<p><b>1. Aerial reconnaissance:</b> Remote sensing, airborne geophysical survey etc.</p> <p><b>2. Geological survey:</b> Mapping on 1:50,000 scale or smaller scales.</p> <p><b>3. Geochemical survey:</b> (i) Grab/chip sampling of rocks or weathered profiles; (ii) Recording of broad geomorphology, drainage etc.</p> <p><b>4. Geophysical survey:</b> Ground geophysical work.</p> <p><b>5. Technological:</b> (i) Trenching- One or two random pits or trenches; (ii) Pitting/drilling: Upto 5 test pits per 100sq. km area; (iii) Sampling- Regional and random grab</p>	<p><b>1. Geological survey:</b> (i) Mapping: 1:50,000 to 1:25000 scale; (ii) Linking of geological maps with topogrids; (iii) Assessment of stratigraphy, lithology, structure, surface shows of mineralisation, analysis of old history of mining.</p> <p><b>2. Geochemical survey:</b> (i) Closed -grid geochemical sampling , rocktype wise and if necessary rock type-cum -skeletal soil - domain-wise; (ii) Geochemical specialization with respect to element of interest of pegmatite rock to be deciphered and identification of path finder and trace elements.</p> <p><b>3. Geophysical survey:</b> Detailed ground</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:5000 or larger scales with triangulation stations, bench marks, if any and fiducials shown; (ii) Linking of geological maps with topogrids.</p> <p><b>2. Geochemical survey:</b> (i) Detailed litho-geochemical channel sampling from fresh rock exposures, trenches, pits etc; (ii) Recording of deleterious and likely by -product elements.</p> <p><b>3. Geophysical:</b> Detailed and specialised geophysical studies ( e.g. missalamasse, borehole geophysical study etc.) to unravel the three dimensional configuration of host rock.</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:2000 scale or larger scale; (ii) Preparation of detailed topographical cum geological map, including all surface geological features ,extent of deposit, location of trenches, pits, boreholes, geological plan and sections of exploratory mining.</p> <p><b>2. Geochemical:</b> Detailed litho-geochemical analysis.</p> <p><b>3. Geophysical :</b> Detailed survey if necessary and specific borehole geophysical studies.</p> <p><b>4. Technological :</b> (i) Drilling-surface drilling at 50-10m section intervals in 3 -4 levels, 30-60m x 90m vertically apart to trace and intersect mineralised zones;</p>

<p>sampling, stream sediment sampling after orientation survey for narrowing down target areas.</p> <p><b>6. Petrography and minerography:</b> (i) Determination of main rock types and mineral assemblages; (ii) Identification of minerals of interest and gangues.</p> <p><b>7.</b> Synthesis of all available data/concepts.</p> <p><b>8.</b> The activities as above or less than that required for <b>G-3</b>.</p>	<p>geophysical work to delimit the potential host rock.</p> <p><b>4. Technological:</b> (i) Pitting and trenching in colluvial zones, residual overburden and on primary host rocks; randomly distributed; (ii) Drilling-only to broadly test the continuity of host rock at 100 m to 200m strike spacing; (iii) Sampling- At surface across zones of mineralisation; also from pits and trenches on the basis of lithological homogeneity; closer spaced stream sediments sampling (2-3 samples per sq. km) for further narrowing down target areas; (iv) Core sampling.</p> <p><b>5. Petrographic and minerographic:</b> (i) Petrographic study of rocks of the deposit and its surrounding, alterations (if any) associated with mineralisation; (ii) Determination of phase in which the mineral of interest occurs; (iii) Mineralogical studies including paragenesis, identification of zones of oxidation if any, and primary zones, grain size distribution, over all characteristics of useful minerals.</p>	<p><b>4. Technological:</b> (i) Pitting/trenching- pits on regular grid pattern (preferably at 50 m. sq.grid) in colluvial zones and residual overburdens; trenches across host rocks of mineralisation; (ii) Drilling-testing at two levels; Strike spacing of boreholes to be 50-100m up to depth of 100-150m; (iii) Sampling- systematic pits sampling (over burden horizon wise) and trench sampling (lithological domain wise), core sampling.</p> <p><b>5. Petrographic:</b> (i) Refining of data on the petrographic characters of rocks, including study of grain size, texture, gangues etc; (ii) Further refining of data.</p>	<p>under ground drilling as and when necessary; (ii) Sampling - core and sludge ,bulk and channel samples for processing technology bulk samples for pilot plant/bench scale investigation; (iii) Exploratory mining - 3 or more levels over the entire or part strike length of ore body at 30m level interval and along dip at suitable intervals.</p> <p><b>5. Petrographic:</b> (i) Refining of data on the petrographic characters of rocks, including study of grain size, texture, gangues and its liberation etc; (ii) Further refining of data.</p>
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**FEASIBILITY AXIS**

<b>F 3(Geological Study )</b>	<b>F 2(Prefeasibility Study)</b>	<b>F1(Feasibility Study)</b>
<p><b>1. Geological and related study:</b> (i) Geology of area, reconnaissance phase to detailed phase exploration</p>	<p><b>1. Geology:</b> Geology of area, detailed exploration, closed spaced drilling in</p>	<p><b>1. Geology:</b> Geology of area, detailed exploration, closed space drilling in prospect in 2-3</p>

<p>guided by geochemical, geophysical survey; geological maps delineating mineralised zones and its extent, lithology, controls, guides, mineralogical, chemical analytical data;</p> <p>(ii) Studies on amenability to beneficiation;</p> <p>(iii) Infrastructure;</p> <p>(iv) Environmental- meteorological and preliminary ecological data, if possible.</p> <p><b>2.</b> The activities as above or less than that required for <b>F 2.</b></p>	<p>prospect in 2-3 levels for delineation of host rock body ; boreholes, channel, bulk samples for beneficiation test.</p> <p><b>2. Mining-</b> Viable methods-details of exploratory mining data, recoveries estimates, manpower details.</p> <p><b>3. Environment-</b> Baseline data, potential constraints and analysis of possible impacts /hazards.</p> <p><b>4. Processing-</b> Proven pilot plant investigations, further follow up for viability.</p> <p><b>5. Infrastructure, services and construction activities:</b> Brief details.</p> <p><b>6. Costing-</b> Capital and operating cost estimates with likely break-up.</p> <p><b>7. Marketing-</b> An overview, demand supply relations, industry structure.</p> <p><b>8. Economic viability:</b> Preliminary study of cash flow forecast.</p> <p><b>9. Other factors:</b> Statutory provisions relating to labour , land , mining ,taxation, etc.</p>	<p>levels for delineation of host rock body, ore body modelling; boreholes channel bulk samples for beneficiation, geotechnical and ground water &amp; surface water studies.</p> <p><b>2. Mining-</b> methods of mining, mine plan, mine recoveries and its milling characteristics; exploitation plan preferably with exploratory mining scheme, manpower details.</p> <p><b>3. Environmental-</b> EIA/EMP, including socio-economic impact, rehabilitation of project affected persons ,waste disposal/reclamation.</p> <p><b>4. Processing-</b> a) For tin- tungsten, molybdenum -details of proven pilot plant scale investigations on bulk samples, choosing of suitable processing treatment by industrial scale testing, tailings and effluent disposal plans, plant layout, equipment list; b) For gemstones- studies on amenability to cutting, polishing etc</p> <p><b>5. Infrastructure, utilities and construction activities:</b> Full details.</p> <p><b>6. Costing-</b> Detailed capital and operating cost, along with break up.</p> <p><b>7. Marketing-</b> An overview , specific market aspects.</p> <p><b>8. Economic viability-</b> Cash flow forecast, inflation effects, sensitivity studies.</p> <p><b>9. Other factors:</b> : Statutory provisions relating to labour, land , mining , taxation, etc.</p>
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## ECONOMIC AXIS

E3(Intrinsically Economic)	E2 (Potentially Economic)	E1(Economic)
1.Reconnaissance to detailed geological study, rough estimates	1.General and detailed exploration. 2. Specific end-use grades of	1.Detailed exploration. 2.Mining report/mining plan/working

of grades (may be below economic cut-off), general idea about forest /non - forest and land use status. <b>2.</b> The activities as above or less than that required for E-2.	reserves (above/marginally below economic cut-off grade). <b>3.</b> General knowledge of forest/non-forest and other land use data.	mines. <b>3.</b> Specific end-use grades of reserves (above economic cut-off grade). <b>4.</b> Specific knowledge of forest/non-forest and other land use data.
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## VI. Placer and Residual Mineral Deposits of Hill and Valley Wash

### Characteristics of Deposit

Eluvial, colluvial and alluvial placer concentration of heavy metals and minerals, pebble and cobble, boulder beds, gravel beds in alluvium and colluvium, conglomerates, foothills fan deposits, grain size from extremely fine striated material to rough to polished boulders.

### Principal kinds of Minerals

Placer tin and gold deposits, monazite, garnet, ilmenite, rutile, diamonds in conglomerate, floats and gravel beds of corundum, kyanite, sillimanite, floats and talus deposits of magnetite.

### GEOLOGICAL AXIS

G4 (Reconnaissance)	G3 (Prospecting)	G2 (General Exploration)	G1 (Detailed Exploration)
<p><b>1. Aerial reconnaissance:</b> Remote sensing, airborne geophysical survey, etc.</p> <p><b>2. Geological survey:</b> Mapping on 1: 25,000 or smaller scales.</p> <p><b>3. Geo-chemical survey:</b> (i) Stream sediment or overburden sampling after selection of sites and media of sampling; (ii) Recording of geomorphology, land form etc. in a broad way.</p> <p><b>4. Geophysical survey:</b> Ground geophysical survey .</p> <p><b>5. Technological-</b> (i) Trenching - not essential; (ii) Pitting/drilling - upto 5 test pits /boreholes per 100 sq. km area; (iii) Sampling – stream sediment or placer sediment sampling and</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:25,000 to 1:5,000 scale depending on the extent of potential zone; (ii) Tracing of coarse sediments (e.g. boulders etc. ) exposures in eluvial and colluvial terrains; (iii) Geomorphic analysis of terrain; (iv) Analysis of history of mining, etc.</p> <p><b>2. Geo-chemical survey:</b> Representative pit sampling, horizon or layer wise, large diameter bore holes (or auger sampling) one or two sets of samples for each demarcated potential zone.</p> <p><b>3. Geo-physical survey:</b> Geo- physical survey in identified mineralised areas.</p> <p><b>4. Technological :</b> (i) Pitting/trenching - one or two per prospect;</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:5,000 to 1: 1,000 or larger scales with triangulation stations, bench marks, if any, and fiducials shown; (ii) Tracing of favourable sediment horizons in detail; (iii) Detailed analysis of geo-morphology and land use; (iv) Linking of map so prepared with topo grids; (v) Synthesis and regional correlation and analogy.</p> <p><b>2. Geo-chemical:</b> Representative layer wise sampling from pits, bore holes and auger drills.</p> <p><b>3. Geo-physical:</b> Geo-physical survey for bringing out the depth of weathering or thickness of overburden if required.</p> <p><b>4. Technological :</b> (i) Pitting: On grid pattern</p>	<p><b>1. Geological survey:</b> (i) Mapping on 1:1000 scale; (ii) Preparation of geological base map including all geological features, extent of deposit, structure and location of pits and trenches and of auger-drill-holes, assay plan.</p> <p><b>2. Geo-chemical:</b> Systematic grid pattern sampling and analysis.</p> <p><b>3. Geo-physical survey:</b> if necessary.</p> <p><b>4. Technological :</b> (i) Pitting at smaller than 50 m grid; (ii) Trenching - as necessary; (iii) Drilling - (a) auger drilling at 50 m grid, (b) for buried placer deposits deep drilling necessary; (iv) Sampling - closed grid pattern placer sampling in identified prospects at 50x50 m or smaller</p>



<p>analysis; panning at random /heavy mineral studies.</p> <p><b>6. Petrographic and mineragraphic studies:</b> Preliminary identification of economic minerals.</p> <p>7. Synthesis of all available data/concepts.</p> <p>8. The activities as above or less than that required for G-3.</p>	<p>(ii)Drilling - large diameter or auger drilling one or two per prospect if necessary; (iii)Sampling and analysis-systematic stream sediments/placer sampling (two to three samples per sq.km) and analysis.</p> <p><b>5) Petrographic and minerographic studies:</b> Mineral phases and deleterious constituents identification, grain size analysis.</p>	<p>of 400 m. x 400 m. to 50 m. x 50 m.; occasional deep pits (upto 6 m.);</p> <p><b>(ii)Trenching- as per requirement;</b> (iii)Drilling : systematic large diameter drilling at 400 m. x 400 m. grid or augering at 200 m. x 200 m. to 50 m. x 50 m. grid. However for beach sand minerals, augering at 400mx100m grid and sampling along grid profile over total width . Depthwise sampling of boreholes at 1m interval. (iv)Sampling and analysis: Placer sampling in identified prospects, hydraulicking , sluicing, panning and follow-up laboratory scale separation and testing and analysis of concentrates from bulk samples.</p> <p><b>5.Petrographic and mineragraphic studies:</b> Further refinement of petrographic and mineragraphic data, laboratory scale studies on recoverability.</p>	<p>grid;However for beach sand minerals, sampling by auger or improvised version of drilling equipment at 200m x50m to 100m x25m in grid pattern. (v)Collection of abiotic geo-environmental parameters.</p> <p><b>5. Petrographic and mineragraphic studies:</b> Refining of data on petrographic character of rocks including study of grain size textures, associated gangues and concentrate recoveries.</p>
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## FEASIBILITY AXIS

F 3 (Geological Study )	F2 (Pre-feasibility Study)	F1( Feasibility Study)
<p><b>1. Geological and related study:</b> (i)Geological map delineating boulder zones,eluvial/ colluvial terrain placers and recognition of geo-morphological structure and its</p>	<p><b>1. Geology:</b> Geology of area, general to detailed exploration by pitting in grids in moderate to close spaced intervals; recoveries through physical</p>	<p><b>1.Geology:</b> Geology of area; detailed/general exploration by pitting and auger drilling in grid pattern at closed intervals;</p>

<p>analysis;  (ii)Surface soil testing;  (iii)Pit and trench sampling at various grid intervals;  (iv)Delineation of pay zones through pit/auger sampling and its analytical data; concentrate recoveries through panning, other physical separation methods;  (v)Infrastructure;  (vi)Environmental :Meteorological and preliminary ecological data of the area, if possible.  <b>2.</b>The activities as above or less than that required for <b>F-2</b>.</p>	<p>separation e.g. panning and its analytical data on concentrate recoveries.</p> <p><b>2.Mining</b> : Methods of mining, pre-production plan, manpower requirements through rough estimates.</p> <p><b>3.Environmental</b> : EMP with special emphasis on geo-hydrology and hydrology.</p> <p><b>4. Processing</b> - Pilot plant/laboratory scale investigations, possibilities of setting up of plant.</p> <p><b>5. Infrastructure, construction etc</b> - Brief details.</p> <p><b>6.Costing</b> – Capital and operating costs-rough estimates based on comparable mining operations.</p> <p><b>7. Marketing</b> - An overview on marketing aspects, demand supply relations, and industry structure.</p> <p><b>8.Economic viability</b> -Preliminary study of cash flow forecast.</p> <p><b>9. Other factors:</b> Statutory provisions relating to labour, land , mining, taxation, etc.</p>	<p>panning ,concentrate recoveries from the beneficiation test on pilot plant scale/laboratory scale of bulk samples, geotechnical and ground &amp; surface waters studies.</p> <p><b>2.Mining</b> - Methods of mining, mining plan,detail of manpower,equipment list.</p> <p><b>3.Environmental:</b> EIA/EMP including socio- econmic impact,rehabilitation of project affected persons with details of waste disposal/reclamation, detailed land use data.</p> <p><b>4.Processing</b> - Proven, pilot plant/industrial scale level investigations, plant layout, enviromental considerations - disposal of placer material/handling plan, effluent treatment etc; details of equipment required.</p> <p><b>5.Infrastructure, construction, etc:</b> Full details</p> <p><b>6. Costing</b> - Capital costs with break up details of capital and operating costs, working capital.</p> <p><b>7. Marketing</b> - An overview, industry structure and specific market studies.</p> <p><b>8. Economic viability</b> - Cash flow forecasts, inflation effects and sensitivity studies.</p> <p><b>9. Other factors-</b> Statutory provisions relating to labour, land , mining, taxation etc.</p>
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## ECONOMIC AXIS

<b>E3(Intrinsically Economic)</b>	<b>E2 (Potentially Economic)</b>	<b>E1(Economic)</b>
<p><b>1.</b>Reconnaissance to detailed geological study, rough estimates of grades (may be below economic cut –off), general idea about</p>	<p><b>1.</b>General and detailed exploration.</p> <p><b>9.</b> Specific end-use grades of reserves (above marginally below</p>	<p><b>9.</b> Detailed exploration.</p> <p><b>9.</b> Mining report/ mining plan/working mines.</p>

forest /non – forest and land use status.  <b>2.</b> The activities as above or less than that required for <b>E2</b> .	economic cut-off grade).  <b>3.</b> General knowledge of forest/non-forest and other land use data.	<b>9.</b> Specific end-use grades of reserves (above economic cut-off grade).  <b>4.</b> Specific knowledge of forest/non-forest and other land use data.
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## VII. Dimension Stones

### Characteristics of Deposit

Surficial, occasionally bouldery or tabular, partly weathered, jointed/fractured, recoverability dependant on block size chosen vis-à-vis joint spacing etc, marketable at buyer's choice, amenable to good polish with aesthetic colour or colour combination.

### Principal kinds of minerals

Coloured varieties, including granites, syenites, schists, marbles, slates and sandstone, migmatites, etc; black varieties including dyke rocks, e.g; diorite, dolerite, gabbro, etc.; sills, plugs, batholiths etc. e.g., anorthosites, gabbro, etc.

## GEOLOGICAL AXIS

<b>G4 (Reconnaissance)</b>	<b>G3 (Prospecting)</b>	<b>G2 (General Exploration)</b>	<b>G1(Detailed Exploration)</b>
<p><b>1.Aerial reconnaissance:</b> Remote sensing, airborne geophysical survey etc.</p> <p><b>9. Geological survey:</b> Mapping on 1:50,000 or smaller scales.</p> <p><b>3.Geo-chemical survey:</b> Not required.</p> <p><b>4. Geophysical survey:</b>Ground geophysical survey.</p> <p><b>9. Technological :</b> (i)Pitting and trenching: not required; (ii)Sampling –Random grabs of fresh rock, one or two samples per 5 sq. km; (iii)Geo-technical work – joints/fractures density and preliminary assessment of blockability.</p> <p><b>6.Petrographic and other studies :</b> (i)Petrographic</p>	<p><b>1.Geological survey:</b> <b>9.</b> Mapping on 1:50,000 to 1:25,000 scale; (ii)Photogeology on 1:25,000 or equivalent scale.</p> <p><b>2.Geo-chemical survey:</b> Identification of deleterious constituents of one or two samples drawn from each prospect.</p> <p><b>3.Geophysical survey:</b> Not required.</p> <p><b>4.Technological:-</b> (i)Pitting /trenching/drilling –not required. (ii)Sampling – One grab of fresh rock per prospect of premium variety; (iii)Geo-technical – measurement of at least one sample per prospect for determination of specific gravity, porosity,</p>	<p><b>1.Geological survey:</b> Mapping on 1:25,000 to 1:10,000 scale.</p> <p><b>2.Geo-chemical :</b> Identification of deleterious constituents of one or two samples drawn from each prospect; measurement of abiotic geoenvironmental parameters.</p> <p><b>3.Geophysical survey :</b> not required.</p> <p><b>4.Technological:</b> (i)Pitting/trenching :one or two per prospect; (ii)Drilling – One or two per prospect (scout drilling); (iii)Sampling – Sample density two to three grabs per prospect; (iv)Geo-technical – further refinement of blockability data and</p>	<p><b>1.Geological survey:</b> <b>9.</b> Mapping on 1:10000 or larger scale; (ii)Preparation of detailed topographical- cum – geological map, including all surface geological features, joint patterns, fracture density etc.; (iii)Delineation of blockable dimension stone zones/ areas.</p> <p><b>2.Geochemical :</b> Identification of deleterious constituents; measurement of abiotic geoenvironmental parameters.</p> <p><b>3.Geophysical :</b> Not required</p> <p><b>4.Technological:</b> (i)Pitting/trenching – not required; (ii)Drilling- One or two per prospect; (iii)Geo-technical – measurement of compressive</p>

<p>studies - not required; (ii) Measurement of ground water table – not required; (iii) Measurement of geo-environmental parameters – not required.</p> <p><b>9.</b> Synthesis of all available data/concepts.</p> <p><b>8.</b> The activities as above or less than that required for <b>G3.</b></p>	<p>water absorption, compressive strength and tensile strength.</p> <p><b>9. Petrographic and other studies :</b> (i) Petrographic studies- mineralogical composition, texture and micro –texture study of each variety; (ii) Measurement of ground water table: not required.</p>	<p>polishing index measurement.</p> <p><b>5. Petrographic and other studies :</b> (i) Petrographic studies- mineralogical composition, texture and micro structure study of each variant in a prospect; (ii) Ground water table: measurement at each prospect.</p>	<p>strength, tensile strength, traverse strength, abrasion test, specific gravity, density, porosity, absorption, polishing index.</p> <p><b>5. Petrographic and other studies :</b> (i) Colour, granularity, inclusions, texture and microstructure study. (ii) Ground water table: measurement at each prospect.</p>
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### FEASIBILITY AXIS

F3 (Geological Study)	F2 (Pre-feasibility Study)	F1 (Feasibility Study)
<p><b>9. Geological and related study:</b> (i) Geological mapping, delineating weathered and boulder zone, blockable areas and recognition of geomorphological structure and its analysis, prospectwise grab sampling at grid intervals; (ii) Delineation of probable productive zones through grab sampling and its analytical data; (iii) Infrastructure; (iv) Environmental: meteorological and preliminary ecological data, if possible.</p> <p><b>9.</b> The activities as above or less than that required for <b>F 2.</b></p>	<p><b>1. Geology :</b> Geology of area; detailed / general exploration; geological map delineating blockable areas and identification of productive zones with recovery factors based on geotechnical studies conducted.</p> <p><b>2. Mining :</b> Methods of mining, pre-production plan, manpower requirements through rough estimates.</p> <p><b>9. Environmental:</b> EMP with particular reference to geo-hydrology and hydrological aspects, bulk material handling management plan.</p> <p><b>4. Processing:</b> Physical characteristics data, details of petro-fabric studies generated through laboratory investigations, possibilities of setting up of cutting, polishing plant.</p> <p><b>9. Infrastructure, construction etc.:</b> Brief details.</p> <p><b>9. Costing :</b> Capital and operating costs – rough estimates based on comparable mining operations.</p> <p><b>9. Marketing:</b> An overview on marketing aspects, demand supply relations and industry structure.</p> <p><b>8. Economic viability:</b> Preliminary study of cash flow forecast.</p>	<p><b>9. Geology:</b> Detailed exploration; geological map delineating blockable areas and identification of productive zones with recovery factors based on geotechnical studies conducted.</p> <p><b>2. Mining:</b> Mining plan, block recoveries and efficiencies, heavy machineries, equipment selection, manpower requirement.</p> <p><b>3. Environment:</b> EIA studies with particular reference to geo-hydrology and hydrological aspects, bulk material, and EMP including socio-economic impact, rehabilitation of project affected persons, waste disposal, detailed land use data.</p> <p><b>4. Processing:</b> Industrial scale investigation data on physical characteristics data, details of petrofabric studies, setting up of cutting, polishing plant (optional), list of equipments, manpower details.</p> <p><b>9. Infrastructure and services, construction activities:</b> Full details.</p> <p><b>6. Costing:</b> Detailed break-up of capital cost, operating cost, details of working capital.</p> <p><b>9. Marketing:</b> Overview, specific market aspects.</p>

