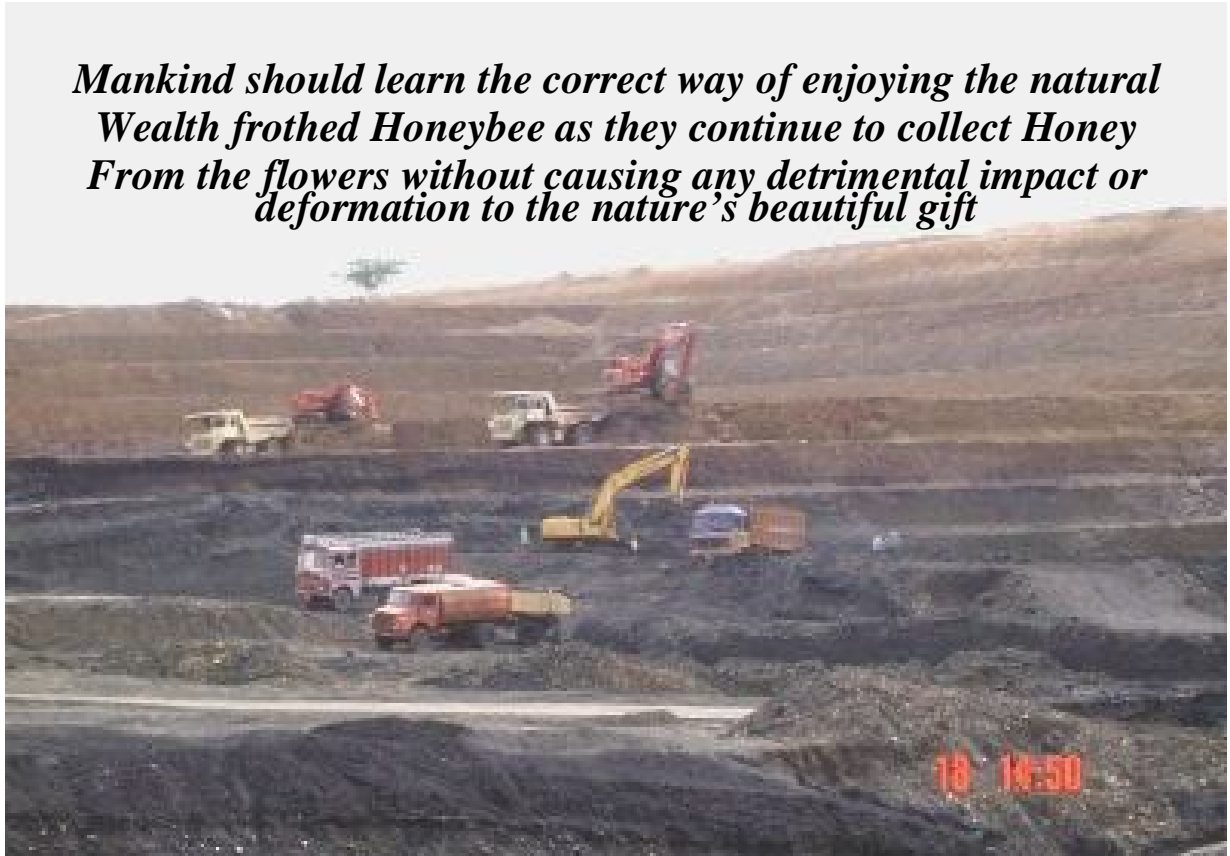


Guidelines for Abatement of Pollution In Mines

*Mankind should learn the correct way of enjoying the natural
Wealth frothed Honeybee as they continue to collect Honey
From the flowers without causing any detrimental impact or
deformation to the nature's beautiful gift*



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1. GENERAL

The State Board has issued detailed guidelines from time to time to facilitate the process of grant of consent to establish/ consent to operate and to suitably guide/ advise the industries for taking appropriate measures for abatement of pollution. The purpose of developing sector specific guidance manual for **Mining projects** is to provide clear and concise information to all the stakeholders i.e. project proponent, environmental consultant, Rajasthan State Pollution Control Board officials and the public to have a better understanding on the relevant environmental aspects in the initial stage itself. This manual covers the legal requirements, clearance process, environmental standards and maintenance of statutory records. The manual will also covers the environmental concerns related mining of minerals. The project proponent may use this manual to ensure that all the aspects of the environment due to the project are addressed and adequate mitigation measures are planned in the environmental management plan and he will be fully aware of the environmental process and requirements. Public who are concerned about mining of minerals, should have information about the environmental aspects, standards, regulatory requirements etc., and have a better understanding about the mining activity.

This sector specific guidance manual by **Rajasthan State Pollution Control Board** is prepared in line with National Environmental Policy 2006, which emphasizes on:

- Formulate and periodically update, codes of good practices for environment for different category of industries
- Ensure faster decision making with greater transparency and access to information, together with necessary capacity building

The manual is meant to serve as a guide. In case of interpretation of any question related to law, the provisions of the original law and the rules made thereunder with various government directions/resolutions will have to be read and followed. In case of amendment to the original Act/Rules/Notifications made thereunder, the provisions as amended from time to time shall be applicable.

1.1 Introduction

The process involved in the mining industry is such that if appropriate measures are not taken, it may lead to pollute air and/ or water, besides impact on Land, soil, flora and fauna. Therefore, it is mandatory that mining units must be established only after seeking proper consent under Air (Prevention & Control of Pollution) Act, 1981 (Air Act) and/or Water Prevention & Control of Pollution) Act, 1974 (Water Act). Likewise, after getting established, the mining Units must be put to operation only after valid consent to operate under the above mentioned laws. Any violation in this regard is a criminal offence.

1.2 Minerals resources of Rajasthan

With total geographical area of 3,42,239 sq. km, occupying 10.41 % of India's total area and having population (2001 Census) of about 5.65 crore, Rajasthan ranks first in production of Minor Minerals by contributing about 30% share of the nation's production and occupies fifth place in terms of the value of Major Minerals produced. Out of 23,818 leases in force in the State (15.10.2010), 2,384 leases are of Major Minerals, 10,147 leases of Minor Minerals, and 10,287 Quarry Licenses of Minor Minerals. Minerals contributed Rs. 1560.48 crores (rent and royalty) to the State's exchequer during 2009-10 as compared to Rs 1213.02 crores during the preceding year 2008-09

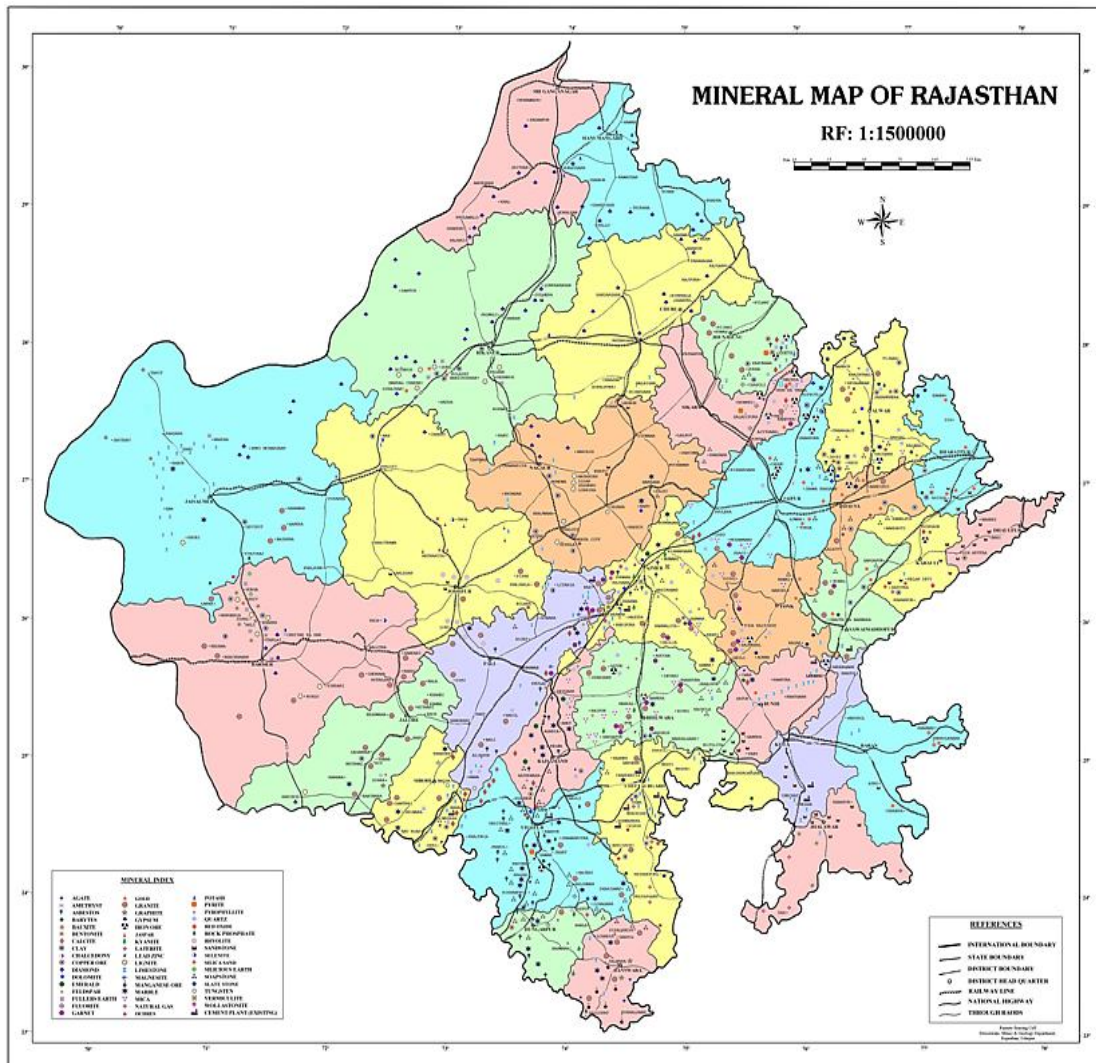
India in general and Rajasthan in particular have a large variety of mineral resources - both metallic and non-metallic. Mining and smelting of its base metal deposits are also one of the oldest in world dating back to more than 2,500 years before present (BP).

Briefly stated, Rajasthan is endowed with a continuous geological sequence of rocks from the oldest Archaean Metamorphic, represented by Bhilwara Super group (>2500 m. y.) to sub-recent alluvium & windblown sand. Vast unconsolidated deposits including the blown sand of the Thar Desert of western Rajasthan cover the western & NW parts of the state. The remaining area exposes wide variety of hard rocks including various types of metamorphic rocks like schist, quartzite, marble, and gneisses of Precambrian age with associated acid & basic intrusive rocks. The formations include the rocks of Aravalli Super group, Delhi Super group, upper Precambrian Vindhyan Super group and those of Cambrian to Jurassic, Cretaceous, and Tertiary ages. The southeastern part of the state is occupied by a pile of basaltic flows of Deccan traps of Cretaceous age. Several mineral deposits and renowned building stones of economic importance occur in association with the above rock units.

Rajasthan is the sole producer of jasper, lead & zinc concentrate and wollastonite. Rajasthan was the sole producer of garnet (gem) till 2004-05. Almost entire production of calcite and natural gypsum in the country comes from Rajasthan. State is a major producer of asbestos, copper concentrate, ochre, Rock phosphate, silver, steatite, ball clay, fluorite and feldspar. The State is also an important producer of marble having various shades. Makrana area is world famous centre for marble mining. Country's more than 90% resources of wollastonite, lead & zinc ore and potash are located in Rajasthan. State has a main share in the total resources of silver ore (84%), gypsum (81%), bentonite (80%), fuller's earth (74%), diatomite (72%), ochre (71%), marble (63%), feldspar (62%), calcite

(53%), mica (51%), talc/ steatite/soapstone (50%), asbestos (49%), copper (48%), ball clay (36%), rock phosphate (31%), tungsten (31%), fluorite (26%), granite (23%), gold (primary) (17%) and china clay (14%).

The value of mineral production in Rajasthan during 2007-08 was Rs.4931 crores increased by 6% as compared to the previous year. Its share to the total value of mineral production in the country in 2007-08 was about 4.6%.The value of production of minor minerals was estimated at Rs.2,578 crores for the year 2007-08. The index of mineral production in Rajasthan (base 1993 - 94 = 100) was 200.5 in 2007-08 as against 176.9 in the previous year.



The following table shows the contribution of the Minor mineral and Major mineral in the state of Rajasthan during the year 2007-08. It is evident from the statistics that the contribution of the minor mineral is far more than the major

mineral, not only in terms of production, but the total revenue to state exchequer, the employment it has generated and its share in the overall economy of the state, thus making the small scale mining significant.

Source: : www.dmg-raj.org) Based on the Statistics of 2008-09

Mineral	Leases	Area	Production	Sale Value	Revenue	Employment
	No.	(in Hector)	('000 Tons)	(Rs. Lacs)	('000 Rs.)	(Nos.)
Major Mineral	1941	89916.35	49116.021	163887.774	7658456.062	29155
Minor Mineral leases	9456	47980.88	178470.742	311449.399	4545140.955	237009
Minor Mineral Quarry Licenses	15203	Statistics not available				

1.3 Classifications of Minerals

As per the available legislations in the India, all minerals have been classified into two categories namely

Major Minerals: Schedule Major Minerals as specified in Second Schedule appended with the MMDR Act 1957 Asbestos, Bauxite, Chrome ore, Copper ore, Gold, Iron ore, Lead, Manganese ore, precious stones, Zinc.

Other Major Minerals such as Agate, Apatite and Rock Phosphate, Barites , Bauxite and Laterite Cadmium, Asbestos, Calcite, China clay/Kaolin, Corundum Dolomite, Feldspar, Fire Clay, Fluorspar, Garnet ,Graphite, Gypsum, Iron ore, Kyanite, Limestone, Magnesite, Vermiculite ,Wollastonite ,Mica, Coal and Lignite.

Minor Minerals: The Minor Mineral are Building Stone, Gravel, Ordinary Clay, Ordinary Sand and any other mineral which the Central Government may by notification in the official Gazette declare as Minor Mineral. As on today the Minor Minerals are River sand(Bajri) Brick Earth, Chips and Powder making minerals, Diorite, Granite, Kankar, Limestone, Marble, Masonry stones, Sand Stone, Serpentine and other Decorative Stone, etc. as specified in Schedule-I appended with RMMCR 1986.

The State Board, in supersession of the previous guidelines, hereby issues new comprehensive guidelines for establishment of new mining Units and for operation of new or existing mining Units. It is pertinent to clarify here that:-

- (i) The case where capacity of existing mining unit is proposed to be enhanced, it will be treated as the case of establishing new mining unit.
- (ii) The mining units will also be required to comply with the conditions laid down in all other laws for the time being in force. The consent to establish / consent to operate issued under the Air Act/Water Act does not absolve the

project proponent from the other statutory obligations prescribed under any other law or any other instrument.

2. CLASSIFICATION OF MINING UNITS:

All mining units have been categorized under Red Category vide Boards Order No.F.14 (57) Policy/PCB/9219 Dated 21.12.2010 (Annexure-5).

3. DELEGATION OF POWERS

The State Board has delegated powers to Regional Officers to grant or refuse consent to establish and consent to operate to all Mining/Quarrying of Minerals in area less than 5.0 Hectares except in case of Schedule Major Minerals and Mines covered under Aravalli Notification. However, when a consent application is refused by Regional Officer, the decision on the application submitted subsequently is taken by the Head Office (Ref. Board office Order No.F.14 (57) POLICY/PCB/Plg/9260 Dated 21.12.2010).

Descripti on	Category	Size/ Scale	Competent authority to process and decide consent applications
Mining of Minerals	Red	Mining of minerals in area less than 5.0 Hects. except in case of Schedule Major Minerals	Regional Officer
		All units not covered above	Head Office

4. MINING LEGISLATION

It is estimated that there are nearly 200 enactments in the country, which deals with the protection of forests, wildlife, land use, and prevention and control of water, air and noise pollution. Most countries in the world, both developed and developing, already have comprehensive legislation and monitoring system to regulate mining activities from the environmental angle.

Mining of minerals other than coal, lignite, natural gas and petroleum is regulated under the Mines and Minerals (Development & Regulation) Act, 1957, amended in 1994; Mineral Concession Rules, 1960; and the Mineral Conservation and Development Rules, 1988 besides the Rajasthan Minor Mineral Concession Rules 1986 which deals with the concession of Minor Minerals in the state. These acts and rules have provisions for environment preservation and protection while carrying out mining operations. In addition, there are following five main environmental acts which cover the mining industry:

1. The Water (Prevention and Control of Pollution) Act, 1974 (amended in 1988)
2. The Air (Prevention and Control of Pollution) Act, 1981 (amended in 1988)
3. The Environment (Protection) Act, 1986 (with rules 1986 and 1987)
4. The Forest (Conservation) Act, 1980 (amended in 1988)
5. The Wildlife (Protection) Act, 1972 (amended in 1991)

The important features of the some of the Acts and Rules concerning mine environment are as follows:

The Mines and Minerals (Development & Regulations) Act, 1957

This act provides for general restriction on undertaking prospecting and mining operations; procedure for obtaining prospecting licenses or mining leases; and conservation and systematic development of minerals.

The Mineral Concession Rules (MCR), 1960

These rules framed under the MMDR Act, 1957 and subsequent amendments stipulate that a “Mining Plan” shall incorporate, amongst others, a plan of the area indicating water sources, limits of forest areas, density of trees, impact of mining activity on forest, land surface and environment including air and water pollution; scheme for restoration of the area by afforestation, adoption of pollution control device and such measures as may be directed by the concerned Central and State Government agencies. Environmental management plan therefore forms a part of the mining plan.

The Mineral Conservation & Development Rules (MCDR), 1988

These rules contain a chapter devoted to environment. There are 11 provisions in this chapter pertaining to storage and utilization of top soil, storage of overburden, waste rock, reclamation and rehabilitation of land, measures against ground vibrations, control of surface subsidence, measures against air and noise pollution, discharge of toxic liquids, and restoration of flora, the provisions for protection of Environment under these rules are given in the Para 4.1.

The Forest (Conservation) Act, 1980

This act provides for the protection of two classes of forest; reserved and protected forests. Prior approval of Government of India is required for any change in status of reserved forest or non-forest use of protected forest land. Reserved forest has the highest conservation status and the area so classified cannot be used for any non-forest purpose. Surface and underground mining are deemed non-forest activities and, therefore, MoEF approval is required for mineral concessions in any forest area.

The act stipulates that, for any area of forest lost due to development, the developers have to pay for purchase of an equivalent area of non-forest land as near as possible to the site of diversion, or twice the degraded forest area, for transfer to the State Forest Department with sufficient funds for compensatory afforestation, which is then declared as protected forest.

The Safety zone for mining operations cannot form part of the replacement forest area. The developers have to provide funds to the State Department for one and half times the forested area of the safety zone. The act has now been modified with respect to underground mining so that only the area actually damaged by subsidence need be replaced by duly afforested non-forest land.

The Wildlife (Protection) Act, 1972

This act provides power to the authorities for regulating hunting of wild animals, declaration of any area to be a sanctuary, national park or closed area, protection of specified plants, sanctuaries, national parks and closed areas and miscellaneous matters.

4.1 Provisions related to Environment in MMRD Rules 1988

The chapter V Rule- 31 – 41 of Mineral Conservation & Development Rules, 1988 enumerates the provisions to safeguard the Environment from Mining Activity which is provided below for ready reference:

Rule 31 Protection of environment:

Every holder of a prospecting license or a mining lease shall take all possible precautions for the protection of environment and control of pollution while conducting prospecting, mining, beneficiation or metallurgical operations in the area.

Rule 32 Removal and utilization of top soil:

(1) Every holder of a prospecting license or a mining lease shall, wherever top soil exists and is to be excavated for prospecting or mining operations, remove it separately.

(2) The top soil so removed shall be utilized for restoration or rehabilitation of the land which is no longer required for prospecting or mining operations or for stabilizing or landscaping the external dumps.

(3) Whenever the top soil cannot be utilized concurrently, it shall be stored separately for future use.

Rule 33 Storage of overburden, waste rock, etc.:

(1) Every holder of a prospecting license or a mining lease shall take steps so that the overburden, waste rock, rejects and fines generated during prospecting and mining operations or tailings, slimes and fines produced during sizing, sorting and beneficiation or metallurgical operations shall be stored in separate dumps.

(2) The dumps shall be properly secured to prevent escape of material there from in harmful quantities which may cause degradation of environment and to prevent causation of floods.

(3) The site for dumps, tailings or slimes shall be selected as far as possible on impervious ground to ensure minimum leaching effects due to precipitations.

(4) Wherever possible, the waste rock, overburden etc. shall be back-filled into the mine excavations with a view to restoring the land to its original use as far as possible.

(5) Wherever back-filling of waste rock in the area excavated during mining operations is not feasible, the waste dumps shall be suitably terraced and stabilized through vegetation or otherwise.

(6) The fines, rejects or tailings from mine, beneficiation or metallurgical plants shall be deposited and disposed in a specially prepared tailings disposal area such that they are not allowed to flow away and cause land degradation or damage to agricultural field, pollution of surface water bodies and ground water or cause floods.

Rule 34 Reclamation and rehabilitation of lands:

Every holder of prospecting license or mining lease shall undertake the phased restoration, reclamation and rehabilitation of lands affected by prospecting or mining operations and shall complete this work before the conclusion of such operations and the abandonment of prospect or mine.

Rule 35 Precaution against ground vibrations:

Whenever any damage to public buildings or monuments is apprehended due to their proximity to the mining lease area, scientific investigations shall be carried out by the holder of mining lease so as to keep the ground vibrations caused by blasting operations within safe limit.

Rule 36 Control of surface subsidence:

Stopping in underground mines shall be so carried out as to keep surface subsidence under control.

Rule 37 Precaution against air pollution:

Air pollution due to fines, dust, smoke or gaseous emissions during prospecting, mining, beneficiation or metallurgical operations and related activities shall be controlled and kept within 'Permissible Limits' specified under various environmental laws of the country including the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) and the Environment (Protection) Act, 1986 (29 of 1986) by the holder of prospecting license or a mining lease.

Rule 38 Discharge of toxic liquid:

Every holder of prospecting license or a mining lease shall take all possible precautions to prevent or reduce the discharge of toxic and objectionable liquid effluents from mine, workshop, beneficiation or metallurgical plants, tailing ponds, into surface water body ground water aquifer and useable lands to a minimum. These effluents shall be suitably treated, if required, to conform to the standards laid down in this regard.

Rule 39 Precaution against noise:

Noise arising out of prospecting, mining, beneficiation or metallurgical operations shall be abated or controlled by the holder of prospecting license or a mining lease at the source so as to keep it within the permissible limit.

Rule 40 Permissible limits and standards:

The standards and permissible limits of all pollutants, toxins and noise referred to in rules 37, 38 and 39 shall be those notified by the concerned authorities under the provisions of the relevant statutes from time to time.

Rule 41 Restoration of flora:

(1) Every holder of prospecting license or a mining lease shall carry out prospecting or mining operations, as the case may be, in such a manner so as to cause least damage to the flora of the area held under prospecting license or mining lease and the nearby areas.

2) Every holder of prospecting license or a mining lease shall

(a) take immediate measures for planting in the same area or any other area selected by the Controller General or the authorized officer not less than twice the number of trees destroyed by reason of any prospecting or mining operations;

(b) look after them during the subsistence of the license/lease after which these trees shall be handed over to the State Forest Department or any other authority as may be nominated by the Controller General or the authorized officer and;

(c) restore to the extent possible, other flora destroyed by prospecting or mining operations

5. ENVIRONMENTAL ACTS AND LEGAL REQUIREMENTS

5.1 Legal Requirements - Water Act

<p>Section 25 (1) Restrictions on new outlets and discharges</p>	<p>Subject to the provisions of this section, no person shall, without the previous consent of the State Board:</p> <p>A. Establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or an extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage); or</p> <p>B. Bring into use any new or altered outlets for the discharge of sewage; or</p> <p>C. Begin to make any new discharge of sewage</p>
<p>Section 44 Penalty of contravention of section 25</p>	<p>Whoever contravenes the provision of section 25 shall be punishable with imprisonment for a term which shall not be less than two years but which may extend to six years and with fine</p>

5.2 Legal Requirements – Air Act

Section 21 (1) Restrictions on use of certain industrial plants	Subject to the provisions of this section, no person shall, without the previous consent of the State Board, establish or operate any industrial plant* in an air pollution control area
Section 37 (1) Penalty of contravention of Section 21	Whoever fails to comply with the provisions of section 21, be punishable with imprisonment for a term which shall not be less than one year and six months but which may extend to six years and with fine

*Mine is considered as industrial Plant w.r.t Air Act 1981

5.3 Requirements for Ground Water Extraction

Keeping in view of the requirements stated in the Policy guidelines for clearance of ground water abstraction for various uses issued by the Central Ground Water Authority, Ministry of Water Resources, GoI vide their letter dated 14.10.2009, the following guidelines regarding the requirement of NOC from CGWA for abstraction of ground water by any industry/ infrastructure project/ mine (**proposed/existing**) are being followed:

S. No	Guidelines
1.	NOC from CGWA shall not be required for abstraction of ground water in the following cases: <ul style="list-style-type: none"> • In case of <u>over-exploited</u> areas abstraction <25m³/day • In case of <u>critical</u> areas abstraction <50 m³/day • In case of <u>semi critical</u> areas abstraction <100 m³/day
2.	Industry/infrastructure project/time (proposed/existing) located in safe category areas, are required to obtain NOC from CGWA if ground water abstraction exceeds 1000 m ³ /day for hard rock areas and 2000 m ³ /day for alluvial areas
3.	For the industry/infrastructure project/mine which proposed to abstract ground water more than the exempted quantity referred above, the Consent to Establish application will be considered only after submission of NOC from CGWA
4.	In case of mine which proposed to intersect the water table during the course of mining the Consent to Establish application will be considered only after submission of NOC from CGWA
5.	<ul style="list-style-type: none"> • The following conditions shall be imposed while issuing Consent to Establish: • The artificial recharge proposal shall be vetted by the component authority viz. Regional Director, Central Ground Water Board (WR), Jaipur/State Ground Water Department, Jaipur • Industry shall undertake artificial recharge measures • Recycled and /or treated water shall not be used for recharge to ground water

	<ul style="list-style-type: none"> Industry shall provide suitable meter system and maintain proper record of the daily abstraction of ground water
6.	A copy of consent letter containing will be endorsed to Regional Director, Central Ground Water Board (WR), 6A, Jhalana Institutional Area, Jaipur for their information and necessary action by RPCB
<i>Please refer RPCB Circular dated 08.01.2010 for further information</i>	

5.4 Legal Requirements - Hazardous Waste Rules

Schedule I: Processes generating hazardous waste (S.No. 5) Industrial operations using mineral/synthetic oil as lubricant in hydraulic systems or other applications	5.1 Used/spent oil 5.2 Wastes/residues containing oil
Rule 5 (1) Grant of authorization for handling hazardous waste	Every person who is engaged in generation, processing, treatment, package, storage, transportation, use, collection, destruction, conversion, offering for sale, transfer or the like of the hazardous waste shall require to obtain an authorization from the SPCB

5.5 Restrictions - Aravalli Range

The MoEF, GoI had stipulated restrictions on certain activities in specified area of Aravalli Range vide Notification No. S.O. 319 (E) dated 7th May 1992 and as amended. As per the Notification the Central Government prohibits the carrying on the following processes and operations, except with its prior permission, in the specified area.

Processes and activities which require prior permission	<ul style="list-style-type: none"> Location of new industry including expansion/modernization A. All new mining operations including renewals of mining lease B. Existing mining leases in sanctuaries/national park and areas covered under Project Tiger and/or C. Mining is being done without permission of the competent authority Cutting of trees Construction of any clusters of dwelling units, farms houses, sheds, community centers, information centers and any other activity connected with such construction (including roads a part of any infrastructure relating thereto) Electrification (laying of new transmission lines)
Areas	<ul style="list-style-type: none"> All reserved forests, protected forests or any other area shown as “forest in

covered under the Notification	<p>the land records maintained by the State Government as on the date of this notification in relation to Gurgaon District of the State of Haryana and the Alwar District of the State of Rajasthan</p> <ul style="list-style-type: none"> • All areas shown as <ul style="list-style-type: none"> a. Gair Mumkin Pahar, or b. Gair Mumkin Rada, or c. Gair Mumkin Behed, or d. Banjad Beed, or e. Rundh <p>In the land records maintained by the State Government as on the date of this notification in relation to Gurgaon district of the State of Haryana and the Alwar district of the State of Rajasthan</p> <ul style="list-style-type: none"> • All areas covered by notifications issued under Section 4 and 5 of the Punjab Land Preservation Act, 1900, as applicable to the State of Haryana in the district of Gurgaon up to the date of this notification • All areas of Sariska National Park and Sariska Sanctuary notified under the Wildlife (Protection) Act, 1972 (53 of 1972)
Clearance process	<p>Any person desirous of undertaking any of the activities mentioned in the Notification No. 319 (E) dated 7th May 1992 shall submit an application to the Secretary, Department of Environment of the Government of Haryana/Rajasthan, as the case may be. The applicant shall also furnish environment impact statement and an environment management plan and such other information as may be prescribed by such State Governments. The application after due scrutiny shall be placed before the Expert Committee for its recommendations. Based on the recommendations of the Expert Committee, the Department of Environment in the State Government concerned shall take a final decision and convey the same to the applicant within the three months from the date of receipt of application or when further information has been asked for from the applicant within three months from the date of receipt of such information</p>
Monitoring mechanism	<p>Monitoring Committee, under the Chairmanship of District Collector concerned (Gurgaon in Haryana and Alwar in Rajasthan) shall inter alia monitor the compliance of the conditions stipulated while according Environmental Clearance by State Government</p> <p>The District collectors of Gurgaon in Haryana and Alwar in Rajasthan shall be authorized by the respective State Governments to take necessary action under section 5 of the said Act in respect of cases where the project proponents fail to implement the conditions</p>
Appeal provision	<p>The MoEF retains appellate power against rejection of any proposal and the National Environmental Appellate Authority constituted under the National Environment Appellate Authority Act, 1997 (22 of 1997) shall continue as an Appellate Authority against approval</p>
<p><i>Note: Refer the Notification for details</i></p>	

Public Hearing is required for the projects required Environmental Clearance under this Notification.

5.6 Restrictions - Mount Abu Eco Sensitive Zone

Mount Abu area has significant ecological importance comprising of tropical dry deciduous forests at lower altitude and evergreen forests at higher altitude and the flora and fauna of the region comprise of several endemic and rare species; besides Mount Abu has natural heritage such as Nakki Lake and man-made heritage like Dilwara temples and other heritage buildings and structures. To conserve and protect the area from ecological and environmental point of view, the MoEF had issued Notification No. S.O. 1545 dated 25th June 2009 regulating certain activities in the eco-sensitive zone

Boundaries of the eco-sensitive zone	<p>a. The said eco-sensitive zone is situated in the southern area of Rajasthan in Sirohi District between 24⁰ 33'42'' and 24⁰ 39' 00'' North latitude and between 72⁰ 41' 36'' and 72⁰ 48' 06'' East longitude and the configuration of land is hilly and rugged with high altitudinal variation ranging from 300 meter to 1727 meter. Gurushikar, the highest peak of the Aravalli, is the highest peak between the Himalayas and the Nilgiris. The boundaries of the said eco-sensitive zone comprise</p> <p>North - Southern boundary of Abu Forest Block No.3 South - Northern Boundary of Abu Forest Block No. 1 East - Western and Southern Boundary of Abu Forest Block No.2 West - Eastern boundary of Abu Forest Block No. 3</p> <p>b. The Eco-sensitive zone covers the entire area of Notified Urban Area Limit, including Mount Abu Municipal Limits adjoining Forest Block Areas</p> <p>c. The list of the villages in the eco-sensitive zone – Sanigaon, Machgaon, Goagaon, Delwara, Oriya, Jawal, Achalgarh, Salgaon, Torna, Dudhai, Hetamji and Ama</p> <p>d. All activities in the Forest Block Areas (both within and outside Municipal Areas) shall be governed by the provisions of the Rajasthan Forest Act, 1953 and the Forests (Conservation) Act, 1980 (69 of 1980) and all the activities in the Protected Areas (Sanctuary) shall be governed by the provisions of the Wildlife (Protection) Act, 1972 (53 of 1972)</p>
Quarrying and mining	<p>The quarrying and mining activities shall be restricted in the Eco-sensitive zone</p> <p>The monitoring committee shall have the authority to grant special permission for limited quarrying of materials required for the construction of local residential housing and traditional road making and maintenance work in Mount Abu, based on site evaluation</p> <p>No quarrying shall be permitted on steep hill slopes with a gradient of 20 degrees or more or areas with a high degree of erosion, or on forestland</p>
<p><i>Note: Refer the Notification for complete details</i></p>	

6. ENVIRONMENTAL CLEARANCE

As per EIA Notification S.O.1533 (E) dated 14th September 2006 as amended on 1.12.2009 has made it mandatory to obtain prior environmental clearance for certain mining projects. The following is the categorization made for applicability of EIA Notification:

Project or activity	Category with threshold limit	
	A	B
Mining of minerals	<p>≥ 50 ha of mining lease area in respect of non-coal mine lease.</p> <p>>150 ha of mining lease area in respect of coal mine lease.</p> <p>Asbestos mining irrespective of mining area.</p>	<p><50 ha ≥5 ha of mining lease area in respect of non-coal mine lease.</p> <p>≤150 ha ≥5 ha of mining lease area in respect of coal mine lease.</p>
Authority for approval of TOR & issue/reject of EC	MoEF, GOI on the recommendations of Expert Appraisal Committee (EAC)	State/Union territory Environmental Impact Assessment Authority (SEIAA) on the recommendations of State or Union territory level Expert Appraisal Committee (SEAC)
<p>(a) General condition should apply*</p> <p>General Condition (GC): Any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: i) Protected areas notified under the Wild Life (Protection) Act, 1972, ii) Critically polluted areas as notified by the Central Pollution Control Board from time to time, iii) Notified Eco-sensitive areas, iv) Inter-state boundaries and international boundaries</p>		

Explanation:

Prior Environmental Clearance is required in case of following

- 1 New Mining Projects
- 2 Mining Lease Renewal is pending or became due on the Date of Notification of EIA Notification
- 3 Expansion of Production after EIA Notification
- 4 Increase in the Lease Area after EIA Notification
- 5 Addition of the New Mineral in the Mining Lease after EIA Notification

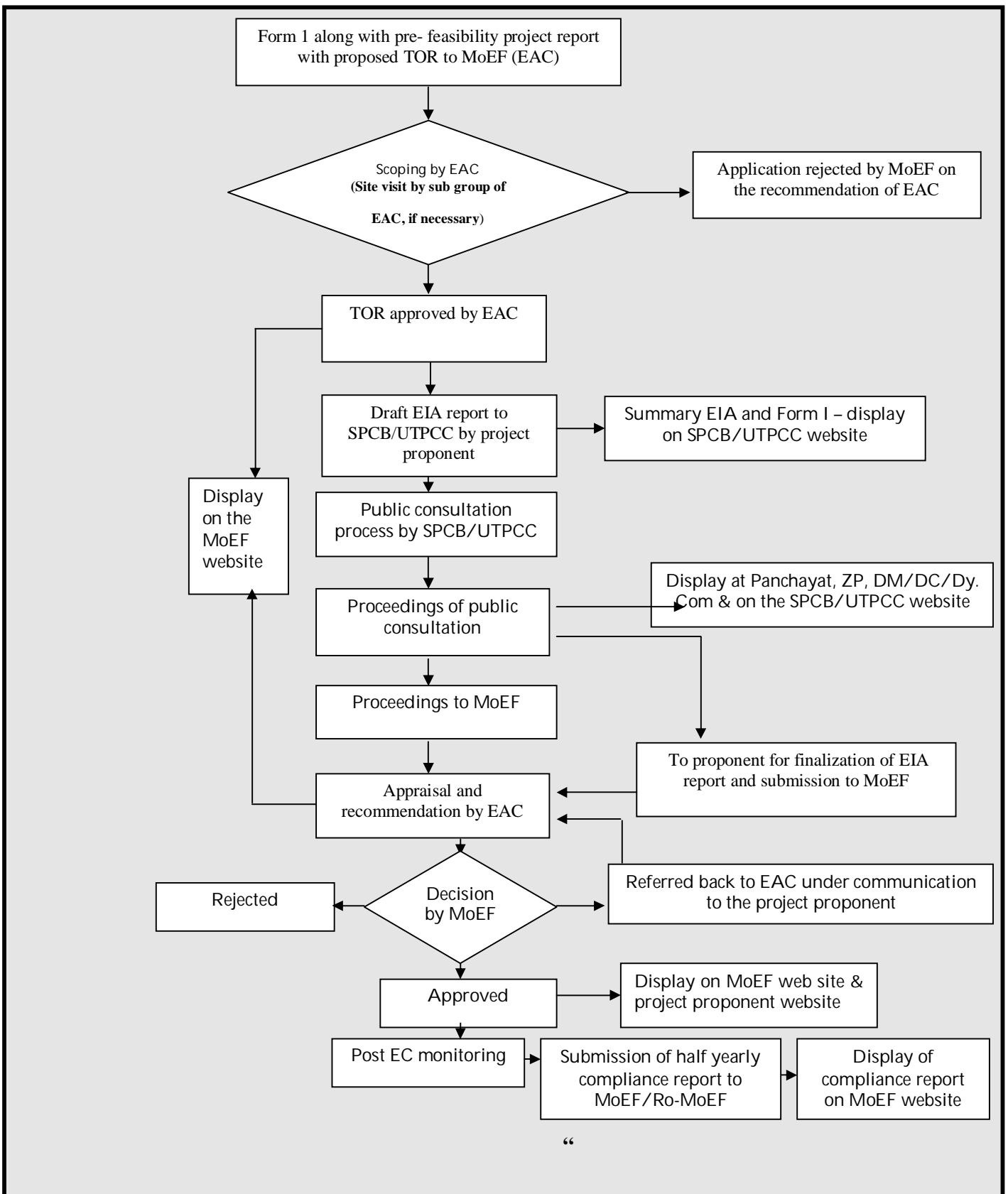


Figure 5.1 Prior Environmental Clearance Process for Category 'A' Projects

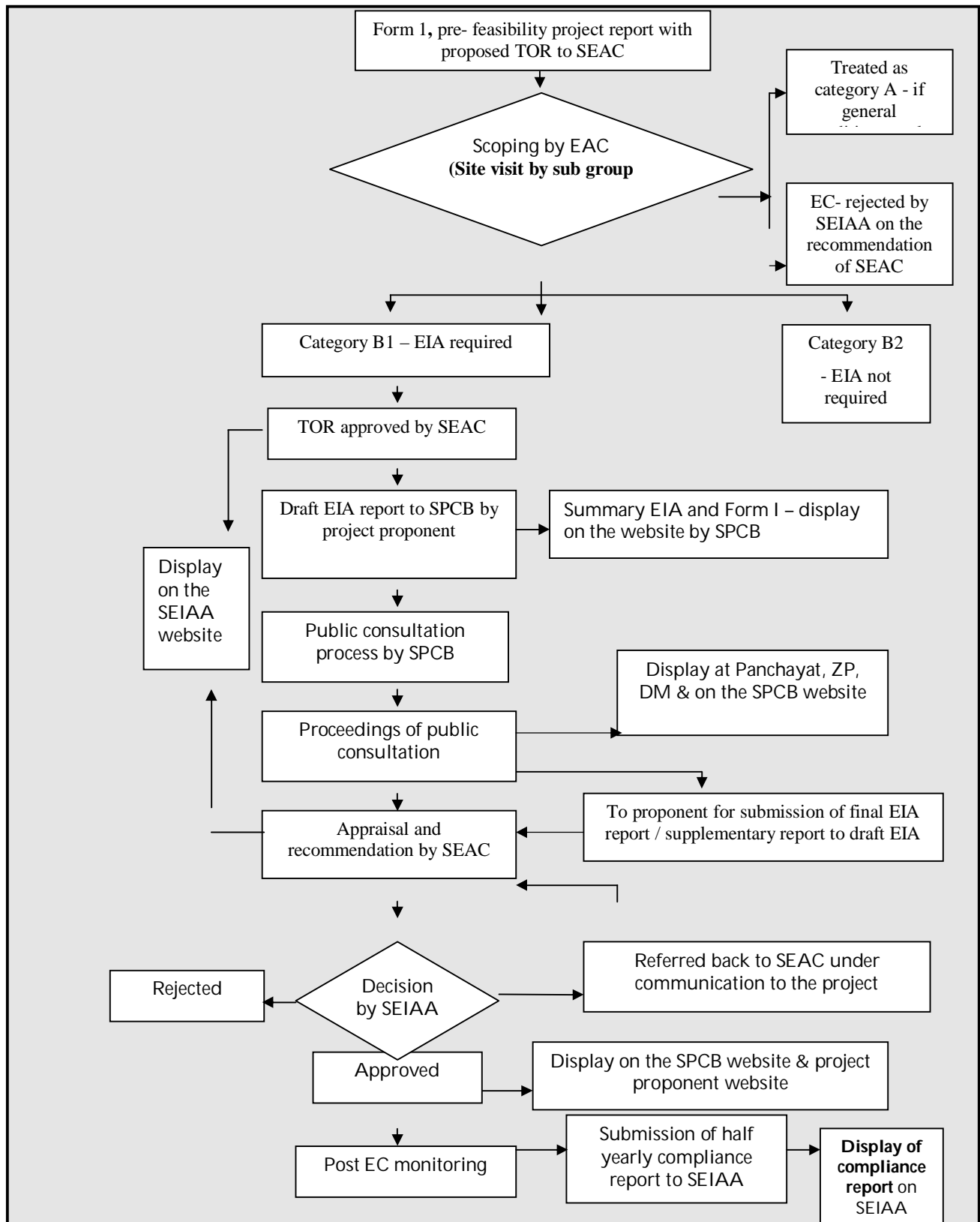


Figure 5.2 Prior Environmental clearance processes for category 'B' projects

6.1 Validity of the TOR

From 01.04.2010, the prescribed TORs would be valid for a period of two years for submission of the EIA reports, after public consultation where so required. This period will be extended to the 3rd year, based on the proper justification and approval of the EAC/SEAC, as the case may be (MoEF circular dated 22nd March 2010).

6.2 Validity of Environmental Clearance

The prior environmental clearance granted is valid for a maximum period of **30** years for mining projects. The regulatory authority concerned may extend this validity period by a maximum period of **5** years.

6.3 Post Environmental Clearance Monitoring

In respect of category **A** projects, it shall be mandatory for the project proponent to make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the district or state where the project is located and in addition, this shall also be displayed in the project proponent's website permanently.

In respect of category **B** projects, irrespective of its clearance by MoEF/SEIAA, the project proponent shall prominently advertise in the newspapers indicating that the project has been accorded environmental clearance and the details of MoEF website where it is displayed.

The Project management shall submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions on 1st June and 1st December of each calendar year. All such reports shall be public documents. The latest such compliance report shall also be displayed on the website of the concerned regulatory authority.

6.4 Transferability of Environmental Clearance

A prior Environmental Clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transferor or the transferee with a written "no objection" by the transferor, to, and by the regulatory authority concerned, on the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period.

6.5 Criteria for EIA consultants

The MoEF, GoI had stipulated certain criteria for EIA consultants as per the Ministry's office memorandum dated 2nd December 2009 & 18th March 2010, and the same is kept in the public domain of Ministry's website (www.envfor.nic.in). Accordingly, the EIA consultants shall have accreditation with Quality Control of India (QCI)/National Accreditation

Board of Education and Training (NABET). The consultants shall include the copy of the accreditation certificate and that provided by the other organizations/laboratories including their status of approvals etc. the EIA/EMP reports prepared by the consultants who are not registered with NABET/QCI shall not be considered by the Ministry after 30th July 2010.

6.6 Authorized Signatory

All correspondence with the regulatory authority including submission of application for TOR/Environmental Clearance, subsequent clarifications, as may be required from time to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorized signatory shall also submit a document in support of his claim of being an authorized signatory for the specific project (EIA amendment Notification dated 1st December 2009).

6.7 Participation of the project proponent during the EAC meetings

As per the office memorandum dated 25th February 2010 of MoEF, the authorized representative of the project proponent shall only attend the EAC meetings. The authorized representative of the project proponent should be a reasonably senior officer / executive duly authorized in writing. In case, a consultant is to be nominated as the authorized representative, it should be through a irrevocable power of attorney executed and formally registered with the Sub-Registrar concerned. A copy of the authorization / registered power of attorney, as the case may be should be submitted to the ministry for record. The authorized representative, so nominated should only participate in the EAC meetings on behalf of the project proponent. The consultant (s) and other experts may, however, assist the authorized representative during the meeting. In the absence of the authorized representative, the proposal will not be considered by the EAC.

6.8 Projects requiring recommendation of the Chief Wildlife Warden

If the project is located within 10 km radial distance from the national parks, sanctuaries, biosphere reserves, migratory corridors of wild animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon at the stage of EC (EIA amendment Notification dated 1st December 2009).

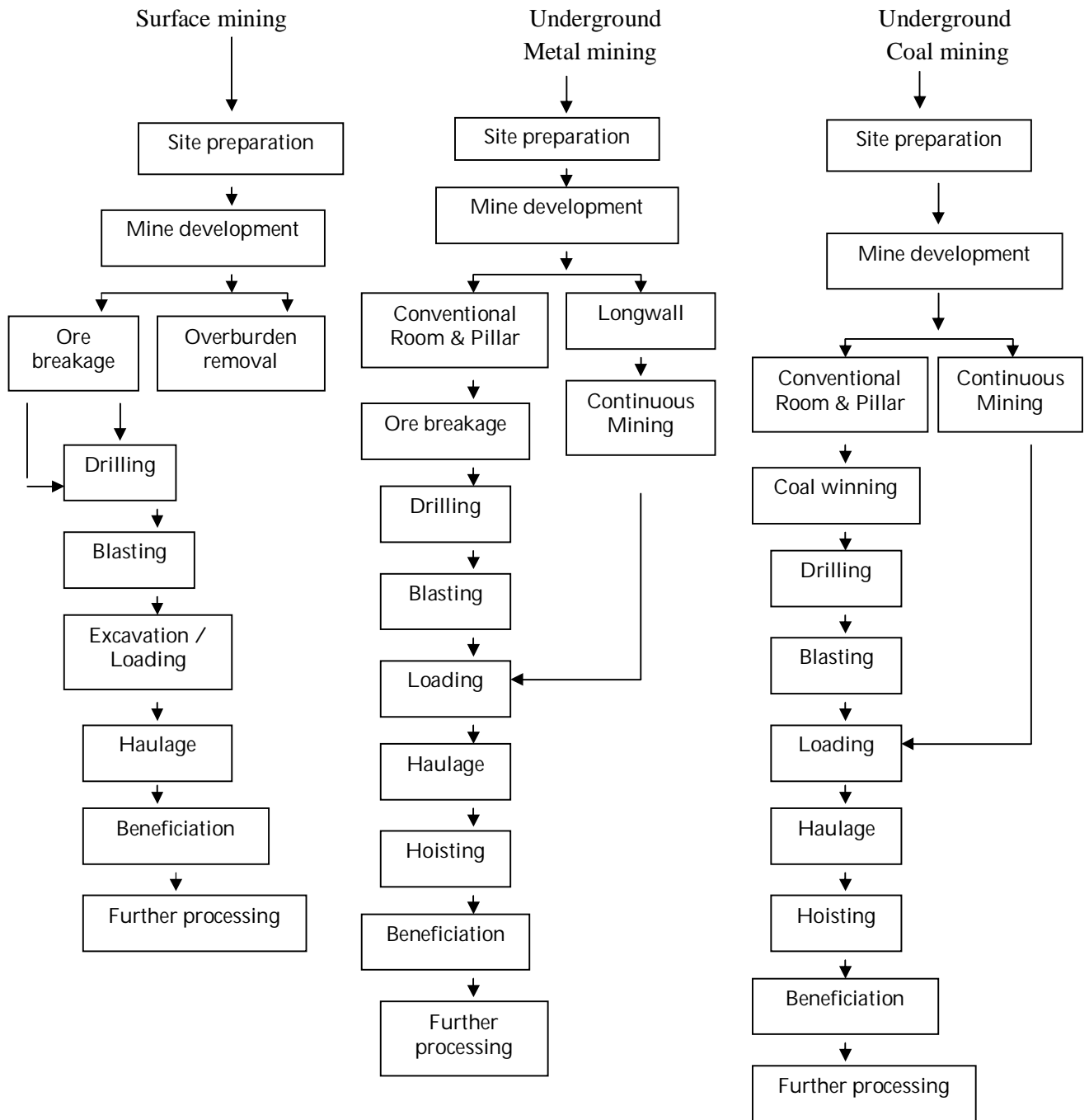
6.9 EIA Guidance Manual for mining projects of MoEF, GoI

The MoEF, GoI has released EIA Guidance manual for “Mining of Minerals”. The same is available on MoEF web site (www.moef.nic.in)

7. ENVIRONMENTAL ASPECTS OF MINING

7.1 Mining Operations

The sequence of mining operations in surface mining, underground metal mining and coal mining is broadly illustrated in **Figure No. 7.1**



7.2 Mining Methods

The various mining methods are broadly given in **Table No 7.2**

Method	Deposit
<p>Surface Mining</p> <ul style="list-style-type: none"> • Quarrying • Opencast Mining (incl. Strip mining) Auger/High wall mining • Placer mining (mineral and mining) Hydraulicking Dredging • Solution Mining Borehole mining In-Site leaching 	<p>Nonmetallic Coal, Metal, Non-metallic</p> <p>Coal</p> <p>Metal, Non-metallic</p> <p>Metal, Non-metallic</p> <p>Non-metallic</p> <p>Minerals</p>
<p>Underground Mining</p> <ul style="list-style-type: none"> • Unsupported / minimum supported <ul style="list-style-type: none"> - Room and pillar /Board and pillar mining - Stope and pillar mining - Shrinkage stopping - Sub level stopping - Hydraulic mining • Supported (with fill) <ul style="list-style-type: none"> - Cut and fill stopping - Longwall mining - Room-and-pillar mining - Sub-level mining • Caving <ul style="list-style-type: none"> - Longwall mining - Sub-level / caving - Block caving 	<p>Coal, Non metallic</p> <p>Metal, Non metallic</p> <p>Metal, Non metallic</p> <p>Metal, Non metallic</p> <p>Coal</p> <p>Metal</p> <p>Coal</p> <p>Coal, Metal</p> <p>Coal</p> <p>Coal, Metal</p> <p>Coal, Metal</p> <p>Metal</p>

7.3 Study Area for Mining Projects for environmental considerations

In case of new mine proposals are for expansion or modernization of the existing mines, while preparing the CTE application the following criteria for study area should be considered.

- Mine lease area should be the “core zone”
- 10 km. radius from the boundary limits of the mine lease area of ≥ 50 hectares should be the “buffer zone”

- 5 km. radius from the boundary limits of mine lease area of < 50 hectares should be “buffer zone”
- Maps (appropriate scale) of the study area (core and buffer zones) clearly delineating the locations of various monitoring stations (air/water/noise/soil), superimposed on locations of habitats are to be shown
- Indicate 2km, 5km distance from the boundary limits of mine lease by appropriate line
- Monitoring and testing should be done as per guidelines of CPCB/MoEF

7.4 Sources of Air Pollution

S. N.	Activities in Mines	Air Pollutants
1.	Drilling	SPM
2.	Blasting	SPM, SO ₂ , NO _x
3.	Loading & Unloading	SPM
4.	Haul Road	SPM
5.	Transportation	SPM, SO ₂ , NO _x , CO
6.	Crushing of ore	SPM
7.	Waste / Top soil handling	SPM
8.	DG Set	SO ₂ , NO _x , SPM, CO

8. SPECIFIC POLLUTION CONTROL MEASURES

Following measures must be taken for curbing emissions:-

8.1 Air Pollution Control Measures

The Air Pollution Control (APC) measures generally required for mining are mentioned below. The APC system requirement should be assessed based on the specific mining activity and location aspects.

Potential Sources of Air Pollution	Magnitude of Air Pollution	Suggested Control Measures
Drilling	High dust generation Risk of occupational hazard	Wet drilling technology or dry drilling fitted with bag filter Driller shall be equipped with closed cabin personal protective gear to reduce occupational hazard
Blasting	High dust generation (Impact lasts for short period)	<ul style="list-style-type: none"> • By improvising blasting technique and adopting controlled blasting methods • Water spray prior to blasting • No blasting should be allowed in the areas close to human habitation Rock breakers should be employed instead of blasting
Loading of	Air emission	<ul style="list-style-type: none"> • Air conditioned cabin for loading

Mineral/Overburden		operator <ul style="list-style-type: none"> Water spray on mineral ore / overburden material prior to loading
Haul Roads / Transportation	High dust potential	<ul style="list-style-type: none"> Both dumper and conveyor transportation. Provision for automatic water sprinkle system on permanent road and water spray by tankers on temporary road Covering of the material with turpentine in case of long haulage or in case the road is passing through in close proximity of habitation Green belt of trees with good footage on both side of haul road Provision of water spray on the dumper to arrest fine dust before it is transported to crusher
Crushing of Mineral	High potential of dust and occupational hazard	<ul style="list-style-type: none"> Automatic water spray in crusher hopper and unloading point. Suitable enclosure for the conveyor system Provision of bag filter in crusher unit Barrier in form of greenbelt all around in the vicinity of the crusher to trap fugitive dust
Storage of Mineral	High potential and occupational hazards	Covered storage yards with greenbelt of adequate width all around

8.2 Environmental Management Plan for mining units

The project proponent should address and submit and implement a plan for the following mitigation measures, depending upon the type of the mining activity, scale of operation and location.

- i. **Compensation and rehabilitation of affected/displaced people** – Project Proponent are require to submit complete details of **Compensation and rehabilitation of affected/displaced people**. It will reduce the distress caused by the loss of land and land-based livelihood
- ii. **Topsoil management** – During the planning stage itself Project Proponents are require to submit topsoil storage area details, they are require to submit the estimated quantity to be generated, its storage area and location and details for subsequent utilization. The top soil should not be stored for longer periods.
- iii. **Overburden dumps management** - should be stabilized by mechanical and biological reclamation. The Project Proponents shall submit a plan indication the quantity of overburden to be generated in the entire life of the mine and its

- management. The lessee will construct a Retaining wall and siltation around the waste dump as per the standard practice and procedure.
- iv. **In-pit dumping of mine waste** – in-pit dumping of mine waste should be promoted wherever possible rather than external dumping. In case of external dumping, it should be stabilized by suitable plantations.
 - v. **Rain water runoff management** – runoff from the mine and waste dumps should be regulated by constructing check dams and garland drains, a detail plan shall be submitted.
 - vi. **Mine drainage management** – mine drainage is to be treated adequately before appropriate discharge outside the boundary of the mine area.
 - vii. **Rain water harvesting** – check dams on natural nallah and developing water bodies should be planned for recharging water.
 - viii. **Fugitive emissions** – adequate dust control/suppression system during Drilling and blasting, haulage, processing/ crushing, storage etc should be planned. In case dust suppression is planned proper assessment on water quantity requirement and reliable source should be addressed
 - ix. **Noise control** – engineering noise control by noise reduction at the source and by interpretation of the noise path from the source to the receiver
 - x. **Noise and ground vibration from blasting** – be carefully designing a blast hole drilling pattern or blast geometry with appropriate burden distance, spacing as holes, hole size, hole depth and stemming height, and powder factor. Required Permissions from the Director General Mines Safety and Director, Explosives be obtained and copy be submitted to State Board. Controlled Blasting be promoted.
 - xi. **Stress on road network** – the number of vehicles for transportation of ROM, capacity of the vehicles and stress on the existing road network and requirements for improvement should be assessed
 - xii. **Mine waste management** – phase wise waste management should be shown on surface plan in the mine leased area for the 5th, 10th, 15th, 20th, 25th & 30th year.
 - xiii. **Mine closure plan** – In case of Major Minerals whether mine closure plan is prepared as per Rules. In case of Minor Minerals also project proponent shall submit a Mine closure plan.
 - xiv. **Green belt development** – identification of areas for development of greenbelt, suitable plant species, suitability of the soil conditions, any requirement of soil treatment and water availability should be addressed
 - xv. **Monitoring** – The monitoring requirement (parameters & frequency) should be outlined based on MoEF circular guidelines on this subject.

8.3 Operation and maintenance

- i Wetting agents may be added in the water used in the spraying systems.
- ii All spraying systems used for dust suppression shall be maintained in good condition and shall be used regularly. The spraying system shall be able to cover the areas of emission points concerned.
- iii Adequate water storage facility shall be provided at the mine site.

- iv The dust extraction and collection system shall be regularly inspected and maintained in good condition and shall be used as required.
- v A high standard of housekeeping shall be maintained. Any piles of materials accumulated on or around the mine process shall be cleaned up regularly.
- vi Malfunctioning or breakdown of equipment leading to abnormal emissions shall be dealt with promptly. In any case, the abnormal emission due to equipment failure shall be stopped as soon as practicable.
- vii The premises of the mine must clearly be demarcated by having pillars.

8.4 Guidelines for Eco-friendly Mining

There are no statutory provisions for the Mine plan in case of Minor minerals. *The Department of Mines and Geology has formulated the following guidelines for Eco-friendly mining for **Minor Minerals*** and project proponents shall submit a duly approved Eco- friendly mining plan before applying for the consent.

1. Whenever the lessees dig out the available top soil they may store it separately in such a manner that it could be utilized for stabilizing of dumps created by depositing over burden, by intensive plantation
2. For minerals like Gypsum, brick earth etc. where mining is done for very shallow depth (1m to 5m), waste & overburden generated during mining operations, must be refilled. After leveling, top soil collected must be spread over it and suitable plantations should be done
3. All leaseholders should check the water channels in their mining lease areas and clear/clean them before the rains start. Water should flow in its natural path and there should be no obstruction created by way of unplanned mining activities
4. If some diversion of water channels becomes necessary due to availability of mineral in lease area at a particular location only, new drains following the contours be constructed by lessees, so that water flows un-obstructed to main water bodies/ponds / tanks/natural reservoirs
5. The over burden should not be dumped in such a manner that it flows with water in the nearby tanks, reservoirs and ponds etc. The leaseholders should dump the over burden in such a manner that it does not gets washed away to the nearby water tanks and lakes etc. during the rainy season
6. All mining lease holders/quarry license holders are requested to plant a specific number of trees based on their area of lease so that they survive for longer time to come. It has to be ensured here that the mine owners should report the achievement of the target of tree plantation by way of giving number of plants that survive and not by the number of plants planted by them
7. The lessees of major and minor minerals having areas more than 5.00 hectares shall develop thick afforestation zone on the boundary of lease in at least 10 meter strip. This can be achieved in steps and exact plan should be submitted to ME/AME. The plan must contain year wise afforestation programme including site and nature of plantation. It shall also be duty of lessee to maintain growth of

these plants and survival rate should not be less than 80%. Proper protection of these plantations is also to be ensured by the lessee

8. In all leases that are located adjacent to forest areas, a safe distance as provided in the rules should be left by leaseholders between the actual mining area and the forest boundary. The lessees of such leases should plant a specific number of trees to create a green buffer zone between the mining area and the forest. Such lessees may also construct loose stone/Pakka stone wall showing their working boundaries between the forest and the lease so that there is no possibility of even unintentionally movement towards the forest areas
9. Whenever mining reaches to the water table, the leaseholder should dig a separate well in the lease area itself in which water from the mining pit is disposed with the objective of recharging the water table. By doing so there would be no wastage of ground water due to mining operations close to the water table
10. Water pollution and air pollution clearances, wherever required are duly obtained by the lessees from the State Pollution Control Board

The lessees should prepare “Eco-friendly Mining Plan” on the above guideline and submit the mining plan in the Performa given in **Annexure 5** to DMG

8.5 Environmental Norms

The project proponents shall comply with the standards as per the following Notification/Circular

S. No	Description of the norms	Notification/Circular
01	General Standards for discharge of effluents	G.S.R 422 (E) dated 19.05.1993 and G.S.R 801 (E) dated 31.12.1993, MoEF, GoI (Annexure 6)
02.	National Ambient Air Quality Standards (NAAQS)	CPCB Notification No. B-29016/20/90/PCI-I dated 18 th November 2009 (Annexure 4)
03.	National Noise Ambient Air Quality Standards	The Noise Pollution (Regulation & Control) Rules, 2000 – S.O. 123 (E) dated 14 th February 2000 and as amended in S.O. 1046 (E) dated 22.11.2000 and S.O 50 (E) dated 11 th January 2010 (Annexure 7)
04.	Noise Limit for Generator Sets Run With Diesel	Notification No. G.S.R 371 (E) dated 17 th May, 2002 (Annexure 8)
05.	Hazardous waste categorization	Hazardous Material (Management, Handling and Transboundary Movement) Rules, 2008 (www.moef.nic.in)

8.6 Key Parameters for Monitoring – MoEF, GoI

Ministry of Environment & Forest has issued a Circular dated 27th May 2009 vide circular no No. J-20012/1/2006-IA.II (M) for the Key parameters to be monitored in

the mining units which is reproduced for the convenience of mine project proponents.

It has been recognized that self-monitoring of key environmental parameters by the respective project proponents and placing the same for information all concerned in the public domain is crucial for ensuring effective compliance of the stipulated conditions and environmental safeguards. Accordingly, in respect of mining projects, it has been decided as under:

1. The information to be put in public domain will be in two parts comprising of (i) static information relating to physical data about the mine lease in terms of its area, production, lease duration and date of commencement of work and (ii) dynamic parameters to be monitored periodically and put into public domain such as AAQ, quality of discharged water, area under plantation and number of trees planted and vibration due to blasting (peak particle velocity)
2. The broad parameters to be monitored and their frequency as decided by the Committee are as under:

(i) Ambient Air Quality:

SPM, RSPM and NO_x for opencast mining

Name of the Mineral	Production Capacity (≥)	Frequency of Monitoring
Iron Ore	0.5 MTPA	15 days
Bauxite	0.1 MTPA	15 days
Lime Stone (Cement/Chemical Grade)	0.5 MTPA	15 days
Lead, zinc, copper	0.5 MTPA	15 days
Chromite	0.1 MTPA	15 days
Silica Sand (Glass)	0.1 MTPA	30 days
Building Stone (Dimensional Stone)	0.5 MTPA	15 days

(ii) Vibration:

Peak particle velocity at 300m distance or within the nearest habitation, whichever is closer, for opencast mine using large diameter hole blasting (100mm and above)

(iii) Quality of Discharge Water:

TDS, DO, pH, Total Suspended Solids (TSS), Cr⁺⁶ (only for chromite mine)

(iv) Greenbelt/ Plantation

Number of trees planted, calendar year wise (progressive) and area covered

3. In case of small mines operating in clusters, it would be desirable that these mines form a cooperative and monitor the environmental parameters as a group of mines

and display the monitored parameters on a display board to be located at a suitable location in the area to show the environmental conditions in the public domain

It is thus brought to the information of all the project proponents of mining projects to take note of the above instructions for compliance with immediate effect

(Source: MoEF Circular No. J-20012/1/2006-IA.II (M) dated 27th May 2009--**Annexure -3**)

9. PLANTATION FOR ENVIRONMENTAL CARE

To be written as per direction and discussion with member secretary and chairperson

10. GENERAL CONDITIONS

- 1 A Sign Board showing the name, address and capacity of the mine should be displayed at the entrance of the site.
- 2 Where the Owner of the Mine Unit is a Juristic person (Company, Firm, Association etc.), the applications must be filed / information must be furnished under the seal and signature of a person authorized for such purpose and the document confirming the authorization must be attached.
- 3 Health, Environment and safety slogans are required to be written adequately at all critical points in and around the mine.

11. PROCEDURE TO APPLY FOR CONSENT TO ESTABLISH

It is mandatory on the part of the project proponent to obtain Consent to Establish from the RSPCB, before start of the Mine project. **The application with requisite documents shall be submitted at the concerned Regional Office of the Board or at Head Office as the case may be.**

The Statutory time limit to decide consent application by State Board as provided in the Air Act and Water Act is four months after receipt of the application. There is a provision to Grant Consent to Establish under Tatkal; Scheme within seven days by paying additional 100% fee (Ref. Fee Notification dated 24.06.2010, www.rpcb.nic.in)

VALIDITY OF CONSENT TO ESTABLISH

Consent to Establish will be valid for a period of three years or till the commissioning of the unit (RPCB Office order dated. 10.08.2010, www.rpcb.nic.in) whichever is earlier.

THE CONSENT TO ESTABLISH IS REQUIRED UNDER THE PROVISIONS OF AIR ACT AND /OR WATER ACT

The Mine Project Proponent shall obtain Consent to Establish under section 21(1) of the Air (P&CP) Act, 1981 as amended and shall also obtain Consent to Establish

under section 25(1) of the Water (P&CP) Act, 1974 as amended in case of discharge of sewage or trade (Mine) effluent into stream or well or sewer or on land.

11.1 The documents required to be submitted for Consent to Establish

- 1 The Project Proponent shall apply in the prescribed Consent to Establish application form (completely filled and duly signed by authorized signatory) alongwith the following documents. The Consent to Establish and Consent to Operate application form can be downloaded from RSPCB website (www.rpcb.nic.in).
- 9 Requisite consent fee- Consent to Establish fee is to be paid along with Consent to Establish application as notified by the DoE, Government of Rajasthan under section 64 of the Water (P&CP) Act, 1974 as amended and under section 54 of the Air (P&CP) Act, 1981 as amended (**Refer Fees notification dated 10.12.10 and 24.6.10** www.rpcb.nic.in).. If the mine attracts the provision of the **Hazardous Waste** (Management & Handling) Rules, 1989 then fee equal to **one and a half times** fee prescribed in the schedule of the Notification shall be paid. In case of the mine requires environmental clearance under the provisions of E (P) Act, the project proponent shall pay an extra amount of Rs 15,000/-, as one time consent fee to establish in addition to the fee mentioned in the schedule each under the provisions of Water Act & Air Act. The Fee is to be paid through Demand Draft In favor of Member Secretary, Rajasthan State Pollution Control Board, payable at the location where the Consent application is submitted.
- 10 Requisite declaration on Rs. 10/- non-judicial stamp paper duly attested by notary public (**Annexure 1**)
- 11 Copy of the Lease Agreement/Sanction Letter/ Letter Of Intent (LOI) from the Mines Department.
- 12 Copy of memorandum of article of Association/Partnership deed as the case may be.
- 13 Document authorizing the applicant for signing application and other documents, if the applicant is (him/herself) is not a mining lease holder.
- 14 Details of various sources of water/air pollution & solid waste and mitigation measures to meet the norms.
- 15 Copy of the Mine plan/ Eco- Friendly Mine Plan as the case may be.
- 16 Copy of EIA Report in case of Mines which have obtained Environmental Clearance.
- 17 Copy of Environmental Clearance in case of mine which have obtained E.C
- 18 In case of all other mines which have not obtained E.C. nor require E.C shall submit Environmental Management Plan broadly covering information such as facilities proposed with capacities, environmental aspects on land, water, air, noise and solid waste – generation/mitigation
- 19 Copy of partnership deed/MoU & Article of Association as the case may be
- 20 Authenticated Production Figures in case Consent to Establish is required for expansion of production of mineral or has obtained E.C. on account of Mining Lease Renewal.

- 21 Undertaking of the Compliance of conditions of E.C. on Rs 10/- Non Judicial Stamp Paper if Consent to Establish is being applied after Obtaining E.C.
- 22 Copy of permission from Central Ground Water Authority Permission in case mine proposes to intersect water table or abstract ground water or undertaking on Rs 10/- Non Judicial Stamp Paper if mine is not proposed to intersect water table or abstract ground water (Refer Annexure-2).
- 23 Copy of Forest Diversion letter under FCA if the mining lease falls in forest land. Otherwise relevant documents which indicate that mine area does not fall in forest land.

11.2 WHAT ACTIVITY CAN BE CARRIED AFTER GRANT OF CONSENT TO ESTABLISH

After grant of Consent to Establish Lessee can remove overburden, develop Haul Roads, overburden disposal site, Green Belt, mineral processing facility, if any construct Infrastructure, and also carry out Trial Mining(If, applied for consent to operate and CTO is not decided by the Board) for maximum of 10 % of the permitted production capacity in the Consent to Establish.

12. PROCEDURE TO APPLY FOR FIRST CONSENT TO OPERATE

The application in the prescribed form must be filled up and following documents must be submitted while applying for consent to operate:-

- 6 Requisite consent fee. (As per Fees notification dated 10.12.10 and 24.6.10)
- 7 Declaration on Rs. 10/- non judicial stamp paper (as per Annexure-1)
- 8 Report of compliance of conditions of consent to establish
- 9 Copy of requisite documents required with consent to establish as per Para 11, if not submitted earlier.
- 10 Action plan for green belt development.

13. PROCEDURE TO APPLY FOR RENEWAL OF CONSENT TO OPERATE

The application in the prescribed form must be filed and following documents must be submitted while applying for renewal of consent to operate:-

- 1 Requisite consent fee.
- 2 Requisite Declaration on Rs. 10/- non judicial stamp paper (as per annexure 1).
- 3 Report of compliance of conditions of consent to operate.
- 4 Copy of periodical reports (As per Para 14).
- 5 Authenticated Production Figures.
- 6 Action Plan for Green Belt Development in case not submitted earlier as per Para 12.
- 7 Present/ Ultimate depth of Mining & Depth of Ground Water Table.
- 8 The Approved Mining Scheme for the current period if earlier Mining Plan/ Scheme stands expired.

14. PERIODICAL REPORTS REQUIRED TO BE SUBMITTED TO THE STATE BOARD

Following periodical reports must be submitted to the Board

- 1 Quarterly compliance report of consent conditions to Regional Office & Head Office both.
- 2 Quarterly Ambient Air Quality Monitoring Report & Noise Monitoring to Regional Office & Head Office both.
- 3 Annual Environment Statement to Regional Office & Head Office both (Refer Annexure -9).
- 4 Environment Audit Report from the certified Environmental Auditor once in every three years.

15. PROCEDURE TO APPLY FOR INCREASING CAPACITY OF THE EXISTING MINE

Expansion of existing mine / modification in mine process, plant and machinery will be treated as new mine and procedure is same as per Para 11 and 12.

16. INSPECTIO BY STATE BOARD

The mine has to be inspected by the Board official and Inspection Report has to be submitted in the Performa as per Annexure 11

The Inspection is mandatory once in five years in case of Manual Mining, once in two years for Semi Mechanized Mining and once in a year for Mechanizes Mining.

17. CONSEQUENCE OF DEFAULT IN COMPLIANCE OF GUIDELINES

If any non compliance is observed during the operations notice U/s 31(A) of the Air Act, 1981 will be issued and Project Proponent will be directed to rectify the non compliance and if non compliances are found to be continued after show cause notice, the consent will be revoked/refused and closure directions will be issued forthwith.

Proforma Affidavit for CTE/CTO

AFFIDAVIT

I, _____ (with name and designation) S/o Shri _____ Resident of _____ do solemnly affirm and declare as under:-

1. That I am responsible for establishing / operating the Mine unit named M/s. _____ (Name & address of the Mine unit).
2. That, I, _____ (with name and designation) am authorized to sign the consent application form and other enclosures with the application.
3. That the area of the Mine unit is _____ Hectares.
4. That the number of workers to carry out various activities in the Mine unit is _____.
5. That the total number of employees proposed in the Mine unit is _____.
6. That the total capital investment on the Mine project is Rs. _____.
7. That this Consent to Establish/Operate is being obtained for Mining of Mineral _____ Tonnes per year/Sq Feet/Year. In case of any increase/change in production of Mineral or addition/modification/alteration or change in Mine process or project or discharge points, we will obtain fresh Consent to Establish.
8. That there is no source of ground water in the Mining Lease Area in case of source; ground water abstraction is within permissible limits as per CGWA Guidelines.
9. That the present depth of Mining is _____ m (With respect to Mean Sea Level) & the Ground Water Table is at _____m (With respect to Mean Sea Level). Ultimate depth of Mining will be _____m (With respect to Mean Sea Level) & the Mine will not intersect the Ground Water Table or Propose to intersect the Ground Water Table permission from the Central Ground Water Authority.
10. There will be no generation/ treatment/ disposal of hazardous waste at the mine site. Hence provision of Hazardous Waste 1998 with till date amendments are not applicable.
11. That our Mining Lease does not falls under Forest Land (Copy of the relevant documentary proof is enclosed)

OR

That our Mining Lease Area includes _____ hectare of Forest Land and we have permission for Diversion of Forest Land which is valid up to _____ (Copy is enclosed).

12. That the quantity of trade/domestic effluent shall not exceed _____ KLD. The mode of disposal shall be _____. In case of any increase in quantity of effluent or alteration in outlet or mode of disposal, we shall obtain prior consent from the Board.

OR

That there will no effluent discharge from the premises (applicable only in the case of dry units).

13. That all adequate measures for control and treatment of water/air pollution from the various processes/activities shall be taken to meet the prescribed standards as per the Environment (Protection) Rules, 1986 as amended to date.
14. That the adequate pollution control measures (if required) shall be prescribed to meet the prescribed standards.
15. That the adequate Emission Control System (ECS) (if required) shall be provided to meet the prescribed standards.
16. That the adequate pollution control measures shall be taken to meet the prescribed ambient noise standards.
17. That if Diesel Generator Sets (of capacity 5 KVA or more) shall be installed it will be Eco-Friendly or with inbuilt acoustic enclosures to meet the prescribed norms w.r.t. noise as per the Gazette Notification on Ministry of Environment & Forests, Government of India dated 2.1.1999. Adequate stack height with D.G. Set(s) shall also be provided and maintained and shall submit noise monitoring report.
18. That all orders and directions issued by the Board from time to time shall be complied with.
19. That the name and addresses of Managing Director or other working Directors or Partner shall be given _____ under. Any change thereof shall be intimation immediately to the State Board.

DEPONENT

VERIFICATION

Verified at _____ on this _____ (day, month and year) that the above contents of this affidavit are true and correct to the best of my knowledge and belief and nothing has been concealed there from.

DEPONENT

Note: The aforementioned Affidavit must be duly signed by the Deponent and duly attested by the Notary Public thereof.

Note: Please omit whatever is not applicable.

Annexure 2

**Areas as Identified by CGWA as – Safe Areas, Semi – Critical Areas,
Critical Areas & Over Exploited Areas**

S.No	District	No of Blocks	Safe <70%	Semi-Critical 70-90%	Critical 90-100%	Over-Exploited >100%
1	2	3	4	5	6	7
1	Ajmer	8			1.Kekri 2.Masuda	1.Arain 2.Bhinai 3.Jawala 4.3Peesangan 5.Silora 6.Srinagar
2	Alwar	14			1.Thanagaji	1.Bahror 2.Bansur 3.Ktathumar 4.Kishangarhbas 5.Kotkasim 6.Laxmangarh 7.Mandawar 8.Neemrana 9.Rajgarh 10.Ramgarh 11.Raini 12.Tijara 13.Umrain
3	Banswara	8	1.Pipalkunt	1.Anandpuri 2.Bagidaura 3.Ghatol 4.Kushalgarh 5.Sajjangarh 6.Talwara	1.Gadi	
4	Baran	7	1.Chhabra 2.Kishangarh 3.Shabad	1.Chhipabarod	1.Anta	1.Atru 2.Baran
5	Barmer	8	1.Barmer		1.Chuhtan 2.Singhri	1.Bayatu 2.Balotra 3.Dhorimanna 4.Siwana 5.Shiv
6	Bharatpur	9	1.Deeg 2.Kaman 3.Kumher	1.Bayana		1.Nadbai 2.Sewar 3.Weir

			4.Nagar 5.Rupwas			
7	Bhilwara	11			1.Kotadi 2.Sahara 3.Shahpura	1.Asind 2.Baneda 3.Hurda 4.Jahajpur 5.Mandal 6.Mandalgarh 7.Raipur 8.Suwana
8	Bikaner	5	1. Lunkaransar 2. Kolayat	- -	1. Dungargarh	1. Bikaner 2. Nokha
9	Bundi	4		-	1. Kesorai Patan 2. Talera	1. Hindoli 2. Nainwa
10	Chittorgarh	14	-	1. Bhainsrorgarh	-	1. Amod 2. Bari Sadri 3. Begun 4. Bhadesar 5. Bhopalsagar 6. Chhotisadri 7. Chittorgarh 8. Dungla 9. Gangrar 10. Kapasan 11. Nimbahera 12. Pratapgarh 13. Rashmi
11	Churu	6	1. Churu 2. Atangarh 3. Sardarshahar	-	1. Sujangarh	1. Rajgarh
12	Dausa	5				1. Bandikui 2. Dausa 3. Lalsot 4. Mahua 5. Sirai
13	Dholpur	4	1. Bari		1. Baseri	1. Dholpur 2. Rajakhera
14	Dungarpur	5	1. Aspur	1. Bichhiwara 2. Dungarpur	1. Sagwara 2. Simalwara	

15	Ganganagar	7	1. Anupgarh 2. Ganganagar 3. Karanpur 4. Padampur 5. Raisingh nagar 6. Sadulshahar 7. Suratgarh			
16	Hanumangarh	3	1. Bhadra 2. Hanumangarh 3. Nohar			
17	Jaipur	13			1. Dudu 2. Phagi	1. Amer 2. Bairath 3. Bassi 4. Chaksu 5. Govindgarh 6. Jamwa Ramgarh 7. Jhotwara 8. Kotputli 9. Sambher 10. Sanganer 11. Shahpura
18	Jaisalmer	3	1. Sam			1. Jaisalmer 2. Sankra
19	Jalore	7				1. Ahore 2. Bhinmal 3. Jalore 4. Jaswantpura 5. Raniwara 6. Sanchore 7. Sayla
20	Jhalawar	6			1. Bakani 2. Dag 3. Jhalra Patan 4. Khanpur	1. Manoha Thana 2. Pirawa

21	Jhunjhunu	8	1. Alsisar			1. Bhuhana 2. Chirawa 3. Jhunjhunu 4. Khetri 5. Nawalgarh 6. Surajgarh 7. Udaipurwati
22	Jodhpur	9	1. Bap	1. Phalodi	1. Luni 2. Shergarh	1. Balesar 2. Bhopalgarh 3. Bilara 4. Mandore 5. Osaian
23	Karauli	5		1. Nadauti	1. Sapotra	1. Hindaun 2. Karauli 3. Todabhim
24	Kota	5			1. Sultanpur	1. Itawa 2. Khairabad 3. Ladpura 4. Sangod
25	Nagaur	11	1. Nagaur	1. Ladnu	1. Jayal 2. Makrana	1. Degana 2. Didwana 3. Kuchaman 4. Merla 5. Mundwa 6. Parbaisar 7. Riyan
26	Pali	10			1. Bali 2. Desuri 3. Pali 4. Raipur 5. Rohit	1. Jaitaran 2. Kharchi 3. Rani 4. Sojat 5. Sumerpur
27	Rajsamand	7			1. Railmagra 2. Rajsamand	1. Amet 2. Bhim 3. Deogarh 4. Khamnor 5. Kumbhalgarh
28	Sawaimadhopur	5			1. Bamanwas 2. Bonli 3. Khandar	1. Gangapur 2. Sawai Madhopur

29	Sikar	8	1. Fatehpur			1. Danta Ramgarh 2. Dhod 3. Khandella 4. Lachhmangarh 5. Neem Ka Thana 6. Piprali 7. Sri Madhopur
30	Sirohi	5			1. Abu Road 2. Pindwara 3. Sirohi	1. Reodar 2. Sheoganj
31	Tonk	6			1. Deoli 2. Malpura 3. Newai 4. Toda Rai Singh 5. Tonk	1. Untara
32	Udaipur	11			1. Kherwara 2. Kotra 3. Sarada	1. Badgaon 2. Bhinder 3. Dhariawad 4. Girwa 5. Gogunda 6. Jhadot 7. Mavli 8. Salumber
	Total	237	32	14	50	140

(Source: CGWA No: 21-4/Guidelines/CGWA/2009-832 dated 14.10. 2009)

Key Parameters for Monitoring – MoEF, GoI

Sub: Key parameters to be monitored in respect of Mining Projects by the Project Proponents for putting on their website and for display on display board in the public domain-regarding

It has been recognized that self-monitoring of key environmental parameters by the respective project proponents and placing the same for information all concerned in the public domain is crucial for ensuring effective compliance of the stipulated conditions and environmental safeguards. Accordingly, in respect of mining projects, it has been decided as under:

1. The information to be put in public domain will be in two parts comprising of (i) static information relating to physical data about the mine lease in terms of its area, production, lease duration and date of commencement of work and (ii) dynamic parameters to be monitored periodically and put into public domain such as AAQ, quality of discharged water, area under plantation and number of trees planted and vibration due to blasting (peak particle velocity)
2. The broad parameters to be monitored and their frequency as decided by the Committee are as under:
 - (i) **Ambient Air Quality:** SPM, RSPM and NO_x for opencast mining

Name of the Mineral	Production Capacity (≥)	Frequency of Monitoring
Iron Ore	0.5 MTPA	15 days
Bauxite	0.1 MTPA	15 days
Lime Stone (Cement/Chemical Grade)	0.5 MTPA	15 days
Lead, zinc, copper	0.5 MTPA	15 days
Chromite	0.1 MTPA	15 days
Silica Sand (Glass)	0.1 MTPA	30 days
Building Stone (Dimensional Stone)	0.5 MTPA	15 days

(ii) Vibration:

Peak particle velocity at 300m distance or within the nearest habitation, whichever is closer, for opencast mine using large diameter hole blasting (100mm and above)

(iii) Quality of Discharge Water:

TDS, DO, PH, Total Suspended Solids (TSS), Cr⁺⁶ (only for chromite mine)

(iv) Greenbelt/Plantation:

Number of trees planted, calendar year wise (progressive) and area covered

3. In case of small mines operating in clusters, it would be desirable that these mines form a cooperative and monitor the environmental parameters as a group of mines and display the monitored parameters on a display board to be located at a suitable location in the area to show the environmental conditions in the public domain

It is thus brought to the information of all the project proponents of mining projects to take note of the above instructions for compliance with immediate effect

This issue with the approval of the Competent Authority

(S.K. Aggarwal)

Director

To

1. All the Officers of IA Division
2. All the Regional Offices of MoEF } With a request to give
3. Member Secretary, CPCB } wide publicity to this
4. Member Secretary of all SPCBs } circular for compliance

Copy to

1. PPS to AS (JMM)
2. Advisor (GKP)
3. Advisor (NB)

(Source: MoEF Circular No. J-20012/1/2006-IA.II (M) dated 27th May 2009)

National Ambient Air Quality Standards (NAAQS)

S. No	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and other areas	Ecologically sensitive area (notified by central government)	Methods of measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur dioxide (SO ₂), µg/m ³	Annual*	50	20	-Improved West & Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual*	40	30	-Modified Jacob & Hochheiser (Na- arsenite)
		24 hours**	80	80	-Chemiluminescence
3	Particulate Matter (Size less than 10µm) or PM ₁₀ µg/m ³	Annual*	60	60	- Gravimetric
		24 hours**	100	100	- TOEM - Beta attenuation
4	Particulate Matter (Size less than 2.5µm) or PM _{2.5} µg/m ³	Annual*	40	40	- Gravimetric
		24 hours**	60	60	- TOEM - Beta attenuation
5	Ozone (O ₃) µg/m ³	8 hours**	100	100	- UV photometric
		1 hour**	180	180	- Chemiluminescence - Chemical method
6	Lead (Pb) µg/m ³	Annual*	0.50	0.50	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
		24 hours**	1.0	1.0	-ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/ m ³	8 hours**	02	02	-Non Dispersive Infra Red (NDIR)
		1 hour**	04	04	spectroscopy
8	Ammonia (NH ₃) µg/m ³	Annual*	100	100	- Chemiluminescence
		24 hours**	400	400	- Indophenol blue method
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	-Gas chromatography based continuous analyzer -Adsorption and Desorption followed by

					GC analysis
10	Benzo(a)Pyrene (BaP) – particulate phase only, ng/m ³	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As) ng/m ³	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni) ng/m ³	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note:

Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation

(Source: National Ambient Air Quality Standards, CPCB Notification dated 18th November 2009)

Model Eco-Friendly Mining Plan – DMG, Rajasthan

1. OVERVIEW OF THE AREA

1-1 General Information:

- a. Name of lessee
- b. Address of lessee
- c. C. Phone No.
- d. Status of the lessee
Individual / Company
- e. Details of the Area
- f. District and State
- g. Tehsil
- h. Village
- i. M.L. No.
- j. Area (may be shown on map) -----Hect.
- k. Whether area falls in forest?
- l. Lease period

1-2 General Topography :

- a. G.T. Sheet No.
- b. Description of FRP of the lease
- c. Longitude and Latitude of nearest FRP (if available)
- d. Nearest Railway Station
- e. Land Status
- f. Details of forest area adjoining to the lease Pvt. / Govt.
- g. Ground water level in the region.

1-3 Availability of basic infrastructure:

- Road
- Electricity
- Telephone
- Water Supply
- Dispensary
- Post Office
- School

1-4 Details of Abadi nearby mining area

1-5 Plantation in the area:

- a. Number of plants naturally
Existing in the lease area
- b. Plants to be grown (Location
Should be shown in the map) No. per year

1-6 Condition of top soil cover and its present use:

- a. Depth of topsoil
- b. Details of place for stacking the top soil (may be shown in map)
- c. Details of re-use of topsoil

1-7 Existing Nalas, Water Bodies, Channels in the lease hold area and nearby: (may be shown in map)

- Nala
- River

Ponds
Water Channel
Others

1-8 Do you propose to carry out mining operations up to the water table

2 SURFACE MANAGEMENT PLAN

- 2-8 Pattern of stacking top soil for future use
- 2-9 Details of approved / declared dumping site
- 2-10 Effects of dumping on mineral zone and natural water channel / stream
- 2-11 Back filling of land and leveling of surface
- 2-12 Rehabilitation of dumps by crating Contour bunds and filling them with soil and leveling
- 2-13 Maintenance of dumps and monitoring

3 WATER MANAGEMENT

3-1 Present water scenario of area:

- a. Availability of water in the mining area
 - b. Duration in which water is available
 - c. Details of dug wells in nearby mine areas
 - d. Recharging of water (if proposed)
- 3-2 Details of diversion of rain water from the mining area, if required (may be shown on the map)
 - 3-3 Details of Obstruction of water channels and measures taken
 - 3-4 Impact and measures of Mining / blasting on water sources as well as natural water channels in the area
 - 3-5 Measures taken for minimizing Silting and contamination of water Plan for mining water utilizing in (may be shown on the map)
 - a. Drinking and irrigation purpose
 - b. Artificial recharge
 - c. Water harvesting

4 AREA REHABILITATION

- 4-1 Details of storage of top soil in Reusable form (may be shown on the map)
- 4-2 Details of stabilization of dumps after leveling
- 4-3 Details of plantation plan (may be shown on the map)
- 4-4 Details of group plantation on land Allotted, if any
- 4-5 Details of measures for maintenance of Plantation done in top soil/ OB dump /Boundaries / other places.

5 AIR, NOISE AND WELFARE MEASURES

- 5-1 Plan for air, dust suppression
- 5-2 Measures taken for air / dust control as Per permissible limit
- 5-3 Plan for noise level
- 5-4 Measures taken for noise level control
- 5-5 Welfare measures taken for mining laborers:
 - a. Drinking water
 - b. Sanitary condition
 - c. First Aid facility
 - d. Labour Health
 - e. Social Welfare and Upliftment
 - f. Child care facility

6 METHOD OF MINING (OPEN CAST / UNDERGROUND)

- 6-1 Bench Height
- 6-2 Bench Width
- 6-3 Machinery used

- 6-4 Explosive used (if blasting done)
 6-5 Details of crusher or any plant (if Constructed within lease area)

7 PERMISSIONS FROM PCB / FOREST

- 7-1 Details of NOC received from PCB (if Applicable)
 7-2 Details of ECC received from MOEF (if applicable)

(Signature of Lessee)

Note:

- For quarry licenses existing in clusters combined eco-friendly mining plan would be prepared for the whole area by the Mines Department in consultation with the Quarry holder will abide this plan in true spirit.
- In case of any confusion, lease holder may contact the concern Mining Engineer / AME for details.
- No fees or other charges are required to be deposited for submission of Eco-friendly mining plan.
- Lessee/Licence Holder should give as much information as he can give relating to Environment friendly mining.

(Source: www.dmg-raj.org)

Annexure 6

General Standards for Discharge of Effluents

S. No	Parameter	Standards			
		Inland surface water	Public sewers	Land for irrigation	Marine coastal areas
		(a)	(b)	(c)	(d)
1	Color & odour	*	-----	*	*
2	Suspended solids mg/l, Max	100	600	200	1. For process waste water-100 2. For cooling water effluent 10% above total suspended matter of influent
3	Particle size of suspended solids	Shall pass 850 Micron IS sieve	--	--	1. Floatable solids max. 3 mm 2. Settleable solids max. 850 microns
4	pH Value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
5	Temperature	Shall not exceed 5 ⁰ C above the receiving water temperature	--	--	Shall not exceed 5 ⁰ C above the receiving water temperature
6	Oil and grease mg/l Max.	10	20	10	20
7	Total residual chlorine mg/l	1.0	--	--	1.0

	Max.				
8	Ammonical Nitrogen (as N), mg/l Max.	50	50	--	50
9	Total Kjeldahl nitrogen (as NH ₃), mg/l Max.	100	--	--	100
10	Free ammonia (as NH ₃), mg/l Max.	5.0	--	--	5.0
11	Bio-chemical oxygen demand (3 days at 27 ⁰ C), mg/l max.	30	350	100	100
12	Chemical oxygen demand, mg/l max.	250	--	--	250
13	Arsenic (as As), mg/l max.	0.2	0.2	0.2	0.2
14	Mercury (as Hg), mg/l max.	0.01	0.01	--	0.01
15	Lead (as Pb), mg/l max.	0.1	1.0	--	2.0
16	Cadmium (as Cd), mg/l max.	2.0	1.0	--	2.0
17	Hexavalent chromium (as Cr +6), mg/l max.	0.1	2.0	--	1.0
18	Total chromium (as Cr), mg/l max.	2.0	2.0	--	2.0
19	Copper (as Cu), mg/l max.	3.0	3.0	--	3.0
20	Zinc (as Zn), mg/l max.	5.0	15	--	15
21	Selenium (as Se), mg/l max.	0.05	0.05	--	0.05
22	Nickel (as Ni), mg/l max.	3.0	3.0	--	5.0
23	Cyanide (as CN), mg/l max.	0.2	2.0	0.2	0.2
24	Fluoride (as	2.0	15	--	15

	F), mg/l max.				
25	Dissolved phosphates (as P), mg/l max.	5.0	--	--	--
26	Sulphide (as S), mg/l max.	2.0	--	--	5.0
27	Phenolic compounds (as C ₆ H ₅ OH), mg/l max.	1.0	5.0	--	5.0
28	Radioactive materials:				
	a. Alpha emitter micro curie/ml	10 ⁻⁷	10 ⁻⁷	10 ⁻⁸	10 ⁻⁷
	b. Beta emitter micro curie/ml	10 ⁻⁶	10 ⁻⁶	10 ⁻⁷	10 ⁻⁶
29	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
30	Manganese (as Mn), mg/l	2	2	--	2
31	Iron (as Fe), mg/l	3	3	--	3
32	Vanadium (as V), mg/l	0.2	0.2	--	0.2
33	Nitrate nitrogen, mg/l	10	--	--	20
* All efforts should be made to remove colour and unpleasant odour as far as practicable					
These standards shall be applicable for industries, operations or processes other than those industries, operations or process for which standards have been specified of the Environment Protection Rules, 1989					
<i>Source: G.S.R 422 (E) dated 19.05.1993 and G.S.R 801 (E) dated 31.12.1993 issued under the provisions of E (P) Act 1986</i>					

Noise Ambient Air Quality Standards

Area code	Category of area	Limits in db (A) Leq	
		Day time	Night time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence zone	50	40

Note:

1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
3. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area, which is declared as such by the competent authority.
4. Mixed categories of areas may be declared as one of the four above-mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

L_{eq} : It is an energy mean of the noise level over a specified period.

(Source: Noise pollution (Regulation and control) Rules, 2000)

Noise Limits for Generator Sets run with Diesel

1. Noise limit for diesel generator sets (up to 1000 KVA) manufacture on or after the 1st July 2003

The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity up to 1000 KVA, manufactured on or after the 1st July, 2003 shall be 75 dB (A) at 1 meter from the enclosure surface

The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself

The implementation of noise limit for these diesel generator sets shall be regulated as given in paragraph 3 below

2. Noise limit for DG sets not covered by paragraph 1

Noise limits for diesel generator sets not covered by paragraph 1, shall be as follows:

2.1 Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end

2.2 The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances the performance may be checked for noise reduction up to actual ambient noise level, preferably, in the nighttime). The measurement for insertion loss may be done at different points at 0.5m from the acoustic enclosure/room, and then averaged

2.3 The DG set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB (A)

2.4 These limits shall be regulated by the State Pollution Control Boards and the State Pollution Control Committees

2.5 Guidelines for the manufacturers/users of Diesel Generator sets shall be as under:

1. The manufacturer shall offer to the user a standard acoustic enclosure of 25 dB (A) insertion loss and also a suitable exhaust muffler with insertion loss of 25 dB(A)

2. The user shall make efforts to bring down the noise levels due to the DG set; outside his premises, within the ambient noise requirements by proper siting and control measures

3. Installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer

4. A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use

3. Limits of noise for DG Sets (Up to 1000 KVA) Manufactured on or after the 1st July 2003

3.1 Applicability

1. These Rules apply to DG sets up to 1000 KVA rated output, manufactures of imported in India, on or after 1st July 2003

2. These rules shall not apply to

- a. DG sets manufactures or imported for the purpose of exports outside India; and
- b. DG sets intended for the purpose of sample and not for sale in India

(Please refer Notification No. G.S.R. 371 (E) dated 17th May, 2002 for details)

Form-V

(See rule 14)

Environmental statement for the financial year ending the 31st March**Part A**

- Name and address of the owner/occupier of the industry operation or process
- Industry category primary- (STC Code) Secondary- (SIC Code)
- Production capacity
- Year of the establishment
- Date of last environmental statement submitted

Part B*Water and raw material consumption*(1) Water consumption m³/d

Process

Cooling

Domestic

Name of Products	Process Water consumption per unit of product output	
	During the Previous Financial year	During the current financial year
	(1)	(2)
(1)		
(2)		
(3)		

Raw material consumption

* Name of raw Materials	Name of products	Consumption of raw material per unit of output	
		During the previous Financial year	during the current financial year

*Industry may use codes if disclosing details of raw material would violate contractual obligations; otherwise all industries have to name the raw materials used.

Part C

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

(1) Pollutants	Quality of pollutants discharged (mass/day)	Concentrations of pollutants discharges (Mass/volume)	Percentage of variation from prescribed standards with reasons

(a) Water			
(b) Air			

Part D

HAZARDOUS WASTES

(As specified under hazardous wastes (Management and Handling) Rules, 1989)

Hazardous Wastes	Total Quantity (Kg)	
	During the Previous Financial year	During the current financial year

- a. From process
- b. From pollution control facilities

Part E

Solid Wastes

	Total Quantity	
	During the Previous Financial year	During the current financial year

- a. From process
- b. From pollution control facilities
- c. (1) Quantity recycled or reutilized within the unit.
- (2) Sold
- (3) Disposed

PART F

Please specify the characterizations (in terms of composition of quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

PART G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

PART H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution

PART I

Any other particulars for improving the quality of the environment

Geo-referenced Cadastral Map

As per the procedure in vogue, a Mining Lease map/Prospecting License map showing the area/areas with details on a cadastral map with the Khasra numbers/Survey Nos. for mining lease/prospecting license, granted by the State governments under Act and Rules made there-under, is a basic requirement which is enclosed along with the Mining Plan/Scheme of Mining /Progressive Mine Closure Plan and Scheme of Prospecting. The Mining Lease map/Prospecting License map is a certified copy obtained from the state/district authorities, which is essential for planning purpose in mining plan/Scheme of Mining etc.

In suppression to all the instructions issued on the subject, it is decided that:

1. The Mining Lease/Prospecting License boundary showing all Khasra numbers/Survey Nos. on a Cadastral Map (Khasra Plan) on original plan (not the photo copy) and duly certified by State Government on a scale of 1:3960 shall be submitted with Mining Plan/Scheme of Mining/Progressive Mine Closure Plan and Scheme of Prospecting by the Lessee/Applicant/Licensee
2. The boundary pillars of each mine lease/prospecting license are to be fixed precisely. Each boundary pillars shall be surveyed using DGPS (at least 2 hours observation) for its ground position by an agency recognized by the State Government)
3. The Geo-referenced mining lease/prospecting licenses map prepared using DGPS shall be superimposed on Geo-referenced vectorised cadastral maps
4. On integration, the Geo-referenced mining lease/prospecting licenses map shall duly matched with geo-referenced vectorised cadastral maps
5. In case of forest areas, the boundary pillars shall be fixed on ground with reference to at least three permanent ground features in and around mining leases/prospecting licenses
6. The geo-referenced mining leases/prospecting licenses map shall be superimposed on latest high-resolution satellite data (cloud-free) derived from merging of Cartosat-2 and LISS-IV (Scale 1:5,000) covering an area of 500 meters from the mining lease/applied area boundary
7. The satellite data products are available from NRSC, Hyderabad. The superimposed output in the form of soft copy and hard copy should be submitted along with the Mining plan/Scheme of Mining/Progressive Mine Closure Plan and Scheme of Prospecting. The soft copy submission should be in the standard format and digitized maps should be in shape file, which can be imported in any GIS database
8. The above maps will be base for preparation of all statutory as well as working plans of the mines

This circular may be given wide publicity amongst RQPs/Mine Owners / Lessee's / Licensee's / Applicants for implementation. Further, this may be intimated to all the states.

(Source: Circular No. 2/2010, No.N-11013/3/MP/90-CCOM Vol-VII dated 06.04.2010-IBM)

PERFORMA OF INSPECTION REPORT FOR MINING UNIT

- M.L. No**
- Latitude of M.L. Area
- Longitude of M.L. Area
- Date of Inspection-
- Name of Inspecting Person with designation
- Operational Status of the mine during Inspection
1. Name of Mine-
 2. Location-
 3. Lease Area-
 4. Name of Mineral/ Minerals-
 5. Major Mineral/ Minor Mineral-
 6. Consented Production Capacity-
 7. Applied for consent afresh or for renewal
 8. Validity of Last Consent in case of Renewal-
 9. Validity of Mining Lease-
 10. Whether E.C. required
 - i) under EIA, 1994/ EIA, 2006/- Yes/ No
 - ii) Aravalli Notification, 1992 Yes/ No

If E.C. obtained-

 - a. E.C. issued on-
 - b. Permitted Production Capacity-
 - iii) Opencast Mining/ Under Ground Mining-
 - iv) Mechanized Mining/ Semi Mechanized Mining/ Manual Mining-
 - v) No. of Mining Pits with Dimension (LxBxD)-
 - vi) Whether Benches are properly Developed or Not-
 - vii) Bench Height/ Bench Width/ Bench Length Pit wise-
 - viii) R.L. of deepest Bench w.r.t. MSL (Mean Sea Level)-
 - ix) R.L. of Ground Water Table -w.r.t. MSL -
 - x) Whether Mining below Water Table or above Ground Water Table-
 - xi) Whether CGWA permission is required for Abstraction of Ground Water/-
Intersection of Ground Water Table
 - a) If Yes whether permission of CGWA has been obtained or not-

- xii) No. of O.B. dumps with Dimension and Location of Dumps
 - a) Whether Retaining Wall & Siltation Pond constructed around OB Dumps or Not-
- xiii) Water Consumption- KLD
- xiv) Water Source- Surface Water/ Ground Water/ Accumulated Rain-Fall Water in Pits
- xv) Sources of Air Pollution-
- xvi) Air Pollution Control Measures-
Water Sprinkling arrangements & its functioning/ periodicity of water sprinkling & Details of Location where Water sprinkling is being done.
- xvii) Whether Boundary Pillars of Lease Area/ Sign Boards are Provided or Not-
- xviii) Whether Health/ Env./ Safety Slogans are in place at mine site or not-
- xix) Whether Safety helmets/ Boots/ torches and other safety devices provided to mine labour or not-
- xx) No. of Labour/ Mine personnel at Mine Site-
- xxi) Whether Garland Drainage/ Siltation pond are provided around the Pits or Not-
- xxii) No. of plants around the dump, Boundary of lease, Road Side and other Location, please specify in details about type of plantation, its location and overall quantum.
- xxiii) Whether Top Soil is available or not.
If yes, how it is stacked, its location and quantity-
- xxiv) In case of Major Mineral, validity of Approved Mining Plan-
- xxv) Overall comments on the working of Mine-
- xxvi) Compliance of conditions of E.C./ Consent/ CGWA permission -
- xxvii) Any Specify observations, comments & Recommendations*-

* Clear Recommendations for grant /renewal/refusal of consent be given

PANORMIC VIEW OF SCIENTIFIC MINING



**dk'Bik'kk.k'kkrwuka d`Rok Hkkosu Isoue~A
J};k p rFkk flf)LrL;fo'.kks% izlknRr%AA
(Pkk.kD;)**

*Utmost feeling of respect and gratitude
(‘Shradhaa’ & ‘Aabhaar’) is to be
Exercised while exploiting*

- ◆ *Wood (Kaashthaa)’*
- ◆ *Stone (Paashaan)*
- ◆ *Metal (Dhaatu)*

*In the same way as if, it is divine blessing and
Offering (Prasaadaa) of LORD VISHNU*