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## Indian Bureau of Mines (IBM)

9.1 The Indian Bureau of Mines (IBM) is a subordinate office under the Ministry of Mines. It is engaged in the promotion of scientific development of mineral resources of the country, conservation of minerals, protection of environment in mines for minerals, other than coal, petroleum and natural gas, atomic mineral and minor minerals. It performs regulatory functions, namely enforcement of the Mineral Conservation and Development Rules, 1988, the relevant provisions of the Mines and Minerals (Development and Regulation) Act, 1957, Mineral Concession Rules, 1960 and Environmental (Protection) Act, 1986 and Rules made thereunder. It also undertakes scientific, techno-economic, research oriented studies in various aspects of mining, geological studies, ore beneficiation and environmental studies.

9.2 IBM provides technical consultancy services to the mining industry for the geological appraisal of mineral resources, and the preparation of feasibility reports of mining projects, including beneficiation plants. It prepares mineral maps and a countrywide inventory of mineral resources of leasehold and freehold areas. It also promotes and monitors community development activities in mining areas. IBM also functions as data bank of mines and minerals and publishes statistical periodicals. It also brings out technical publications/ monographs on individual mineral commodities and bulletins of topical interest. It advises the Central and State Governments on all aspects of mineral industry, trade, legislation, etc.

9.3 IBM imparts training to technical and non-technical officials of IBM and also persons from the mineral industry and other agencies in India and abroad.

### Organizational Set-up

9.4 IBM is organized into six functional divisions, namely :

- (i) Mines Control and Conservation of Minerals Division.
- (ii) Ore Dressing Division.
- (iii) Technical Consultancy, Mining Research and Publication Division.
- (iv) Mineral Economics Division.
- (v) Mining and Mineral Statistics Division.
- (vi) Planning and Co-ordination Division having two sub-divisions:
  - (a) Administration, Establishment matters (including training), Accounts with all other administrative and financial matters and;
  - (b) Planning and Co-ordination.

9.5 IBM has its headquarters at Nagpur, 03 Zonal Offices at Ajmer, Bangalore and Nagpur, and 12 Regional Offices at Ajmer, Bangalore, Bhubaneswar, Chennai, Dehradun, Goa, Hyderabad, Jabalpur, Kolkata, Nagpur, Ranchi and Udaipur and 2 sub-regional offices at Guwahati and Nellore.

9.6 IBM has well equipped Ore Dressing Laboratories and Pilot Plants at Ajmer, Bangalore and Nagpur.

### Performance of IBM

9.7 Performance relating to various activities of IBM during the year 2009-10 (up to December 2009) is given below.

### Inspection of Mines

9.8 During the year 2009-10 (up to December 2009), 1,775 mines were inspected for enforcement of the provisions of Mineral Conservation and Development Rules (MCDR) 1988 and for examination of mining plans/ schemes of mining / mine closure plans.

Consequent to the inspection of mines, 1,568 violations under MCDR, 1988 were pointed out in respect of 726 mines and during the period 787 violations were rectified; 22 prosecution cases were launched in various courts; 10 cases were decided in the Court in favour of IBM and 11 cases were compounded. A list of principal violation observed during mine inspection is given in **Annexure 9.1**. Besides, mining operations were suspended in 70 mines for not carrying out mining in accordance with approved mining plan/ scheme of mining. The status of mining leases and mines in India is given in **Annexure 9.2**.

9.9 State-wise break-up of inspection of mines carried out during 2009-10 (up to December 2009) is given in **Table 9.1**.

**Table 9.1**  
**Inspection of Mines carried out by IBM during 2009-10 (up to Dec., 2009)**

Sl No	State	No. of inspection
1	Andhra Pradesh	226
2	Assam	11
3	Chhattisgarh	93
4	Goa	95
5	Gujarat	158
6	Himachal Pradesh	19
7	Jharkhand	136
8	Karnataka	182
9	Kerala	27
10	Madhya Pradesh	164
11	Maharashtra	36
12	Manipur	17
13	Meghalaya	16
14	Orissa	163
15	Rajasthan	228
16	Sikkim	11
17	Tamil Nadu	138
18	Uttarakhand	18
19	Uttar Pradesh	18
20	West Bengal	19
	<b>TOTAL</b>	<b>1775</b>

9.10 During the year 2009-10 (up to Dec., 2009), 230 mining plans were approved and 20 were not approved, 307 schemes of mining were approved and 24 were not approved and 23 final mine closure plans were approved and 04 were not approved. State-wise break-up is given in **Annexure 9.3**. In 68 cases, mining plans were modified. Details are given at **Annexure 9.4**. Lessee may continue to operate a lease under deemed extension, pending disposal of the renewal application by the State Government under Rule -24 A(6). A State-wise list of mines working under deemed extension is available at **Annexure 9.5**.

### Technical Studies

9.11 The performance of IBM with regard to technical studies, investigations and preparation of mineral inventory/maps etc is indicated in the **Table 9.2**.

9.12 During the year 2009-10 (up to December 2009), 12 Regional Mining Geological Studies were at various stages of completion.

9.13 IBM monitors the progress of reconnaissance permits and prospecting licences, the details of which are given in **Annexures 9.6** and **9.7** respectively.

### Preparation of Mineral Maps

9.14 During the year 2009-10 (up to December 2009), preparation of 100 multi-mineral leasehold maps of Gujarat on a scale of 1:50,000 along with corresponding forest overlays was at various stages of completion.

### Mineral Beneficiation

9.15 Mineral beneficiation studies including mineralogical testing and chemical analysis is intimately related to both conservation and development of mineral resources. During the year 2009-10 (up to December 2009), 53 ore dressing investigations, 37,700 chemical analysis and 1,870 mineralogical examinations were completed. Three in-plant studies were also carried out.

### National Mineral Inventory

9.16 During 2009-10 (up to December 2009), based

**Table 9.2**  
**Technical Studies, Investigations and Preparation of Mineral Inventory/ Maps in 2009-10**  
**(up to December 2009)**

Sl. No.	Item	2007-08*	2008-09*	2009-10	
				Target	Achievement**
1	Mining Geological Studies/ Regional Mining Geological Studies	12	12	12	12 Studies at various stages of completion.
2	Updation of National Mineral Inventory (NMI) adopting UNFC.	i) Updation of NMI as on 1.4.2005 was completed in all respects and summary outputs for all the 65 minerals generated. ii) Analytical notes & qualitative analysis were also made.	An ad-hoc publication "National Mineral Inventory at a Glance as on 1.04.2005" released. Draft chapters for all the 65 minerals prepared and the Handbook of NMI was under printing.	i) Preparatory work for updating NMI as on 1.04.2010 ii) Data collection for updating NMI as on 1.04.2010 for Granite, Marble, Fullers Earth & Bentonite.	i) Private sector leasehold data as on 1.04.2005 supplied to all the 12 Regional Offices. Output for Freehold & Public Sector leasehold deposits generated for 45 minerals. ii) Data collection in progress for Granite, Marble, Fullers Earth & Bentonite.
3	Preparation of multi-mineral maps with forest overlays	120 maps	100 maps	100 maps	Preparation of 100 multi-mineral leasehold maps of Gujarat on a scale 1:50,000 with corresponding forest overlays at various stages of completion.
4	OD Investigations	66	68	70	53 completed & 37 in progress
5	Chemical Analysis (No. of radicals)	46,804	49,108	50,000	37,700 completed & 612 in progress
6	Mineralogical Studies	2,390	2,366	2,300	1,870 completed & 62 in progress
7.	Technical Consultancy Assignments	08	13	05-07	06 completed & 06 in progress
8	Mining Research including Environmental Studies	09	09	08	07 completed & 05 in progress
9	Training	16	16	16	12

\*Actuals \*\* Up to December 2009

on the updated NMI adopting UNFC, a Handbook on "National Mineral Inventory – An Overview (as on 1.04.2005)" was released. Besides, preparatory work for updating the NMI as on 1.04.2010 was in progress. As a preparatory exercise for updation of NMI, a National Conference on NMI as on 1.04.2010 for the exploration and exploitation agencies was organized at IBM, Nagpur on 24 November 2009. Representatives from GSI, MECL, NALCO, KIOCL, MOIL, nine State Directorates of Geology and Mining, AMD, HCL and various leading private organizations totaling about 50 participated in the conference.

### Market survey of Minerals and Metals

9.17 Market Survey on copper, lead and zinc was continued and drafting of the report was in progress. Besides, 03 reports on end-use metal consumption for copper-lead-zinc for the quarters ending March, June and September, 2009 were prepared.

### Statistical Publications

9.18 IBM disseminates statistical information on mines, minerals, metals and mineral based industries through its various publications. Information on mineral production, stocks, despatches, employment, inputs in mining, mining machinery and related matters received from the mine owners on statutory basis under the MCDR, 1988 and ancillary statistics on metals production, mineral trade and market prices of minerals, revenue from the mining sector, rent, royalty and cess on minerals, etc., from other agencies is compiled regularly by IBM.

9.19 The statistical publications released during the year 2009-10 (upto December 2009) include 07 issues (September 2008 – March 2009) of Monthly Statistics of Mineral Production and Statistical Profile of Minerals 2006-07 & 2007-08 Combined issue. Besides, Indian Mineral Industry at A Glance, 2006-07 & 2007-08 Combined issue and Statistical Profile of Minerals 2008-09 issue were at various stages of preparation.

### Consultancy Service

9.20 IBM provides technical consultancy services on

prescribed charges for geological appraisals, survey of the areas, preparation of feasibility study reports, environment impact assessment and environment management plan, selection of suitable mining equipment, evaluation of feasibility report prepared by other consultants, financial institutions, etc. During the year 2009-10 (up to December 2009), 06 assignments were completed and 06 are in progress.

### Technical Publications

9.21 IBM brings out technical publications relating to mines and minerals, mineral based industries, trade, beneficiation, R&D activities, etc. During the year 2009-10 (up to December 2009), Handbook on National Mineral Inventory - An Overview (as on 1.04.2005), Bulletin on Mining Leases & Prospecting Licenses 2007 issue and Half-yearly Bulletin on Mineral Information, April-September 2008 issue were released. Besides, Indian Minerals Year Book (IMYB) 2008 issue was under printing.

9.22 Under the series 'Mineral Facts and Problems' the Monograph on Chromite, was under scrutiny and modification. Directory of Mineral Consumers in India and two bulletins on (i) Recent Developments in Blasting Technology and (ii) Application of Rock Mechanics in Surface and Underground Excavations, were at various stages of preparation.

### Mining Research

9.23 Applied Mining Research is carried out in IBM on various mining aspects so as to help in systematic development of mines and improvement in productivity in mines through evolution of suitable norms. Industry sponsored assignments on environment and rock mechanics on charge basis are also undertaken. During the year 2009-10 (up to December 2009), 07 such assignments have been completed and another 05 assignments were in progress.

### Training

9.24 IBM imparts training to technical and non-technical officials of IBM and also to persons from mineral industry and other agencies in India and

abroad. During the year 2009-10 (up to December 2009), 12 training programmes were conducted in which a total of 76 IBM personnel and 222 industry personnel participated.

### Advisory Role

9.25 IBM continued to advise the Central and State Governments on matters concerning mines and minerals, mining legislation, export and import policies, mineral consumption and industrial utilization, recovery of by-products, demand and supply of minerals, renewal of mining leases. Assistance was also rendered to private parties, institutions and foreign organizations on subjects like mineral production and other statistics.

### Computerized On-line Register of Mining Tenement System

9.26 The project is to be implemented in 12 States, namely, Goa and one district each in Andhra Pradesh (Khammam), Chhattisgarh (Durg), Gujarat (Jamnagar), Jharkhand (Singbhum [W]), Karnataka (Bellary), Kerala (Thiruvananthapuram), Madhya Pradesh (Katni), Maharashtra (Sindhudurg), Orissa (Keonjhar), Rajasthan (Udaipur), and Tamil Nadu (salem). Initially, a pilot project has been taken up in two districts viz Durg (Chhattisgarh State) and Bellary district (Karnataka State).



Majhgawan diamond mine in Panna district, Madhya Pradesh.

9.27 The Regional Remote Sensing Service Centre (RRSSC), ISRO, Nagpur has been assigned the work of digitization of mining lease plans. So far 61 lease plans (24 of Bellary & 37 of Durg) were handed over by IBM to ISRO. The State Governments of Chhattisgarh and Karnataka have been requested to take up the job of fixation of boundary pillars in all mining leases of Durg and Bellary districts so that IBM can take up the GPS work. IBM has designed formats on Reconnaissance Permits, Prospecting Licenses, Mining Leases & Exploration etc., and circulated to all the concerned State governments, which will be the input data for the database to be designed at later stage.

### Measures for Abatement of Pollution and Environmental Protection

9.28 The IBM undertakes inspections/studies for the enforcement of provisions of MCDR 1988 which include provision on protection of mines environment. During inspection it ensures that mine operators are taking due care for preservation and utilization of top soil, storage of overburden/waste rocks, reclamation and rehabilitation of land, precaution against ground vibration, control of ground subsidence, abatement measures against air, water and noise pollution, restoration of flora etc. in addition to other conservation and developmental measures. Necessary guidance to mine managements/ operators are also given for systematic and scientific development of mine including protection of environment. While approving the mining plans, schemes of mining and mine closure plans, IBM ensures that environment impact assessment studies have been carried out and to that effect environmental management plan has been incorporated for its effective implementation, besides reclamation and rehabilitation of mined out areas. IBM also ensures that mining operations are carried out in accordance with the approved mining plan/scheme of mining.

9.29 As a result of follow up for implementation of EMP, extensive afforestation has been undertaken in the mines by the mine owners. During the year 2009-10 (upto December 2009), about 2.80 million saplings

have been planted over an area of 760 hect. in and around mine areas. Thus, so far, 93.21 million saplings have been planted over an area of about 38,164 hect. with a survival rate of 67 percent.

9.30 Simultaneous reclamation of working mines and abandoned mines is required to be carried out. During the year 2009-10 (upto December 2009), simultaneous reclamation / rehabilitation is going on in 48 working mines covering an area of about 352 hec, taking the cumulative figure upto 1,250 working mines covering an area of about 12,123 hec. So far, 53 abandoned mines covering an area of 660 hec. have been reclaimed/ rehabilitated.

9.31 IBM continued to take initiative to organize Mines Environment and Mineral Conservation (MEMC) Weeks every year in important mining centres through its regional offices to promote awareness amongst mine owners for minimizing environmental pollution. During the year 2009-10 (up to December 2009), two such weeks were organized, in which 143 mines owners participated. Besides, 10 MEMC weeks will be celebrated during the remaining period.

### Revenue Generation

9.32 IBM generates revenue through promotional activities. Revenue generated during 2009-10 (up to December 2009), is of the order of Rs. 149.52 Lakhs comprising Rs. 16.98 Lakhs from the consultancy work in mining and geology; Rs. 91.74 Lakhs from mineral



Uti opencast mine for gold, Hutti-Maski schist belt, Raichur district, Karnataka

beneficiation assignments; Rs. 11.62 lakhs from mining research assignments; Rs. 10.56 Lakhs from processing of mining plans / schemes of mining and compounding fees & fines; Rs. 12.59 Lakhs from training and balance Rs. 6.03 Lakhs through sale of publications, mineral maps, mineral inventory data etc.

### Computerization

9.33 The Regional/Zonal offices and Headquarters of IBM have been linked through a sophisticated system based on client server architecture established with the help of BRGM, France, which includes new databases required by IBM. IBM has well established LAN facility, besides WAN system to communicate and exchange data from Regional, Zonal offices and Headquarters. Wide Area Network through leased lines of BSNL has been established between IBM Head Quarters at Nagpur and Ajmer, Bangalore, Hyderabad and Kolkata; between Ajmer Zonal Office and Regional Office; and between Kolkata regional office and Guwahati sub-regional office.

9.34 IBM is maintaining a website (<http://ibm.gov.in>) linked with the site of Ministry of Mines. This website provides information on the main functions and activities of IBM. This website has been linked to the Grievance Portal of DoPT and also to the website of CVC, New Delhi. Presently discussions / correspondence with NIC is going on to develop new website for IBM according to the guidelines of Govt. of India and also to make database of IBM web enabled thereof.

9.35 IBM has implemented "IT Infrastructure Security Policy (version 1.0 of 2006)" with a view to implementing Information Security to safeguard information infrastructure from possible attack through Internet or corruption, compromise of data etc.,

### Task Force of IBM to Check Illegal Mining

9.36 In compliance of the direction of the Ministry in the light of large scale reports of illegal mining in the media, a Task Force of IBM was constituted to check illegal mining in respect of the States of Andhra Pradesh, Jharkhand, Karnataka and Orissa for iron and

manganese ore and Gujarat for bauxite, which are the major States where illegal mining is rampant.

The Task Force have inspected 106 mines out of the target of 103 mines and recommended 60 mines for suspension under rule 13(2) of MCDR, 1988.

### IBM Advisory Board

9.37 IBM Advisory Board was reconstituted under the chairpersonship of Secretary, Ministry of Mines, Government of India on 14 November 2008 for a tenure of two years. Meeting of the reconstituted Board was held under the chairpersonship of Ms. Santha Sheela Nair, Secretary (Mines) on 7 August 2009 at Chennai.

9.38 As a follow up action on the decisions taken in the Board meeting, IBM have constituted Working Groups on the following aspects:

- (i) To suggest incentives to be given to mine operators to promote adoption of mechanization, computerization and automation;
- (ii) To develop a plan for Private Sector, networking of institutions and jobs in the field of mineral beneficiation;
- (iii) To develop legal and institutional framework for zero waste mining and strengthening of mechanization in mining;
- (iv) To evolve guidelines for operating small deposits in scientific and efficient manner safeguarding vital environmental and ecological aspects; and
- (v) To examine improved coordination between States and IBM.

### Working Group on Sustainable Development Framework (SDF) for the Mining Sector in India

9.39 Ministry of Mines constituted a Working Group on Sustainable Development Framework (SDF) for the Mining Sector in India on 04 March 2009, under the chairmanship of Additional Secretary (Mines) with Director (Mining Policy) as Member Secretary and representatives from Ministry of Mines, Ministry of Environment & Forests, NEERI, FIMI, Controller General, IBM and Director General, GSI. The Working

Group will supervise the preparation of SDF for Mining Sector in India comprising of principles, reporting Initiatives and good practice guidelines after studying the work of International Council on Mining and Metals (ICMM) and International Union for Conservation of Nature (IUCN) and other such organizations.

9.40 The Sustainable Development Framework would address important issues pertaining to Rehabilitation & Resettlement, environment mine closure etc. The Ministry has selected M/s ERM India Ltd, as a Consultant to prepare the draft Sustainable Development Framework through a bidding process. Consultations have also been initiated with Civil Rights Groups and NGOs in this matter.

### Committee for Review and Restructuring of the Functions and Role of IBM

9.41 A Committee for review and restructuring of the functions and role of IBM in terms of the policy directions given in the National Mineral Policy, 2008 has been constituted under the chairpersonship of Joint Secretary (Mining Legislation) and Director (Mining Policy) as Member Secretary, on 23 August 2009. The Committee comprises of representatives from Ministry of Environment & Forests, Central Pollution Control Board, State Directors of Mining & Geology of Andhra Pradesh & Chhattisgarh, GSI, IBM, ISMU, FIMI, NIC and retired officers of IBM. S/Shri Ranjan Sahai, CCOM and Y.G. Kale, ACOM are the members of the committee from the IBM.

### Group to Evolve Model Guidelines on Environmental Aspects of Quarrying of Minor Minerals

9.42 Shri R.K. Sinha, Controller of Mines, IBM was nominated as a member on the Group constituted under the chairmanship of Secretary (E&F), Government of India, to evolve model guidelines on environmental aspects of quarrying of minor minerals.

### Study Group to examine implementation of UNFC of Ores / Resources

9.43 A Study Group to examine implementation of UNFC of Ores/ Resources on the Ground was

constituted by the Ministry of Mines under the chairmanship of Dr. A.K. Bhandari, Advisor, TPPC with Shri S.B.S. Chauhan, Advisor, FIMI as Member Secretary and members from IBM, GSI, MECL and State DGMs. The Study Group submitted its report to the Ministry on 15 April 2009. S/Shri R.N. Meshram, Chief Mineral Economist and M. Sengupta, Sg. Mining Geologist were the members from IBM on this committee.

### Steps taken to curb Illegal Mining

9.44 Illegal mining is a bane to the entire mining sector as it not only leads to loss of revenue but also encourages unscientific mining practices, and there is a need to curb this menace. In the recent past increasing incidents of illegal mining have come to the knowledge of the Central Government through various reports, including media. Even though minerals are the property of the State Government and the entire royalty accrues to the State Governments, due to the fact that illegal mining has ramifications for the ecology, internal security and for the proper management of the sector, the Central Government is deeply concerned by the rising incidence of illegal mining.

9.45 In the First phase (1999), the Central Government amended the Mines and Minerals (Development and Regulation) Act, 1957, to empower the State Governments to take action against illegal mining by giving them powers to enter and inspect any mine, penalize transportation and storage of illegally mined minerals, confiscate illegally mined minerals, tools, equipment and vehicles, and frame separate Rules under the Mines and Minerals (Development and Regulation) Act, 1957 for curbing illegal mining. The results were not encouraging as many States did not actively use their powers.

9.46 In the Second Phase (since 2005 onwards), The Central Government adopted a three- pronged strategy, whereby the State Governments were required to set up Task Forces at District and State level for prevention of illegal mining, immediately frame separate Rules under the Mines and Minerals (Development and Regulation) Act, 1957 and put them in operation, and furnish quarterly reports on cases of

illegal mining detected by the State Governments, and action taken in the matter. As a result of this action a total of 157057 cases of illegal mining were detected, 117 lakh tonnes of mineral seized, 90431 vehicles seized, 3791 FIRs registered, 22980 court cases filed, and Rs325 crore realized as fine by State Governments.

9.47 In the Third Phase (September 2009 onwards), in order to evolve a holistic plan using modern technology to curb illegal mining, all the State Governments have been requested to prepare an Action Plan on the following points:

- Use of Satellite Imagery sourced from State Remote Sensing Organisations to curb illegal mining,
- Developing reliable mechanism in the State Government for collecting and monitoring of data regarding prices of various minerals, wherein the price trend could indicate possible chances of illegal mining in certain minerals,
- Developing a mechanism for integrated monitoring of information on movement of trucks/ vehicles from mining areas to ports/ markets/ manufacturing units which use mineral ores, and correlating the same with the production data to capture any spurt in mining activity,
- Maintaining and collecting information from ports, custom authorities, Ministry of Commerce on export of ores out of the country;
- Bar-coding, use of Holograms for transport permits, royalty paid permits etc., as a means of tracing unauthorized transport or sale of ores;
- Compulsory registration of all the end-users and issue of directives to the end-user industries to mandatorily check payment of royalty before purchase of ores for various manufacturing processes, with penalties for violations
- Development of reporting mechanism for the traders of mineral ores and end-use industries to report receipt of ore for which royalty payments have not been made;

- Constituting and empowering Joint teams of officials from various Departments of the State Government including, Police, Forest, Revenue department to conduct checks and file cases,
- Coordinating and concentrating efforts of both State Government and Indian Bureau of Mines through combined inspection in specific areas in which illegal mining is suspected and to ensure safety and effective cessation of illegal mining.
- Creation of a Special Cell in Police force to tackle illegal mining.

The IBM has constituted special Task Forces for checking incidents of illegal and irregular mining.

9.48 During the year 2009-10, 12 state governments have submitted the quarterly return on illegal mining upto the quarter ending June 2009 and 18 states upto the quarter ending September 2009. An annualised quarterly return on illegal mining for the year 2009-10 (Upto Sept. 2009) is given as **Annexure 9.8**.



Ms. Santha Sheela Nair, Secretary (Mines) addressing the IBM Advisory Board members in the 15<sup>th</sup> meeting held on 7 August, 2009 at Chennai